2022


ICSDG-LCWU
2022
1st International Conference on
Sustainable Development Goals:
Localizing SDGs through Academia
March 29-31, 2022
Lahore, Pakistan

Table of Contents

Overview ICSDG 2022

The 2030 Agenda for Sustainable Development covers a wide range of interrelated goals, including poverty eradication and economic growth, social inclusion, environmental sustainability and peace for all people by 2030. Policy decisions to meet the Sustainable Development Goals (SDGs) need to be informed by policy-relevant evidence co-designed and co-produced with the pertinent stakeholders, considering local and political contexts. Universities are uniquely placed to lead the cross-sectoral implementation of the SDGs and advance the 2030 agenda. This conference provides the case for building, strengthening and institutionalizing university partnerships with governments and communities to achieve the SDGs. It calls for a change in mindsets and culture in academia, NGOs, civil society, and government It invites all parties to start the dialogue if we are to rise to the global challenge.

As the number one women university, Lahore College for Women University occupies a unique position within society. With a broad remit around the creation and dissemination of knowledge, we have long been powerful drivers of global, national and local innovation, economic development, and societal wellbeing. Being the largest women's university in Asia, LCWU has a critical role in achieving the SDGs; hence the theme of this conference is "Localising through academia". This conference will not only provide students and professionals with the knowledge, skills, and motivation to understand and address the challenges of the SDGs yet empower and mobilize young people to provide in-depth academic or vocational training to implement SDG solutions. It will enhance opportunities for capacity building of students and professionals to address challenges relating to the SDGs.

This conference marks an important milestone in the history of Lahore college for women university for organising the first international conference jointly by the Directorate of Research and Office of Research Innovation and commercialization. It has been both a challenging and exciting venture to include many academic departments to play their unique part in addressing different themes. We received an overwhelming response from professionals and students from all over the country. We received international submissions, and our national submissions are from all four provinces and from as far as Gilgit. We had 563 scientific papers as submissions, out of which 227 were accepted as oral papers, 87 posters and 34 talks by distinguished speakers targeting more than 2000 attendees.

Within this conference, we are hosting 17 sub-conferences addressing each SDG uniquely, with 35 parallel sessions, 11 plenary Talks and 23 Keynote addresses. We are also very fortunate as distinguished international speakers have joined us from Australia, Azerbaijan, Bangladesh, Canada, England, India, Iran, Jordan, Kazakhstan, Poland, Singapore, Turkey, and United Kingdom.

The conference's main objective is to provide a chance to multidisciplinary experts and high-level practitioners worldwide to exchange knowledge, ideas, experiences, and expectations around the challenges involved with the SDGs and to facilitate and share research on different SDGs in Pakistan and other countries.

We are very thankful for our platinum sponsor, USEPF, PSF and Qasim Ali Shah Foundation, Our Golden Sponsors Seasons, Mcdonald, Hardees, Izhar Group, ECS, Pure, Denim, Young Psychologists Association (YPA), and ChiltanPure®. Without their support, this event couldn't have been possible.

The conference will be held from 29th -31st March in Iqra auditorium and seven other seminars halls of LCWU, Lahore. This three-day conference consists of many amazing segments with legendary guests to explore many things to learn and seek. I hope this conference will be a huge success and add some positive contribution to achieving sustainable development goals for Pakistan.

Lahore City Overview

Declaration of Lahore as city of literature by UNESCO can be regarded as most significant acknowledgement of Lahore's strong cultural history. It highlights Lahore, as a city with richest history in terms of tangible and intangible. Lahore, a city with a culture so rich with its foundation based on traditional music, sets it aside from any other city ever seen. Lahore, the land of multiple monumental locations such as the Badshahi Mosque and Lahore Fort, clarifies Lahore as a city filled with historical sites.

Contrary to popular belief, Lahore is a city where individuals are free to express themselves in terms of cultural aspects. A city known for its marvelous qawwali (a form of music), you can expect Lahore to have qawals set up at every city corner, singing their hearts out. Lahore exerts a strong cultural influence over Pakistan. For several years, Lahore was home to the genre of

'Lollywood,' which consisted of the Pakistani film industry initiated after the independence that Pakistan gained. The history of Lahore dates back to the 1st and 7th century A.D, that is when the name Lahore was first mentioned, although it was put into action was in 1947 A.D. Lahore is the

second-largest city in Pakistan. Lahore is also known as the 'City of Gardens' because of its many parks and gardens. This city is known for its rich culture and lively atmosphere.

Locations such as Food Street depict the type of city Lahore is. It is showing its diversification between its food, jewelry, etc. Food Street also shows us the different variations between the food that Lahore is famous for. Halwa Puri, Pathoray, Naan Channa, Biryani are some foods. Old Lahore is a place where the authentic and rich culture of Lahore originated from. This culture is still present in Haveli, Cuco's Den, Fazel -e- Haq, Teefi Ki Lassi, Khalifa ki khatayi, and much more. Lahore's culture is unique. It is sometimes referred to as the cultural capital or the heart of Pakistan. The city was a seat of the Mughal Empire and the Sikh Empire and the capital of Punjab in Mahmud Ghaznavi's 11th-century empire and the British Empire. Lahore is a place where if you visit, your heart stays here.

Educational institutes such as LCWU (Lahore College For Women University) hold major significance in the culture of Lahore. Established in May of 1922, it was made as an intermediate residential college before the partition and initially housed in a building on Hall Road, Lahore, with a strength of 60 students (25 boarders) and 13 staff members. Slowly it gained significance and is now one of the top leading institutions of women in the country.

Lahore College for Women University Overview

Lahore College for Women University is one of the most prestigious institutions in Pakistan. It has a unique position as Asia's leading women's university with an Impact ranking of **First** for the year 2021. Lahore College for Women University was established in May 1922 as an intermediate residential college. Initially, it was housed in a building on Hall Road, Lahore, with the strength of 60 students and 13 staff members. LCWU is completing its **100 years** in 2022 with a full-time enrollment of 15,000 students and a teaching faculty of more than 500 members. It has produced many meritorious alumni women serving in various fields in Pakistan and across borders ranging from the army to police, media to athletics, physicians, and athletics, teachers, and mothers. It offers various degrees at the Intermediate, Graduate, Master's, and Ph.D. levels, including BS 4-years degree in 39 disciplines, 5 years Pharm-D and Architecture degree. The university offers M.A/M.Sc. in 6 subjects and MS/M.Phil degree in 28 subjects and Ph.D. programs in 16 disciplines. LCWU is playing a huge contribution to Pakistani women's lives through education.

It is an outstanding achievement that Lahore College for Women University is ranked in the '2021 Times Higher Education Impact Rankings', which are the only global performance indicators that assess universities against the United Nations Sustainable Development Goals (SDGs). LCWU is ranked 6th amongst 36 universities of Pakistan, achieving the overall rank of 401- 600 out of 1115 world institutions. The individual SDGs in which LCWU stood out and showed remarkable performance are SDG 4, SDG 5, SDG 10, and SDG 17. SDG 4 (Quality Education) symbolizes inclusive and equitable quality education and promotes lifelong learning opportunities. SDG 5 (Gender Equality) represents achievement towards gender equality and empowerment of women and girls. SDG 10 (Reducing Inequalities) aims towards reducing income inequality within and among countries. SDG 17 (Partnership for the Goals) measures the strengthened means of implementation to revitalize the global partnership for sustainable development. LCWU is ranked 7th in gender equality amongst 776 institutions in 2021. In addition, LCWU is ranked in the category 101-200 in quality education out of the 996 institutions of the world.

LCWU aspires to be a leading teaching and research university, recognized nationally and globally as a hub of academic excellence, producing highly skilled, professional, empowered, well-groomed and values driven women leaders to contribute positively to the socio-economic development of Pakistan

Patron in Chief's Message

On behalf of Lahore College for Women University (LCWU) and my colleagues I extend a warm welcome to all the National and International Guest Speakers, delegates, faculty members, students and staff of LCWU to the International Conference on Sustainable Development Goals (SDGs) 2022. This conference has been jointly organized by the Directorate of Research (DOR) and Office of Research Internationalization and Commercialization (ORIC) of LCWU.

Lahore College for Women University holds the pride of being one of the oldest and the largest Women University of Pakistan. This institute has been playing a pivotal role in empowering generations of women by providing quality higher education and contributing in the socio-economic development of the country since its inception in 1922 and now this prestigious institution is about to accomplish its 100 glorious years of academic success in May, 2022.

The University is vigorously engaged in arranging National and International Conferences in order to promote quality research and innovation. International conferences offer a unique platform for transnational dialogue and collaboration. This International conference has indeed provided an invaluable opportunity for exchange of ideas and stimulation of intellectual growth on the most relevant theme of SDGs.

The importance of SDGs also known as Global Goals cannot be overstated. The SDGs provide worldwide guidance for addressing the global challenges facing the international community. It is about better protecting the natural foundations of life and our planet everywhere and for everyone, and preserving people's opportunities to live in dignity and prosperity across generations. The main aim of these SDGs is to protect the planet and ensure prosperity for all.

I feel glad to share that LCWU has scored prominent positions in the Times Higher Education Impact Rankings for the Year 2020 and 2021 which is the only global performance tables that assess Universities against the United Nations' Sustainable Development Goals (SDGs). The SDGs in which LCWU performed remarkably are; SDG 4 (Quality Education), SDG 5(Gender Equality), SDG 10 (Reducing inequalities) and SDG 17 (Partnership for the Goals). LCWU is ranked 7th in Gender Equality among 776 Institutions of the world in 2021 Impact Ranking. In addition, LCWU is ranked among 101-200 out of 996 Institutions of the world for quality

education. Moreover, a SDGs Wall has also been established at LCWU in order to highlight its significance.

It is heartening to see so many senior professionals and keen young people from diverse backgrounds come together to share, discuss and develop ideas on such a significant theme. I am confident that this conference will be a great success. I am grateful to all our distinguished guests and speakers for sparing their valuable time to grace the event. I wish you all a wonderful experience at the International Conference on Sustainable Development Goals and wish you a comfortable stay in Lahore, Pakistan.

PROF. DR. BUSHRA MIRZA (T.I)
VICE CHANCELLOR

Honorary Chairs

Patron-in-Chief

PROF. DR. BUSHRA MIRZA (T.I)

Honorary Chair

Prof. Dr. Engr. Intesar Ahmed

Honorary Chair

Prof. Dr. Shagufta Naz

Honorary Chair

Prof. Dr. Muhammad Afzal

General Chair

Prof. Dr. Amina Muazzam

General Chair

Dr. Engr. Aqsa Shabbir

Message by Conference Chair

Director Research LCWU

It is indeed a great pleasure to welcome you all to the 1st international conference on sustainable development goals. The aim of this conference is to raise awareness about the importance of sustainable development goals (SDGs). I would like to highlight the challenges and threats brought by the COVID-19 pandemic for the cause of sustainable development both globally and in our region. As we have been observing, the COVID-19 has transformed from a health crisis to a development, or even more, a human crisis. The sustainable development goals are a blueprint for fighting poverty and hunger, confronting the climate crisis, improving health and wellbeing, achieving gender equality, and much more, within the next eight years. At a time of great uncertainty, the SDGs show the way forward to a strong recovery from COVID-19 and a better future for all on a safe and healthy planet. We all have to play a positive role for the betterment of our country and our people. Throughout my life, I have been working immensely for the promotion of good health and wellbeing and gender equality. More recently, I am working with WHO COVID rehabilitation policy 2030 as a world lead for the mental health goals. I am open and looking forward to working with all positive and potential collaborators around the globe. This conference will provide you an excellent opportunity to look at multifarious aspects of SDGs including no poverty, zero hunger, good health and wellbeing, quality education, gender equality, clean water and sanitation, climate action, and many others. It will provide you with a platform to observe and learn how different departments of LCWU can play their role in enhancing knowledge, information, and wellness among individuals, groups, and the society at large with respect to SDGs. I warmly welcome to all of you and I hope you will find this conference a very enriching experience.

Message by Conference Chair

Director ORIC, LCWU

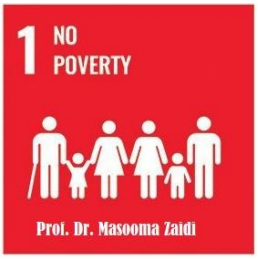
On behalf of the organizing committee, I would like to welcome you to 1st International Conference on Sustainable Development Goals, and Industrial Expo 2022. The theme of this year's conference is Localizing SDGs through academia. The organizing committee has put together a program that is impressive with 300 abstracts and keynote speakers from approximately 10 different countries. We thank you for your active participation in the conference. None of this would have happened without the earnest efforts of the organizers behind the scenes. We had an excellent team that has worked very hard to organize this conference.

First, I would like to thank general Co-Chair: Dr. Amina Mauzzam. I would also like to thank all 22 scientific chairs and their team in carrying out the paper review tasks and organizing committee who have done an outstanding job for registration, publication, publicity and local arrangements. Finally, I thank our patron and sponsors for their generous financial support and all conference participants for making ICSDG a success, and hope that you have an enjoyable and fruitful stay in Lahore, City of gardens.

Welcome you to 1st International conference on Sustainable Development Goals, and Industrial Expo 2022!

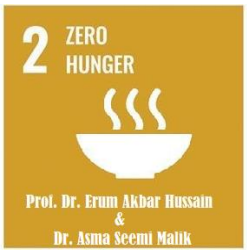
ORGANIZERS

ICSDG-LCWU 2022



Scientific Chair
SGD Goal 1
represents research related to eradication of extreme poverty in
ICSDG-LCWU 2022

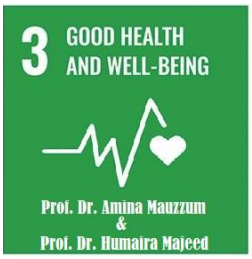
Prof. Dr. Masooma Abbas
Chairperson, Department of Research Centre of Art and Design, LCWU



Scientific Chairs
SGD Goal 2
represents research related to achieve zero hunger in
ICSDG-LCWU 2022

Prof. Dr. Erum Akbar Hussain
Department of Chemistry, LCWU

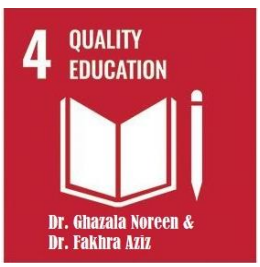
Dr. Asma Seemi Malik
Chairperson, Department of Sociology, LCWU



Scientific Chairs
SGD Goal 3
represents research related to heath systems and health related issues in
ICSDG-LCWU 2022

Prof. Dr. Amina Muazzam
Chairperson
Department of Applied Psychology, LCWU

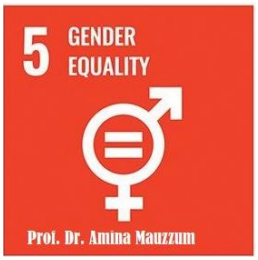
Prof. Humaira Majeed
Department of Pharmacology, LCWU



Scientific Chairs
SGD Goal 4
represents research related to quality education management in
ICSDG-LCWU 2022

Dr. Ghazala Noreen
Chairperson
Department of Secondary Education, LCWU

Dr. Fakhra Aziz
Chairperson
Department of STEM Education, LCWU

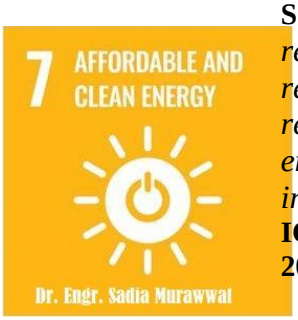


Scientific Chair
SGD Goal 5
represents research related to reduce gender inequalities in
ICSDG-LCWU 2022

Prof. Dr. Amina Muazzam Chairperson Department of Applied Psychology, LCWU

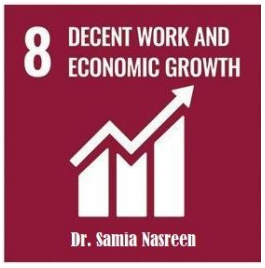
Scientific Chair
SGD Goal 6
represents research related to clean water access mechanisms in
ICSDG-LCWU 2022

Prof. Dr. Zohra Kiyani Chairperson Department of Physics, LCWU



Scientific Chair
SGD Goal 7
represents research related to affordable, reliable, and modern energy in
ICSDG-LCWU 2022

Dr. Engr. Sadia Murawwat Chairperson Department of Electrical Engineering, LCWU

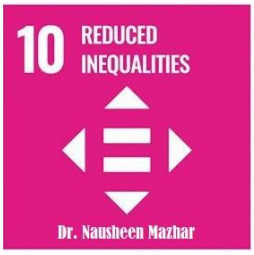


Scientific Chair
SGD Goal 8
represents research related to inclusive and sustainable economic growth in
ICSDG-LCWU 2022

Dr. Samia Nasreen Chairperson Department of Economics, LCWU

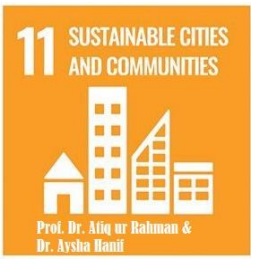
Scientific Chair
SGD Goal 9
represents research related to sustainable industrialization and foster innovation in
ICSDG-LCWU 2022

DR. Engr. Aqsa Shabbir Director ORIC, LCWU



Scientific Chair
SGD Goal 10
represents research related to reducing inequality within and among countries
in
ICSDG-LCWU 2022

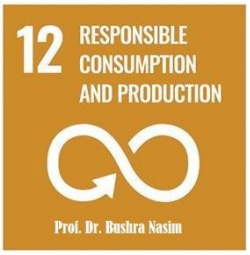
Dr. Nausheen Mazhar
Department of Geography, LCWU



Scientific Chairs
SGD Goal 11
represents research related to management for making "cities and human settlements inclusive, safe, resilient, and sustainable
in
ICSDG-LCWU 2022

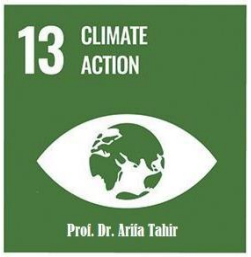
Prof. Dr. Atiq-ur-Rahman
Chairperson,
Department of City & Regional Planning, LCWU

Dr. Aysha Hanif
Chairperson
Department of Geography, LCWU



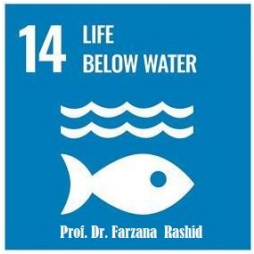
Scientific Chair
SGD Goal 12
represents research related to sustainable consumption and production patterns worldwide
in
ICSDG-LCWU 2022

Prof. Dr. Bushra Naseem
Chairperson
Department of Chemistry, LCWU



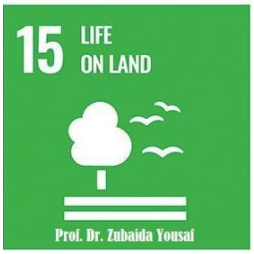
Scientific Chair
SGD Goal 13
represents research related to mitigations for climate change and its impacts
in
ICSDG-LCWU 2022

Prof. Dr. Arifa Tahir
Chairperson
Department of Environmental Science, LCWU



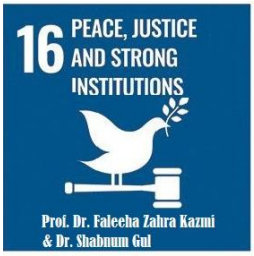
Scientific Chair
SGD Goal 14
represents research related to Conservation and sustainably use of the marine live in
ICSDG-LCWU 2022

Prof. Dr. Farzana Rashid
Department of Zoology, LCWU



Scientific Chair
SGD Goal 15
represents research related to Conservation of terrestrial ecosystem in
ICSDG-LCWU 2022

Prof. Dr. Zubaida Yousaf
Chairperson, Department of Botany, LCWU



Scientific Chairs
SGD Goal 16
represents research related to promotion of peaceful and inclusive societies in
ICSDG-LCWU 2022

Dr. S. Faleeha Kazmi
Chairperson, Department of Persian, LCWU

Dr. Shabnam Gul
Incharge, Department of International Relations, LCWU

Scientific Chair
SGD Goal 17
represents research related to establish equitable trade across borders in
ICSDG-LCWU 2022

Dr. Saima Farhan
Chairperson, Department of Computer Science, LCWU

Dr. Rahat Ajmal,
Principal
Intermediate College, LCWU

Local Arrangement Chair
ICSDG-LCWU 2022

Mr. Naveed Iqbal,
Senior Manager Communication & Media, LCWU

Publicity Chair
ICSDG-LCWU 2022

Dr. Muhammad Zia-Ul-Haq
Senior Manager,
ORIC, LCWU

Industry Chair
ICSDG-LCWU 2022

Dr. Nudra Malik
Department of Applied Psychology,

Registration Chair
ICSDG-LCWU 2022

Dr. Sahar Zia
Senior Manager
ORIC
LCWU

Publication Chair
ICSDG-LCWU 2022
Member of Book of Abstracts committee

Dr. Nausheen Mazhar
Geography Deptt.

Convener of Book of Abstracts committee

Eng. Saira Arshad
Research Assistant,
Electrical Engineering Deptt.
Member of Book of Abstracts committee

Ms. Aleena Khan
Visiting lecturer
Psychology
Member of Book of Abstracts committee

Ms. Alina Ashraf
BS Geography,
President Geographical Society-LCWU

List of Conference Plenary/Keynote/Invited Speakers

Sr. No	Plenary / Keynotes / Invited Speakers.
1.	Mr. Qasim Ali Shah
2.	Prof. Dr. Zabta Khan Shinwari
3.	Mr. Mudassar Riaz Malik
4.	Prof. Dr. Qammer Abbasi
5.	Dr. Samar Mubarik Mand
6.	Prof. Dr. Kausar Abdullah Malik (SDG-13,14,15)
7.	Prof. Dr. M. Ashraf (SDG-13,14,15)
8.	Dr. Ali Hussain Kazim, University of Engineering & Technology, Lahore(SDG-13,14,15)
9.	Dr. Sara Rizvi Jaffree (SDG-05)
10.	Dr. Azra Batool (SDG-05)
11.	Ms Rabia Riasat Director Program CPWB (SDG-05)
12.	SDPO Anum Tajammul (SDG-05)
13.	Dr. Rahat Naseer, University of Veterinary and Animal Sciences (SDG-02)
14.	Dr. Maliha Uroos, University of The Punjab (SDG-02)
15.	Dr. Arjumand Iqbal, University of Engineering & Technology, Lahore (SDG-02)
16.	Dr. Muhammad Saeed, Head Department of Education, University of Lahore (SDG-04)
17.	Dr. Bilal Anwar Senior Lecturer EFL/ESOL at East Sussex, UK (SDG-04)
18.	Mr. Najam Mazari (Chiltan Pure) (SDG-04)
19.	Mr. Kashif Junaid, CEO Denim By Mood (SDG-04)
20.	Prof. Dr. Ashraf (SDG-15)
21.	Prof. Dr. Zafar Khan Baloch (SDG-15)
22.	Dr. Muhamaad Nawaz (Virtual) National University of Singapore (SDG-07)
23.	Dr. Rabia Nazir, UET Lahore (SDG-07)
24.	Dr. Abdul Sattar Nizami, Sustainability Study Center, GCU (SDG-07)
25.	Dr. Muhammad Farooq, UET Lahore (SDG-07)
26.	Dr. Muhammad Salahuddin Ayyubi; FCCU Lahore (SDG-08)
27.	Prof. Dr. Sheikhzadeh, Vice Chancellor University of Bojnurd –Iran (SDG-16)
28.	Prof. Dr Saleem Mazhar, Pro-Vice Chancellor University of Punjab (SDG-16)
29.	Dr.Aygun Alizadeh, The Institute of Oriental Studies- Azerbaijan (SDG-16)
30.	Dr. Galiya Kabarbekova, Oriental studies faculty Middle East and South Asia Department Al-Farabi Kazakh National University-Kazakhstan (SDG-16)
31.	Prof. Dr. Nimat Yaldirim, Chairperson Persian Department, University of Attaturk-Turkey.(SDG-16)
32.	Prof. Dr. Amna Mahmood, Department of Politics & International Relations, International Islamic University, Islamabad. (SDG-16)
33.	Ms. Aisha Saddiqa, Chairperson Department of Graphic Design, IDVA, LCWU (SDG-16)
34.	Mizanur Rehman, PhD Rsearch Fellow, University of Rajshahi – Bangladesh (SDG-16)

35.	Ms. Pernekulova Meruyert, Senior Lecturer, Oriental Studies Faculty Middle East and South Asia Department, Al-Farabi Kazakh National University-Kazakhstan (SDG-16)
36.	Ali Hashim University of Sussex, UK. (SDG-04)
37.	Prof. Dr. Hassan Sher (SDG-15)
38.	Dr. Arshad Javaid (SDG-15)
39.	Dr. Kamran Ali, (Virtual) Middlesex University London (SDG-09/17)
40.	Dr. Ali Hammad Akber, Associate Professor, Department of Computer Engineering, UET Lahore (SDG-09/17).
41.	Prof. Dr. Tehmina Anjum (SDG-15)
42.	Prof. Dr. Zeb Siddique (SDG-15)
43.	Prof. Lindsay C Stringer (SDG-15)
44.	Prof. Dr. Wasim (SDG-15)
45.	Dr. Sadaf Hina, Department of Computer Science, UET, Lahore (SDG-09/17)
46.	Dr. Yasmin Ansari (Virtual), Scuola Superiora Sant'Anna, Pisa (SDG-09/17)
47.	Prof. Dr. Nasir Abbas (SDG-03)
48.	Prof. Dr. Zohra Nazir Kayani: LCWU, Lahore, Pakistan. (SDG-06)
49.	Dr. Khalid Nadeem Riaz: University of Okara, Okara, Pakistan. (SDG-06)
50.	Dr. Muhammad Najam Khan: BUITEMS, Quetta, Pakistan. (SDG-06)
51.	Dr. Muhammad Yasin Naz: University of Agriculture, Faisalabad, Pakistan. (SDG-06)
52.	Dr. Foazia Tanvir: University of Okara, Okara, Pakistan. (SDG-06)
53.	Dr. Aneeqa Sabah, LCWU, Lahore, Pakistan. (SDG-06)
54.	Prof. Dr. Rana Ejaz Ahmed Department of Political Science, University Punjab, Lahore (SDG-16)
55.	Dr. Iram Khalid: Chairperson of Department of Political Science, University of Punjab, Lahore (SDG-16).
56.	Dr. Abeeda Qureshi, Department of Political Science, Forman Christian College, Lahore. (SDG-16)
57.	Dr. Humaira Shafi, Centre for International Peace and Stability, NUST, Islamabad (SDG-16).
58.	Prof. Dr. Muhammad Afzal, Dean Faculty of Arts and Social Sciences, Lahore College for Women University, Lahore (SDG-16).
59.	Mulana Khabeer Azad, Khateeb Badshahi Mosque Lahore (SDG-16)
60.	Mr. Ramesh Singh Arora, MPA Punjab Assembly (SDG-16)
61.	Mr. Ihsan H. Nadeem, Director Dyal Singh Research & Cultural Forum, Lahore (SDG-16)
62.	Dr. Father James Channon, Director Pace Center, Lahore (SDG-16)
63.	Dr. Manor Chand, Director Balmick Temple, Lahore (SDG-16)
64.	Prof. Dr. Imtiaz Dogar (SDG-03)
65.	Dr Shahida Batool (SDG-03)
66.	Dr. Indhushree Rajan (SDG-03)
67.	Dr. Usman Rasheed (SDG-03)
68.	Dr Anna Visizi, Professor of Economics and Political affairs, University of Warsaw Poland (SDG-11).
69.	Dr Shaker Mahmood Mayo Chairman CRP Department, UET Lahore (SDG-11).

70.	Dr Martin Dallimer, School of Earth and Environment University of Leeds, UK (SDG-11).
71.	Prof. Dr. Saeed Iqbal, Forman Christian College, A Chartered University, Lahore (SDG-12).
72.	Dr. Lyaba Arshad: Forman Christian College, A Chartered University, Lahore, (SDG-12).
73.	Dr. Ghayoor Chotana: Lahore University of Management Sciences, Lahore (SDG-12).
74.	Prof. Dr. Nusrat Hussain (SDG-03)
75.	Prof. Dr. Rafia Rafiq, (SDG-03).
76.	Prof. Dr. Josephine Tan (SDG-03).
77.	Prof. Dr. Munawwar Sabir, Director, Centre for Integrated Mountain Research, PU (SDG-10).

Conference Program

All Three Days

Scientific Session – SDG 1: No Poverty
Scientific Chair SDG 1: Prof. Dr. Masooma Abbas, Research Center Art and Design, LCWU

Art Exhibition
Venue: Naseem Hafiz Qazi (NHQ) Art Gallery, Institute of Design and Visual Arts, LCWU
Curator: Dr. Sadia Murtaza and Ms. Nida Ijaz
Organizer: Ayesha Saddiqa
Inauguration: 11:45 am

Scientific Session – SDG 12: Responsible Consumption and Production Scientific Chair
SDG 12 (Social Sciences Stream): Dr. Asma Seemi Malik

Exhibit on Reducing, Reusing and Recycling
Venue: Bushra Khan Gallery, Iqra Auditorium
Inauguration: 11:45 am

Scientific Session – SDG 3: Good Health and Well Being
Scientific Chair SDG 3 (Social Sciences Stream): Prof. Dr Amina Muazzam

Exhibit on Health and Well Being
Venue: Zamurad Safdar Gallery, Iqra Auditorium
Inauguration: 11:45 am

Selected Posters

from all Scientific

Sessions Venue:

Foyers of Iqra

Auditorium
Inauguration: 11:45 am

Day 1: Tuesday, 29th March 2022
Plenary Session (Session 1)

Session Chair: Prof. Dr. Bushra Mirza (T.I), Vice Chancellor, LCWU

9:00 AM – 1:00 PM **Iqra Auditorium**

8:00-9:30	Registrations and Guests to be seated
9:30-9:45	Recitation, Welcome and Overview of the Conference
9:45-10:00	Address by the Session Chair: Worthy Vice Chancellor, LCWU
10:00-10:20	Keynote speaker 1 (Honorable Mr. Qasim Ali Shah)
10:20-10:40	Keynote speaker 2 (Prof. Dr. Zabta Khan Shinwari (SI, TI))
10:40-11:00	Keynote speaker 3 (Honorable Mr. Mudassar Riaz Malik)
11:00-11:15	Address by the Chief Guest: Mr. Zaigham Mehmood Rizvi, Chairman Naya Pakistan Housing Task Force
11:15-11:45	Refreshments
11:45- 12:00	Inauguration of Art Exhibit at NHQ Art Gallery, By Hon. Mr. Mudassar Malik Inauguration of Exhibit on Reducing, Reusing and Recycling & Exhibit of Mental Health and Well Being by Hon. Mr. Qasim Ali Shah Inauguration of Poster Foyers by the Hon. Chief Guest, Prof. Dr. Zabta Khan Shinwari (S.I) (T.I) and Prof. Dr. Qammer Abbasi
12:00-12:30	Plenary Talk by Prof. Dr. Qammer Abbasi
12:30 – 1:00	Plenary Talk by Dr. Samar Mubarik Mand (NI, HI, SI)

1:00 PM – 2:00 PM **Lunch**

Vegan Lunch with An Emphasis on Zero Food Wastage

(SDG 13: Climate Change, SDG 2: Zero Hunger, SDG 12: Responsible Consumption & Production)

2:00 PM – 4:30 PM (Concurrent Sessions)

Day 1, Session 2	Day 1, Session 3	Day 1. Session 4
Iqra Auditorium	Student Service Center	Seminar Hall, Chemistry Department
SDG 13: Climate Action, SDG 14: Life under Water, SDG 15: Life on Land	SDG 5: Gender Equality	SDG 2: Zero Hunger

4:30 PM – 6:30 PM
Musical Evening by GCU Music Society in Iqra Auditorium

Day 1, Session 2 (Iqra Auditorium)

SDG 13,14 and 15 (Climate Action, Life under Water and Life on Land)

Scientific Chair SDG 13: Prof. Dr. Arifa Tahir
Scientific Chair SDG 14: Prof. Dr. Farzana Rashid
Scientific Chair SDG 15: Prof. Dr. Zubaida Yousaf
Session Chair(s): Prof. Dr. Zabta Khan Shinwari (S.I) and Prof. Dr. Hassan Sher
Moderator: Dr. Samina Sarwar
Facilitators: Dr. Mobina Ulfat

2:00 – 2:05	Address by Scientific Chairs
2:05-2:30	**Keynote:** Prof. Dr. Kausar Abdullah Malik
2:30-2:45	**Invited Speaker 1:** Prof. Dr. M. Ashraf
2:45 -3:00	**Invited Speaker 2:** Dr. Ali Hussain Kazim, University of Engineering & Technology, Lahore

Time	Speaker	Title
3:00 – 3:10	Dr. Sibgha Noreen	Impact of foliar fertigation of ascorbic acid and tocopherol with zinc on antioxidant activity of barley (Hordeum vulgare l.) under
3:10 – 3:20	Asma Afzal	Stress alleviation and intestinal mucosal health improvement in response to dietary rosemary oil and Nigella sativa in quails.
3:20 – 3:30	Dr. Kafeel Ahmed	Copper acculaulation in some waste water irrigated plant and their transfer in blood of human.
3:30 – 3:40	Dr. M. Hafeez ur Rehman	Development of fish cake sensory and proximate analysis by utilizing low cost fish species
3:40 – 3:50	Dr. Sadaf Gull	Distribution of phytoplankton diversity and abundance in North Arabian Sea, shelf of Pakistan
3:50 – 3:55	Muhammad Inayat	Optimization of rice spacing density and fish species to improve production and eco sustainability through rice fish co-culture
3:55 – 4:05	Shariq Waheed	Impact of gender on perception and adaptation strategies against climate change in Lahore Pakistan. A cross sectional study.
4:05 – 4:15	Arshad Ali Sheday	Spatiotemporal assessment and valuation of key regulating ecosystem services and linkages with the SDGs in the terrestrial ecosystem of Pakistan

4:15-4: 30pm Closing by Session Chair + Certificates and Shield Distribution

Day 1, Session 3 (Student Service Center)
SDG5: Gender Equality

Scientific Chair SDG 5: Prof. Dr. Amina Muazzam
Moderator: Ms. Sana Belal and Dr. Maryam Gul
Facilitators: Ayesha Ashfaq and Sana Shahid
Session Chair (s): Prof. Dr. Sara Shahid and Prof. Dr. Shahida Batool

1:55-2:00	Guests to be Seated
2:00-2:10	Address by Scientific Chair
2:10-2:20	**Keynote Speaker:** Dr. Sara Rizvi Jaffree, "Breaking Cultural Barriers facing Pakistani Girls' Schooling through Social Interventions"
2:20-2:30	**Invited Speaker 1:** Dr. Azra Batool
2:30-2:40	**Invited Speaker 2:** Ms Rabia Riasat Director Program CPWB
2:40-2:50	**Invited Speaker 3:** SDPO Anum Tajammul

SCIENTIFIC SESSION

Time	Authors	Title of Presentation
2:50 – 3:00	Hassan Ibrahim Tela, and Sadia Khan, Department of Psychology, Lahore Leads University, Pakistan	Female Entrepreneurship as a Sustainable Development Goal 2030; A Stakeholder's Perspective in Pakistani Context
3:00-3:10	Marwa Ijaz, Rabia Khurshid, and Suhaib Aamir, Air University School of Management (AUSOM), Air University, Islamabad, Pakistan	Gender Equality in the Tourism Industry of Pakistan: An Assessment of Difficulties and Challenges Faced by Transgender Tourists
3:10-3:20	Nabeela Nazly, Dr. Saqib Rehman, and Dr. Adeel Nasir, Department of Management Sciences, LCWU	Spring In Women Empowerment For Sustainable Society
3:20-3:30	Rehmana Khalil, Farhat Jamil, and Ruhi Khalid, Department of Psychology, Beaconhouse National University, Pakistan.	Reasons of Crime, Personality and Guilt in Women Prisoners
3:30-3:40	Sadia Jabeen and Dr. Sonia Omer, Department of Sociology, Virtual University of Pakistan, Pakistan and Department of Social Work, University of the Punjab, Lahore, Pakistan.	Gender Sensitive Public Policy Initiatives: An Analytical Study of Women Empowerment Package (2012-2016) Punjab
3:40-3:50	Sunnia Malik, Department of English, Bahauddin Zakariya University, Multan, Pakistan	Comparative Study of Archetype Heer And Contemporary Woman In Patriarchal Society

4:00-4:10 Closing by Session Chair
4:10-4:30 Certificates and Shield Distribution + Refreshments

Day 1, Session 4 (Seminar Hall, Chemistry Department)

SDG 2: Zero Hunger

Scientific Chair SDG 2: Prof. Dr. Erum Akbar Hussain
Session Chair: Prof. Dr. Ahmad Adnan
Moderator: Dr. Sana Ahmad
Facilitator: Ms. Bareera Ejaz

2:05pm	Address by Scientific Chair
2:15-2:40pm	Plenary Talk: Dr. Rahat Naseer, University of Veterinary and Animal Sciences "Zero Hunger & Research Potential of Pure Sciences"
2:40-3:00pm	Keynote Speaker 1: Dr. Maliha Uroos, University of The Punjab "Attaining SDG 2 by Utilization of Agricultural Waste to Produce Food Grade Glucose"
3:00-3:20pm	Keynote Speaker 2: Dr. Arjumand Iqbal, University of Engineering & Technology, Lahore "The Role of Food Chemists in Fighting against Hunger and Stunting in Pakistan"

Time	Speakers	Title
3:20- 3:30	Faisal Mehdi	Effect of heat stress on activities of sucrose metabolizing enzymes in relation to sucrose accumulation.
3:30 – 3:40	Amna Ashfaaq	Nutraceutical frameworks - Combating healthy food scarcity.
3:40 – 3:50	Waqas Shair	Effects of social safety net programme on household food insecurity in Pakistan
3:50- 4:00	Nazish Saleem	The hidden hunger: vitamin d deficiency intensifies the insulin resistance in obese women in Pakistan

4:00-4:30pm Closing by Session Chair + Certificates and Shield Distribution + Refreshments

Day 2: Wednesday 30th 2022

Morning Concurrent Sessions

Day 2, Session 1	Day 2, Session 2	Day 2. Session 3	Day 2, Session 4	Day 2, Session 5	Day 2, Session 6
9:00 – 11:00	9:00 – 11:30	9:00 – 11:00	9:30 – 12:50	10:50 – 12:40	10:30 – 12:40
Iqra Auditorium	Student Service Center	IT Seminar Hall	Management Science Dept	(Online) Persian Dept	Firdowsi Room, Persian Dept
SDG 4: Quality Education	SDG 15: Life on Land	SDG 7: Affordable and Clean Energy	SDG 8: Decent Work and Economic Growth	SDG 16: Peace	SDG 16: Peace

Early Afternoon Concurrent Sessions

Day 2, Session 7	Day 2, Session 8	Day 2. Session 9	Day 2, Session 10
11:30 AM -1:20 PM	11:30 AM -1:30 PM	11:30 AM -1:30 PM	11:30 AM -1:30 PM
Iqra Auditorium	Student Service Center	IT Seminar Hall	Seminar Room, Botany Dept
SDG 4: Quality Education	SDG 15: Life on Land	SDG 9: Industry, Innovation & Infrastructure SDG 17: Partnership for Goals	SDG 15: Life on Land

Afternoon Concurrent Sessions

Day 2, Session 11	Day 2, Session 12	Day 2. Session 13	Day 2, Session 14	Day 2, Session 15
2:30PM-4:20PM	2:30PM-4:50PM	2:30PM-4:30PM	2:30PM-4:30PM	2:30PM-4:30PM
Iqra Auditorium	Student Service Center	IT Seminar Hall	G-35 Social Science Building	Seminar Room Biotechnology Dept
SDG 4: Quality Education	SDG 15: Life on Land	SDG 9: Industry, Innovation & Infrastructure SDG 17: Partnership for Goals	SDG 4: Quality Education	SDG 4: Quality Education

Day 2, Session 1 (Iqra Auditorium) SDG 4: Quality Education

Scientific Chair: Dr. Ghazala Noureen and Dr. Fakhra Aziz
Session Chair: Prof. Dr. Mumtaz Akhter
Moderator: Dr. Tayyaba Batool, **Facilitators:** Maria Nasir, Zainab and Yusaira

9:00-9:30	Guests to be seated
09:30-09:40	Address by Scientific Chairs
09:40-10:00	**Keynote**: Dr. Muhammad Saeed, Head Department of Education, University of Lahore
10:00-10:15	**Invited Speaker 1** (Virtual): Dr. Bilal Anwar Senior Lecturer EFL/ESOL at East Sussex, UK.
10:15 – 10:25	**Invited Speaker 2:** Mr. Najam Mazari (Chiltan Pure)
10:25 – 10:35	**Invited Speaker 3:** Mr. Kashif Junaid, CEO Denim By Mood
10:35-10:45	**Guest of Honor:** Prof. Dr. Mumtaz Akhter, Dean Social Sciences, UMT

10:45-11:00 Comments by Session Chair + Certificates and Shield Distribution
11:00 – 11:30 Refreshments

Day 2, Session 2 (Student Service Center)

SDG 15 (Life on Land)

Scientific Chair SDG 15: Prof. Dr. Zubaida Yousaf
Session Chair 1: Prof. Dr. Hassan Sher, **Session Chair 2:** Dr. Arshad Javaid
Moderator: Dr. Sumera Iqbal, **Facilitator:** Dr. Amna Tariq

09:00- 09:10	Registration and Guests to be Seated
09:10-09:20	Welcome Address by Scientific Chair
09:20 - 09:40	**Keynote:** Prof. Dr. Ashraf
09:40 – 10:00	**Invited Speaker**: Prof. Dr. Zafar Khan Baloch

Time	Speaker	Title
10:00-10:10	Naveera Akhtar	Role of used tea leaves (Thea sinensis) against salt stress (naf) in canola (Brassica napus)
10:10-10:20	Dr. Hussan Bano	Potential changes in photosynthesis and chlorophyll a fluorescence of mash cultivars under drought stress
10:20-10:30	Shehzad Akhtar	Toxicological potential of zinc in soil-vegetables grown with diverse regimes of irrigation and their public health implications
10:30-10:40	Dr. Abdul Ghani	Response of maize to exogenously applied chromium: elucidation of possible tolerance mechanism
10:40-10:50	Dr. Sibgha Noreen	Impact of foliar fertigation of ascorbic acid and tocopherol with zinc on antioxidant activity of Barley (Hordeum vulgare l.) under

10:50-11:00	Dr. Zill e Huma Aftab	Nano-biochar induced defense response against bacterial leaf spot (Xanthomonas campestris pv. vesicatoria) of chilies
11:00- 11:10	Dr. Mobina Ulfat	Insights into salt tolerance mechanism through RNA-seq analysis of canola (*Brassica napus* l.) grown under nacl stress
11:10-11:20	Dr. Aisha Nazir	Achieving pollution abatement of tannery solid waste through biochar at open dumps – a huge threat to related SDGs
11:20– 11:30	Dr. Sadia Nawaz	Genetic Variations are Susceptible factor to Aggressive Behavior Among Convicted Criminal Prisoners in Punjab Pakistan
11:20– 11:30	Dr. Aisha Nazir	Achieving pollution abatement of tannery solid waste through biochar at open dumps – a huge threat to related SDGs

Day 2, Session 3 (IT Seminar Hall)

SDG 7: Affordable and Clean Energy

Scientific Chair: Dr. Sadia Murawaat
Session Chair: Dr. Jawad Sarwar, UET Lahore
Moderator: Ms. Ahlam Jameel

9:00-9:10	Address by Scientific Chair
09:15-09:30	**Keynote**: Dr. Muhamaad Nawaz (Virtual) National University of Singapore
09:30-9:45	**Invited Speaker 1**: Dr. Rabia Nazir, UET Lahore, "Clean energy access and off-grid system: An opportunity to empower a Billion lives"
10:30-10:45	**Invited Speaker 2**: Dr. Abdul Sattar Nizami, Sustainability Study Center, GCU, "Biorefinery; Emerging Trends in Circular Bioeconomy for Sustainable Development"
10:45 – 11:00	**Invited Speaker 3:** Dr. Muhammad Farooq, UET Lahore, "Waste to energy: Challenges and opportunities for sustainable clean energy solutions in Pakistan"

Time	**Authors**	**Title**
9:45-9:55	Sadia Murawwat, Anisa Batool	Model Predictive Control And Active Disturbance Rejection Control Algorithms Ensuring Clean Energy For All By Reducing Fuel Consumption And Emissions
9:55-10:05	Rehana Kausar, Tayyaba Raza	Production And Storage Of Energy Using Graphene Based Nano-Composites
10:05-10:15	Zohra Nazir Kiyani, Alveena Shahid	Synthesis and Characterization of Cobalt Oxide nanostructured thin film for affordable and clean energy storage device
10:15-10:20	Rubab Nazar, Abdul Sattar Nizami	Development of a Sustainable biomass supply chain in Pakistan
10:20-10:30	Asma Naeem, Rimsha Musharraf, Ayesha Tariq	Power generation by footsteps

11:00-11:15 Closing by Session Chair + Certificates and Shield Distribution + Refreshments

Poster Session (10:00 – 12:00)

Asma Naeem, Rimsha Musharraf, Ayesha Tariq, Electrical Engineering Dept, LCWU	Plant Irrigation System

Gohar Latif, Kashaf Nasir, Aeman, Ayesha Tariq, Electrical Engineering Dept, LCWU	Lead Acid Battery Charger
Zainab Bashir, Zohra Nazir Kayani, Physics Dept, LCWU	Boron-doped zinc oxide films; Probe of Antibacterial and Optical Properties
Maryam Anwar, Zohra Nazir Kayani, Physics Dept, LCWU	Use of Gd-doped ZnO thin films in Optoelectronic devices
Aima Maqbool, Maab Akbar, Ayesha Tariq, , Electrical Engineering Dept, LCWU	Water Wheel Based Energy Generation
Samavia Nawaz, Mehak Fatima, Maryam Ahmad, Nukhba Shehzad, , Electrical Engineering Dept, LCWU	MPPT Solar Charge Controller
Maroosh Hameed, Mehak Sohail, Ayesha Tariq, Rimsha Musharraf , Anum Shaheen, Maryam Naveed and Sajjad Rabbani, , Electrical Engineering Dept, LCWU	Air Pollution Detection and Control System

Day 2, Session 4 (Management Science Department)

SDG 8: Decent Work & Economic Growth

Scientific Chair: Dr. Samia Nasreen
Session Chair: Dr. Shazia Kousar
Moderator: Dr. Hafsa Batool, **Facilitators:** Faryal Ishtiaq, Saira Arsh and Khadija Tul Kubra

9:30	Guests to be Seated	
9:30-9:40	Address by Scientific Chair	
9:40-10:00	**Keynote address:** Dr. Muhammad Salahuddin Ayyubi; FCCU Lahore "The myth and reality of decent work and economic growth"	
Time	**Authors**	**Title**
10:00-10:10	Atifa Arif, Asma Asghar	Impact of Terrorism on Economic Growth of Pakistan
10:10 -10:20	Dr Ahmad Bilal	Tasalsul; The Role of Film in Pakistan to Create Awareness About Environmental Issue
10:20-10:30	Prof Dr. Abdul Majid Khan, Prof Dr. Muhammad Yasir, Sadoon Hanif	Sensitization of women domestic workers to decent living: A case study of district Abbottabad
10:30-10:40	Rabbia Arshad	Impact of Ethical Climate and Extra-Role Performance Behavior: Mediating Role of Employee Engagement
10:40-10:50	Ms. Rabia Aslam, Dr. Saqib Rehman, Dr. Adeel Nasir	Achieving decent work environment through sustainable business performance
10:50 – 11:00	Amber Pervaiz	Green Economic Growth: A Road Towards Sustainable Development (Evidence from South Asian Economies)
11:00-11:30	Refreshments	

11:30-11:40	Sidra Azam, Ramsha Saleem	External Resources, and Economic Growth: Moderating role of Institutional Quality; An Evidence from Selected Developing Countries
11:40-11:50	Mehwish Gulzar	Does Public Debt Effect Economic Growth? (Analytical Study of Pakistan)
11:50-12:00	Asma Abdul Rehman, Dr Shazia Kousar, Dr. Samia Nasreen	Role of Technology and Social factors on women empowerment in higher educational institutions of Punjab, Pakistan
12:00-12:10	Rubab Aslam Malik, Dr. Hafsah Batool	Socio-Economic Antecedents of Women Entrepreneurship Mindset in Achieving Sustainable Economic Development: A Case Study of Punjab, Pakistan
12:10-12:20	Faryal Ishtiaq, Dr Samia Nasreen	The Role of ICT and Financial Development in Economic Growth of Asian Economies
12:20-12:30	Bushra Mushtaq, Prof. Dr. Muhammad Afzal, Dr. Muhammad Afzal	Linkages Among Technological Spillover, Absorptive Capacity and Economic Growth: A Nonlinear Autoregressive Distributed Lag Approach

12:30pm-12:50pm: Closing by Session Chair + Certificates and Shield Distribution

Day 2, Session 5 (Online) (Persian Department)

SDG 16: Peace

Scientific Chair: Prof. Dr. S. Faleeha Zahra Kazmi
Moderator: Dr. Hira Gilani, **Facilitators:** Dr. Maria Umer

10:50	Address by the Scientific Chair
11:00	Prof. Dr. Sheikhzadeh, Vice Chancellor University of Bojnurd –Iran
11:10	Prof. Dr Saleem Mazhar, Pro-Vice Chancellor University of Punjab
11:20	Dr.Aygun Alizadeh, The Institute of Oriental Studies- Azerbaijan
11:30	Dr. Galiya Kabarbekova, Oriental studies faculty Middle East and South Asia Department Al-Farabi Kazakh National University-Kazakhstan
11:40	Prof. Dr. Nimat Yaldirim, Chairperson Persian Department, University of Attaturk- Turkey
11:50	Prof. Dr. Amna Mahmood, Department of Politics & International Relations, International Islamic University, Islamabad
12:00	Ms. Aisha Saddiqa, Chairperson Department of Graphic Design, IDVA, LCWU
12:10	Mizanur Rehman, PhD Rsearch Fellow, University of Rajshahi – Bangladesh
12:20	Ms. Pernekulova Meruyert, Senior Lecturer, Oriental Studies Faculty Middle East and South Asia Department, Al-Farabi Kazakh National University-Kazakhstan
12:30	Vote of Thanks by Conference Chair

Day 2, Session 6 (Firdowsi Room Persian Department)
SDG 16: Peace

Scientific Chair: Prof. Dr. S. Faleeha Zahra Kazmi
Moderator: Dr. Faiza Kiran, **Facilitators:** Dr. Maria Umer

Time	Presenter	Title of Presentation
10:30	Tuba Rufa	Glimpses of Peace and Harmony in malbonaw Behr-ul-Irfan
10:35	Hira Siddiq	Message of Peace by Hazrat Nizam ud din view of Fawaid ul Fawaid
10:40	Fazila Munawar	Peace & Harmony in Rumis's Poetry
10:45	Habiba Khursheed	Peace & Harmony in Thousand Sufi Tales
10:50	Maham Imran	Message of Peace & in the spiritual aspect of Saadi & Hafiz
10:55	Sonia Yaseen	Rol of Mysticism in oneness of Religions
11:00	TasmiaTariq	Teaching of Islamic Mysticism Friendship, Brotherhood & oneness
11:05	Nimra Farooq	Study of Role of Mysticism in Creating Peaceful coexistence
11:10	Masooma Wadood	Mysticism in the Peace of Naseer ud din Golravi
11:15	Shaheen Hanif	Razi Artimassi a Mystic and peace poet
11:20	Zainab Khalid	War and Peace in Mystical Teachings
11:25	Maham Khan	A Criticism on the idealogy of "Sulah-e-Kul" in Mysticism
11:30	Maleeha Zahid	Educational & Mystical researches & comperative study of Gulistan & Baharistan-e-Jami
11:35	Sadia Raheem	"Faith" in the light of Sultan Bahu's Mystical Ideology
11:40	Zahra Murtaza	نقش نکر حضرت سلطان باهو در فلاح نوع بشر
11:45	Hirra Gillani	سیمرغ از دیدگاه شاعران فارسی
11:50	Sana Gillani	مثنوی ولی رام، تاللو عرفان و سلوک موالنا در سر زمین شبه قاره
11:55	Nighat Prveen	صلح و آشتی در دوره رنجیت سنگھ
12:00	Bisma Ikram	بررسی بن مایه های عرفانی در غزل فاضل نظری با تکیه بر سه گانه غزلیات
12:05	Maria Ali	امنیت و صلح در رمان سووشون از سیمین دانشور
12:10	Rohama un nisa	عرفان و تجلی آن در غزلیات حویزی
12:15	Alina Dilshad	جهان بینی عرفانی زبان فارسی پژوهشی در نسبت میان افول فارسی و رواج خوشونت در پاکستان
12:20	Kiran Nadeem	صلح و آشتی در کالم عزیز الدین
12:25	Rabia Asif	Guru Nanak as Sufi Saint
12:30	Rimsha Ali	درس صلح و آشتی در راحت العاشقین از خواجه محمد سلیمان تونسوی (با تکیه بر نسخه دست نویس از میان محمد درزی)
12:35	Sadaf Naz	تطبیقی کشف المحجوب و طبقات الصوفیه

Day 2, Session 7 (Iqra Auditorium)
SDG 4: Quality Education

Scientific Chair: Dr. Ghazala Noureen and Dr. Fakhra Aziz
Session Chair: Prof. Dr. Mumtaz Akhter
Moderator: Dr. Tayyaba Batool, **Facilitators:** Maria Nasir, Zainab and Yusaira

11:30-11:35	Welcome Address by Scientific Chair
11:35-11:50	**Invited Speaker 1:** Prof. Dr. Ayaz Muhammad khan, Director, Division of Education, University of Education
11: 50-12: 05	**Invited Speaker 2:** Prof. Dr. Faisal Bari, Director, School of Humanities and Social Sciences LUMS
12:05 -12:20	**Invited Speaker 3:** (Recorded) Dr Farha Sattar Charles Darwin University Australia

12:20-12:35	**Invited Speaker 4:** Malik Khalid Yaqoob, Seasons Group
12:35-12:50	**Invited Speaker 5:** (virtual/recorded) Dr. Nabil G Alawadeh (Jordan)
12:50- 01:05	**Invited Speaker 6:** Ali Hashim University of Sussex, UK. English Language as A Communication Barrier for Quality Education in Pakistan.

01:05-01:20 Comments by Session Chair + Certificates and Shields Distribution

Day 2, Session 8 (Student Service Center)
SDG 15 (Life on Land)

Scientific Chair SDG 15: Prof. Dr. Zubaida Yousaf
Session Chair 1: Prof. Dr. Rehmatullah Qureshi, **Session Chair 2:** Prof. Dr. Farrukh Nawaz
Moderator: Dr. Shabnum Shaheen, **Facilitators:** Dr. Riffat Siddique

11:30 – 11:50	**Keynote Speaker:** Prof. Dr. Hassan Sher
11:50 – 12:10	**Invited Speaker:** Dr. Arshad Javaid

Time	Speaker	Abstract title
12:10-12:20	Asma Ahmed	Effect of different concentrations of zinc oxide nanparticles and zinc sulphate on wheat (Triticum aestivum l.) plant growth.
12:20-12:30	M, Shafiq	Role of composting-based decentralized municipal solid waste management in achieving prioritized sdgs in Pakistan.
12:30-12:40	Farzana Abbas	Effect of different stocking density of Tilapia on growth and biochemical composition of both rice and fish in integrated rice cum fish farming system.
12:40-12:50	Dr. Kiran Shehzadi	Evaluation of the effect of zinc oxide nanoparticles on seed germination and vegetative parameters of Capsicum annuum .
12:50-1:00	Shabana Kausar	Antihemolytic and radical scavenging potential of Calotropis procera (aiton).
1:00-1:10	Faiza Anum	Phytochemical analysis and fungistatic potential of achyranthus aspera l. against colletotrichum gloeosporioides penz
1:10 – 1:20	Dr. Arusa Aftab	Morphological variability assessment of worldwide germplasm of pharmaceutically important plant Nigella sativa L.
1:20 – 1:30	Dr. Riffat Siddique	Comparision of phytoconstituents and antioxidant potential of Begomoviruses infected and healthy *Hibiscus rosa-sinensis* l.

Day 2, Session 9 (IT Seminar Hall)
SDG 9 (Industry, Innovation and Infrastructure) & SDG 17 (Partnership for Goals)

Scientific Chair SDG 9: Dr. Engr. Aqsa Shabbir
Scientific Chair SDG 17: Dr. Saima Farhan
Session Chair: Prof. Dr. Muhammad Aslam
Moderator: Dr. Maria Anjum, **Facilitators:** Ms. Ramsha Mukhtar & Ms. Aqsa Munir

11:25 – 11:30	Welcome address by Scientific Chair
11:30 – 11:45	Invited Speaker 1: Dr. Kamran Ali, (Virtual) Middlesex University London
11:45 – 12:00	Invited Speaker 2: Dr. Ali Hammad Akber, Associate Professor, Department of Computer Engineering, UET Lahore, "Understanding SDGs in the context of Pakistan"

Time	Authors	Title of Presentation
12:00	Waqas Shair, Dr. Muhammad Nawaz, Dr. Mumtaz Anwar, Abdul Waheed School of Economics & Finance, Minhaj University Lahore, Pakistan & School of Economics, University of the Punjab Lahore, Pakistan	Differential ICT Usage Opportunity among the Individuals of Pakistan
12:10	S. Nasir, M. Toseef, Gul Baddin, M. Rameez Baig, Physics department, university of Kotli, AJ&K, Pakistan	Efficiency Enhancement Through Light Harvesting in Organic Inorganic Hybrid Solar Cells
12:20	Sidra Rafique, Sabahat Ahmad, Fatima Anjum, Maria Saleemi, Wajeeha Malik, Rabia Javed	Collaborative Platform for Physiological Wellbeing through Emotion Recognition to Achieve Healthy and Sustainable Society
12:30	Wajeeha Malik, Fahima Tahir, Rabia Javed, Sidra Rafique	Smart Solution to Address Natural Disasters Through Early Warnings for Cross Border Sustainable Environment and Society
12:40	Rabia Javed, Attia Anis, Wajeeha Malik	A Cross-Platform Skin Cancer Treatment Technique Through Collaboration and Partnership of Healthcare Practitioners
12:50	Fatima Anjum, Komal Bashir, Faria Kanwal, Ayesha Iqbal, Ayesha Afzaal	Agriculture Transformation Through Cross Borders Transferable Advanced Technologies for Sustainable Crop Production
1:00	Maria Saleemi, Maria Anjum, Sidra Rafique, Rabia Asghar	An Efficient, Effective and Transferable Ubiquitous Platform for Women and Child Safety to Enable Secure and Sustainable Society

Poster Session: 11:00 – 1:00	
Ifrah Tahir, Isma Tariq, Mubarra Nazir, Amina Ahmad, Ayesha Tariq and Rimsha Musharraf, Electrical Engineering Dept, LCWU	Line Follower Robot
Ayesha AD, Ayesha Javed and Ayesha Tariq, Electrical Engineering Dept, LCWU	Biometric Attendance System Using ATmega32
Aqsa Iqbal, Sarah Rehman, Fatima Karamat, and Ayesha Tariq, Electrical Engineering Dept, LCWU	Color Sensing Arduino
Afifa Azam, Arooj Asad, Huda Naeem, Rabia Saleem, Electrical Engineering Dept, LCWU	Self-Driving Car
Dr. Aqsa Shabbir, Javeria Zafeer, Javeria Aamir Ali, Areeba Ali and Sahiqa Noor, Electrical Engineering, LCWU	Low-cost portable mechanical ventilator
Saira Arsh, Dr. Samia Nasreen, Economics Dept., LCWU	The impact of ICT on tourism development in Asia: Evidence from panel data analysis
S. Nasir, M. Toseef, Gul Baddin, M. Rameez Baig, Physics department, University of Kotli, AJ&K, Pakistan	Efficiency enhancement through light harvesting in organic inorganic hybrid solar cells
Waqas Shair, School of Economics & Finance, Minhaj University Lahore, Pakistan & Department of Economics, University of the Punjab Lahore, Pakistan	Differential ICT usage opportunity among the individuals of Pakistan

Asma Shahid, Bushra Amjad, Samina Naz and Iram, Electrical Engineering, LCWU	Robo server for food management services
Khadija Basharat, Sidra Hanif, Filza Fatima and Amna Ameen, Electrical Engineering, LCWU	Optimized solar generation monitoring & control through iiot 4.0 scada over cloud
Farooq Alam , Umair Rana[2], Tahreem Akram, Areej Murtaza, Muskan Zehra, Rutaba, M. Usman Nadeem and Syed Sajjad Zaidi, NUST and Dept. of Avionics Engg, Karachi Institute of Economics and Technology.	Robust droop controller design for The microgrid energy storage systems

1:10-1:30pm Comments by Session Chair +Certificates and Shield Distribution

Day 2, Session 10 (Seminar Room, Botany Department)

SDG 15 (Life on Land)

Scientific Chair SDG 15: Prof. Dr. Zubaida Yousaf
Session Chair 1: Prof. Dr. Zafar Baloch, **Session Chair 2**: Dr. M. Wasim
Moderator: Dr. Khajista Jabeen, **Facilitators:** Dr. Hannan Mukhtar

11:25 – 11:30	Address by the Scientific Chair
11:30 – 11:50	**Keynote Speaker:** Prof. Dr. Tehmina Anjum
11:50 – 12:10	**Invited Speaker:** Prof. Dr. Zeb Siddique

Time	Speaker	Title
12:10-12:20	Dr. Shabnum Shaheen	Taxonomic and phytochemical analysis of geminivirus infected and healthy Duranta erecta (l.)
12:20-12:30	Dr. Samina Sarwar	Diversity of toxin producing micromycetes on different cereal seeds collected from local markets in Pakistan
12:30-12:40	Iqra Haider Khan	Aspergillus species as new biocontrol agents against Macrophomina phaseolina
12:40-12:50	Nadia Riaz Qamar	Development of Carrot Nutraceutical Products as An Alternative Supplement for The Prevention of Nutritional Diseases
12:50-1:0	Misbah Amir	Physiological survival strategies in maize under drought stress
1:00-1:10	Dr. Asif Shabbir	Lab-scale biogas production from agriculture and kitchen wastes using different anaerobic gas generating systems
1:10- 1:20	Dr. Sobia Ilyas	A report on micromycetes from rice fields of district narowal
1:20- 1:30	Dr. Kafeel Ahmed	Copper acculaulation in some wastewater irrigated plant and their transfer in blood of human

1:30-1:40pm Comments by Session Chair

1:40-1:50pm Certificates and Shield Distribution

Day 2, Session 12 (Iqra Auditorium)

SDG 4: Quality Education

Scientific Chair: Dr. Ghazala Noureen and Dr. Fakhra Aziz
Session Chair: Dr.Ijaz Ahmad Tatlah
Moderator: Dr. Afifa Khanam

02:20 – 02:25	Address by the Scientific Chair

Time	Author	Title
2:40-2:55	Iqra Toor, Dr. Gazala Noureen	Role of Homework in Improving the Quality of Education at Secondary Level
2:55-3:05	Muhammad Bilal, Hira Farhan and Ayesha Jabeen	Self-Concealment, Apprehension and Interpersonal Difficulties in University Students
3:05-3:15	Ms. Naila Latif, Ms. Iqra Asim	Role of School Monitoring in School Quality Enhancement
3:15-3:25	Saadia Intezar	Rate Of Returns to Investment In Education and Human Capital in Pakistan
3:25-3:35	Sana Javed, Dr Aishah Siddiquah	Factors Affecting Quality Management at Higher Education Institutions; from The Eyes of Institutional Leaders
3:35-3:45	Fatima Hanif, Dr. Sadaf Jabeen	Relationship between Teacher-Student Rapport, Learners' Autonomy and Academic Achievement at University Level
3:45-3:50	Dr. Qurratulain Rehan, Duranayab Farooq and Iffrah Hayat	Exploring Sustainable Development Goals and Moral Values in the Oxford Social Studies Textbooks for Primary Classes
3:50-4:00	Dr. Mubashara Akhtar Dr. Fasiha Altaf	Impact of Science Teachers' Attitude on Academic Achievement of Students at Secondary Level in Lahore

4:00-4:30pm Comments by Session Chair + Certificates and Shield Distribution

Day 2, Session 13 (Student Service Center)

SDG 15 (Life on Land)

Scientific Chair SDG 15: Prof. Dr. Zubaida Yousaf
Session Chair 1: Prof. Dr. Tehmina Anjum**, Session Chair 2**: Dr. Kafeel
Moderator: Dr. Kiran Shehzadi, **Facilitators:** Dr. Arusa Aftab

2:30-2:50	**Keynote:** (Virtual) Prof. Lindsay C Stringer
2:50-3:10	**Invited Speaker:** Prof. Dr. Wasim

Time	Speaker	Abstract title
3:10 – 3:20	Nazia Rehman	Genome wide identification of NLR gene family in tomato (Solanum lycopersicum) and their relatedness to fungal diseases resistance
3:20 – 3:30	Dr. Faiza Saleem	Potential of Bacillus subtilis for heterologous expression of human interleukin-2 (hil-2) gene
3:30 – 3:40	Dr. M. Wasim	Exploring the genetic potential of Pakistani Soybean cultivars through rna-seq based transcriptome analysis
3:40 – 3:50	Faisal Mehdi	Effect of heat stress on activities of sucrose metabolizing enzymes in relation to sucrose accumulation
3:50 – 4:00	Afifa Younas	Physiological and biochemical changes induced by Qiangdi nano-863 biological assistant growth apparatus during rice seed priming under temperature stress
4:00 – 4:10	Dr. Hannan Mukhtar	Comparative biocheical analysis of fruit extract of the commercially available varieties of Punica granatum l.
4:10 – 4:20	Dr. Nosheen Yousaf	Taxonomy and phylogeny of phallales from pakistan

4:20 – 4:30	Farah Naz	Anti-biogram of multidrug resistant staphylococcus aureus isolated from community acquired infection in pakistan: a phenotupic and genotypic approach

4:30-4:40pm Comments by Session Chair

4:40-4:50pm Certificates and Shield Distribution

Day 2, Session 9 (IT Seminar Hall)

SDG 9 (Industry, Innovation and Infrastructure) & SDG 17 (Partnership for Goals)

Scientific Chair SDG 9: Dr. Engr. Aqsa Shabbir
Scientific Chair SDG 17: Dr. Saima Farhan
Session Chair: Prof. Dr. Kashif Javed
Moderator: Dr. Maria Saleemi, **Facilitators:** Ms. Ramsha Mukhtar

2:30-2:35	Address by Scientific Chair
2:35-2:50	Dr. Sadaf Hina, Department of Computer Science, UET, Lahore
2:50-3:05	Dr. Yasmin Ansari (Virtual), Scuola Superiora Sant'Anna, Pisa

Time	Author	Abstract title
3:05	Attia Anis*, Rabia Javed	Determining Seed Viability Through Advanced Technologies to Address Low Crop Production in Agricultural Countries
3:15	Ayesha Iqbal*, Ayesha Afzaal, Fatima Anjum, Faria Kanwal and Komal Bashir	Smart Traffic Control Solution for Green Sustainable Cities Through Advanced Transferable Technologies
03:25	Ayesha Afzaal*, Ayesha Iqbal, Faria Kanwal, Fatima Anjum and Komal Bashir	Transferable and Cost-effective end-user Energy consumption techniques for smart grids to achieve sustainable economic growth and improved environment
03:35	Faria Kanwal*, Fatima Anjum, Komal Bashir, Ayesha Iqbal, Ayesha Afzaal	A Collaborative Sustainable Quality Assessment and Evaluation Solution for Online Learning Platforms to Achieve Cross Border Educational Transformation
03:45	Komal Bashir*, Faria Kanwal, Fatima Anjum, Ayesha Iqbal, Ayesha Afzaal	Agriculture Knowledge Management Through Collaboration and Partnership for Sustainable Crop Production and Food Security
03:55	Huma Tauseef*, Komal Bashir, Arzoo Taj, Humaira Shabbir, Maheen Akhtar, Sabahat Faria	Transferable Predictive Technologies for Epileptic Seizure Detection to Improve Healthcare Services
04:05	Maria Anjum*, Humaira Kosar, Maria Saleemi	Sustainable Transformation of Agriculture Practices Through Collaboration and Technology Mashup

4:15-4:30pm Comments by Session Chair + Certificates and Shield Distribution

Day 2, Session 15 (G-35 Social Science Building)

SDG 4: Quality Education

Scientific Chair SDG 4: Dr. Ghazala Noureen and Dr. Fakhra Aziz
Session Chair 1: Dr. Ghazal Khalid
Moderator: Dr. Sadaf Jabeen

Participants to be seated 2:30-2:40pm		
Time	**Author**	**Title**
2:40-2:50	Dr Saira Taj Asfa Zaigham	The Effect Of Teacher Efficacy And Emotional Intelligence On The Teaching Competence Of Prospective Teachers Studying In Public Universities Of Lahore.
2:50-3:00	Dr. Syeda Tehzeeb Alvi	Impact Of Leadership Style In The Assurance Of Quality Performance
3:00-3:10	Laiba Fatima, Dr. Affifa Khanam	Factors Affecting The Development Of Moral Behavior At Secondary Level
3:10-3:20	Dr. Mahvish Fatima Kashif, Dr. Faiza Shaheen,	Relationship Between Motivation And Job Performance Of University Teachers
3:20-3:30	Assist. Prof. Dr. Mehmet Veysi Babayiğit, Batman University,	Investigating The Role Of Communicative And Cultural Topics On The Conversational Skills Of Efl (English As A Foreign Language) Learners: A Case Of High School Students
3:30-3:40	Muhammad Yasir Nadeem Agha Abdul Majid Abdul Basit Durani	Determinants Of Decent Work And Its Outcomes; The Role Of Social Support And Vocational Support For Domestic Women Workers
3:40-3:50	Namirah Aslam, Gulnaz Fatima , Hina Akbar	To Promote Gender-Equality Through Quality Education In Rural Areas Of Lahore
3:50-4:00	Sadia Murawwat, Ahlam Jameel, Ismat Hira	Role of Outcome Based Education in Achievement of SDGs

4:00-4:30 Comments by Session Chair + Certificates and Shield Distribution

Day 2, Session 16 (Seminar Room Biotechnology Department)

SDG 4: Quality Education

Scientific Chair: Dr. Ghazala Noureen and Dr. Fakhra Aziz
Session Chair: Dr. Huma Lodhi

Moderator: Dr. Rabia

Participants to be seated 2:30-2:40pm		
Time	**Speaker**	**Title**
2:40-2:50	Sehrish Hamid Butt	Service Involvement and Civic Attitudes of NUST University's Alumni Assistant Manager Community Service.
2:50-3:00	Dr Anam Noshaba, Misham Israr and Sania Rehan	Effect Of Servant Leadership On Employees'engagement At Public Colleges Of Lahore

3:00-3:10	Maheen Mumtaz	Improving Quality Education Through Acts Of Volunteerism- A Pathway Of Achieving Sustainable Development Goals
3:10-3:20	Syed Ali Asad Naqvi	Geospatially Modelling Education Status Inequalities and Determinants in Pakistan: A Geographic Information System-Based Study in Context of Sustainable Development Goal-4
3:20-3:30	Shabnam Khan	Ensuring Equitable Quality Education (Sdg4) Of Disable Students Through Resource Distribution Justice For Promotion Of Lifelong Learning
3:30-3:40	Dr. Tayyaba Batool, Iqra Nasir	Role Of Mediumof Instruction On Students'Achievement At Elementry Level
3:40-3:50	Dr Ijaz Ahmad Tatlah Dr Tahira Kalsoom	Investigating Teaching Quality and Teachers' Performance from Students' perspective at University Level Abdul Haseeb Mujahid
3:50-4:00	Iqra Akram and Dr Tahira Kalsoom	Evaluation of B.Ed. (Elementary) 4-years Program Offered by Distance and Universities through CIPP Model.
4:00-4:10	Sehar Arif	Relationship between Academic Stress and Academic Achievement at Secondary Level

4:10-4:20 Comments by Session Chair + Certificates and Shield Distribution

Day 3: Thursday, 31st March 2022

Morning Concurrent Sessions

Day 3, Session 1	Day 3, Session 2	Day 3, Session 3	Day 3, Session 4	Day 3, Session 5	Day 3, Session 6	Day 3, Session 7	Day 3 Session 8	Day 3 Session 9	Day 3, Session 10
9:00-11:30	9:00- 11:10	9:30-1:15	10:40-11:45	9:00-11:00	9:00- 11:15	9:00 - 11:00	9:00- 11:45	9:30–01:15	9:30-12:00
Iqra Auditorium	Student Service Center	IT Seminar Hall	Persian Department	Committee Room	Pharmacy Department	Seminar Room Biotechnology Department	CRP Department	Chemistry Department	G35, Social Sciences
SDG 3: Good Health & Well-being (Pharmacy)	SDG 6: Clean water and sanitation	SDG 16: Justice and Strong Institutions	SDG 16: Peace	SDG 3: Good Health & Well-being	SDG 3: Good Health & Well-being	SDG 3: Good Health & Well-being	SDG 11: Sustainable cities & communities	SDG 12: Responsible consumption and production	SDG 9 & 17: Industry & Partnership for Goals (ORIC Roundtable)

Early Afternoon Concurrent Session

Day 3, Session 11	Day 3, Session 12	Day 3, Session 14	Day 3, Session 15
11:30- 1:30	11:30 -1:30	12:00 -1:45	11:30-12:30
Iqra Auditorium	Student Service Center	CRP Department	Pharmacy Dept
SDG 3: Good Health & Well-being	SDG 6: Clean water and sanitation	SDG10: Reduced inequalities	SDG 3: Good Health & Well-being (Pharmacy)

Late Afternoon

2:30 – 3:30 **Panel Discussion**	**Theme: Mental health & wellbeing in the context of gender inequality** **Panelists**: Prof .Dr. Ruhi Khalid, Prof .Dr.Asir Ajmal, Prof. Dr. Uroosa Faheem, Prof.Dr. Imran Ijaz Haider, Prof.Dr. Usman Hotiyana **Moderator:** Prof. Dr. Amina Muazzam **Facilitators:** Dr.Saima Ahmad, Dr. Maryam Hassan Iqra Asif and Zara Haroon
3: 30 – 4:30	Closing Ceremony

Day 3, Session 1 (Iqra Auditorium)

SDG 3: Good Health & Well Being (Pharmacy)

Scientific Chair SDG 3 (Science Stream): Prof. Dr. Humaira Majeed Khan
Scientific Chair 1: Prof. Dr. Khawaja Tahir Mehmood, **Scientific Chair 2:** Prof. Dr. Syed Atif Raza
Moderator: Dr. Hafsa Afzal, **Facilitator**: Dr. Mobeena Manzoor, Dr. Misbah Hameed, Dr. Fatima Amin

9:05	Welcome Address by the Scientific Chair
9:15-9:35	**Keynote**: Prof. Dr. Nasir Abbas

Time	Presenters	Title
9:35-9:45	Prof. Dr. Humaira Majeed Khan	Therapeutic spectrum of herbal oil-loaded orabase formulation for localized delivery against oral candidiasis: in-vitro and in-vivo study
9:45 - 9:55	Dr. Ali Sharif	Acute and sub-chronic toxicity study of pirarubicin loaded poly-lactic-co-glycolic acid nano-particles
9:55- 10:05	Dr. Saira Hafeez Kamran	Protective effect of glycyrrhiza glabra l. In bleomycin induced pulmonary fibrosis
10:05-10:15	Dr. Sumera Latif	Design and evaluation of orodispersible film containing diltiazem hydrochloride with taste masked effects
10:15-10:25	Dr. Hafsa Afzal	Diclofenac saccharin cocrystals: development, preliminary pharmacotechanical and pharmacokinetic characterization
10:25-10:35	Dr. Fatima Amin	Impact of arteriovenous7. Fistula on daily life activities and pharmacotherapy outcomes among hemodialysis patients in a tertiary care hospital of lahore
10:35-10:45	Dr. Misbah Hameed	Formulation and evaluation of a clove oil-encapsulated nanofiber formulation for effective wound-healing
10:45-10:55	Sara Sattar	Evaluation of anti-arthritic activity of *eichhornia crassipes* in diminution of rheumatoid arthritis using sprague-dawley rat model
10:55-11:05	Kiran Mashal	Treatment of Rheumatoid Arthritis by *Fragaria nubicola* in Rat Model
11:05-11:30	Address by Session Chair + Certificates & Shields Distribution	

Day 3, Session 2 (Student Service Center)

SDG 6: Clean Water and Sanitation

Scientific Chair SDG 6: Prof. Dr. Zohra Nazir Kayani
Session Chair: Prof. Dr. Safia Anjum
Moderator: Dr. Salma Waseem, **Facilitator:** Maryam Anwar

09:00-09:05	Guests to be Seated
09:10-09:15	Welcome address by Scientific Chair
09:15-09:30	**Plenary lecture:** Prof. Dr. Zohra Nazir Kayani: LCWU, Lahore, Pakistan. "Synthesis and application of Titania photo catalyst for the water treatment and sanitation"
09:30-09:50	**Invited Speaker 1:** Dr. Khalid Nadeem Riaz: University of Okara, Okara, Pakistan. "Photocatalysis: Energy and Environmental Applications"
09:50-10:10	**Invited Speaker 2:** Dr. Muhammad Najam Khan: BUITEMS, Quetta, Pakistan. "Urbanization And Associated Domestic Water Consumption Problems in Faisalabad City"
10:10-10:30	**Invited Speaker 3:** Dr. Muhammad Yasin Naz: University of Agriculture, Faisalabad, Pakistan. "Production and Testing of La/ZnO/CNT Photocatalysts for Production of Hydrogen Fuel"
10:30-10:50	**Invited Speaker 4:** Dr. Foazia Tanvir: University of Okara, Okara, Pakistan. "Colorimetric detection of mercury using prismatic silver nanoparticles capped with PVP"
10:50-11:10	**Speaker**: Dr. Aneeqa Sabah, LCWU, Lahore, Pakistan. "Synthesis and Modification of Metal doped Silica Particles and Membranes for Water Purification"

Day 3, Session 3 (IT Seminar Hall)

SDG 16: Justices and Strong Institutions

Scientific Chair SDG 16: Dr. Shabnam Gul
Moderator: Dr. Maryam Azam, **Facilitators:** Ali Taqi

9:30-9:40	Welcome address by Scientific Chair
9:55-10:10	**Plenary Talk:** Prof. Dr. Rana Ejaz Ahmed Department of Political Science, University Punjab, Lahore. "Ensure Responsive, Inclusive and Representative decision-making in Pakistan"
10:10-10:25	**Keynote:** Dr. Iram Khalid: Chairperson of Department of Political Science, University of Punjab, Lahore
10:25-11:00	**Invited Speaker 1:** Dr. Abeeda Qureshi, Department of Political Science, Forman Christian College, Lahore. **Invited Speaker 2:** Dr. Humaira Shafi, Centre for International Peace and Stability, NUST, Islamabad. **Invited Speaker 3:** Prof. Dr. Muhammad Afzal, Dean Faculty of Arts and Social Sciences, Lahore College for Women University, Lahore.

11:00 – 11:30	Tea Break

Time	Authors	Title of Presentation
11:30-11:40	Dr. Fauzia Ghani, Department of Political Science, Government College University, Lahore	Accountability for Human Development and Challenges of Good Governance Telescoping Pakistan
11:40-11:50	Ms. Atifa Arif & Ms. Asma Asghar, Department of Economics, LCWU	Impact of Terrorism on Economic Growth of Pakistan
11:50-12:00	Dr. Sadia Mehmood Falki, Department of Political Science, LCWU	Type of Regime: Institutional Imbalance and Prospects of Democratic Federalism in Pakistan
12:00-12:10	Dr. Adeel Irfan, School of Peace and Counterterrorism Studies, Minhaj University, Lahore & Dr. Shabnam Gul, Chairperson, Department of International Relations, LCWU	Ethnic Conflict and Humanitarian Crisis: A Case Study of Afghanistan after US withdrawal
12:10-12:20	Dr. Maryam Azam, Department of International Relations, LCWU	Reasons of Crime, Personality and Guilt in Women Prisoners
12:20-12:30	Mrs. Nadia Zaheer Ali, Department of International Relations, LCWU	Challenges of Human Security in India: A Case Study of India-Held Kashmir
12:30-12:35	Dr. Kinza Tasleem Chaudhr, Department of International Relations, LCWU	Climate Change and Water Security: Focus on Pakistan
12:35-12:45	Ms. Bushra Ghani	Gender Inequality and Human Development in Pakistan: An Analysis

Poster Session

Facilitators: Ms. Rabia Irfan, Mrs. Ambreen Akhtar

Time: 11:30 – 12:30	
Name	**Title**
Kaneez Fatima, Hooria Mohsin and Saba Imtiaz, International Relations, LCWU	Role of Women in Parliamentary Democracy: A Case Study of Pakistan and Bangladesh
Fatima Rasheed and Zainab Sohail, International Relations, LCWU	Judicial Reforms: The Issue of Increasing Crime Rate and Violence in Pakistan
Zainab Shahbaz, Maria Zaib and Zulekha Sufiyan, International Relations, LCWU	Role National institutions in the Counter-Terrorism Efforts of Pakistan
Khizra Ahsan, Tayyaba Habib, Hafiza Noor-ul-Huda and Mahrukh Fazail, International Relations, LCWU	Promoting Peace through Tourism Industry in Pakistan
Sawaira Amjad, Emaan Azeem, Fatima Aziz and Hafsa Khalid, International Relations, LCWU	Rights of Transgender in Pakistan
Rafaq Aftab, Fatima Zulfiqar and Amna Farhan, International Relations, LCWU	Child Labor laws in Pakistan: A Critical Assessment

Syeda Nimra Bukhari, Rahma Hussain, Rameen Nabeel, Warda Dilshad, Nishat Aslam, International Relations, LCWU	The issue of Drug addiction in the Youth of Pakistan: Counter Strategies and Challenges
Uneeza Mujeeb, Vaneeza, Maryam Imtiaz, Zahra Batool and Arooj Fatima, International Relations, LCWU	The Effects of Corruption on the Institutional Empowerment: A Case Study of Pakistan
Sawera, Manahil, Hafiza Asma, Summaya Bint e Azhar, Muneeza Rehmat and Zoha Zulfiqar, International Relations, LCWU	Curtailing Corruption and Bribery: Issues and Challenges in Pakistan
Rida Saleem, Sijjal Sarfaraz, Sara Khokar and Nimra Rai, International Relations, LCWU	The issue of Women Violence in the South Asian Region
Fareha Hussain, Khadija Asif, Riana and Baigand Moeedah Hussain, International Relations, LCWU	A Proposed Mechanism Child Abuse and Exploitation in Pakistan

12:45-01:00 Comments by Session Chair + Certificates and Shield Distribution

Day 3, Session 4 (Persian Department)

SDG 16*:* Peace

Scientific Chair: Prof. Dr. S. Faleeha Zahra Kazmi
Moderator: Dr. Shahida Alam, **Facilitators:** Dr. Faiza Kiran, Dr. Maria Umer

Time	Program
10:40	Introduction of the Conference Session by: Prof. Dr. Faleeha Kazmi, Chairperson Persian Department)
10:50	Invited Speaker 1: Mulana Khabeer Azad, Khateeb Badshahi Mosque Lahore
11:00	Invited Speaker 2: Mr. Ramesh Singh Arora, MPA Punjab Assembly
11:10	Invited Speaker 3: Mr. Ihsan H. Nadeem, Director Dyal Singh Research & Cultural Forum, Lahore
11:20	Invited Speaker 4: Dr. Father James Channon, Director Pace Center, Lahore
11:30	Invited Speaker 5: Dr. Manor Chand, Director Balmick Temple, Lahore
11:40	Vote of Thanks by Conference Chair
11:45	Certificates and Shields Distribution

Day 3, Session 5 (Committee Room)

Scientific Session – SDG 3: Good Health and Well being

Scientific Chair SDG 3 (Social Sciences Stream): Prof. Dr. Amina Muazzam
Session Chair 1: Dr. Farhat Nadeem **Session Chair 2:** Dr. Ambreen Anjum
Moderator: Dr. Amna Khawar, **Facilitators:** Zara Haroon and Maryam Munnawar

9:00 – 9:10 Welcome Address by Scientific Chair
9:10 – 9:30 **Keynote:** Prof. Dr. Imtiaz Dogar, "Pandemic of Addiction"

Time	Authors	Title

9:30-9:40	Kiran Javaid & ZehraMohsin Department of Applied Psychology, Govt. Fatima Jinnah College, Chunna Mandi, Lahore	Self-Efficacy for Managing Chronic Disease and Medication Adherence in Patients with Rheumatoid Arthritis
9:40-9:50	Maham Imtiaz & Syeda Shahida Batool Department of Psychology, Government College Lahore	Translation, Adaptation and Validation of Stigma Conscious Questionnaire for Women Undergoing Assisted Reproductive Technology Treatment
9:50-10:00	Mahnoor Shehbaz Butt, Farhat Jamil &Ruhi Khalid Institute of Psychology, Beaconhouse National University	Predictors of Psychological Well-being in Women with Polycystic Ovarian Syndrome
10:00-10:10	Memoona Ahmad & Nudra Malik Department of Applied Psychology, LCWU	Body Image Dissatisfaction, Depression and Quality of Life in Women with Polycystic Ovary Syndrome
10:10-10:20	Najwa Bashir &Nasreen Akhtar Department of Psychology, Government College University, Lahore	Development and Validation of Body Shame Scale for Obese People
10:20-10:30	Aneela Aziz &Irum Naqvi Institute of Psychology, QAU, Islamabad	Exploring the Phenomenon of Psychosexual Maturity among Women with Child Marriages: A Grounded Theory Perspective
10:30-10:40	Mahwish Abbas and Dr.Shameem Fatima Department of Humanities, COMSATS University Islamabad, Lahore Campus	Positive Personal Resources and Mental Wellbeing during COVID-19: The Explanatory Role of Cognitive Regulation

10:40-11:00 Comments by Session Chair + Certificates and Shield Distribution
11:00-11:30 Refreshments

Day 3, Session 6 (Pharmacy Department)

Scientific Session – SDG 3: Good Health and Well being

Scientific Chair SDG 3 (Social Sciences Stream): Prof. Dr. Amina Muazzam
Session Chair 1: Prof. Dr. Salma Hassan, **Session Chair 2:** Dr.Shumaila Asad
Moderator: Dr. Umme Rubab Kazmi, **Facilitators:** Nuzhat-ul-Ain and Umaiza Bashir

9:00-9:05	Welcome address by Scientific Chair	
9:05-09:25	**Keynote**: Dr Shahida Batool, "Psychosocial Journey of Infertile Women in Pakistan and the Way Forward"	
09:25-09:40	**Invited Speaker:** Dr. Indhushree Rajan, "Gender Inequality and the Perpetuation of Complex Trauma in Women and Girls"	
Time	**Authors**	**Title of Presentation**
09:40-09:45	Ayesha Tahir & Rafia Rafique Institute of Applied psychology, University of the Punjab	Perceptions Regarding Side Effects of Corona Virus Vaccination Among University Students
9:45-09:50	Humna Abid & Rafia Rafique Institute of Applied Psychology, University of the Punjab	Lived Experiences of Female Health Professionals During Covid-19 Pandemic
9:50-09:55	Mahnoor Butt & Masha Asad Khan, Applied Psychology department, Kinnaird College for Women University, Lahore	Perception of Home Demands, Depression, Stress and Anxiety in Working and Non-Working Women During Covid-19
9:55-10:00	Nuzhat-ul-Ain, Saima Dawood, Aminah Abdul Khaliq, Kanwal Safeer & Nayab Komal	Prevalence of Academic Stress in undergraduate students during Covid 19

	Centre for clinical psychology, University of the Punjab	
10:05-10:10	Tehreem Zahra, Iffah Khan & Nudra Malik, Department of Applied Psychology, LCWU	Behavior, Perceptions, Negative Affect and Psychological Distress among University Students during Covid-19
10:10-10:15	Hadiqa Rehman& Zara Haroon, University of Management and Technology Lahore & Kinnaird College for Women, Lahore.	Emotional Regulation, Professional Quality Of Life and Empathy Among Mental Health Counselors During Covid-19
10:15-10:20	Wajiha Kiran & Nuzhat-ul-Ain, Centre for Clinical Psychology, University of the Punjab, Lahore, Pakistan	Role of Secondary Trauma Self-efficacy in predicting Secondary Trauma and Job Burnout among Doctors dealing with COVID-19 patients

10:20-11:00 Comments by Session Chairs + Certificates and Shield Distribution

Day 3, Session 7 (Seminar Room Biotechnology Department)

Scientific Session – SDG 3: Good Health and Well being

Scientific Chair SDG 3(Social Sciences Stream): Prof. Dr. Amina Muazzam

Session Chair 1: Dr. Fatima Kamran, **Session Chair 2:** Dr.Shamim Fatima

Moderator: Dr. Amina Obaid Khawaja, **Facilitators:** Maryam Amjad and Kiran Akbar Khan

9:00-9:05	Guests to be Seated and Address by Scientific Chair	
9:05-9:25	**Keynote:** Dr. Usman Rasheed, "Social Reforms Model a way forward for better role of Government and Governance in Developing Countries"	
Time	**Authors**	**Title of Presentation**
9:25-9:35	Mamoona Laiba & Kiran Akbar Khan, Government College University, Lahore	Self-Objectification, Colorism and Social Appearance Anxiety in Youth
9:35-9:40	Arooj Zahra Rizvi & Syeda Shahida Batool, Department of Psychology, Government College University, Lahore	Risk and Protective Factors of Marital Quality among Parents of Children with Autism Spectrum Disorder
9:40-9:50	Syeda Shahida Batool, Nimra Munawar & Seemab Shafiq Department of Psychology, GCU	Do Grit and Internal Locus of Control Matter in the Psychological Well-Being of Differently Abled Individual?
9:50-10:00	Muhammad Yasir, Nadeem Asghar, Abdul Majid &Abdul Basit Durani	Determinants of Decent Work and its outcomes; The role of Social Support and Vocational Support for Domestic Women Workers
10:00-10:10	Muneeba Shakil, Shameem Fatima and Amina Muazzam Department of humanities CUI Lahore Campus and LCWU	Assessment of Risk Perception and adoption of safety measures during Covid-19 Pandemic in Pakistan: A Survey Study
10:10-10:20	Mahnoor Arshad and Dr.Shameem Fatima Department of Humanities, COMSATS University Islamabad, Lahore Campus	Religious Coping and Mental Well-being of Young Adults during COVID-19: The Boosting role of Physical Health Status

10:20-10:30	Amina Shamas, Raumish Masood Khan & Noor-e-Saher Department of Applied Psychology, Kinnaird College for Women, Lahore	Effects of Cartoons on Mental and Behavioral Responses of Children during COVID-19 Pandemic
10:30-10:40	Sabahat Sana, University of the Punjab, Lahore	Sustainable Interior Design Feature Toward Reduced Workplace Stress
10:40-10:45	Syeda Azra Batool, Muhammad Ehsan School of Economics, BZU Multan	Is Human Capital a Pathway to attain sustainable development goal of poverty alleviation

10:45-10:50am Comments by Session Chair

10:50am-11:00am Certificates and Shield Distribution

Day 3, Session 8 (CRP Department)

SDG11: Sustainable Cities & Communities

Scientific Chairs SDG 11: Prof. Dr. Atiq ur Rahman and Dr.Aysha Hanif
Moderator: Saba Islam and Rehana Ghulam Ali **Facilitators:** Ayesha Shahbaz and Aleena Ashraf

9:00-9:15	Welcome address by Scientific Chairs	
9:15-9:30	Plenary Talk: Dr Anna Visizi, Professor of Economics and Political affairs, University of Warsaw Poland, "Rethinking the SDGs in the smart cities'	
9:30-9:40	Keynote 1: Dr Shaker Mahmood Mayo Chairman CRP Department, UET Lahore	
9:40-9:50	Keynote 2: Dr Martin Dallimer, School of Earth and Environment University of Leeds, UK "A global horizon scan of the future impacts of robotics and autonomous systems on urban ecosystems and the sustainability of cities"	
Time	**Authors**	**Title of Presentation**
09:50-10:00	Ayesha Bilal	Sustainable Communities: Role of Digital Technologies in Preservation of Communal Heritage
10:00-10:20	Hafiza Saba Islam & Amna Shoaib, Department of CRP, UET Lahore & Department of City & Regional Planning, LCWU,	Comparing Urban Heat Island with Spatio-Temporal Urbanization Patterns in Gujranwala City
10:20-10:30	Nikhat Zahra, Dr. Sahar Zia & Dr. Aysha Hanif Department of Geography, LCWU	Correlative Assessment of Urban Green Space Ratio and Urban Flooding: A Case Study of Lahore Pakistan
10:30-10:40	Nazish Kanwal, Department of Zoology, GC Women University Sialkot	Impact of Selected Natural and Synthetic Insecticides on Eco-Biology of Syrphids
10:40-10:50	Maryam Khalid	Spatial Modeling of Normalized Difference Vegetation Index (NDVI) And Land Surface Temperature (LST) Of Lahore Using Remote Sensing And GIS
10:50-11:00	Humaira Munir	Environmental and Social Impact Assessment of Industries in Residential Area
11:00-11:10	Dr Noreen Khalid, Department of Botany, Govt. College Women University, Sialkot, Pakistan	Sustainable management of traffic borne elemental enriched roadside soils by using Nerium oleander L.

11:10-11:20	Arwa Tariq & Attiya Haseeb CRP, LCWU	Spatial Analysis of Urban Resilience in Relation to Urban Form in Selected Areas of Lahore
11:20-11:30	Siddiqa Amin, CRP LCWU	Implications Of Public Transportation In Post-Covid-19 Case Study Of Lahore

Poster Session

Author	Title
Sadia Tariq	Integrated Solid Waste Management System in University of Karachi: A Pilot Study
Saba Tariq	Mitigating The UHI By Green Spaces in Allama Iqbal Town Lahore
Saba Islam	Urban Groundwater Investigation and Mapping Using GIS & Remote Sensing Techniques
Maira Ali	Assessing the potential of integrating sponge infrastructure to cope with urban flooding in Lahor
Kashmala Tariq	Identification Of Social, Psychological, Technical and Financial Barriers Towards Adaptation of Solar Power System In Higher Educational Institutions Of Lahore
Fariyal Khalid	Analysis Of Walkability Environment in The Vicinity of Orange Line Metro Train Stations in Lahore
Arwa Tariq	A Geospatial Assessment of Off-Site Parking in Central Business District, Lahore
Siddiqa Amin	Assessing Service Quality and Riders' Satisfaction (Case Study Of Metro Train Lahore)
Maryam Bashir	Comparative Analysis Of Seasonal Variation W.R.T Temperature And Rainfall Since 2000 (Case Study Of Lahore And Karachi)

11:30-11:45am Comments by Session Chair + Certificates and Shield Distribution

Day 3, Session 9 (Chemistry Department)

SDG 12: Responsible Consumption and Production

Scientific Chair SDG 12 (Science Stream): Prof. Dr. Bushra Naseem
Session Chair 1: Prof. Dr. Athar Yaseen Khan, **Session Chair 2:** Prof Dr. Farah Kanwal
Moderator: Prof. Dr. Saadia Rashid Tariq**, Facilitators:** Dr. Fozia Iram

09:30-9:40	Welcome address by Scientific Chair
09:45-10:15	**Plenary talk**: Prof. Dr. Saeed Iqbal, Forman Christian College, A Chartered University, Lahore
10:15-10:45	**Keynote Speaker 1**: Dr. Lyaba Arshad: Forman Christian College, A Chartered University, Lahore, "3, 5-Bis[4-(diethonymethyl) benzylidenc] -1 methyl-pipenidine 4-one, a novel curcumin analogue, inhibits cellular and immoral immense responses in male balb/cmic"
10:45-11:15	**Keynote Speaker 2**: Dr. Ghayoor Chotana: Lahore University of Management Sciences, Lahore "Green Chemistry for responsible consumption and production"
11:15 – 11: 30	Refreshments

Time	Speaker	Title
11:45-12:00	Dr. Sobia Dilpazir	Metal Organic Frameworks Derived Heterogeneous Catalysts for Sustainable Energy Production
12:00-12:10	Somia Younas	Green Economy is a Nucleus of Sustainable Development Goals
12:10-12:25	Dr. Mohsin Javed	Designing of Co-SnO_2/S-g-C_3N_4 Heterojunction for Boosting Photodegradation of MB and Inactivation of Pathogens
12:25-12:35	Nazneen Zahra	Care, Gender and Change in the Study of Sustainable Consumption
12:35-12:45	Sadia Tariq	Renewable Energy Penetration in Pakistan for Energy System for Sustainable Development

12:45-12:50pm Comments by Session Chair

12:50-1:15pm Certificates and Shield Distribution

Day 3, Session 10 (G-35 Social Science Building)

SDG 9 (Industry, Innovation & Infrastructure) & SDG 17(Partnership for Goals)

All ORIC offices across Pakistan have been invited for an ORIC's Roundtable (Jointly Hosted by ORIC LCWU and ORIC UVAS).

Time: 9:30 – 12:00

Chief Guest: Honourable Mr. Qasim Ali Shah

Guest of Honour: Mr. Kashif Rasheed, Gulf Petrochemical and Chemicals Association

Agenda:

- Commercialization of Research
- Industry-Academia Linkages

Day 3, Session 11 (Iqra Auditorium)

Scientific Session – SDG 3: Good Health and Well being

Scientific Chair SDG 3 (Science Stream): Prof. Dr. Amina Muazzam
Session Chair 1: Prof. Dr. Ruhi Khalid, **Session Chair 2:** Prof. Dr.Asir Ajmal
Moderator: Dr. Bisma Ejaz, **Facilitators:** Yasmin Niazi

11:30-11:40	Welcome address by Scientific Chair: Prof. Dr. Amina Muazzam
11:40- 11:55	**Plenary Talk:** Prof. Dr. Nusrat Hussain, Mental Health and SDGs: Focus on Suicide Prevention
11:55- 12.10	**Keynote Address I:** Prof. Dr. Rafia Rafiq, "Mental Health and Wellbeing in times of COVID-19: Challenges and Future Directions"
12:10- 12.25	**Keynote address II:** Prof. Dr. Josephine Tan, "The Role of Psychology in Meeting the UN Sustainable Development Goals"

Time	Authors	Title of Presentation
12:25-12.35	Saleha Javed & Ahmad Qammar Punjab University & COMSAT University, Lahore	Quality of Patients Care in Pakistan: Mediating Role of Job Burnout and Life Satisfaction between Emotional Intelligence, Spiritual Intelligence, Psychological Ownership and Caring Behavior of Nurses.
12:35-12.45	Dr. Abdul Majid. Muhammad Yasir& Muhammad Ali University of Haripur & Hazara University	Understanding the Healthcare Seeking Behavior of Transgender Patients in Khyber Pakhtunkhwa Region of Pakistan

12:40-12.50	Syeda Ramish Batool, Fatima Rabia Sajjad, Noman Sabir& Amina Tarar, Department of Psychology, Government College, University	Unveiling the Psychological Correlates of Déjà vu Phenomenon in the Context of Pakistan
12:50-01:00	Namood-e- Sahar & Shakir Hussain Quaid-i-Azam University, Islambad & Karakurun International University, Gilgit	Mental Health Risk Among Adolescents and Young Adults: A Conceptual Understanding
1:00-1.10	Ramzan Kausar & Kiran Akbar Khan, Clinical Psychology Unit, Government College University, Lahore	Lived Experiences of Families of Homicide Victims and Coping Strategies
1:10-1.20	Swaira Shahbaz, Irum Naqvi National Institute of Psychology, QAU Islamabad, Pakistan	Levels of self-criticism, motivation, and self-generated stress among competitive exam aspirants
1:20-1:30	Rahul Agerwal	Coronavirus Disease 19(COVID-19) and its Impact on Sustainable Development Goal 3.

1.30-1:45 Comments by Session Chairs + Certificates and Shield Distribution

Day 3, Session 12 (Student Service Center)

SDG-6 Clean Water and Sanitation

Scientific Chair SDG 6: Prof. Dr. Zohra Nazir Kayani
Session Chair: Dr. Mujeeb U Chaudary
Moderator: Dr. Hina Nazli, **Facilitator:** Maida Sehar

Time	Authors	Title of Presentation
11:30-11:50	Gousia Muzammal	Agricultural waste derived activated carbon against combinational contaminant in drinking water
11:50-12:10	Liaqat Ali Waseem	The Challenges and solutions in achieving clean water and sanitation for all in the developing and underdeveloped countries
12:10-12:30	Rahat Naseer	Exploring The Potential of Leaves Extracts of Azadirchte Indica Against Mycotoxins Producing Funjai in Animal Feed
12:30-2:40	Amna Hassan	Synthesis And Characterization of Gd Doped Titania Nanostructures for Water Treatment And Clean Energy
12:40-12:50	Madia Sehar	Performance enhancement of Photocatalytic Activity with Co-doped Bi2O4

1:00-1:20 = POSTER SESSION

Session Chair: Prof. Dr. Zohra Nazir Kayani

Judges: Dr. Aneeqa Sabah and Dr. Zeba Israr
Moderators: Dr. Shafaq Arif and Dr. Madeeha Riaz, **Facilitators (Student/ushers):** Amna Hassan

Authors	Title of Presentation
Ifra Sheri	Studies of enhanced photocatalytic activity of Ba doped TiO_2 thin films prepared by Sol-gel Dip/Spin-coated method
Ammara Iqbal Baig	Preparation of K doped TiO_2 thin films by sol gel dip coating metho and their sunlight-driven Photo catalytic activity
Mammona Ashfaq	Enhanced photocatalytic Activity of Cu doped TiO_2 thin films Deposited by Sol-Gel Dip coating method.
Hafiza Aqsa Abid	Photo-catalytic Performance of TiO_2 Thin films Improved by Mg dopant.

Zaib un Nisa	Green synthesis of zinc oxide nanoparticles using leaves extract for photodegradation of methylene blue dye
Fatima Khitab	Metal impregnated ZnO Nanoparticles Photocatalyst for the Sonophotocatalytic Degradation of organic pollutants in Aqueous Solution under Visible Light

1:20-1:30 Comments by Session Chair +Certificates and Shield Distribution

Day 3, Session 14 (CRP Department) SDG10: Reduced inequalities

Scientific Chair SDG 10: Dr. Nausheen Mazhar
Session Chair: Dr. Nausheen Mazhar
Moderator: Ms. Amna Afzal
Facilitators: Tehreem Tahir, Sabahat Khurram and Nimra Arshad

11:45-11:55	Welcome address by Scientific Chair
11:55-12:25	**Plenary Talk:** Prof. Dr. Munawwar Sabir, Director, Centre for Integrated Mountain Research, PU, "Why South Asia continues to be one of the least developed regions of the world?"

Time	Authors	Title
12:25-12:35	Ayesha Awan, Mahwish Zafar	Socio Economic Factors Affecting Poverty: A Fresh Insight from South Asia Region
12:35-12:45	Faiza Sarwar, Maria Kamal, Sidrat-ul-Ain & Sumaira Kausar	Urban Slums and Associated Health Risk Among Children In Lahore, Pakistan: A GIS Perspective
12:45-12:50	Aisha Shahzad	Reducing Inequalities by New Chinese Global Order Prospects for Pakistan
12:50-01:00	Nimra Razzaq, Mahwish Zafar	Child Mortality: Socio-Economic Factor a Fresh Insight Achieving the Global Goal For 2030 (SDG's) For Developing Countries
01:00 -01:10	Urooj Riaz, Saima Nasreen	Effect Of Financial Inclusion on Green Economic Growth in Developing Countries
01:10-01:20	Iqra Shahzadi, Nausheen Mazhar, Sohail Abbass, Asif Sajjad	An Empirical Investigation of Climate Change Impacts on Cotton Productivity in Punjab, Pakistan

1:20-1:30 Comments by Session Chair

1:30-1:45 Certificates and Shield Distribution

Day 3, Session 15 (Pharmacy Department) SDG 3: Good Health & Well Being (Pharmacy)

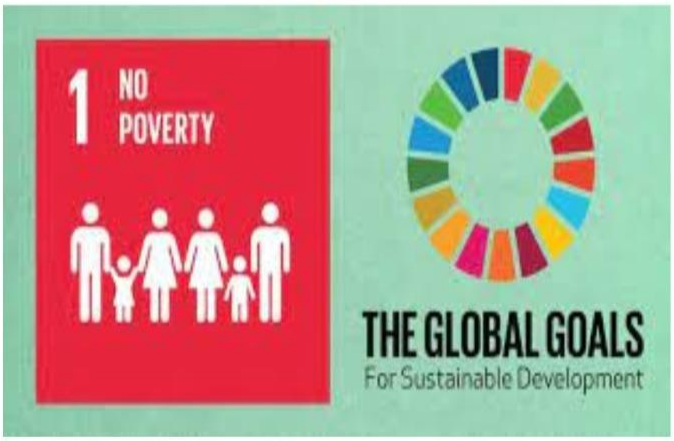
Scientific Chair SDG 3 (Sciences Stream): Prof. Dr. Humaira Majeed Khan
Scientific Chair 1: Prof. Dr. Khawaja Tahir Mehmood, **Scientific Chair 2:** Prof. Dr. Syed Atif Raza
Moderator: Dr. Hafsa Afzal, **Facilitator**: Dr. Mobeena Manzoor, Dr. Misbah Hameed, Dr. Fatima Amin

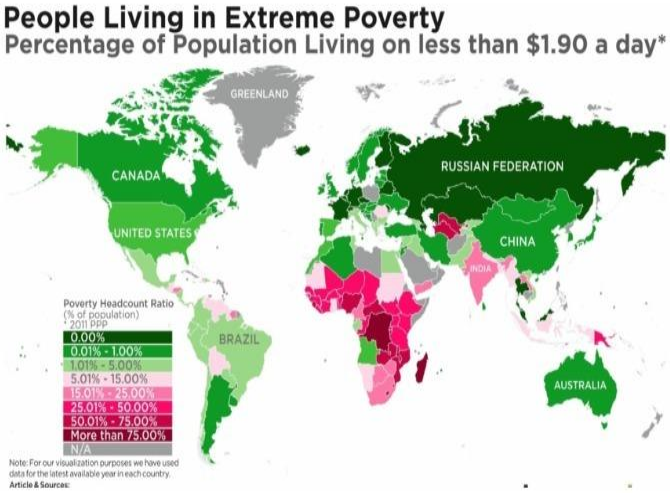
Poster Session: 11:30 – 12:30

Lahore College for Women University, Lahore
Detailed Program

Amna Arshad	Evaluation of samarium doped hydroxyapitie to achieve sustainable development in biomedical field
Moneeza Abbas	Exposure to particulate pollution (pm2.5) from indoor biomass cooking and its effects on respiratory health among females of kasur district
Sadia Murawwat	Improving convergence in fetal electrocardiogram extraction using adaptive lms algorithm: parametric analysis with optimal step size and weight coefficient
Sehrish Ramzan	Molecular Authentication of *Gymnema sylvestre*, an important medicinal plant
Dr. Shahnaz	Synthesis and characterization of triazine benzohydride and its derivatives
Shama Sadaf	Antimicrobial polyester textiles based on organic compounds
Tooba Amir	Exploring the detoxifying potential of deferoxamine loaded poly lactic-co-glycolic acid nanoparticles in iron induced toxicity using rat model
Khadeeja Ahsan, Neelam Batool, Mohammad Tahir Waheed, QAU	Designing a prophylactic multiepitope vaccine candidate using human papillomavirus type 18 l1 antigen against cervical cancer: an in silico approach
Kainat Qadeer, Neelam Batool, Mohammad Tahir Waheed, QAU	In silico analysis of l1 gene of human papillomavirus type 16 for novel multiepitope vaccine design and its immunogenicity studies


1 NO POVERTY
Goal 1 - No Poverty
End poverty in all its forms everywhere
96
GUEST ARTICLES
53
POLICY BRIEFS
7
GENERATION 2030
2429
NEWS
396
EVENTS


1 NO POVERTY
THE GLOBAL GOALS
For Sustainable Development


People Living in Extreme Poverty
Percentage of Population Living on less than $1.90 a day*
GREENLAND
CANADA
UNITED STATES
RUSSIAN FEDERATION
CHINA
INDIA
BRAZIL
AUSTRALIA
Poverty Headcount Ratio
(% of population)
* 2011 PPP
0.00%
0.01% - 1.00%
1.01% - 5.00%
5.01% - 15.00%
15.01% - 25.00%
25.01% - 50.00%
50.01% - 75.00%
More than 75.00%
N/A
Note: For our visualization purposes we have used data for the latest available year in each country.
Article & Sources:


1 NO POVERTY

SDG1 NO POVERTY

SCIENTIFIC CHAIR PROFILE:

Name: Prof. Dr. Masooma abbas
Qualification: PhD Fine Arts LCWU, Post-Doc USA
Designation: Chairperson
Department: Research Centre for Art & Design
Faculty: Faculty of Arts and Social Sciences
University: Lahore College for Women University

Contribution in Research and Academics:
Teaching experience of more than twenty-three years. Supervising MS and PhD thesis along with several publications in the field of Fine Arts.
Specific SDG and its role in Pakistan development and globally: SDG-1No Poverty

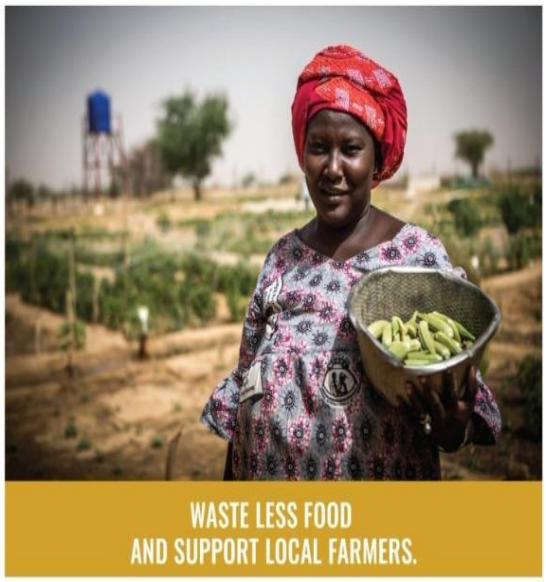
PROGRAM

Poverty is one of the most important issues of Pakistan. NHQ Art gallery at LCWU presents an exhibition of representational and conceptual works of art related to the state of poverty and its understanding in post COVID-19 scenario in Pakistan. This exhibition under the banner of UN's SDG-1 comprises of a number of paintings and posters by faculty and students of Research Center for Art and Design IDVA, Department of Graphic Design and alumni of LCWU Lahore.

Aim of the displayed art is to create awareness about poverty and how we can suggest solutions for its elimination through the power language of visuals.
The artist believes in ethics of honoring human dignity and of sharing one's competence and time with those among whom we live, for the relief of hardship, pain, or ignorance.

These art works raise awareness about the millions of people living in poverty hence, providing an opportunity to the viewer to think about improving the quality of life of the underprivileged in our society.


2 ZERO HUNGER
Goal 2 - Zero Hunger
End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
126
GUEST ARTICLES
65
POLICY BRIEFS
27
GENERATION 2030
1746
NEWS
334
EVENTS


WASTE LESS FOOD
AND SUPPORT LOCAL FARMERS.


Share of people who are undernourished, 2017
Undernourishment measures the share of the population that has a caloric intake which is insufficient to meet the minimum energy requirements necessary for a given individual. Countries with undernourishment rates below 2.5% are not shown.
Our World in Data
No data
0%
5%
10%
20%
30%
40%
50%
>60%
Source: UN Food and Agriculture Organization (FAO)
Note: Figures are given as the 3-year moving average.
OurWorldinData.org/hunger-and-undernourishment • CC BY


2 ZERO HUNGER

SDG2 ZERO HUNGER

SCIENTIFIC CHAIR PROFILE:

Name: Dr. Erum Akbar Hussain

Qualification: Ph.D, ICCBS, H.E.J Research Institute of Chemistry, University of Karcachi

Designation: Professor

Department: Chemistry

Faculty: Science & Technology

University: Lahore College for Women University

Contribution in Academics and Research:

Prof. Dr. Erum A. Hussain has been teaching for the last 18 years with the aim to enlighten young minds and help them explore their real potential to live with integrity. She explored medicinal chemistry in the first decade of her research career then she begins to focus on Green Chemistry aspects of material synthesis. This work is reflected in PhD theses supervised by her and over 30 international research publications. She wrote a book on Betalains- Biomolecular Aspects, published by Springer.

Specific SDG and its role in Pakistan development and globally:

Being an agricultural realm, Pakistan has aim to have sufficient, safe and nutritious food throughout the year for all. Pakistan is a country that has been the victim of natural disasters and chronic political and economic turmoil. These volatile conditions have led to high rates of poverty and hunger in the country, about a quarter of the population lives below the poverty line. Undernutrition has also led to stunting in 38% of Pakistani children under the age of five, and a leading cause of death in the world. Unequal access to resources and inefficient handling leaves millions of people malnourished. There are 821 million people estimated to be chronically undernourished and over 90 million children under five are dangerously underweight. Undernourishment and severe food insecurity appear to be increasing in almost all regions of the world. Considering these facts, SDG-02 envisioned to end malnutrition and promote and secure agriculture thus ensuring that sufficient nutritious food is available to all people – especially children who are the future of Pakistan. A range of initiatives to improve nutrition has been

spearheaded comprises strengthening the agricultural sector with the support of academic research, enhancing nutrition awareness, improving coordination mechanisms and engaging the private sector to ensure access to nutritious food for a healthy society.

THE ROLE OF FOOD CHEMISTS IN FIGHTING AGAINST HUNGER AND STUNTING IN PAKISTAN

Keynote speaker: Dr. Arjumand Iqbal Durrani*

Department of Chemistry, University of Engineering and Technology, Lahore, Pakistan

*Corresponding Author's Email: arjumand@uet.edu.pk

The current world population (7.9 billion) is facing the food crisis mainly due to man-made issues, pandemics (i.e., COVID-19), natural disasters, and even deterioration in nature's ecosystem. These issues need to be addressed on high priority to minimize starvation and malnutrition. There is a dire need to modify the current food and agriculture system to provide nourishment to people. This can be achieved by improving the food needs of the present populations, by protecting the existing social protection programs, smooth global food trade, continuous domestic supply chain, and sustainable agriculture. Pakistan is facing critical malnutrition crises. Four out of ten children under five years old are stunted and about 18% suffer from wasting. This burden of malnutrition is increasing day by day. Special emphasis must be given to the improved nourishment of the available food in our country. The focus of our research group is to cope with malnutrition and stunting in children and the common people of Pakistan. We successfully have developed cost-effective functional foods using biowaste and/or low-cost locally available raw materials. Various functional foods have been successfully developed. A few ones will be discussed in the presentation such as micronutrient fortified jams, jellies, cakes, biscuits, bread, cakes, and juices. In addition, targeted functional foods to help the patients suffering from diabetes, cardiovascular diseases, anemia, arthritis, and asthma have also been successfully developed. Nano-fortified edible coatings have also been successfully developed in our research group. Different formulations were prepared, characterized using standard methods of analysis, and the sensory evaluation and stability studies of all the above food products were also done. A brief overview of these developed products will be given during the presentation.

Keywords: malnutrition, functional foods, micronutrients, improved nutrition, biowaste

ZERO HUNGER AND RESEARCH POTENTIAL OF PURE SCIENCES

Plenary lecture: Dr. Rahat Naseer*
Department of Biochemistry, UVAS, Lahore
Corresponding Author's Email: rahat.naseer@uvas.edu.pk

Zero hunger the second goal of sustainable development of human beings is definitely the first in its priority. When we take a superficial look on the targets and respective indicators we find it hard to note our place, as scientist especially if we are from pure sciences domain. But the actual story is far different. Out of eight four targets falls in the domain of pure sciences and rest goes to policy makers. So without the significant contributions from the basic scientist the dream of zero hunger is impossible to achieve. This presentation will point out those challenges which need attention of basic scientist to combat and why it is important to collaborate across the different disciplines to solve local problems. In developing world we need to carefully review the status of our local foods, conserve old recipes and ingredients and need to educate our young generations.

Keywords: Significance SDG-02, research horizons, impossible-is-possible

ATTAINING SDG 2 BY UTILIZATION OF AGRICULTURAL WASTE TO PRODUCE FOOD-GRADE GLUCOSE

Keynote speaker: Dr. Maliha Uroos*
Centre for Research in Ionic Liquids, School of Chemistry, University of the Punjab, 54590 Lahore,

Corresponding Author's Email: malihauroos.chem@pu.edu.pk; director.cril@pu.edu.pk

The depletion of natural food resources has reached an alarming level. This is mainly due to the growing population and increased consumption but slow growth of natural resources. The United Nations Food and Agricultural Organization (FAO) predict a serious shortage of carbohydrates and protein and forthcoming food famine if the population growth continues at the same rate. Thus, alternative technologies should be developed to replace the traditional ones. An important alternative is agricultural waste material that can be used productively to fulfill the future demands of food, fine chemicals, fuel and energy, particularly in an agricultural land 'Pakistan'. Agricultural waste mainly composed of cellulose, hemicellulose and lignin biopolymers. Cellulose is a source of food-grade glucose that can be obtained by using appropriate technologies. We used two agricultural residues abundantly available in Pakistan to produce food-grade glucose using a biocompatible ionic liquid. This biocompatible ionic liquid is based on food-grade cholinium hydroxide and lysine and has potential to remove undesirable components from agricultural cellulose such as, lignin and hemicellulose. The obtained pure cellulose pulp was subsequently hydrolyzed into glucose by using food-grade enzymes. The optimum delignification efficiency of the IL is 87% at 120 °C after 8 h pretreatment. The optimum yield of food-grade sugar was 77% from cellulose pulp after processing at 100 °C for 8 h. The analysis of the pulp and lignin was made using compositional analysis, FT-IR, TGA, and SEM techniques, whereas glucose was quantified using HPLC. The food-grade glucose may be used in the food industry or pharmaceuticals, but this study aims at synthesizing mycoprotein in the future.

Keywords: Agriculture waste, Food grade Glucose, Ionic liquids, Cellulose

ABSTRACT PRESENTATION
Abstract ID: ICSDG0201

DEVELOPMENT OF POST-HARVEST FOOD PRESERVATION METHOD TO COMBAT WORLD HUNGER

Sana Ahmad, Sara Maryam, Nafeesa Shoukat*

Lahore College for Women University, Lahore

Corresponding Author's Email: nafeesashaukat0707@gmail.com

Increased food shelf life is necessary to reduce the food wastage throughout the world. Biodegradable starch-clay nanocomposite films were synthesized for their potential applications in food packaging. Bentonite clay was homogeneously dispersed into soluble starch solution in appropriate ratio at 90^{o}C using glycerine as plasticizer and acetic acid as a cross linking agent. Drying the solution resulted in the formation of films. The synthesized films were characterized by XRD, UV and FT-IR analyses. The films were also tested for their biodegradability and food preservation. The results proved that the prepared films are a promising substitute for petroleum-based food packaging materials. The results proved that the prepared films are a promising substitute to combat world hunger with food preservation. (SDG 2: Zero hunger).

Keywords: Zero hunger, Food shelf life, Food wastage, Biodegradability, Food preservation

Abstract ID: ICSDG0202

FIGHTING WORLD HUNGER BY USING BIODEGRADABLE FILMS FOR FOOD PRESERVATION

Sana Ahmad, Bushra Perveen*

Lahore College for Women University, Lahore

Corresponding Author's Email: bushra548@yahoo.com

Increased food shelf life is necessary to reduce the food wastage throughout the world. A biodegradable film coating on food samples is a new step towards this goal. High strength alginate composite films with different clay content were synthesized by solvent casting method to improve their mechanical and barrier properties. Kaolin clay was uniformly dispersed into the soluble alginate solution at 70^{o} C using glycerol as plasticizer. Film forming solution was then allowed to dry in oven at 60 ^{o} C resulted in the formation of films. The synthesized films were then characterized by XRD, FTIR, SEM and UV analysis. Food packaging potential of the prepared films was evaluated for common fruits. The films were also tested for their biodegradability and antimicrobial activity. The results proved that the prepared films are a promising substitute to combat world hunger with food preservation. (SDG 2: Zero hunger)

Keywords: Zero hunger, Food shelf life, Food wastage, Biodegradability, Food preservation

Abstract ID: ICSDG0203

DEVELOPMENT OF GUAR GUM BASED ADSORBENT FOR PESTICIDE EXCLUSION

Samra Hussain*, Hina Daud, Erum Akbar Hussain

Department of Chemistry, Lahore College For Women University ,Jail Road, Lahore C

*Corresponding Author's Email: samrahussain888@gmail.com

Being agricultural country, Pakistan is facing many challenges among which compromised water quality for irrigation is of fundamental concern due to the use of pesticides. This ultimately resulted in contamination of water bodies and oblivious of purity again used in irrigation of crops. Hence give in the crop quality and become challenging for promoting sustainable agriculture commodities. Therefore, development of suitable material is needed for remediation of aqueous media contaminated with pesticide to ensure the sustainable food system thus combating hunger. Among other feasibilities, biocomposites with three dimensional (3D) network have ability to remove these pollutants from water. In this research, biocomposites of Guar gum were prepared in aqueous medium and employed for assessing adsorption capacity to remove pesticide pollutants. The results showed that prepared biocomposites have been proved as excellent adsorbents for said purpose with cost effectiveness. All composites were confirmed by FTIR and UV-Visible spectroscopy. These biocomposites possess biocompatibility, biodegradability and non-toxicity.

Keywords: Sustainable agriculture, food safety, biocomposites, biodegradable, non-toxic

Abstract ID: ICSDG0204

SYNTHESIS OF HYDROCOLLOIDAL CARRIERS FOR BIOACTIVE RELEASE

Javairia Saleem*, Erum Akbar Hussain

Department of Chemistry, Lahore College for Women University, Lahore

*Corresponding Author's Email: javairiasaleem98@gmail.com

Nowadays, the world is facing a huge challenge to provide enough quality food to a rapidly growing population that can reduce hunger and malnutrition. The Food and Agriculture Organization of the United Nations reported the loss of huge amount of edible plants and crops per year due to various abiotic and biotic factors. In order to get protected and enhance crop quality, some sustainable and biodegradable carriers are required that are nutritionally rich and biologically active. This research targets the synthesis of hydrocolloidal carrier systems made from biopolymers. For this purpose, the varying concentration of gaur gum, sodium alginate and plasticizer solutions were homogenized at ambient temperature. The phenolic acid which is a highly bioactive compound was loaded on hydrocolloidal solution. The swelling and release behaviour of these hydrocolloidal carriers depicted the efficacy of the proposed target delivery. Concluding together, the bioactive hydrocolloidal systems can be utilized as protective bioactive agents against microbes and other abiotic stress during crops production.

Keywords: Biopolymers, Hydrocolloid Carriers, Phenolic Acid, Crop Protection, Zero Hunger

Abstract ID: ICSDG0205

PREPARATION OF AGAR EDIBLE FRUIT COATING - A FOOD SAVING APPROACH

Sania Azam*, Erum A. Hussain, Shahida Shujaat

Department of Chemistry, Lahore College for Women University, Lahore

*Corresponding Author's Email: sania_azam0116gmail.com

Fruits are important source of nutrition but a perishable product, so it is crucial to improve their safety and quality in order to extend their shelf life. Pakistan is the world's seventh-largest apricot producer, with the primary growing regions in Gilgit-Baltistan and Baluchistan. Apricots are easily damaged in the environment due to retaining higher moisture content. As a result, a better preservative approach to prevent fruits from deterioration is required to combat zero hunger. In this study, a series of blend films of agar were prepared through the casting solution method. An antimicrobial agent has been loaded on films and confirmed by UV-spectrophotometry. These formulations were coated on fresh apricots and proved effective preservation for 7 days.

Keywords: Agar, shelf-life, eugenol, good health and wellbeing, zero hunger

Abstract ID: ICSDG0206

SYNTHESIS OF SUPERABSORBENT HYDROGELS FOR WATER MANAGEMENT

Maria Hussain*, Erum Akbar Hussain

Department of Chemistry, Lahore College for Women University, Lahore

Corresponding Author's email: amirh5615@gmail.com

From the last few decades food scarcity threat is rising day by day due to increase population and climate changes. These climate changes are responsible for lowering the content of water in soil. The sustainability of agriculture production is highly influenced by these unbalanced water contents that results in increased non availability of food. In order to reduce the food unavailability, we need to enhance agricultural productivity. Therefore, there is a need to synthesize superabsorbent that possess properties to retain the water content of soil. Hydrogels were synthesized by blending biopolymers namely Gaur gum and Alginate employing Tween-80 as plasticizer and were investigated through spectroscopic techniques. Hydrogel water holding capacity was examined and results showed that it is highly sensitive to water content. The synthesized superabsorbent hydrogel exhibited varied water holding potential in drench and drought conditions.

Keywords: Biopolymers, Hydrogels, Superabsorbent, Zero Hunger

Abstract ID: ICSDG0207

EFFECT OF HEAT STRESS ON ACTIVITIES OF SUCROSE METABOLIZING ENZYMES IN RELATION TO SUCROSE ACCUMULATION

Faisal Mehdi[1*], Abid Azhar[2] and Saddia Galani[2]

[1]*Agriculture and Agribusiness Management University of Karachi, Karachi Pakistan.*

[2]*Dr. A. Q. Khan Institute of Biotechnology and Genetic Engineering University of Karachi, Karachi Pakistan.*

Corresponding Author's Email: mehdifaisal@yahoo.com

Heat stress to be the most deleterious abiotic stress that limit plant growth and affecting crop productivity worldwide. It constrains enzymes activities and their expression consequently, loss sugar in sugarcane crop. Present study was designed to evaluate the quantitative and qualitative analysis of sucrose metabolizing enzymes such as sucrose synthase (SS), sucrose phosphate synthase (SPS), cell wall invertase (CWIN), cytoplasmic invertase (CyIN) and vacuolar invertase (VIN) were quantified in two sugarcane varieties during different growth stages under heat stress conditions. For this, sugarcanes were grown; during control (C), heat stress (45 ±2 °C) and recovery (30 ±2°C) growth conditions. Sucrose metabolizing enzymes were quantified by spectrophotometer while qualitative analysis or differential staining of invertase isozymes (cell wall, vacuolar & cytoplasmic) were carried out on NATIVE-PAGE at all growth stages. The results indicated that under heat stress condition, SS, SPS, VIN, CWIN and CyIN activity were decreased in both varieties but in comparison between varieties, SPF-238 had minimum expression of SPS and SS than S2003-US-633. However, maximum VIN, CWIN and CyIN activity were exhibited in SPF-238 at all stages. In conclusion, S2003-US-633 is ranked in high yielding variety due to maximum SPS and SS enzymes expression despite severe environmental condition at maturity stage. Thus, this study can be helpful to providing valuable approach to select the markers for high yielding variety of sugarcane for framers and sugarcane industrialists.

Keywords: Heat stress, Abiotic stress, Sucrose metabolizing enzymes, Sucrose Accumulation

Abstract ID: ICSDG0208

NUTRACEUTICAL FRAMEWORKS - COMBATING HEALTHY FOOD SCARCITY

Amna Ashfaq[1*], Saba Akram[1], Ambreen Ghani[2]

[1]*Department of Chemistry, Lahore College for Women University, Lahore*

[2]*Department of Chemistry, University of Education, Lahore, Vehari campus, Vehari*

*Corresponding Author's Email: amnaashfaq951@gmail.com

Malnutrition and hunger are on the rise due to the food deficit in developing countries, caused by inadequate food management systems. The control on malnutrition is one of the objectives addressed by Sustainable Development Goals (SDGs)-2030, which aim to make the globe a hunger-free place (SDG-2) with good health and wellbeing of living beings. In addition, undernutrition and micronutrient insufficiency are also challenging areas to assure healthy food. There has been a surge of interest in polymer blends as nutrient carriers for their ability to protect nutraceuticals from oxidation and undesired degradation before reaching target site. This research presents preparation of a nutraceutical delivery frameworks based on ternary blends polyvinyl alcohol, guar gum and sago starch (PGS) for Vitamin D. The loaded frameworks were subjected to kinetic study on release profiles and showed satisfactory results.

Keywords: Starch, nutraceutical delivery, Vitamin D, zero hunger, good health and wellbeing,

Abstract ID: ICSDG0209

EFFECTS OF SOCIAL SAFETY NET PROGRAMME ON HOUSEHOLD FOOD INSECURITY IN PAKISTAN

[1]Waqas Shair, [2]Mumtaz Anwar, [3]Muhammad Nawaz, [2]Ansa Faqeer
[1]School of Economics & Finance, Minhaj University Lahore, Pakistan
[1]Department of Economics, University of the Punjab Lahore, Pakistan
[2]School of Economics, University of the Punjab Lahore, Pakistan
[3]School of Commerce & Accountancy, Minhaj University Lahore, Pakistan

Email: waqasshair689@gmail.com, waqas.eco@mul.edu.pk

This study has been carried out to evaluate the effect of one of the most important social safety net programme (Benazir Income Support Program) on household food insecurity in Pakistan. Food insecurity always remains a heating debate among the researcher due to its inclusion in sustainable development goals (SDGs). Currently, the 2nd SDG is related to the achievement of 'Zero Hunger' by 2030. Due to its globally recognized importance, the Pakistan Bureau of Statistics included a separate section of food insecurity in the Pakistan Social and Living Standards Measurements (PSLM) survey in the 2018-2019 round. We used the Food Insecurity Experience Scale (FIES) methodology to estimate the food insecurity and also the degree of food insecurity. The descriptive analysis shows that 36% of households are facing food insecurity in Pakistan. The spatial analysis was carried out to identify the region with a higher level of food insecurity. The aftermath of the binary logit model suggests that BISP recipient household is more likelihood of being food insecure when compared with non-recipient households. While within the BISP-recipient household, an increase in the transfer payment through the BISP program decreases the likelihood of being insecure for the mild food-insecure household only. Moreover, an increase in BISP amount does not affect the food insecurity of the severe and moderate food-insecure household. The findings of the study concluded: exceptions to poverty alleviation programs, conditional cash transfers, and other social protection programs subject to food security in the food-insecure areas are required.

Keywords: Food Insecurity, Social Protection Program, Poverty

Abstract ID: ICSDG0210

ALOEVERA GEL PRESERVATION FOR FOOD AND VEGETABLES

Saadia Rashid Tariq, Hareem Ehsan Khan*
Department of Chemistry, Lahore College for Women University, Jail Road, Lahore

*Corresponding Author's Email: hareemehsan24@gmail.com

Aloevera is very popular plant and have many therapeutic properties. Its gel is extracted from simple method and has different components including bioactive components, minerals and phenolic contents. Aloevera has tremendous application for increasing transparancy, rigidity, smoothness, elasticity, and biofunctionality. Aloeveragel is doped with other additives and applied to the fruits, vegetables and sea food for their better preservation. It would help in reducing the deterioration of food and enable its long lasting availability. The use of aloevera gel in combination with different additives will help increasing the supply of food and thus will help to enforce the SDG goal 2 that emphasis on zero hunger.

Keywords: Aloevera, Food preservation, zero hunger, edible, thin films

Abstract ID: ICSDG0211

PROPOLIS FORMULATIONS - A NATURAL REMEDY FROM WASTE MATERIAL

Momin Javaid*, Shahida Shujaat, Fareena Akram
Department of Chemistry, Lahore College for Women University, Jail Road, Lahore

*Corresponding Author's Email: mominali4235@gmail.com

The smart consumption of renewable and natural functional products is a promising way to cope with food unavailability and malnutrition in many regions around the globe. Nowadays research is more inclined towards sustainable strategies for utilizing organic side products with high nutritional profiles. Propolis, the honey by product, contains a plethora of bioactive compounds. It contains various biologically active compounds from the polyphenols class having potential to overcome nutritional deficiency of malnourished regions. This research is proposed to investigate the total phenolic content of propolis. For this purpose, starch blends were loaded with propolis extract. Firstly, different concentrations of sago starch, guar gum, and polyvinyl alcohol were mixed to prepare homogeneous blends. Then, the ethanolic extract obtained from propolis was loaded on starch blends. The anti-inflammatory analysis was performed for all the loaded and unloaded blends. The results showed that propolis loaded blend could be a sustainable source of nutrients for utilization in food and nutraceutical industry.

Keywords: Propolis, Total phenolic content, Renewable and natural products, Starch blends

Abstract ID: ICSDG0212

NANO FERTILIZERS FOR THE ENHANCEMENT AND YIELD OF PLANTS

Saadia R. Tariq, Aqsa Ghaffar*, Aasia Saeed
Department of Chemistry, Lahore College for Women University, Lahore

*Corresponding Author's Email: aqsaghaffar937@gmail.com

In recent years, nanotechnology has extended its relevance in plant science and agriculture. Advancement in nanotechnology has improved ways for large-scale production of nanoparticles physiologically important metals, which are now used to improve fertilizer formulations for increased uptake in plant cells and by minimizing nutrient loss. Nanotechnology-based fertilizers hold promise as smart delivery systems for plant nutrients; fundamental properties such as size, surface area, crystal phase, surface capping of nanomaterials, not only control nutrients dissolution and reactivity but also control material behavior during application. An outburst of the world population in the past decade has forced the agricultural sector to increase crop productivity to satisfy the needs of billions of people, especially in developing countries. An increased crop productivity by using nano-fertilizers may reduce hunger thus targeting SDG goal 2 that focuses on zero hunger.

Keywords: Nanoparticles, Nano-fertilizers, Agriculture, Crop productivity, Developing countries

Abstract ID: ICSDG0213

PREPARATION OF NATURAL ANTIOXIDANT CARRIER SYSTEM FOR FRUIT SAFETY

Ayesha Ashfaq*, Shahida Shujaat, Erum Akbar Hussain
Department of Chemistry, Lahore College for Women University, Jail Road, Lahore

*Corresponding Author's Email: ayesha.ashfaq750@gmail.com

The rapid growth in global population, the food security has become a great challenge particularly for under developed countries. Approximately 1.3-billion-ton food (fruits, vegetables and other) is wasted worldwide per year. The food spoiling and rancidity is primarily due to lipid oxidation and polyunsaturated fatty acids degradation. Strategies are required to meet the goals set by sustainable development program that can extend food shelf life eventually leading to zero hunger. Polymeric blends have emerged as a biodegradable material for variety of applications particularly as micronutrient carriers. In this research work, agar based blends have been prepared by mixing agar, guar gum and polyvinyl alcohol solution. Vitamin E is loaded as natural antioxidant that acts as a first line of defense against lipid peroxidation and compared with unloaded ones. The loaded blends were also subjected to antioxidant analysis and found to retain the antioxidant activity. These blends were employed as fruit and vegetable coating material that can help in prevention of food decay.

Keywords : Polyvinyl alcohol, biodegradable, fruit coatings, natural antioxidants

Abstract ID: ICSDG0214

POPULATION GROWTH IS IMPEDIMENTS TO FOOD SECURITY IN PAKISTAN

Rida Amin*, Zisha Rehmat Ali

Department of Economics, Lahore College for Women University, Jail Road, Lahore

This research was a short comprehensive analysis of whether rapidly growing population is hindrance to food security in Pakistan. This research was conducted to find linkage between food security and population growth in Pakistan. Food Security is taken as dependent variable in this study. Whereas, this research analyzes the effect of independent variables population growth, agricultural productivity shares in GDP, consumers price index, GDP on food security. Data used in this research was annual time series data of period 1980-2020. Basic statistical techniques and econometric methodologies including Augmented Dicky Fuller Test were used. Basic Autoregressive Distributive Lag model (ARDL) was used in this Research. Findings of study revealed that population growth has negative significant relationship with food security in the long run. Consumer price index, Agricultural share in GDP and GDP growth have positive relationship with food security in the long run. As Pakistan is an Islamic country so policy makers can make certain policies to fasten Food productivity by giving easy loans to farmers and using effective chemical pesticides on cheaper rates.

Keywords: Food security, Consumer price index, population growth rate, agriculture share in GDP, ARDL model.

Abstract ID: ICSDG0215

THE HIDDEN HUNGER: VITAMIN D DEFICIENCY INTENSIFIES THE INSULIN RESISTANCE IN OBESE WOMEN IN PAKISTAN

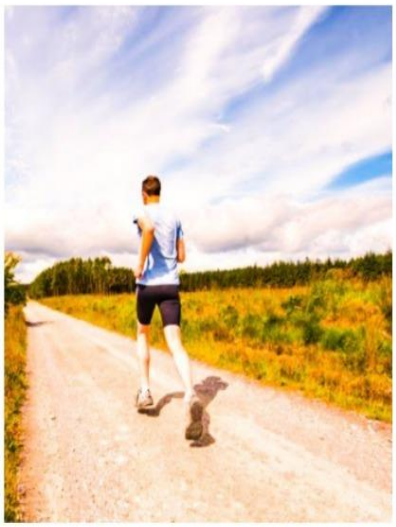
Nazish Saleem*[1], Shan Elahi[2], Nayyab Batool Rizvi[3], Affia Tasneem[4]
[1,3]*Institute of Chemistry, University of the Punjab, Lahore*
[2,4]*Centre for Nuclear Medicine (CENUM), Mayo Hospital, Lahore*
Email: nazishsaleem34@gmail.com

Vitamin D deficiency (VDD) is a major component of low micronutrient intake "The hidden hunger" globally. Obese subjects are relatively at increased risk of VDD compared to general population. Vitamin D (VD) maintains glucose homeostasis, enhance beta-cell functioning and improves insulin sensitivity. We determined mutual relation of VD and insulin resistance (IR) at baseline and improvement in IR after VD supplementation in local obese women. At CENUM, Mayo Hospital Lahore non-diabetic obese (BMI ≥30 Kg/m^2) female were recruited after exclusion of those with any systemic disease, taking of Vitamin D supplementation and pregnancy. A 5 ml venous blood was collected from each participant and fasting glucose (mg/dl), insulin (µIU/L), 25-OH vitamin D (ng/ml) were determined. Insulin resistance (IR) was determined by HOMA2-IR index. Women with HOMA2-IR index ≥ 2.5 were considered to have IR and were supplemented fortnightly with 200000 IU vitamin D3 for 12 weeks. Effect on HOMA2-IR index, serum PTH, calcium and CRP were compared at baseline and after 12 weeks of VD supplementation. Among 116 obese women 84 (72.4%) had vitamin D level less than 20 ng/ml (VDD). Serum VD was negatively correlated with BMI (r = - 0.004), fasting insulin (r = - 0.223) and HOMA-IR (r = - 0.252). IR was significantly more common in VDD than non-VDD obese women (42.9% versus 9.4%; P=0.0028). After VD supplementation in vitamin D deficient IR women (n=26) serum PTH and CRP were significantly reduced. Moreover, HOMA-IR index was significantly ameliorated in 20 (76.9%) of them. Vitamin D deficiency is enhancing insulin resistance and hence DM in obese women and can be improved by Vitamin D supplementation.

Keywords: Vitamin D, Insulin resistance, Obesity, Diabetes, PTH


Goal 3 - Good Health & Well-being
Ensure healthy lives and promote well-being for all at all ages
101
GUEST ARTICLES
68
POLICY BRIEFS
10
GENERATION 2030
1826
NEWS
270
EVENTS


03
GOOD HEALTH
AND WELL BEING




3 GOOD HEALTH AND WELL-BEING
Ensure healthy lives and promote well-being for all at all ages

SDG3 GOOD HEALTH AND WELL BEING

SCIENTIFIC CHAIR PROFILE:

SCIENTIFIC CHAIR 1:

Name: Prof. Dr. Amina Muazzam (Social Sciences stream)

Qualification: PhD, Applied Psychology

Designation: Tenured Professor / Chairperson / Director Research/ Incharge Central Research Lab, LCWU

Department: Applied Psychology

Faculty: Faculty of Arts and Social Sciences

University: Lahore College for Women University, Lahore

Contribution in Research and Academics: She has supervised 10 PhD scholars and 100 MS thesis as HEC approved supervisor. She is visiting faculty of Lake Head University Canada. She has been elected as Director at large at ICP Canada for the terms of 3 years (2018-2021 & 2022-2025). She has published around 100 research papers in prestigious journals. She has written two books and one chapter in IGI. She has been invited as an expert in the area on many TV talks. She is taking BS, MS and PhD classes along with the research work and administration tasks.

Specific SDG and its role in Pakistan development and globally:

SDG-03 (Good Health and Wellbeing). While good health and wellbeing is important for the entire globe**,** the SGD of Health and Wellbeing is particularly crucial for a developing country like Pakistan where health poses a considerable challenge. It is important to ensure health and well-being for all, at every stage of life. The goal addresses all major health priorities, including reproductive, maternal and child health; communicable, non-communicable and environmental diseases; universal health coverage; and access for all to safe, effective, quality and affordable medicines and vaccines. It is imperative for the health sector, government, academia and all stakeholders to work together for the purpose of ensuring holistic health which includes physical as well as mental health

SCIENTIFIC CHAIR 2:

Name: Prof. Dr. Humaira Majeed Khan (Sciences stream)

Qualification: PhD in Pharmacology from Department of Pharmacology and Toxicology, UVAS.

Designation: Director Institute of Pharmacy.

Department: Pharmacy Department.

Faculty: Pharmaceutical and Allied Health Sciences.

University: Lahore College for Women University, Lahore

Contribution in Research and Academics:

She graduated from the Faculty of Pharmacy, University of the Punjab. She completed her M.Phil. from Federal Post Graduate Medical Institute Sheikh Zaid Hospital Lahore. She completed her PhD in Pharmacology from Department of Pharmacology and Toxicology, University of Veterinary and Animal Sciences Lahore. She got 11th position in Punjab Public Service Commission and served as hospital pharmacist, analyst and drug inspector in various Government sector institutes of the Punjab. She has been a member of National Talent Pool Program Islamabad, member committee for drug rules Punjab, committee member for establishment of bioequivalence and bioavailability lab Islamabad along with member of various statuary bodies of LCWU and other universities. Professor Dr. Humaira M. Khan availed Indigenous scholar ship for PhD in 2006 and also availed IRSIP Scholarship in 2011. She has supervised 50 M.Phil. students. She established the Faculty of Pharmaceutical and Allied Health Sciences, LCWU after approval from all statuary bodies under supervision of Prof Dr. Bushra Mirza Vice Chancellor LCWU. She started Doctor of Physical Therapy Program, M.Phil. and PhD Pharmacology and M.Phil. Pharmaceutics programs. She developed various courses of M.Phil. and PhD Pharmacology. She prepared the PC-1 for College of Nursing at new campus LCWU Kala Sah Kaku. 70 more seats were added after approval from Pharmacy Council of Pakistan under her supervision. She purchased the 5 million rupees equipment for Institute of Pharmacy, LCWU.

Specific SDG and its role in Pakistan development and globally:

Over the last 15 years, the number of childhood deaths has been cut in half. This proves that it is possible to win the fight against almost every disease. Still, we are spending an astonishing amount of money and resources on treating illnesses that are surprisingly easy to prevent. The new goal for

worldwide Good Health promotes healthy lifestyles, preventive measures and modern, efficient healthcare for everyone.

KEYNOTES:

Keynote Address 1

MENTAL HEALTH AND WELL-BEING IN TIMES OF COVID-19; CHALLENGES AND FUTURE DIRECTIONS

Prof. Dr. Rafia Rafiq

Institute of Applied Psychology, University of the Punjab, Pakistan.

Tsunami of problems is hitting population due to pandemic that is having a huge negative impact on the well-being of the people. Pandemic is an unprecedented psychological crisis and the contemporary age has become the age of pandemic. Wellbeing of the people is largely compromised due to pandemic and the statistics have highlighted that people are experiencing heightened levels of anxiety, depression and sleep issues due to pandemic. The pandemic has aggravated the current psychological challenges faced by people which include social isolation, gender-based violence and impact of social media on mental health. Psychologists need to prepare themselves to deal with these challenges while adhering to the ethics. They also need to consider the emerging ethical concerns surfacing due to spread of social media. Moreover, focus should also be on the effective ways to embed positive mental health practices in regular life and routines to safeguard the psychological well-being of people.

Keywords: Pandemic, wellbeing, violence, social isolation

Keynote Address 2

THE ROLE OF PSYCHOLOGY IN MEETING THE UN SUSTAINABLE DEVELOPMENT GOALS

Josephine C. H. Tan, PhD., C.Psych.

Lakehead University, Thunder Bay, Canada

The United Nations Agenda for Sustainable Development with its 17 Sustainable Development Goals (SDG) encourages partnerships between developed and developing nations to address global issues and to promote peace and prosperity for everyone. Psychology is placing increasing emphasis on how we can contribute to the realization of the SDGs. Psychology is in a unique position to be an active and significant participant because it incorporates different perspectives that are akin to different disciplines, and many of the content areas it covers has relevance to the SDGs. Furthermore, psychologists are well-trained in different research methodologies that allow for a wide range of questions to be asked and for different types of information to be collected. However, much of the psychological knowledge produced is based on Western paradigms that can sometimes limit its application and effectiveness on the global stage. Adopting Western psychology to address issues in other societies requires sensitivity and familiarity with regional cultures, politics, resources, and challenges. Integrating Western with the regional or local knowledge in the context of equal decision-making and partnership between the psychologist and the local community has proven beneficial in the work with Indigenous peoples, many of whom are affected by the concerns outlined in the SDGs. This presentation will cover the lessons learned from the work with Indigenous peoples, the resources available to psychologists to enhance their international work, and the questions to consider to reinforce effectiveness and cultural safety of their work.

Keywords: Western psychology, applicability, culture, lessons learned, integrating knowledge

Keynote Address 3

PSYCHOSOCIAL JOURNEY OF INFERTILE WOMEN IN PAKISTAN AND THE WAY FORWARD

Prof. Dr Syeda Shahida Batool

Department of Psychology, Government College University Lahore

Infertility is among the most prevalent women's health issues worldwide, and is affecting 8 to 12 % of the couples globally. The rate of infertility is also rising in Pakistan. The descriptive literature on the psychological consequences of infertility presents infertility as a devastating experience, especially for women, and this negative incident of life affects personal, social, physical, psychological and economic well-being of a woman. Feelings of anger, frustration, and aggression often accompanies infertility that induce stress, thereby lowering down her wellbeing. Negative consequences of infertility are experienced more by developing countries than western societies (Ombelet et al., 2008), and in many cultures, infertility is perceived as something to be ashamed of (Ergin et al., 2018), thus it is a core source of diminished health and reduced levels of social wellbeing and results in significant pain and distress. Along with social sufferings, infertility leads to psychological distress as well. Often experienced as a silent struggle, infertility significantly affects the psychosocial life of women, and hampers their treatment, and follow-ups. Qualitative studies carried out in Pakistan indicate that psychosocial journey of infertile women is a bumpy ride, and establishes that infertility is a culturally knitted phenomenon and we should adopt biopsychosocial approach to deal with infertility.

Keynote Address 4

PANDEMIC OF ADDICTION

Professor Dr. Imtiaz Ahmad Dogar

Department of Psychiatry & Behavioral Sciences DHQ/Allied Hospitals, Faisalabad

The entertainment or addiction is getting worse now a days. people are confusing entertainment with addiction. people are merging entertainment with addiction, boundaries are blurring rather they are merging. Even it is going to be a fashion and trend now a day. Different Behavioral addictions are internet, gaming, shopping, love, sex and gambling. These are more than just bad habits. It is compulsive behavior driven by uncountable impulses. On social media different groups are operating and they are promoting various cocktails of party drugs like dancing pills, ICE and cocaine. Society is focusing upon these things and generating confusions. This is something to be considered as symbol of coolness which is highly objectionable. Such issues are rising and getting worst day by day. Dilemmas regarding mental health is in rise. We need to identify it as earlier as possible. So things may be settled in society. There is a dire need to settle down such issues to promote mental health in community. Awareness campaigns should be organized so our young generation may consider it as major drastic and devastating aspect of society. These issues of addiction/addictive behaviors are preventable and treatable in case of early identification. So there is need of time to enhance our understanding about issues of youth, which will in return help us in character building of the nation and a healthier society leading to prosperous country in large.

Keynote Address 5

SOCIAL REFORMS MODEL A WAY FORWARD FOR BETTER ROLE OF GOVERNMENT AND GOVERNANCE IN DEVELOPING COUNTRIES

Usman Rasheed Chaudhry

Correspondence e-mail:usmanchaudhry65@yahoo.com

This paper is way forward for better role of Government and Governance after reviewing literature on Role of Government and Government in developing countries. This paper has discussed the outcome of World Governance Survey (WGS) carried out on 16 developing countries by Hyden, Court & Mease. The paper discussed the importance of good governance in developing countries as there is lots of commonality of problems in developing countries like poverty, insecurity, lawlessness, weaker check and balance and deliberate democracy instead of true democracy having difference in government rhetoric and real Practice. While keeping these issues in mind Social Reforms Model (SRM) is being developed in this paper for further betterment in good Governance and thought provoking for political executives and bureaucratic administration to coordinate as a team to deliver better governance. This paper is way forward for political scientists to develop such more models to achieve manageable goals of good Governance and true democracy. The paper has promoted the idea of social responsibility of Well-informed Persons and local intelligentsia to keep liaison with the Government as “Ambassadors” of Government at grass root level and helping the local administration in psycho educating the general public to be part of national interest instead of creating chaos and unrest in country.

INVITED SPEAKER

GENDER INEQUALITY AND THE PERPETUATION OF COMPLEX TRAUMA IN WOMEN AND GIRLS

Indhushree Rajan

Founder and CEO Project Satori

Faculty, Pacifica Graduate Institute

As we move through the 21st century, we are witness to incredible technological and scientific advancements worldwide, and in some ways, humanity has conceived of a world previously only dreamt of in our wildest imaginations. Yet, the progress that we are witnessing in this new age is not the legacy of all. In fact, women and girls all over the world still disproportionately suffer prejudices and abuses that are being perpetuated by gender inequality across socioeconomic, sociocultural, and political paradigms. Through this presentation, we will more closely consider how gender inequalities serve to perpetuate states of complex trauma for women and girls worldwide.

ABSTRACT PRESENTATIONS

Abstract 1D: ICSDG0303

PERCEPTIONS REGARDING SIDE EFFECTS OF CORONA VIRUS VACCINATION AMONG UNIVERSITY

*Ayesha Tahir[1], Dr. Rafia Rafique[2]

[1,2] *Institute of Applied Psychology, University of the Punjab, Lahore, Pakistan*

***Corresponding Author's Email: 3110275741360@pu.edu.pk**

The study explored perceptions regarding side effects of corona virus vaccination among university students. Thematic Analysis was used to provide an in-depth perspective of the students. Semi-structured interviews were undertaken with a volunteer sample of five university students. Four key themes were identified: government propaganda, myths (deaths/infertility/chip insertion), social media (instagram, facebook), compulsory to get vaccinated (universities/government). The present study revealed that some university students thinks that corona is caused by government itself and vaccinations have more side effects. By getting vaccination they will die after two years and may become infertile or America put some sort of chip in their body through vaccination and then get their bio data or spy on them and make them get away from their religion. But some students do not believe in these myths and think that it is necessary to get vaccination in order to survive. The students have developed these perceptions from social media by watching videos, posts, memes and read articles. These perceptions effect their decision of getting vaccinated as most students who believed in this misconception do not want to get vaccinated but now, the students get vaccinated because it is made compulsory by the university as well as government.

Keywords*:* University students, semi-structured interviews, thematic analysis, perceptions, coronavirus vaccination side effects

Abstract 1D: ICSDG0306

LIVED EXPERIENCES OF FEMALE HEALTH PROFESSIONALS DURING COVID-19 PANDEMIC

*Humna Abid[1], Dr. Rafia Rafique[2]

[1,2] Institute of Applied Psychology, University of the Punjab, Lahore, Pakistan

***Corresponding Author's Email: humnaabid1056@gmail.com**

The study explored the lived experiences of female health professionals working during the Covid-19 pandemic and investigated their psychosocial, professional, personal challenges and coping strategies they use. IPA was utilized to give a detailed and broad view of records. Semi-structured interviews were embraced with a sample of five participants working with corona patients. Four main themes were recognized: Psychosocial challenges, professional and personal challenges, coping strategies, and awareness. Female health professionals experienced depression, anxiety, helplessness, fear, nervousness, frustration, irritation, and anger. Their social life is disturbed. No meetups, no social activity makes them frustrated. Professional and personal life is in conflict. Work burden impairs personal life. Different coping strategies like motivation to work, passion to serve, support by family and public, encouragement by friends were used during this pandemic. Health professionals focused on spreading awareness about corona and vaccines to the public. Our investigation discovered that focusing on COVID-19 patients made psychological and societal uneasiness for feminine health professionals, as described by other worldwide examinations (Sun et al., 2020).

Keywords: female health professionals, semi-structured interviews, interpretative phenomenological analysis, Covid-19

Abstract ID: ICSDG0307

PERCEPTION OF HOME DEMANDS, DEPRESSION, STRESS AND ANXIETY IN WORKING AND NON-WORKING WOMEN DURING COVID-19

*Mahnoor Butt[1], Dr. Masha Asad Khan[2]

Applied Psychology Department, Kinnaird College for Women, Lahore.

***Corresponding Author's Email: mahnoorshahbazbutt@gmail.com**

This study examines the perception of home demands, depression, anxiety, and stress between working and non-working women, during the Covid-19 pandemic. A purposive sample of 250 married women (Working Women=125; Non-Working Women=125) ranged between 20-60 years of age, having at least one child and minimum qualification of matric were included in the study. Data for the study was collected by administering a self-constructed demographic questionnaire, Home Demand Scale, and Depression Anxiety and Stress Scale-21. Statistical Package for Social Sciences (SPSS) version 22 was used to analyse the data. Results of independent sample *t*-test indicated a significant difference between emotional home demands, stress, and depression of both groups. Married working women had higher perception of emotional home demands than non-working married women. Emotional home demands are the emotional issues that arise while performing home tasks. Further, married working women also reported higher stress and depression scores than non-working married women during the pandemic. This study may help society to establish healthy gender-related expectations. Further, the findings may highlight the work pressure women are facing. It also sheds light on the effect of pandemics on women's mental health.

Keywords*:* Home Demands, Mental Health, working and non-working, married women, Covid-19.

Abstract 1D: ICSDG0309

PREVALENCE OF ACADEMIC STRESS IN UNDERGRADUATE STUDENTS DURING COVID I9

*Nuzhat-ul-Ain[1], Saima Dawood[2], Aminah Abdul Khaliq[3], Kanwal Safeer[4], Nayyab Komal[5]

[1,2,3,4,5] Centre for Clinical Psychology, University of the Punjab, Pakistan

***Corresponding Author's Email: nuzhatulain4@gmail.com**

Present study determines the level of educational stress among undergraduate students during COVID-19 pandemic. The sample included 179 (Male=56, Female=123) undergraduate students from different universities of Pakistan with mean age of 20.97 years. All participants were taking classes through online mode. For measuring educational stress, Educational Stress Scale for Adolescents (ESSA) was used which contains 5 variables named as, 'pressure from study', 'workload', 'worry about grades', 'self-expectation' and 'self-despondency' (Sun et al., 2011). The scale was originally standardized on Chinese adolescents ranging from 12 to 18 years (M=15.37, SD=1.69) enrolled in high school. Permission to use this scale on undergraduate university students was granted from the author. Data was collected through purposive sampling and descriptive statistics were employed. Results revealed that majority of the students (45.25%, n=81) were experiencing moderate levels of educational stress whereas 37.4% (n=67) of students were experiencing high educational stress. Within the total sample, 44.13%, 58.10% and 56.98% of the participants scored high on the variables of 'pressure from study', 'worry about grades' and 'self-expectation' respectively. For 'workload' and 'study despondency' a high number of participants i.e., 41.01% and 49.72% fall in moderate educational stress range.

Keywords: academic stress, online mode, undergraduate students.

Abstract 1D: ICSDG0311

BEHAVIOR, PERCEPTIONS, NEGATIVE AFFECT AND PSYCHOLOGICAL DISTRESS AMONG UNIVERSITY STUDENTS DURING COVID-19

Tehreem Zahra[1], Iffah Khan[2], *Nudra Malik[3]

[1,2,3] *Department of Applied Psychology, Lahore College for Women University, Lahore, Pakistan*

***Corresponding Author's Email: nudramalik@gmail.com**

COVID 19 and its consequences had an impact on the emotional and mental health of students globally. This study aimed to examine the association between behaviors (work, study, and travel), perceptions of negative affect, and psychological distress among university students in Pakistan. It was a cross-sectional study. The sample consisted of 306 university students (females=68.4%, males=31.3%) between the age group of 18 to 30 years (M=22.21, SD=3.12). The sample was selected through a convenient sampling technique and the responses were obtained through google forms. The questionnaire including a demographic form, Kessler Psychological Distress Scale (K10), PANAS-GEN, and a General Impact Scaleto measure demographic characteristics, psychological distress, the negative affect of the Covid-19, and behaviors (work, study, and travel) of university students, respectively. It was hypothesized that there is likely to be a significant relationship among negative affect of the Covid-19, psychological distress, and behaviors (work, study, and travel) in the university students. Pearson's correlation was used to measure the association between the study variables. The results revealed a positive association of gender with general behaviors (work,study, and travel), psychological distress and the negative affect of covid-19 *(p<.01),* a negative correlation between age and negative affect *(p<.05),* General impacts were positively correlated with psychological distress and negative affect *(p<.01),* and a positive correlation between psychological distress and negative affect of the Covid-19 *(p<.01).*Independent sample t-test for the analysis of the gender differences among all variables indicated that the general impacts of Covid-19, psychological distress, and the negative affectwere worse among females *(p<.01)* as compared to the males. Multiple hierarchical regression analysis revealed that gender, education, and general impacts were significant predictors of psychological distress among university students, while the negative affect of Covid-19 came out to be the most

significant predictor of psychological distress.

Keywords: Impacts of Covid-19, general behavior, perceptions, negative affect.

Abstract 1D: ICSDG0305

EMOTIONAL REGULATION, PROFESSIONAL QUALITY OF LIFE AND EMPATHY AMONG MENTAL HEALTH COUNSELLORS DURING COVID-19

*Hadiqa Rehman[1], Zara Haroon[2]

[1]*University of Management and Technology Lahore.*

[2]*Kinnaird College for Women, Lahore.*

***Corresponding Author's Email: hadiqa.rehman@umt.edu.pk**

Mental health of a person is as important as the physical health. Over the years, huge importance and recognition has been given to this area of health. To improve and manage the mental health and wellbeing, mental health professionals provide vast services to their respective populations. The researchers and the practitioners brought attention to also to take care of the wellbeing of the mental health professionals. Therefore, burnout, compassion fatigue has been under the research studies for multiple times as the mental health counsellors are also dealing with the emotional, social and psychological aspect of the person. This Correlational study investigated the relationship of emotional regulation, professional quality of life with empathy among mental health counsellors during COVID 19. Purposive sampling strategy was used to collect data from mental health counsellors *(n= 150*), working in a private or government organizations, with age range between 26 to 55 years old (MA=30.51, SD=5.75). Participants were assessed using Emotional Regulation Questionnaire (Gross &John, 2003), The Professional Quality of Life Scale version 5 (Stamm, 2010) and Interpersonal Reactivity Index (Davis, 1980). Data was analyzed using Pearson product moment correlation coefficient and Hierarchal Linear regression analysis. The results indicated that there is a significant positive relationship between emotional regulations among mental health counsellors implying that mental health counsellors whose emotional regulation is stable were more likely to feel empathetic. Results further suggested that there is a significant positive relationship of professional quality of life and empathy among mental health counsellors implying that mental health counsellors whose professional quality of life is better were more likely to have empathetic behaviors. Hierarchal Linear regression analysis indicated that emotional regulation and professional quality of life was significant predictor of empathy among mental health counsellors.

Keywords: emotional regulation, quality of life, empathy, counsellor

Abstract 1D: ICSDG0312

ROLE OF SECONDARY TRAUMA SELF-EFFICACY IN PREDICTING SECONDARY TRAUMA AND JOB BURNOUT AMONG DOCTORS DEALING WITH COVID-19 PATIENTS

*Wajiha Kiran[1], Nuzhat-ul-Ain[2]

[12] *Centre for Clinical Psychology, University of the Punjab, Lahore, Pakistan*

***Corresponding Author's Email: wajihakiran352@gmail.com**

COVID 19 pandemic has been a source of enormous physical and psychological suffering in people. Doctors being frontline workers have to deal with such complicated and traumatic situations on daily basis. These stress inducing situations can contribute to secondary trauma stress and burnout in doctors dealing with coronavirus patients. The present study aimed **t**o examine the impact of secondary trauma self-efficacy on levels of burnout and secondary traumatic symptoms in doctors dealing with coronavirus patients. A cross sectional study design was used and a sample of 78 doctors, who were involved in dealing with coronavirus patients, participated in the study. The data was collected through online google form using purposive sampling technique. Compassion Fatigue scale (short form) (CFS-SF) and Secondary Trauma Self-Efficacy scale (STSE) were used in this study. Pearson Product Moment Correlation and Hierarchical Multiple Regression analysis were used for testing hypotheses. The results showed that there was significant negative relationship of Secondary Trauma Self-Efficacy with job burnout and secondary trauma symptoms. Moreover, Secondary Trauma Self-Efficacy significantly predicted 19 % variance in secondary trauma symptoms and 17 % variance in job burnout among doctors dealing with COVID-19 patients. It was concluded that dealing with coronavirus patients can lead to secondary trauma symptoms and burnout in doctors but secondary trauma self-efficacy can contribute as a significant protective factor against secondary trauma symptoms and job burnout.

Keywords*:* Secondary Trauma Self efficacy, Compassion Fatigue, Secondary Trauma, Job Burnout, Doctors, COVID-19

QUALITY OF PATIENTS CARE IN PAKISTAN: MEDIATING ROLE OF JOB BURNOUT AND LIFE SATISFACTION BETWEEN EMOTIONAL INTELLIGENCE, SPIRITUAL INTELLIGENCE, PSYCHOLOGICAL OWNERSHIP AND CARING BEHAVIOR OF NURSES

Dr Saleha Javed[1] & Dr Ahmad Qammar[2]

1- Adjunct Faculty Punjab University, Lahore, Pakistan

2- Assistant Professor, COMSATS University, Lahore Campus, Pakistan

***Corresponding Author's Email: saleha.appsy@pu.edu.pk**

Quality healthcare has its significance around the world especially for its consumers. Professional medical caregivers are evaluated on their standards of medical procedures and service quality. The aim of the study was to propose a model predicting antecedents of the caring behavior of the nurses inclusive of EI (emotional intelligence), SI (spiritual intelligence), PO (psychological ownership), BO (job burnout), LS (life satisfaction) and the caring behavior of nurses (CB). A sample of 678 nurses in practice from public and private hospitals of Lahore completed the questionnaire that captured six constructs. Besides nurses, 600 patients from 3 public and 5 private hospitals also participated in the study and noted their overall satisfaction with the hospital and the service provided by the nurses. The research was conducted during March 2019 to March 2020. The key findings are that there is no significant relationship between SI and CB of nurses. There is a positive influence of EI on CB. PO has a positive effect on caring behavior. JB and LS does not mediate the relationship between SI and CB. JB and LS mediate the relationship between EI and CB. JB and LS mediate the relationship between PO and CB. Administrators and professional healthcare providers must consider the relationship between the soft factors discussed in this research with greater attention as they are highly perilous to the quality of health care in the nursing arena. The basic nursing training and curricula must comprise of these factors.

Keywords: Spiritual intelligence, emotional intelligence, psychological ownership, burnout, life satisfaction, caring behavior, nurses, public and private hospitals, healthcare providers

UNDERSTANDING THE HEALTHCARE SEEKING BEHAVIOR OF TRANSGENDER PATIENTS IN KHYBER PAKHTUNKHWA REGION OF PAKISTAN

Prof Dr. Abdul Majid[1], Prof Dr. Muhammad Yasir[2] & *Dr. Muhammad Ali[3]

[1]*Department of Management Sciences, The University of Haripur, Pakistan*

[2]*Department of Management Sciences, Hazara University, Pakistan*

[3]*The University of Haripur, Pakistan*

***Corresponding Author's Email: mohd_ali_1@hotmail.com**

Health seeking behaviour refers to the behaviour of people towards seeking their own health through provided health services. This study investigated the health-seeking behaviors of transgender patients in three districts of Abbottabad, Mansehra, and Haripur in the Khyber Pakhtunkhwa region, Pakistan. The transgender community in Pakistan as a marginalized group is at high risk of avoiding health seeking behavior due to the lack of general and specialized medical treatment to cater to their medical needs. This study adopted an ethnographic approach to investigate the health-seeking behaviors of transgender community in the Khyber Pakhtunkhwa region of Pakistan. The data collection took place between October 2021 and January 2022. The data collection process included participant observation, in-depth conversation, and semi-structured interviews with the members of the transgender community who accessed healthcare for medical conditions and the healthcare practitioners that provided medical consultation and treatment to transgender patients. The analysis of the data collected resulted in the emergence of themes of the knowledge gap, societal taboos, and transgender position in society. The core theme identified by the researcher was social inequality. Lack of access to basic health facilities for transgender community is attributed to the discriminatory societal treatment received by them. It is also attributed to the perception of transgender individuals regarding the societal and cultural attitudes towards their community and the lack of information to access basic facilities of life.

Keywords: Transgender, social inequality, ethnography, health seeking behavior

UNVEILING THE PSYCHOLOGICAL CORRELATES OF DÉJÀ VU PHENOMENON IN THE CONTEXT OF PAKISTAN

Syeda Ramish Batool[1], Fatima Rabia Sajjad[2], Noman Sabir[3] & Amina Tarar[4]

1-4 Department of Psychology, Government College University Lahore

***Corresponding Author's Email: ramibatool77@gmail.com**

Déjà vu (DV) is a common, enthralling and enigmatic human experience. Both healthy and unhealthy individuals experience this fascinating phenomenon. This feeling of inappropriate familiarity has fascinated both psychologists and neuroscientists for over a century, but still there is no widely agreed neurological and psychological explanation for the phenomenon of non-pathological DV. The current study investigated the relationship of déjà vu with extra sensory perception, dream memories and experiences, and stress. Gender differences in the experience of déjà vu were also examined in the study. A sample of 498 (349 female and 149 male) healthy individuals was recruited via a convenient sampling technique through online Google form. The age of sample ranged between 15 and 75 years that comprised three groups (viz., 15-25, 45-55 and 65-75 years). Inventory for Déjà vu Experiences Assessment (Sno et al., 1994), The Memory Experiences and Dreams questionnaire (Horton & Conway, 2009), Extra Sensory Perception Scale (Stanovich et al., 1989), and Perceived Stress Scale (Cohen et al., 1994) along with demographic sheet were used to assess the study variables. A correlational research design was used. The findings of the study showed that déjà vu had significant negative correlations with memory experiences and dreams (r=-.21, p=.001), and rumination and dream vividness (r=-.13, p=.001; r=-.18, p=.001) respectively, and positive correlations with extra sensory perception and stress (r=.135 p=.001 =.17, p=.001). Stepwise regression revealed that 7 percent variance in déjà vu was accounted by stress, memory experiences and dreams, and extra sensory perception collectively. t-test showed that there were no gender differences in déjà vu. The second part of I-IDEA indicated that there were some qualitative differences in déjà vu experience when compared with the studies conducted in the west. Its shows that déjà vu is experienced differently in different cultures. Implications of study were also discussed.

Keywords: Déjà vu, extra sensory perception, dreams, stress, rumination

MENTAL HEALTH RISK AMONG ADOLESCENTS AND YOUNG ADULTS: A CONCEPTUAL UNDERSTANDING

*Namood-e-Sahar[1] & Shakir Hussain[2]

[1]National Institute of Psychology, Quaid-i-Azam University Islamabad

[2]Department of Psychology, Karakorum International University Gilgit

***Corresponding Author's Email: namood.sahar@nip.edu.pk**

World statistics demonstrate that around 970 million people around the globe suffer from mental health problems, a major proportion of which comprised of adolescents and young adults. Also, because of increased mental health issues the problems like substance use, suicide, depression, anxiety, and stress are also increasing. The conceptual understanding of mental health risk is thus of great importance to make an attempt for ensuring wellbeing. The objective was achieved through meta-analytic review of recent five years' literature. It highlighted that adolescents and young adults possess a high risk of mental health issues, signified by elevated level of depression, anxiety, and stress. This state could be attributed to the challenges faced by adolescents and young adults during stages of transition. The literature also demonstrated that factors like transpersonal gratitude, emotional intelligence, and life contentment could help reduce depression, anxiety, and stress. Also, there exist evidence of gratitude contributing in development of emotional intelligence and life contentment. In conclusion it is conceptualized that transpersonal gratitude, emotional intelligence, and life contentment as protective factors against mental health risk. The empirical evidences for this conceptualization could help evaluate the significance of proposed variables in reducing mental health issues which would assist to generate an intervention plan for reduction of mental health risk among adolescents and young adults.

Keywords: Mental health risk, wellbeing, adolescents, young adults, transpersonal gratitude

LIVED EXPERIENCES OF FAMILIES OF HOMICIDE VICTIMS AND COPING STRATEGIES

Ramzana Kausar[1] & Kiran Akbar Khan [2]

1-2, Clinical Psychology Unit, Government College University Lahore Pakistan

***Corresponding Author's Email: ramzanakhanjani@gmail.com**

This phenomenological qualitative study examined the coping strategies of the rest of the family members after losing (murder) loved one in the city of Kasur Punjab Pakistan. Qualitative interviews were conducted with 6 families (three male and three females, ages 18-60). Snow ball purposive sampling technique was used for sample recruitment. Only adult family members were selected for interview from their houses. Interpretative phenomenological analysis (IPA) was used to examine the coping strategies of homicide victims. Thematic analysis was adhered potential themes from the data. A superordinate theme Coping strategies was derived from this study after qualitative analysis the interviews in-depth, and with that, more sub-themes were constructed avoidant coping strategy and spiritual coping strategy. Results indicated that it was difficult for the survivors to get back to normal after losing their loved ones. They had poor coping stratifies were used for dealing with psychosocial issues. The findings suggest and recommendation that there is a need for procedures, resources and services that would be useful to those who have lost loved ones by homicide, including educators, counselors, psychologist, practitioners and may be beneficial to medical respondents.

Keywords*:* Families of Homicide Victims, Coping Strategies, Avoidant Coping Strategy, Spiritual Coping Strategy and Psychosocial issues.

LEVELS OF SELF-CRITICISM, MOTIVATION, AND SELF-GENERATED STRESS AMONG COMPETITIVE EXAM ASPIRANTS

Swaira Shahbaz[1] & Irum Naqvi[2]

1-2 National Institute of Psychology, QAU Islamabad, Pakistan

Corresponding Author's Email: Suchinaz1999@gmail.com

The present study was aimed to examine the relationship between levels of self-criticism, motivation and self-generated stress among competitive exam aspirants. Moreover, it also focused to determine the effect of demographics (i.e., age, gender, family system, monthly income, education, and duration of preparation) on study variables among competitive exam aspirants. Sample (*N*=160) consisted of men and women from universities and academies from Rawalpindi and Islamabad with the age range of 21-32 (*M*=25.4, SD=2.4) which is the specific age range for CSS/PMS exam from Civil Services of Pakistan. The major constructs of the study were assessed using Levels of Self-Criticism scale, Global Motivation Scale, Self-Generated Stress Scale. Findings indicated that self-generated stress is linked negatively with internalized self-criticism and intrinsic motivation. Results also stated that there is positive association between comparative self-criticism, extrinsic motivation and self-generated stress among competitive exam aspirants. Significant group differences were also found for family monthly income, and education on study variables. It was found that that aspirant having education of BS suffer less motivation relatively as compared to MPhil students. Mean differences among groups showed that aspirants with low family monthly income scored high on self-criticism and motivation scale which means that aspirants with low family monthly income criticized themselves more and have high levels of intrinsic motivation as compared to the aspirants with relatively high family monthly income. Non-significant gender differences were found on the study variables. Practical implications were discussed and suggestions for further research were made.

Keywords: Self-Criticism, Self-Generated Stress, Motivation**,** Extrinsic and Intrinsic Motivation

CORONAVIRUS DISEASE 19 (COVID-19) AND ITS IMPACT ON SUSTAINABLE DEVELOPMENT GOAL 3

Dr. Rahul Agerwal

CARE Hospital, Hyderabad, India

Corresponding Author's Email: dr.rahul.agrawal@carehospitals.com

The current pandemic was sudden and has uncertain long-term impacts. All developmental activities have been suddenly shelved and stalled and all the focus is on repairing and combating the damage it caused. The ambitious Sustainable Development Goals (SDGs) has also suffered a similar setback. Adopted by the global community in 2015 to improve the life of all the citizens, it was just gaining its pace when the pandemic struck. The interrelated and complimentary health related goals (SDG-1,2,4,5,6,13,14,15,17) that have a direct impact on SDG 3 have also been adversely affected. The healthcare system has been overwhelmed in terms of our preparedness, infrastructure, competence, outreach and restoration of the pre-pandemic efforts to attain the SDG 3. The current pandemic has negatively impacted the health of the vulnerable- mother and baby, children and the elderly. Logistics and supplies of medicines and equipment have been hit by global trade lockdowns. The pandemic has reduced the household income of an average citizen either by job, functionality or life lost, leaving a gaping mismatch on healthcare availability and affordability. The world also witnessed diminishing supply of medical resources for chronic and non-communicable diseases in terms of medications, laboratory services and healthcare personnel availability. Even in the health care sector all focus has been shifted on research, procurement and development of COVID-19 related resources namely PPEs, masks, drugs, vaccines etc. sidelining other equally impactful diseases. Preventable communicable diseases like polio, measles, AIDS, TB, malaria water, air and food borne diseases are expected to rise. The current pandemic is also predicted to increase the Maternal and Infant Mortality Rate. Lastly, the rise in the cases of mental disorders and substance abuse forecasts a daunting task and extraordinary collective efforts to attain the goals set for the year 2030.

Keywords: Sustainable Development Goals (SDGs), COVID-19, pandemic

SELF-OBJECTIFICATION, COLORISM AND SOCIAL APPEARANCE ANXIETY IN YOUTH

Mamoona Laiba[1]; Ms. Kiran Akbar Khan[2]

[1, 2] *Department of Psychology, Government College University, Lahore*

***Corresponding Author's Email: sheikhmona8@gmail.com**

The present study aimed to inquire the relationship between self-objectification, colorism and social appearance anxiety in youth. It also intended to find out the predictors for social appearance anxiety and to explore the gender differences. The number of participants in these study were (N = 243) with age range from 15-25 years. The sample consisted of 122 female participants and 121 male participants. Research design used in this study was correlational research design. Purposive and snowball sampling strategy was used for sample recruitment. The tools used in this study to collect the data were Social Appearance Anxiety Scale (Hart et al., 2008), Self-Objectification Questionnaire (Noll & Fredrickson, 1998) and the In-Group Colorism Scale (Harvey, Tennial, & Banks, 2017). The statistical analyses used in this study were Pearson Product Moment Correlation, Linear Regression, Independent Sample T-Test and ANOVA. The findings of correlation showed that there is a significant positive correlation between colorism and social appearance anxiety ($p < .01$) and also between self-objectification and social appearance anxiety ($p < .01$). The findings of linear regression revealed that colorism positively predict social appearance anxiety ($\beta = .50$, $P < 0.01$) and likewise that self-objectification also predict social appearance anxiety ($\beta = .37$, $P < 0.01$). The findings of T-test revealed non-significant mean differences of gender on self-objectification with $t (241) = -.386$, $p < .05$, colorism objectification $t (241) = -1.73$, $p < .05$ and social appearance anxiety $t (241) = -.887$, $p < .05$. Moreover, it also revealed non-significant mean differences of marital status on colorism with $t (241) = -1.75$, $p > .05$, social appearance anxiety $t (241) = -1.05$, $p < .05$, and self-objectification $t (241) = .553$, $p < .05$. Results of ANOVA revealed significant mean differences of socioeconomic status on social appearance anxiety with $F (2, 240) = 1.039$, $p > .05$ and residence area on social appearance anxiety with $F (2, 240) = .65$, $p > .05$. This study adds to the literature of self-objectification, colorism and social appearance anxiety, and it is the first

research that is conducted to investigate the impact of self-objectification and colorism on social appearance anxiety among Pakistani youth.

Keywords: social appearance anxiety, colorism, self-objectification

RISK AND PROTECTIVE FACTORS OF MARITAL QUALITY AMONG PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

[1]Arooj Zahra Rizvi & [2]Prof. Syeda Shahida Batool, PhD

[1, 2] Department of Psychology, Government College University Lahore

***Corresponding Author's Email: shahidaphd@yahoo.com**

Marital quality is an assessment of the relationship between spouses. When a child is born in a family with disability, the relationship between both parents becomes strained. The objective of the current study was to assess the risk and protective factors of marital quality among the parents of children with autism spectrum disorder (ASD). Parents having a child with ASD (N=600) with equal distribution of fathers and mothers were recruited from different Autism centers of Lahore. Data were collected via demographic datasheet, Couple Satisfaction Index (Funk & Rogge, 2007) Defensive Style Questionnaire-40 (Andrews, Singh & Bond, 1993), Sense of Coherence Short Form-13 (Antonovsky, 1993), Berlin Social Support Scale (Schwarzer & Schulz, 2000) and Perceived Autism Related Stigma by Association Scale (Rizvi & Batool, 2020). The results of correlation analysis demonstrated that marital quality had significant positive relationship with social support and sense of coherence and negative correlation with stigma by association and neurotic type of defense mechanism. Multiple regression analysis showed that stigma by association, neurotic type of defense mechanism, sense of coherence and social support were significant predictors of marital quality among parents of children with ASD along with gender and income (R^2 =16***). Implications of the study in the context of improving marital quality of parents of children with ASD have been discussed.

Keywords: social support, sense of coherence, stigma by association, marital quality, parents

DO GRIT AND INTERNAL LOCUS OF CONTROL MATTER IN THE PSYCHOLOGICAL WELL-BEING OF DIFFERENTLY ABLED INDIVIDUAL?

[1]Prof. Syeda Shahida Batool, PhD, [2]Nimra Munawar, & [3]Seemab Shafiq

[1,2,3] Department of Psychology, Government College University Lahore

***Corresponding Author's Email: shahidaphd@yahoo.com**

This study was carried out to examine the relationship of demographic variables (viz., gender, education, and types of disability), and intrapersonal variables (viz., internal locus of control, and grit) with psychological well-being among differently abled individuals. A sample of 156 differently abled (viz., deaf, blind, and physically disabled), including (n=86 male and n=70 female) individuals, with age range of 15-35 years was taken. A purposive sampling technique was used for data collection through Google forms. Ryff's Psychological Well-being Scale Grit-17 item scale, and Internal Locus of Control scale were used. Result showed that grit and internal locus of control significantly predicted psychological well-being (R^2= .17). Male participant showed significantly higher psychological well-being than female participant. Multivariate analysis indicated significant mean differences on psychological well-being in terms of types of disabilities. It was concluded that by improving the grit and internal locus of control, well-being of differently abled individual could be enhanced. This study has important implication in special education institution.

Keywords: grit, internal locus of control, psychological well-being, differently abled individual

ASSESSMENT OF RISK-PERCEPTION AND ADOPTION OF SAFETY-MEASURES DURING COVID-19 PANDEMIC IN PAKISTAN

Muneeba Shakil[1], Shameem Fatima[2], Amina Muazzam[3], Maryam Amjad[4], Saba Javed[5] and Anna Visvizi[6]

[1, 2, 4] *Department of Humanities, COMSATS University Islamabad, Lahore Campus*

[3]*Department of Applied Psychology, Lahore College for Women University*

[5]*FoIT Department, University of Central Punjab*

[6] *Effat University, Jeddah, KSA*

[6] *SGH Warsaw School of Economics, Warsaw, Poland*

***Corresponding Author's Email: aminamuazzam3@gmail.com**

This coronavirus disease's impact, effect, and spread largely depend on how people behave and react mindfully. According to the knowledge, attitude, and practices (KAP) theory, the only way to war against COVID-19 is to ensure allegiance for all Pakistanis' controlled maneuvers nationwide. This study aimed to explore Pakistani's perception of the economic and psychological risks related to COVID-19 and the association of perceived risks with adopting safety measures. From March 15 to June 15, 2020, an online survey was conducted among 915 Pakistanis by using a self-developed survey questionnaire. The analysis revealed that more participants agreed that (i) Covid 19 is associated with economic threats to the overall economy, (ii) social media and the Government is causing more psychological threat than the virus, and (iii) personal and imposed safety measures should be observed during the spread of the virus. Moreover, regression analysis indicates that economic and psychological threats were significantly and positively correlated with personal safety measures, but not government-imposed safety measures. Economic and Psychological threats are significant predictors of personal safety measures. To control this pandemic, the determination of safety measures practiced by people and their associated factors are of great importance. This study is helpful as it is the first to inform about the threats associated with this pandemic and their association with safety measures practiced by Pakistan's population.

Keywords: Pakistan, COVID-19, safety measures, perceived economic risk, perceived psychological risk

DETERMINANTS OF DECENT WORK AND ITS OUTCOMES; THE ROLE OF SOCIAL SUPPORT AND VOCATIONAL SUPPORT FOR DOMESTIC WOMEN WORKERS

Muhammad Yasir[1], Nadeem Agha[2], Abdul Majid[3], & Abdul Basit Durani[4]

[1] *Department of Management Sciences, Hazara University Mansehra, Pakistan*

[2] *PhD Scholar, Department of Management Sciences, Hazara University Mansehra, Pakistan*

[3] *Chairman Department of Management Sciences, The Haripur University Haripur, Pakistan*

[4] *Chairman Department of Management Sciences, Hazara University Mansehra, Pakistan*

***Corresponding Author's Email:**

muhammadyasir@hu.edu.pk

Drawing from the psychology of working theory in the context Domestic Women Workers in Pakistan, the aim of this study is to explore the relationship between the determinants of decent work as well its outcomes and to see significance role of social support and vocational support for positive psychology outcomes and career shift. This study is a cross-sectional as an adopted questionnaire is used for data collection. A sample of 180 Domestic women in Hazara division, Pakistan is selected. Based on structural equation modeling where path between determinants of decent work and job outcomes, as well the moderating role of social Support and vocational support is tested. Expected results will reveal that social and vocational support significantly moderate the relationship between determinants of decent work and its outcomes. With social support and vocational support one can have a career change as well could have better psychological outcomes. This study validate the psychology of working theory in the context of domestic women workers as well has implications for policy makers and other stakeholders.

Keywords: Domestic Women workers, Decent Work, Psychology of Working Theory, SEM

RELIGIOUS COPING AND MENTAL WELL-BEING OF YOUNG ADULTS DURING COVID-19: THE BOOSTING ROLE OF PHYSICAL HEALTH STATUS

[1]Mahnoor Arshad, [2]Dr Shameem Fatima, Zunaira Khalil[3]

Department of Humanities, COMSATS University Islamabad, Lahore Campus.

*Corresponding Author's Email:

shameemfatima@cuilahore.edu.pk

The literature describes the general positive role of religious coping in mental well-being. The study extends this focus by examining whether religious coping positively regulates cognitive emotional responses to boost mental well-being during COVID-19 pandemic. A sample of 200 young adults (M age = 21.43, SD = 2.96; age range 19–36 years) was selected and assessed on measures of negative and positive religious coping, mental well-being, and two emotion regulation strategies namely positive reappraisal and self-blame. Results showed that positive religious coping was directly associated with mental well-being and positive reappraisal mediated and explained this direct association. Also, the interactive roles of gender and physical health status were analyzed as moderators and it was found that positive religious coping was strongly indirectly associated with mental wellbeing through stronger positive indirect effects of positive reappraisal for men compared to women and for participants with better physical health compared to those with poor physical health. However, negative religious coping did not associate with mental well-being but significantly and positively linked with self-blame, a negative emotion regulation strategy. Results suggest that positive protective role of positive religious coping in regulates emotions to enhance mental well-being in healthy young adult men.

Keywords: Religious coping, Mental wellbeing, Emotion regulation, Physical health, Young Adults

EFFECTS OF CARTOONS ON MENTAL AND BEHAVIORAL RESPONSES OF CHILDREN DURING COVID19 PANDEMIC.

[1]Amina Shamas, [2]Raumish Masud Khan, [3]Noor e Saher

[1]BS (hns) from Department of Applied Psychology, Kinnaird College for Women, Lahore

[2]Assistant Professor, Department of Applied Psychology, Kinnaird College for Women, Lahore.

[3]Center for Clinical Psychology, University of Punjab, Lahore.

***Corresponding Author's Email: raumishmasudkhan@gmail.com**

Within months, COVID-19 had spread to nearly every country on the planet. After being labeled a worldwide pandemic by the World Health Organization, the virus' rapid spread had a significant impact on people's lives. There has been very little attention paid to the importance of psychological health and well-being in these circumstances. People's mental health emotional, social, psychological states were badly affected due to pandemic. Everybody was involved in different screen activities as mobile phones TV and other such gadgets were the only source of entertainment during the rise in pandemic. Children were also involved in different screen activities like playing computer, mobile games which affected their mental and psychological health. The current study was conducted to better understand the impact of cartoons on the behavioral and mental response of children during the COVID-19 Pandemic, this study is being conducted. This study employed a combination of descriptive and qualitative research methods. In-depth interviews, focus groups, field notes, and participant observation was used to gather data. The interviews contained open-ended questions and research design was phenomenology. Purposive sampling was used because it develops a good correspondence between research and participants and allows the researcher to judge the participants experiences. Additionally, other behaviors such as attitudes, sentiments and expressions were gathered for the qualitative investigation. The results of this study provided us with three major superordinate themes involving psycho-somatic, cognitive and behavioural consequences to excessive cartoon viewing in pandemic caused by COVID-19. The two theories that were consistent with the analysis of the study were cultivation theory and social cognitive theory.

Keywords: Cartoons, Mental and Behavioral Response. Children, COVID-19

SUSTAINABLE INTERIOR DESIGN FEATURE TOWARD REDUCED WORKPLACE STRESS

Sabahat Sana[1], Farzana Rashid[2], Mayraj Fatima[3], Mohsin Nazir[2]

[1]University of the Punjab, Lahore, Pakistan

[2]Lahore College for Women University, Lahore, Pakistan

[3]NCBAE, Lahore, Pakistan

***Corresponding Author's Email: sabahatsana@hotmail.com**

The thermal environment is one of the main factor of sustainable physical workplace design that influence thermal comfort and, consequently, the productivity of occupants in workplaces. Since the ages, research has described the connection between thermal comfort and productivity. If the physical work place design does not cater the needs of employees it becomes a stress factor at job and can be reflected on the productivity in multiple ways. The goal of this study were to identify the effect of indoor air temperature on stress level as perceived by employees according to gender and age and link these factors with their performance. The research adopted a mix method approach using survey questionnaires, face to face interviews and on site pictures taken from the software houses of Lahore. As the 150 questionnaires were circulated, out of which 133 were filled. The technique of the sampling in order to collect the data was Random Sampling. Results were analyzed through descriptive statistics, coefficient correlation, t-test, themes and subthemes. Study shows that temperature was one of the influential factor of interior design features which affect stress level and productivity for both age (>35 & <35) groups and genders. A strong relationship was found between indoor air temperature and employees 'performance.

Keywords: Sustainability, Interior design features, Thermal comfort, Workplace stress, Physical workplace design

SELF EFFICACY FOR MANAGING CHRONIC DISEASE AND MEDICATION ADHERENCE IN PATIENTS WITH RHEUMATOID ARTHRITIS

Kiran Javaid[1], Zehra Mohsin[2]

[1]*Department of Applied Psychology, Govt. Fatima Jinnah College, Chuna Mandi, Lahore.*

[2]*Department of Applied Psychology, Govt. Fatima Jinnah College, Chuna Mandi, Lahore*.

***Corresponding Author's Email: zk5785460@gmail.com**

The aim of the present study was to find out the relationship between self efficacy for managing chronic disease and medication adherence in patients with rheumatoid arthritis. It was hypothesized that there is likely to be a positive relationship between self efficacy for managing chronic disease and medication adherence in patients with rheumatoid arthritis. It was also hypothesized that self efficacy for managing chronic disease and medication adherence are likely to be higher in men then in women patients with rheumatoid arthritis. In this study correlational research design was used. The sample of (N=100) which included patients of rheumatoid arthritis. Sample was collected through purposive sampling strategy and convenient sampling strategy. Data was collected from the public and private hospitals of Lahore. Assessment protocol included: Demographic form, Self Efficacy for Managing Chronic Disease Scale (Lorig, 2001) and General Medication Adherence Scale (Abbas et. al, 2018). Pearson Correlation and Independent Sample t-test and linear regression were used for data analysis. Analyses were done by using Statistical Package for Social Sciences (SPSS-21). The findings of the study revealed that there was a positive significant relationship between Self Efficacy for Managing Chronic Disease and Medication Adherence in patients with rheumatoid arthritis. There was a significant mean difference between men and women patients with rheumatoid arthritis on Self Efficacy for Managing Chronic Disease. Men showed significant higher Self Efficacy for Managing Chronic Disease than women. There was a significant mean difference on Medication Adherence in patients with rheumatoid arthritis. Men showed significant higher scores on medication adherence than women. The regression analysis for Self Efficacy for Managing Chronic Disease showed a significant model of predictor for General Medication Adherence. The regression analysis for demographic variables showed a significant model of

predictor for General Medication Adherence. The finding of these studies has practical implications more awareness programs would be arranged for rheumatoid arthritis patients.

Keywords: Self Efficacy for Managing Chronic Disease, General Medication Adherence, Rheumatoid Arthritis

TRANSLATION, ADAPTATION AND VALIDATION OF STIGMA CONSCIOUS QUESTIONNAIRE FOR WOMEN UNDERGOING ASSISTED REPRODUCTIVE TECHNOLOGY TREATMENT

Maham Imtiaz & Prof. Syeda Shahida Batool, PhD

Department of Psychology, Government College University Lahore.

***Corresponding Author's Email: dr.shahidabatool@gcu.edu.pk**

Aim of the present study was to translate, culturally adapt and validate Stigma Conscious Questionnaire to measure stigma consciousness among women undergoing assisted reproductive technology treatment in Pakistan. After translation and cross language validation, the psychometric properties of the scale were established. Confirmatory factor analysis (CFA) showed good model fit to the data (Chi-square = 37.83 (*df* =30); *p* = .000; chi-square/*df* =1.26 ; RMSEA =.03; GFI =.97; CFI = .93;AGFI= .95 and the TLI = .90). Analysis showed different results from the original English version of the scale, which led us to conclude that stigma consciousness is differently experienced in Pakistani culture among women undergoing assisted reproductive technology treatment.

Keywords: stigma conscious, back-translation, cross-cultural validation.

PREDICTORS OF PSYCHOLOGICAL WELL-BEING IN WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

Mahnoor Shahbaz Butt [1*], Dr. Farhat Jamil [2], Dr. Ruhi Khalid [3]

Institution of Psychology, Beaconhouse National University, Pakistan

***Corresponding Author's Email: Mahnoorshahbazbutt@gmail.com**

Polycystic Ovarian Syndrome affects the self-esteem and psychological well-being of the patients, but little has been researched on the role of spousal support and the relationships among these variables, especially in Pakistan. This quantitative study investigates these relationships in women with PCOS and the impact of PCOS related fertility status on these relationships. The sample of 151 was collected through purposive sampling from patients at gynecology OPDs or clinics. The questionnaires included a demographic form, Support in Intimate Relationships Rating Scale, Rosenberg's Self-Esteem Scale, and Psychological Well-Being Questionnaire. The questionnaires were filled by two groups of women with PCOs, one without children and other group with children. Findings based on the questionnaire, suggested a significant relationship between spousal support and self-esteem, and a significantly positive correlation between spousal support (predictor) and psychological well-being, while self-esteem predicts some dimensions of psychological well-being. Spousal support was average, nearly the same in both groups. Self-esteem was found to be affected, however, women with children had higher level of self-esteem and psychological well-being, than women without children. It can be implied that increased spousal support and self-esteem contributes to improve psychological well-being.

Keywords: Polycystic Ovarian Syndrome, Self-esteem, Spousal support, Psychological Well-being, Fertility, Infertility.

BODY IMAGE DISSATISFACTION, DEPRESSION AND QUALITYOF LIFE IN WOMEN WITH POLYCYSTIC OVARY SYNDROME

Memoona Ahmed[1], Nudra Malik[2]

Department of Applied Psychology, Lahore College for Women University, Lahore.

***Corresponding Author's Email: memoonaahmed6@gmail.com**

The purpose of this study was to examine the relationship among polycystic ovary syndrome (PCOS) quality of life, body image dissatisfaction and depression in women having PCOS. It was a cross sectional analytical study. The study was conducted at the department of gynaecology of two government hospitals of Lahore from February 2020 to April 2020. Using convenience sampling, 150 PCOS diagnosed women with age ranging from 18-40 years were selected. Beck depression inventory, polycystic ovary syndrome questionnaire and body shape questionnaire were used for collection of data. The results revealed PCOS quality of life and body image dissatisfaction to be significant predictors of depression ($p<.05$) in women. Women having depressive symptoms had low quality of life scores and infertility was found to be the quality of life domain which PCOS affected the most followed by excess body weight and hirsutism. Women having polycystic ovary syndrome experience numerous physiological and psychological challenges, however, the psychological component of this complex condition largely goes unnoticed. It is recommended that care of these women should adopt a holistic approach and must include behavioural health professionals to provide comprehensive care.

Key words: Body Image Dissatisfaction, Depression, Infertility, Polycystic Ovary Syndrome, Women

DEVELOPMENT AND VALIDATION OF BODY SHAME SCALE FOR OBESE PEOPLE

Najwa Bashir[1], Dr. Nasreen Akhtar[2]

Department of Psychology, Government College University, Lahore, Pakistan.

***Corresponding Author's Email: njwidrees19@gmail.com, nasreenakhtar51@gmail.com**

The aim of the current study was to develop and validate a scale that can be used for measuring the body shame of obese people within Pakistani social context. In the first phase of scale development 24 individuals having a BMI of 30 or above were interviewed in order to conceptualize the construct of body shame. A pool of 40 items were generated. After taking reviews from 4 experts, 36 items were finalized. A five-point Likert scale was generated for taking responses of obese people on these items. In the second phase of scale development the psychometric properties of the scale were established. Initially the data was collected from 150 young adults falling in obese criteria. Exploratory factor analysis was run which revealed 15 domains initially. 36 items were finalized after running EFA. Confirmatory factor analysis was done in order to confirm factors which revealed 10 factors initially, however, they were reduced to 5 named as fear of judgment, body appearance related concerns, criticism on body appearance and health related concerns, looks related shame, and impact of peoples' opinion and social media. This was followed by the establishment of convergent and divergent validity of the scale. Convergent and divergent validity of the scale was found to be satisfactory with one sub scale of Bodily Pride and Shame Scale (r= .402*, p= <.05), and Body Appreciation Scale (r= -.487**, p= >.01) respectively. This is a reliable and valid measure for measuring body shame in obese people within Pakistani context.

Keywords: body shame, body shaming, mental health, mental well-being, psychological health

EXPLORING THE PHENOMENON OF PSYCHOSEXUAL MATURITY AMONG WOMEN WITH CHILD MARRIAGES: A GROUNDED THEORY PERSPECTIVE

Aneela Aziz[1]* and Dr Irum Naqvi[2]

National Institute of Psychology, QAU, Islamabad

***Corresponding Author's Email: aneela.aziz@nip.edu.pk**

The women with child marriages face hardships in their early years of marriages that often result in developmental issues associated with the psychosexual maturity required for a successful marital life in adulthood. The present study is based on the identification of indicators of psychosexual maturity that specifically affect women with child marriages by following grounded theory approach. The grounded theory method was used in the present study to identify those indicators. By using this method, the in-depth interviews of 8 women with child marriages having age range of 17-57 (M = 37.38, SD = 12.52) from rural and urban areas of Islamabad were approached using snowball sampling. The indicators of psychosexual maturity explored were psychological and sexual maturity in the literature about marriage. The results were obtained in the present study after analyzing the open, axial, and selective codes for psychosexual maturity. The axial codes of psychosexual maturity were noted as religious beliefs and family planning attitude, lack of in-laws and husband's family planning support, the impact of infidelity and mental illness on wife's resistance to a sexual relationship, and interventions to improve trustworthiness in a sexual relationship. The results indicate that these women are facing hardships that are a major hindrance in determining their marital quality. These issues of psychosexual maturity need special consideration for reducing the risks of marital problems faced by these women. The present results can help to understand the role of psychosexual maturity in marriage for planning some future interventions for improving the marital quality of women with child marriages.

Keywords: Psychosexual maturity, women with child marriages, mental illness, infidelity, trustworthiness, marital quality, sexual relationships

POSITIVE PERSONAL RESOURCES AND MENTAL WELLBEING DURING COVID-19: THE EXPLANATORY ROLE OF COGNITIVE REGULATION

Dr Shameem Fatima[1], Mahwish Abbas[2], Maryam Amjad[3]

Department of Humanities, COMSATS University Islamabad, Lahore Campus.

***Corresponding Author's Email: shameemfatima@cuilahore.edu.pk**

It is known that COVID-19 pandemic has been associated with many challenges and adversities. Better adaptation to the adversities of the pandemic needs psychological strengths and personal positive traits to enhance mental wellbeing in the absence of external resources. This study is aimed at assessing the role of two positive personality traits, resilience and gratitude, in mental wellbeing of young adults and the explanatory role of cognitive emotion regulation strategies in this association during the pandemic time. A sample of young adults (N= 203; 103 women; M age = 30.17, SD=12.63) completed the study measures. Results revealed significant indirect associations of gratitude and resilience with mental wellbeing explained through positive reappraisal. Only positive reappraisal, but not refocus on planning accounted for a significant variance in the associations of resilience and gratitude with mental wellbeing. In addition, gender significantly interacted with resilience to predicted positive reappraisal; and the conditional indirect associations between resilience, positive reappraisal, and mental wellbeing were stronger form women compared to men. Findings highlight the relevance of positive personality traits and positive reappraisal in wellbeing during the pandemic in the presence of limited availability of external resources and suggest the potential utility of interventions aimed at improving resilience, gratitude, and positive emotion regulation to improve wellbeing of young adults.

Keywords: Resilience, Gratitude, Mental Wellbeing, Positive Reappraisal, Refocus on Planning

Abstract ID: ICSDG0316

THERAPEUTIC SPECTRUM OF HERBAL OIL-LOADED ORABASE FORMULATION FOR LOCALIZED DELIVERY AGAINST ORAL CANDIDIASIS: IN-VITRO AND IN-VIVO STUDY

Hafiza Ayesha Hameed[1], Humaira Majeed Khan[1], Muhammad Umar Zafar Khan[2]

1 Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Lahore 54000, Pakistan

2 Institute of Microbiology, University of Agriculture, Faisalabad

***Corresponding Author's Email: drhumaira74@gmail.com**

The current study encompasses the formulation of herbal orabase for oral therapy against Candida albicans. To accomplish the purpose of formulating orabase, six (eucalyptus, clove, lemongrass, orange, patchouli, and cinnamon) essential oils underwent investigation to decrypt their therapeutic indexes and found clove and cinnamon EOs with good therapeutic efficacy. These results were further approved by correlation and cluster analysis. The effective EOs were subjected to determine the MIC which illustrates clove EO at 312.5 µg/mL and cinnamon EO at 156.25 µg/mL are the effective ones. Optimization via RSM of both EOs suggested that clove EO up to 416µg/mL and cinnamon EO at 182µg/mL MIC are effective against C. albicans. From GC-MS analysis, the active ingredient in clove EO is caryophyllene oxide while in cinnamon EO is Dihydroequilenin. Both essential oils were used for orabase preparation. Organoleptic properties, dissolution profile, and in-vivo studies of orabase confirmed that 0.5% herbal orabase is the most effective formulation against oral candidiasis.

Keywords: Candida albicans, essential oils, GC-MS, optimization, cinnamon, clove

Abstract ID: ICSDG0319

DESIGN AND EVALUATION OF ORODISPERSIBLE FILM CONTAINING DILTIAZEM HYDROCHLORIDE WITH TASTE MASKED EFFECTS

Sumera Latif[1*], Ambreen Kokab[1], Hafsa Afzal[1], Misbah Hameed[1], Fatima Amin[1]
Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Jail Road, Lahore, Pakistan
***Corresponding author:** email: sumera_latif@hotmail.com\

Orodispersible film (ODF) is a better alternate to oral disintegrating tablets owing to its ease in application and the subsequent patient compliance. The present study investigates an improvement in physico-mechanical properties and palatability of Diltiazem Hydrochloride (DTZ) by formulating ODF by employing solvent casting method. DTZ, widely used in the treatment of angina and hypertension, undergoes extensive pre systemic metabolism and gives an incomplete bioavailability of 35-40%. Moreover DTZ is associated with a very bitter taste and after taste. In the current study, DTZ was formulated into films using different polymer concentrations of Hydroxy propyl methyl cellulose ethocel 5 and Carboxymethyl cellulose and plasticizer levels of Propylene glycol and glycerin leading towards the screening of appropriate polymer-plasticizer combination to get required film attributes. Final film was developed using optimized polymer-plasticizer combination employing saccharin sodium as a taste concealing agent. The prepared films disintegrated in 10.0 $\pm$ 1.53 sec and appeared to be clear and smooth, and almost 100% of the drug release was achieved within 4 min from the ODF. Film revealed a good mechanical strength having a folding endurance of >260, tensile strength of 1.36 $\pm$ 0.11 N/mm^2 and %elongation of 15.47% $\pm$ 0.47. FTIR and DSC showed the compatability between drug and polymer. Film showed a slightly sweet taste and after taste as well as an acceptability by the human volunteers. In conclusion DTZ was successfully formulated in to films with improved physical properties and taste and could be beneficial to patients with cardiovascular disorders.

Keywords: Diltiazem HCl, ODF, HPMC E5, Propylene glycol, Taste concealing

Abstract ID: ICSDG0323

EVALUATION OF ANTI-ARTHRITIC ACTIVITY OF EICHHORNIA CRASSIPES IN DIMINUTION OF RHEUMATOID ARTHRITIS USING SPRAGUE-DAWLEY RAT MODEL

Sara Sattar[1], Arham Shabbir[2], Muhammad Shahzad[3], Tasleem Akhtar[3], Arfan Ahmad[4]

1. *Department of Pharmacology, Faculty of Pharmacy, The University of Lahore, Lahore Campus, Pakistan*
2. *Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, LCWU, Jail-road, Lahore, Pakistan*
3. *Department of Pharmacology, University of Health Sciences, Lahore, Pakistan*
4. *University Diagnostic Laboratory, University of Veterinary and Animal Sciences, Lahore, Pakistan*

***Corresponding Author,S:** email:* Sara.pharmacist91@gmail.com

This study was designed to analyze the anti-arthritic activity of *E. crassipes* flower in Sprague-Dawley rats, by inducing rheumatoid arthritis (RA) using Freund's complete adjuvant (FCA). Arthritic development and paw edema were determined using macroscopic arthritic criteria and Vernier caliper. Histopathological aspects were examined by Hematoxylin and Eosin (H&E) staining. Blood samples of all groups were processed to determine the effects of *E. crassipes* flower on mRNA expression levels of pro-inflammatory cytokines, using reverse transcription polymerase chain reaction (PCR). Prostaglandin E2 (PGE2) levels in the serum samples were evaluated using Enzyme-linked Immunosorbent Assay (ELISA). Levels of Alanine Transaminase (ALT), Aspartate Aminotransferase (AST), creatinine, and urea along with Hemoglobin (Hb) content and complete blood count were also evaluated. Study showed that *E. crassipes* inhbited arthritic development and paw edema. Histopathological evaluation of ankle joints also confirmed the amelioration of arthritis in the treated groups. *E. crassipes* downregulated the expression levels of Vascular Endothelial Growth Factor (VEGF), Tumor necrosis Factor-α (TNF-α), Matrix Metalloprotinases (MMP-2 and MMP-3), Nuclear Factor-Kappa B (NF-κB) and Interleukins (IL-1β and IL-6) in the treated groups. Hematological studies showed normalization of evaluated parameters as compared to positive control. Biochemical evaluation showed that treatment with plant improved hepatic parameters whereas, non-significant difference was found among all groups for the evaluation of nephrotoxic effect. The data indicated that plant is safe in terms of hepatotoxicity and nephrotoxicity. In conclusion, *E. crassipes* possesses anti-arthritic property which may be ascribed to its immunomodulatory and anti-inflammatory activities.

Keywords: Anti-arthritic activity, Sprague-Dawley rats, Rheumatoid arthritis, Polymerase chain reaction, Hepatotoxicity

Abstract ID: ICSDG0325

EVALUATION OF SAMARIUM DOPED HYDROXYAPITIE TO ACHIEVE SUSTAINABLE DEVELOPMENT IN BIOMEDICAL FIELD

Amna Arshad*, Madeeha Riaz, Aneeqa Sabah

Department of Physics, Lahore College for Women University, Lahore, Pakistan

*Corresponding Author,S Email: amnaarshad4027@gmail.com

Low rates of examining and diagnosing osteoporosis in individuals with fragility fractures is increasing nationally and internationally. To deal with this issue, Hydroxyapatite is a potential biomaterial used to replace damaged tissue and bone. For the present research work the effect of samarium on the dielectric properties of hydroxyapatite was investigated. The samples were synthesized by wet precipitation method sintered at 1000 ^{o}C for 2 hours having 0.1, 0.3 and 0.5 mol% various concentration of dopant. The samples were characterized by using Fourier transform infrared spectroscopy (FTIR) to study bonding characteristics and RLC meter was employed to determine dielectric properties. The results of dielectric analysis showed that 0.3 mol% substitution of Sm in Hydroxyapatite lattice displayed better relative permittivity and comparable to natural bone. FTIR confirmed the different functional groups (OH^-, PO_4^{3-}) of hydroxyapatite. This helps in achieving the Sustainable Development Goal 3, ensuring a good living and fostering well-being for all generations.

Keywords: samarium doped hydroxyapitie, dielectric properties, FTIR, good health, wellbeing

Abstract ID: ICSDG0326

EXPOSURE TO PARTICULATE POLLUTION (PM2.5) FROM INDOOR BIOMASS COOKING AND ITS EFFECTS ON RESPIRATORY HEALTH AMONG FEMALES OF KASUR DISTRICT

Moneeza Abbas, Hafiza Sana Yousaf, Arifa Tahir

Department of Environmental Science, Lahore College for Women University, Jail Road Lahore Pakistan

***** *Corresponding Authors,S Email: moneeza.rana@gmail.com*

Air quality is increasingly becoming a global problem with the increase in industrialization and urbanization. Air quality is also much deteriorated in villages of Pakistan. One of the major reasons for damaging air quality is burning of biomass. Biomass burning emits certain types of harmful products which are dangerous for human health and the environment. Smog, being hazardous to health, is leading to a rapid sprout in multiple health related problems. Inhalable particles have been a source of concern, initiating major health problems by getting deep into the lungs. Present study was conducted to determine the concentration of PM2.5 and their effects on the lung capacity of females in different villages of Kasur District along transboundary. As females are taking the bio indicators of air pollution due to their sensitivity and vulnerability to come into contact easily under the effect of environmental stressor. Female's Health Initiative study is especially relevant because it found a stronger effect from $PM_{2.5}$ on premature cardiovascular and respiratory illness, one of the leading causes of women's mortality.PM 2.5 concentrations were measured using a Particulate counter instrument, Health status was assessed through questionnaire and lung functions were monitored by spirometer. Readings were taken for 5 months from each village during March-July 2021. 200 questionnaires were filled by females 50 from each village. Peak expiratory flow rate was determined from 200 females. Results showed the concentrations of PM2.5 were more than permissible limit by National Ambient Air Quality Standards. The health status of females was

not good because they had fever, skin issues and respiratory problems especially. The lung functioning was low in most of the females due to the high levels of PM.

Keywords: Air quality, Industrialization, Urbanization, Burning of biomass, Human health

Abstract ID: ICSDG0327

IMPROVING CONVERGENCE IN FETAL ELECTROCARDIOGRAM EXTRACTION USING ADAPTIVE LMS ALGORITHM: PARAMETRIC ANALYSIS WITH OPTIMAL STEP SIZE AND WEIGHT COEFFICIENT

Sadia Murawwat[1], Anisa Batool[2*]

[1]*Electrical Engineering Department, Lahore College for Women University (LCWU), Pakistan*

[2]*Electrical Engineering Department, Lahore College for Women University (LCWU), Pakistan*

*Corresponding Author's Email: batoolanisa64@gmail.com

For life saving, characteristics of Fetal Electrocardiogram (FECG) are being studied in clinical sciences since 1906. It includes heart rate and dynamic PQRS waveform for determining fetal life, fetal growth and presence of any genetic heart disease. FECG extraction is a procedure for having important information about fetal state throughout pregnancy and labor. In this study, an adaptive LMS (Least Mean Square) algorithm is proposed with optimal step size and weight coefficient. It has eight steps: first to fourth step is to generate maternal, fetal and abdominal ECG signals in addition to a reference signal respectively, fifth step is to extract FECG using Adaptive Noise Canceller (ANC), sixth step is to recover FECG by passing through a linear filter that removes residual noise, seventh step is to detect 'R' peaks and last step includes counting of 'R' peaks to obtain Fetal Heart Rate (FHR). Two different parametric relationships of step size 'μ' and weight coefficient 'w[n]' of adaptive filter with convergence rate, steady state error and residual noise are being evaluated for validation. Results prove that our algorithm gives optimal adaptation along with fast convergence and more stability contrary to the available state of the art procedures for FECG Extraction and Noise Cancellation.

Keywords: Fetal ECG; Convergence; LMS Algorithm; Weight Coefficient; Noise Cancellation

Abstract ID: ICSDG0328

MOLECULAR AUTHENTICATION OF GYMNEMA SYLVESTRE, AN IMPORTANT MEDICINAL PLANT

Sehrish Ramzan[1*], Shabnum Shaheen[2], Khadim Hussain[3, 4] and Farah Khan[2]

1- *Department of Botany, Government Graduate College of Science Wahdat Road Lahore*
2- *Department of Botany, Lahore College For Women University, Lahore, Pakistan*
3- *Department of Bioinformatics & Biotechnology, Government College University, Faisalabad, Pakistan*
4- Department of Plant Protection, College of Food and Agriculture, King Saud University, Riyadh, Saudi Arabia
Email: sehrishdr86@gmail.com

The use of herbal medicines gains popularity due to safe and effective mode of treatment in comparison to the synthetic drugs. However, adulteration of medicinal plants adversely affects the herbal treatment. *Gymnema sylvestre* (gurmar booti) is an important plant used against range of health problems such as diabetes, weight loss, cough, insulin production and diuretic. Unfortunately *G. sylvestre* is mostly adulterated with another species of *Gymnema* i.e., *G. lactiferum* that has different therapeutic properties. Thus, a current study was conducted to evaluate the authenticity of marketed specimens of *G. sylvestre*. Hence, twelve (12) marketed samples of *G. sylvestre* were procured from different herbal markets of Lahore and a fresh sample was collected from chitral. After the DNA extraction of samples, the DNA was amplified by four primers i.e., matK, nrITS, rbcL and TrnH-PsbA. Results indicated that fresh sample of *G. sylvestre* was amplified with all selected primers except trnH-PsbA and showed its association with database *G. sylvestre* that means fresh samples is genuine. Marketed samples 2,9,11 (amplified with matK primer) related with database *G. sylvestre* that shows authenticity of these samples. However, market sample 4 relates with *Dregea sinesis* of database which showed its adulteration. In nrITS primer case market sample 1 segregate separately. However, market sample 5, 11 showed associations with different accession of database *G. sylvestre*. While market sample 7, 8 showed association with different species of *Gymnema* i.e., *G. capsidatum* and market sample 6 showed its link with two accession of *Vigna radiata.* In trnH-psbA primer case fresh *Gymnema* sample fails to amplify while sample 1 relates with database *G. sylvestre*, sample 6 relates with *V. radiate*, market sample 2,4,11 clustered with database *Telosoma africana* that

showed the adulteration of these samples. Results indicated that maximum adulteration had been observed in market samples of *G. sylvestre* while few market samples are genuine.

Keywords: *Gymnema sylvestre*, medicinal plant, adulteration, molecular authentication

Abstract ID: ICSDG0329

SYNTHESIS AND CHARACTERIZATION OF TRIAZINE BENZOHYDRIDE AND ITS DERIVATIVES

Dr. Shahnaz, Linta Rasheed, Sameen Kazmi, Rabiya Faryad

Chemistry Department, Lahore College for Women University

Corresponding Author's Email: sameenkazmi6@gmail.com

The triazine skeleton is biologically as well as pharmacologically important, due to their wide range of activities. Polyfunctionalized N'-(5,6-diphenyl-1,2,4-triazine-3-yl) benzohydride was prepared by simple, economical and ecofriendly method that intensified the significance of environment friendly compound in synthetic chemistry. Confirmations of all compounds have been done by UV, IR and melting point. 5,6- diaryl-1,2,4-Triazine moiety act as anticancer scaffold. The same compound bearing 3- morpholinoethylamine act as anti-ulcer agent. Benzimidazole show activity against food poisoning bacteria (Salmonella typhimurium). This is how it relates to 3rd SDG which is Good Health and Well-being. Keywords: Triazine, Benzohydrazide, Antimicrobial activity.

Keywords: triazine skeleton, benzohydride, 5,6- diaryl-1,2,4-Triazine moiety, 3- morpholinoethylamine, benzimidazole

Abstract ID: ICSDG0330

ANTIMICROBIAL POLYESTER TEXTILES BASED ON ORGANIC COMPOUNDS

Shama Sadaf[1], Shagufta Naz[2*], Wajeeha Salamat[2], Zeeshan Ahmad[3], Saima Sharif[2], Komal Hassan[1], Ayesha Saeed[1] and Aqsa Shabbir[4]
[1]*Department of Home Economics, Lahore College for Women University, Lahore, Pakistan*
[2]*Department of Zoology, Lahore College for Women University, Lahore, Pakistan*
[3]*School of Science and Technology,University of Management and Technology, Lahore, Pakistan*
[4]*Electrical Engineering Department , Lahore College for Women University, Lahore, Pakistan*
Corresponding Author's Email: sadaf.shama@gmail.com

In this cross-sectional study, eco-friendly antimicrobial finishes was extracted from leaves of *Azadirachata indica, Butea monosperma* and *Litchi chinensis* plants and applied on 100% polyester. The antimicrobial finish was applied by pad dry cure method and finish was fixed by using of polyurethane binder. Plants 'extractions were manipulated by making two concentration levels, in one level pure plant extraction was applied and in other level 50% concentration solution was used. Different instruments such as autoclave, hot air oven were used to check microorganisms' presence. The presences of microorganisms were checked by ASTEM E2149 shake flask method before and after applying antimicrobial finish, after successive 25 washes. The results were analyzed through analysis of variance (ANOVA), Spectrum Analysis, Scanning Electron Microscope(SEM), photographic images and Crosstab. The eco-friendly antimicrobial finish made 89% reduction in microbial growth. The antimicrobial finish lasted up to 25 washes. One Way ANOVA showed that the difference in antimicrobial finish between control group (M=2.00, SD=2.28), the first experimental group *A. indica* (M=.00, SD=.00), second experimental group *B. monosperma* (M=.00, SD=.00) and third experimental group *L. chinensis* (M=.00, SD=.00) were statistically significant (F=4.615, p=0.013, η^2=.409). Antimicrobial fabric is suitable to provide protection against microorganisms and can be used for medical industry, paramedical

staff, sports wears, home furnishing as well as common people. This study is beneficial for good health and well-being of human beings.

Keywords: Antimicrobial Finish, Polyester, Skin Problems, Polyurethane Binder

Abstract ID: ICSDG0324

TREATMENT OF RHEUMATOID ARTHRITIS BY FRAGARIA NUBICOLA IN RAT MODEL

Kiran Mashaal[1], Arham Shabbir*[2], Muhammad Shahzad[3], Aisha Mobashar[1], Tasleem Akhtar[3]

[1] *Faculty of Pharmacy, the University of Lahore, Pakistan*

[2*] *Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Pakistan.*

[3] *Department of Pharmacology, University of Health Sciences, Punjab, Pakistan*

*Corresponding Author's Email: charham007@hotmail.com

Rheumatoid arthritis (RA) is termed as an autoimmune and chronic inflammatory condition. Traditionally, the whole plant of *Fragaria nubicola* (Lindl. ex Hook.f.) Lacaita (Family: Rosacea) is useful for the treatment of rheumatoid arthritis. Present study was carried out to evaluate the antiarthritic activity of methanolic extract of plant and its n-hexane and ethyl acetate fractions using Freund's complete adjuvant-induced arthritic rat model. Macroscopically and digital pleythesmometer assessment of arthritic grading tests were carried out to determine the arthritic development. Hematological and biochemical parameters were also checked. Ankle joints were treated using hematoxylin and eosin stains for histopathological evaluation. PGE2 levels were determined by ELISA. MRNA expression levels of IL1β, IL6, NF-κB, and TNF-α, MMP2, MMP3, MMP9 and VEGF were analyzed by RT-PCR method. Treatment with plant reduced the paw edema, arthritic development, pannus formation, bone erosion, and inflammatory cells infiltration. Blood and biochemical parameters were found almost comparable to negative control in extract treated groups. The biochemical analysis of ALT, AST, ALP, urea, creatinine, and bilirubin levels showed no apparent display of harm to liver and kidneys in all groups. The plant treated groups showed reduction in the expression levels of IL1β, IL6, NF-κB, TNF-α, MMP2, MMP3, MMP9 , VEGF and PGE2. In conclusion, the data suggests that *Fragaria nubicola* possesses significant antiarthritic activity.

Keywords: arthritis, Fragaria nubicola, antiarthritic activity, Elisa, RT-PC

Abstract ID: ICSDG0317

ACUTE AND SUB-CHRONIC TOXICITY STUDY OF PIRARUBICIN LOADED POLY-LACTIC-CO-GLYCOLIC ACID NANO-PARTICLES

Ali Sharif[1*], Nida Shakir[2], Sajid Ali[3], Bushra Akhtar[4]
1. Institute of Pharmacy, Lahore College for Women University, Lahore Pakistan
2. Faculty of Pharmacy, The University of Lahore, Lahore Pakistan
3. Department of Chemistry - Angstrom Laboratory, Physical Chemistry, UPPSALA University Sweden
4. Department of Pharmacy, University of Agriculture Faisalabad, Pakistan

Corresponding Author email: alisharif.pharmacist@gmail.com

Pirarubicin is widely used in clinic because of its broad anticancer activity and reasonable therapeutic index. Clinical trials showed that pirarubicin causes severe bone marrow suppression, cardiotoxicity, hair-loss and gastrointestinal toxicity. Some of these side effects are life-threatening and substantially alter the wellbeing of human health. Therefore, the objective of the present study was to prepare and investigate the toxicological properties of the nano-formulation of Pirarubicin loaded nanoparticles (PRB-NP) of poly-lactic-co-glycolic acid (PLGA) in rats upon intravenous administration. Acute toxicity of (PRB-NP) of PLGA (5mg/kg and 300mg/kg) in female rats was conducted according to organization of economic cooperation and development (OECD-420) guide lines. Sub-chronic toxicity of (PRB-NP) of PLGA was conducted according to OECD-407 guidelines for 28 days at 3 different dosage levels (30mg/kg, 60mg/kg and 100mg/kg). (PRB-NP) of PLGA exhibited an average zeta potential of -33.1mV, and have an average size of 400nm. The scanning electron microscopy demonstrated an unequal particle size distribution but no aggregation behavior. No mortality was recorded among rats treated with (PRB-NP) of PLGA in both acute and chronic toxicity study. The negative cardiac TropT in all treated groups assures that there is no myocardial damage in acute and sub-acute toxicity study. In chronic toxicity study although RBCs and Hb levels were reduced in rats treated with PRB-PLGA NP at three dose levels but the decrease was non-significant when compared to NS group. Hepatic and renal indices were raised in all the treated groups. Interestingly the levels of indices in PRB-PLGA NP treated groups increased in a dose dependent manner but was found within the normal range. This study

suggests increased safety profile, non-cardio-toxic properties of PRB when loaded in PLGA nanoparticles.

Keywords: Anticancer, Pirarubicin, Nanoparticles, Poly-lactic-co-glycolic acid, Toxicity

Abstract ID: ICSDG0331

EXPLORING THE DETOXIFYING POTENTIAL OF DEFEROXAMINE LOADED POLY LACTIC-CO-GLYCOLIC ACID NANOPARTICLES IN IRON INDUCED TOXICITY USING RAT MODEL

Tooba Amir [1], Bushra Akhtar [2*], Ali Sharif [3], Ayesha Tanveer [1]

1- Institute of Physiology and Pharmacology, University of Agriculture, Faisalabad, Pakistan

2- Department of Pharmacy, University of Agriculture, Faisalabad, Pakistan

3- Institute of Pharmacy, Faculty of Pharmaceutical and Allied health sciences, Lahore College for Women University, Lahore, Pakistan

*Corresponding Author's Email: bushra.akhtar@uaf.edu.pk

Deferoxamine (DFO) is used for both acute iron poisoning and transformation anemia. DFO has a short plasma half-life and rapidly cleared from body. This study was planned in order to attempt its prolonged release and better therapeutic profile. DFO was encapsulated by using poly lactic co glycolic acid (PLGA) as a nano-carrier. The PLGA NPs were modified with chitosan (CS) and polyethylene glycol (PEG) and characterized. In this study, 36 rats are divided into 6 groups. Intra-peritoneally (IP) 0.3mg/g iron dextran solution was injected to the rats during light cycle for one week on alternate days to all animals except positive control group. Iron chelator treatment, DFO (40mg/kg), was administered for 2 weeks on alternate days. PLGA loaded DFO NPs, CS modified PLGA loaded DFO NPs and PEG modified PLGA loaded DFO NPs showed zeta size (14.179nm, 108.2nm and 15.09nm) and zeta potential (-4.7mv, 40.5mv, -0.312mv) respectively. Complete Blood Count (CBC) was performed and RBC, MCH, MCHC, Hb, MCV and platelets results are evaluated. Effect of biochemical parameters on iron toxicity were also determined. Serum was evaluated for pro-inflammatory cytokines e.g. IL-6 and TNF-α. Histopathological analysis of iron toxic group showed necrosis and inflammation which was restored with nano particle administration. Final data was analyzed by ANOVA. Further studies are required on safety evaluation and dose optimization of these nanoparticles.

Keywords: Deferoxamine, Poly lactic co glycolic acid, poly ethylene glycol, chelator treatment.

Abstract ID: ICSDG0320

DICLOFENAC SACCHARIN COCRYSTALS: DEVELOPMENT, PRELIMINARY PHARMACOTECHANICAL AND PHARMACOKINETIC CHARACTERIZATION

Hafsa Afzal[1], Sumera Latif[2*], Misbah Hameed[3], Fatima Amin[4], Ali Sharif[5]

[1]*Institute of pharmacy, Faculty of pharmaceutical and allied health sciences, Lahore college for women university, Lahore*

*Corresponding Author's Email: hafsa382@gmail.com

This study was aimed to design and characterize new cocrystals of diclofenac (DFA), belonging to BCS class II and saccharin (SAC) as a coformer for simultaneous improvement in physicomechanical and pharmacokinetic attributes. The DFA and SAC were cocrystallized in 1:1 and 1:2 molar ratios by liquid assisted grinding (LAG) and solvent evaporation (SE) strategies. The PXRD, DSC, FTIR, SEM confirmed the formation of cocrystals. The IDR of cocrystals was ~ 4-fold and ~ 5.77-fold higher in acidic (pH 1.2) and basic buffer (7.4 pH than the PM and pure DFA. The compressional attributes were analyzed by in die Heckel method. The low mean yield pressure (Py) of the cocrystal (40.08) expressed greater plasticity than the pure drug (90.87). The tablets of cocrystal were prepared by direct compression, showed better mechanical attributes. The *in-vitro* dissolution of cocrystal tablets enhanced (~ 60 % and ~100 % release in acidic and basic respectively) than the tablets of physical mixture (PM) (~38 % and ~ 50 %) and pure DFA (~ 20 % and ~ 40 %) within 30 min. and remained stable at both the conditions. The *in-vivo* performance of the selected DFA cocrystal in a single dose in the rabbits, displayed the significant increase in C_{max} and $AUC_{0-\infty}$ (2.263 µg/ml and 10.76 µg h/ml VS 1.442 and 4.763 ± 1.67, respectively, $p < 0.05$). It was concluded form the study that cocrystallization can concomitantly improve compressibility, dissolution and pharmacokinetics of the dissolution limited drug DFA.

Keywords: Diclofenac saccharin cocrystals, intrinsic dissolution, compressibility, *in vitro* dissolution, *in vivo* bioavailability.

Abstract ID: ICSDG0321

IMPACT OF ARTERIOVENOUS FISTULA ON DAILY LIFE ACTIVITIES AND PHARMACOTHERAPY OUTCOMES AMONG HEMODIALYSIS PATIENTS IN A TERTIARY CARE HOSPITAL OF LAHORE

Fatima Amin[*] ,Iqraa Anwar, Sumera Latif, Hafsa Afzal, .Saira Hafeez Kamran, Ali Sharif

[1,] *Institute of Pharmacy, Lahore College for Women University, Lahore*

*Corresponding Author's email: fatimalcwu@gmail.com

End stage renal disease (ESRD) patients require hemodialysis (HD) three to four times a week in divided sessions. Arteriovenous fistula (AVF) is the most widely recommended vascular access in upper limbs. AVF can negatively effect and restrict functional abilities of upper limbs. The study was conducted to evaluate the AVF influence on upper limbs in daily routine activities and pharmacotherapy outcomes observed in the patients at tertiary care hospital of Lahore Cross-sectional study was conducted from 31 October 2019 to 15 March 2 019 in a Tertiary care hospital of Lahore. A predesigned questionnaire DASH was used which is already a valid tool. A total 100 patients undergoing hemodialysis over atleast 1 year and AVF created greater than 3 months were recruited in the study after obtaining their consent Patients with other vascular access and acute kidney injury (AKI) were excluded from the study.64% of the patinets were male with a mean age of 46 years. Most of the patients belonged to urban area (89%), married (67%), unemployed (56%) and right handed (95%). AVF created on left arm in 68% of the patients. Mean duration of dialysis was 4.7 years and major cause of ESRD was hypertension. Mean DASH score was 21.4 with hemoglobin 11.2 g/dl levels. Hypocalcaemia (<8.4mg/dl), hyperphosphatemia (>5.5mg/dl) and PTH (>150pg/dl) levels were present in majority of patients respectively. Medication therapy included erythropoietin, iron, vitamin D and phosphate binder in the patients alongwith other co-morbid medication therapies. Study demonstrated that increased age, dominant arm AVF, increased AVF creation caused higher DASH scoring and poor quality of life among patients. Different anastomotic sites of AVF on upper limbs limits the movement and working of dialysis patients. Medication therapies

improved helpful in improving DASH scoring. Parameters like hemoglobin, Calcium, phosphorous and parathyroid hormone levels play important role in QOL of hemodialysis patients.

Keywords: DASH, QOL, AV fistula, Hemodialysis, Pharmacotherapy

Abstract ID: ICSDG0332

EMPIRICAL ANTIMICROBIAL RESISTANCE/ SENSITIVITY IN CHILDREN CANCER PATIENTS: A CROSS SECTIONAL STUDY

Sairah Hafeez Kamran[1], Rukhsana Yousaf[2], Fatima Amin[1], Noor Fatima[1], Aatiqa Shahbaz[1], Tayyaba Durrani[1]

1 Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Lahore

2 Oncology Department, The Children's Hospital & The Institute of Child Health, Lahore

Corresponding Author's Email: sairah.hafeez@lcwu.edu.pk

Antimicrobial resistance (AMR) is currently a very serious complication and study of local patterns of AMR is currently a dire need for understanding the resistance/ sensitivity towards antimicrobials in a community. The primary objective of the study was to evaluate the AMR in The Children's Hospital & The Institute of Child Health (ICH/CH), Lahore. A single centre cross-sectional observational study was conducted from May 2021 to November 2021. All children admitted to the oncology ward of ICH/CH and prescribed antibiotics were enrolled in the study after obtaining consent from the parents. The microbiological examination reports were collected and antibiotic resistance and sensitivity pattern were recorded by obtaining culture reports from the Microbiology department of ICH/CH. The results showed that median age of children susceptible to cancer was 6 years (0.1-17yrs). The most common cancer identified was Acute Lymphoblastic Leukaemia (53%). It was identified that population studied was equally susceptible to both gram positive and gram-negative bacterial infections. The most common gram-negative bacilli identified was E. coli (40%) and the most common gram-positive organism was Staphylococcus aureus (92%). The sensitivity pattern showed that 35% patients were sensitive to Vancomycin, 26% to Ciprofloxacin and 21.4% to Linezolid. The resistance pattern showed highest resistance towards Penicillin's (32.65%) and Meropenem (26%). The resistance patterns showed that most of the cancer child patients were resistant towards various penicillin's and meropenem so in future these antibiotics may empirically be prescribed with caution. Further

investigation is required on larger population to develop more effective strategies in public health policies.

Keywords: Cancer, Antimicrobial Resistance, Empirical, Children

Abstract ID: ICSDG0318

PROTECTIVE EFFECT OF GLYCYRRHIZA GLABRA L. IN BLEOMYCIN INDUCED PULMONARY FIBROSIS

Sairah Hafeez Kamran [1,2], Saiqa Ishtiaq[2], Rukhma Sajjad[2], Misbah Majeed[1]

1 Institute of Pharmacy, Faculty of Pharmaceutical & Allied Health Sciences, Lahore College for Women University, Lahore, Pakistan

2 Punjab University College of Pharmacy, University of the Punjab, Allama Iqbal Campus, Lahore, Pakistan

Corresponding Author's Email: sairah.hafeez@lcwu.edu.pk

The present study was aimed at studying the protective effect of *Glycyrrhiza glabra* L. *(G. glabra)* on lung injury caused by bleomycin, a cytotoxic drug. The expectorant and antitussive effect of the *G. glabra* were also investigated. Rats were divided into five groups. The control group received normal saline for 20 days followed by intra-tracheal administration of Bleomycin (7.5 units/kg/5ml; n=9), N-Acetylcysteine (NAC) treated group (n=9) received NAC (300mg/kg/day) for 20 days followed by intra-tracheal administration of Bleomycin (7.5 units/kg/5ml). *G. glabra* 100mg/kg/day was administered orally for 20 days in rats (n=9) followed by intra-tracheal administration of Bleomycin (7.5 units/kg/5ml) and the animals were sacrificed on 3rd (n=3), 7th (n=3) and 14th day (n=3) after administration of bleomycin. Protective effect of *G. glabra* was assessed by estimation of malondialdehyde (MDA) and reduced glutathione. Expectorant assay was performed using tracheal phenol red secretion in mice and antitussive activity were assessed using citric acid induced cough measurement in rabbits. The *G. glabra* treated group showed significant ($p<0.05$) reduction in MDA and increase in reduced glutathione when compared with Control group. The expectorant activity showed that *G. glabra* significantly ($p<0.05$) increased the phenol red secretion whereas cough was significantly ($p<0.05$) suppressed in *G. glabra* and citric acid treated group. From this study it could be concluded that *G. glabra* could be employed as protective supplement in patients receiving bleomycin to prevent lung damage with additional benefit for the relief of symptomatic cough.

Keywords: Glycyrrhiza glabra L, Bleomycin, Pulmonary fibrosis.

Abstract ID: ICSDG0322

FORMULATION AND EVALUATION OF A CLOVE OIL-ENCAPSULATED NANOFIBER FORMULATION FOR EFFECTIVE WOUND-HEALING

Misbah Hameed[1] and Akhtar Rasul[2]

1 Institute of Pharmacy, Faculty of Pharmaceutical and Allied Health Sciences, Lahore College for Women University, Lahore 54000, Pakistan

1. Government College University Faisalabad

alisharif.pharmacist@gmail.com

Wound-healing is complicated process that is affected by many factors, especially bacterial infiltration at the site and not only the need for the regeneration of damaged tissues but also the requirement for antibacterial, anti-inflammatory, and analgesic activity at the injured site. The objective of the present study was to develop and evaluate the natural essential oil-containing nanofiber (NF) mat with enhanced antibacterial activity, regenerative, non-cytotoxic, and wound-healing potential. Clove essential oil (CEO) encapsulated in chitosan and poly-ethylene oxide (PEO) polymers to form NFs and their morphology was analyzed using scanning electron microscopy (SEM) that confirmed the finest NFs prepared with a diameter of 154 ± 35 nm. The successful incorporation of CEO was characterized by Fourier transform infra-red spectroscopy (FTIR) and X-ray diffractometry (XRD). The 87.6 ± 13.1% encapsulation efficiency and 8.9 ± 0.98% loading of CEO was observed. A total of 79% release of CEO was observed in acidic pH 5.5 with 117% high degree of swelling. The prepared NF mat showed good antibacterial activity against Staphylococcus aureus and Escherichia coli and non-cytotoxic behavior against human fibroblast cell lines and showed good wound-healing potential.

Keywords: antibacterial; clove bud; nanofibers (NFs); wound-healing.

Abstract ID: ICSDG0335

SUSTAINABLE INTERIOR DESIGN FEATURE TOWARD REDUCED WORKPLACE STRESS

Sabahat Sana[1], Farzana Rashid[2], Mayraj Fatima[3], Mohsin Nazir[2]

University of the Punjab, Lahore, Pakistan

Lahore College for Women University, Lahore, Pakistan

NCBAE, Lahore, Pakistan

Email: sabahatsana@hotmail.com

The thermal environment is one of the main factor of sustainable physical workplace design that influence thermal comfort and, consequently, the productivity of occupants in workplaces. Since the ages, research has described the connection between thermal comfort and productivity. If the physical work place design does not cater the needs of employees it becomes a stress factor at job and can be reflected on the productivity in multiple ways. The goal of this study were to identify the effect of indoor air temperature on stress level as perceived by employees according to gender and age and link these factors with their performance. The research adopted a mix method approach using survey questionnaires, face to face interviews and on site pictures taken from the software houses of Lahore. As the 150 questionnaires were circulated, out of which 133 were filled. The technique of the sampling in order to collect the data was Random Sampling. Results were analyzed through descriptive statistics, coefficient correlation, t-test, themes and subthemes. Study shows that temperature was one of the influential factor of interior design features which affect stress level and productivity for both age (>35 & <35) groups and genders. A strong relationship was found between indoor air temperature and employees 'performance.

Keywords: Sustainability, Interior design features, Thermal comfort, Workplace stress, Physical workplace design

Abstract ID: ICSDG0333

IN SILICO ANALYSIS OF L1 GENE OF HUMAN PAPILLOMAVIRUS TYPE 16 FOR NOVEL MULTIEPITOPE VACCINE DESIGN AND ITS IMMUNOGENICITY STUDIES

Kainat Qadeer[1], Neelam Batool[1], Mohammad Tahir Waheed[1*]

[1] *Department of Biochemistry, Faculty of Biological Sciences, Quaid-i-Azam University, 45320, Islamabad, Pakistan*

[*] Correspondence Author's Email: tahirwaheed@qau.edu.pk

Human Papillomavirus (HPV) types 16 and 18 are the most widespread high risk HPV types associated with 70% of HPV-related infections leading to cervical cancer, which is among the most lethal cancers in women worldwide. HPV infection and cervical cancer can be prevented by prophylactic HPV vaccines. The prominent target for vaccine designing against HPV includes HPV L1 and L2 genes. The aim of this study was to perform *in silico* analysis of the HPV 16 L1 gene for designing a cost-effective multiepitope vaccine and its immunological studies. The L1 sequence of HPV 16 was modified with deletion of 10 amino acids at N terminal and two cysteine-to-serine mutations that results in confinement of L1 conformation to capsomeres and prevents virus-like particle (VLP) assembly. The modified sequence was then subjected to *in silico* analysis for B-cell and T-cell epitope prediction, and a multiepitope vaccine construct was designed. The vaccine construct was then analyzed using online tools for prediction of its physiochemical properties, immunogenicity, allergenicity, toxicity and solubility. The 3D modeling of vaccine construct was performed and validated for structural analysis followed by the molecular docking. Finally, the codon optimization was performed and the vaccine sequence was cloned using SnapGene to perform *in vitro* and *in vivo* studies in the next phase of this study. The results predicted significant immunogenic potential of this vaccine without any allergenicity or toxicity, and the structural and docking analysis further supported the marked efficiency and efficacy of the vaccine. Hence, the designed L1 DNA multiepitope construct reveals promising

results for HPV 16 and 18 vaccine development that can be validated by *in vitro* and *in vivo* analysis.

Keywords: *In silico*, HPV 16, Cervical Cancer, L1 gene, Multiepitope vaccine.

Abstract ID: ICSDG0334

DESIGNING A PROPHYLACTIC MULTIEPITOPE VACCINE CANDIDATE USING HUMAN PAPILLOMAVIRUS TYPE 18 L1 ANTIGEN AGAINST CERVICAL CANCER: AN IN SILICO APPROACH

Khadeeja Ahsan[1], Neelam Batool[1], Mohammad Tahir Waheed[1*]

[1] *Department of Biochemistry, Faculty of Biological Sciences, Quaid-i-Azam University, 45320, Islamabad, Pakistan*

[*] Correspondence Author's Email: tahirwaheed@qau.edu.pk

Cervical cancer is the second most frequent cancer in the women worldwide. The main etiological agent responsible for cervical cancer is prolonged human papilloma virus (HPV) infection that gradually develops into lethal cervical cancer. At present, the only hope to counter HPV infection is the prophylactic vaccines because the therapeutic medications are in their clinical trials. Moreover, due to high costs, the currently available prophylactic vaccines are beyond the approach of developing countries, where the incidence of HPV infection and cervical cancer is quite high. Hence, there is an immense need to develop efficient cost-effective prophylactic vaccines against HPV. In this regard, a multiepitope vaccine can generate more immunity. The aim of this study was to perform an *in silico* analysis using immunoinformatics tools for designing a novel multiepitope HPV-18 prophylactic vaccine. Preliminary *in silico* analysis can help to check the efficacy, safety, and quality of a vaccine without practically designing a vaccine through expensive measures, and then check its quality parameters and immunogenicity. Therefore, epitopes that elicit B-cell and T-cell response were picked up from L1 capsid protein sequence of HPV-18 to design the vaccine candidate and check its critical parameters including immunogenicity, allergenicity, 3D-strucural analysis, validation and codon optimization. The results revealed the vaccine candidate to be highly immunogenic and safe for human use, which strongly supported the idea of practically constructing this vaccine and extending the current study for analyzing immunogenicity of this vaccine on animal models. This

study provides a strong foundation of designing HPV-18 vaccine that can work efficiently to prevent HPV infection and the ultimate cervical cancer.

Keywords: HPV 18, *In Silico*, Prophylactic Multiepitope Vaccine, Cervical Cancer.

Abstract ID: ICSDG0336

IS HUMAN CAPITAL A PATHWAY TO ATTAIN SUSTAINABLE DEVELOPMENT GOAL OF POVERTY ALLEVIATION?

[1]Syeda Azra Batool, [2]Muhammad Ihsan

[1]Assistant Professor, School of Economics, BZ University Multan

[2]M.Phil. Student, School of Economics, BZ University Multan

Email: azrabatool@bzu.edu.pk

Poverty is a complicated issue that entails a web of interconnected economic, social, political, and demographic issues. The study of scope, nature, and determinants of poverty becomes a foundation for efficient public policy in Pakistan. This study examines the impact of human capital on poverty alleviation in Pakistan, one of the Sustainable development goals. The sample of 182 households (male=127 & female=55), age ranged between 18 to 50 was selected from Muzaffargarh district, Punjab Pakistan. Mixed sampling technique was used. Poverty was taken as the explained variable, whereas the main explanatory variable used was human capital, represented by education and health along with other explanatory variables viz., marital status, own education, household income, children education, dependent members, household expenditure and nutrition intake. The findings of the Ordinary Least Square showed that the two variables representing human capital viz., education and health, the main focus of the study, proved to be statistically significantly negatively & positively affecting poverty, respectively. Whereas, the other factors viz, marital status, household income, nutrition intake and dependent members statistically significantly and negatively influenced poverty. Whereas the impact of household expenditure and children education statistically, positively affected poverty. The study suggests that efforts should be made to improve the status of human capital by creating conducive environment to invest on education and health services and ensure these facilities in both rural and urban areas of Pakistan so that poverty could be alleviated and sustainable development goals could be achieved.

Keywords: poverty alleviation, sustainable development goals, human capital, education, health services

BIOPSYCHOSOCIAL DISTURBANCES IN INFERTILE INDIVIDUALS: WHO IS AT MORE RISK!

*Hina Sultan[1], Amina Muazzam[2]

Department of Applied Psychology, Lahore College for Women University.

*Corresponding author's Email. hina.sultan91@yahoo.com

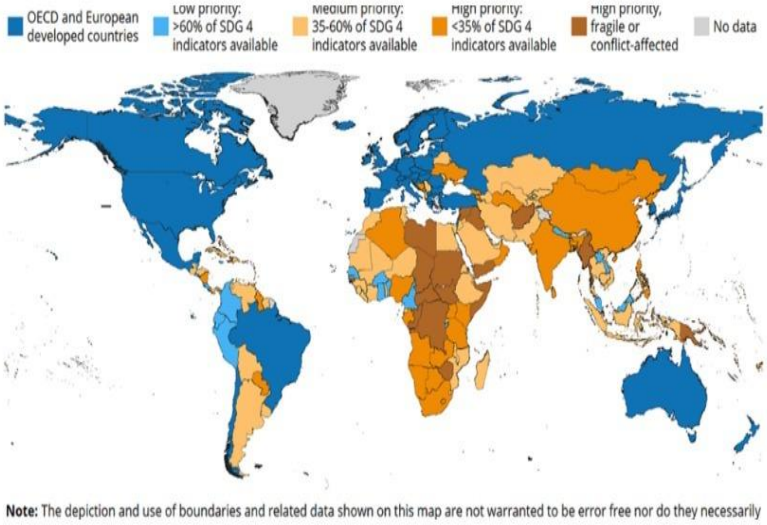
In Pakistan, infertile individuals experience great distress as societal norms and perceived religious dictums may equate infertility with failure on a personal, interpersonal, emotional or social level. Thus, the current study aimed to compare the physiological, psychological and social problems among infertile men and women. For this purpose, a cross-sectional study was carried out at a tertiary care hospital. A purposive sample of 220 married infertile men (n=100) and women (n=120), belonged to the age group 30-45 years, was taken. For physical disturbances, a range of illnesses including gastro, headaches, respiratory, and sleep disturbances were measured through a structured questionnaire named Physical Health Questionnaire (Schat, Kelloway, & Desmarais, 2005). For psychological turmoil, different psychological disturbances like Suicide risk, hopelessness, anxiety, and depression were measured. Questionnaires included Suicide Score Scale, Beck Hopelessness Scale, Beck Anxiety Inventory, and Beck Depression Inventory. Social and emotional loneliness was also studied through 6 items DeJong Gierveld Loneliness Scale. Results demonstrated that no differences in men and women were observed in their experiences of physical illnesses $t=.43$, $p>.05$, $d=.01$. Women were more likely to experience moderate to severe anxiety, depression, and 31% evidenced moderate hopelessness. Women also reported greater suicide ideation but suicidal attempts were at the lowest levels in both men and women. Moreover, both men and women experienced moderate social and emotional loneliness. The implications of the study suggest that infertility is a serious matter that effect the biopsychosocial health of people especially women so, family members and health care professionals should support them to deal with this traumatic phase of life instead of blaming and making fun of them.

Keywords: Infertility, gender, physical illness, psychological illness, social loneliness.

Goal 4 - Quality Education

Ensure inclusive and equitable quality education and promote life-long learning opportunities for all

36	26	25	1127	157
GUEST ARTICLES	POLICY BRIEFS	GENERATION 2030	NEWS	EVENTS



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG4 QUALITY EDUCATION

SCIENTIFIC CHAIR PROFILE:

SCIENTIFIC CHAIR 1

Name: Dr. Ghazala Noureen

Qualification: Ph.D in Education from University of the Punjab and Post doc from UK**.**

Designation: Chairperson Department of Secondary Education

Department: Education

Faculty: Arts and Social Sciences

University: Lahore College for Women University

Contribution in Academics and Research:

She has more than thirty years teaching and research experience in different Educational institutions of Pakistan. Her areas of interest are Educational Research and Educational Measurement and Assessment.

Specific SDG and its role in Pakistan development and globally:

Since 2000, there has been enormous progress in achieving the target of universal primary education. The total enrolment rate in developing regions reached 91 percent in 2015, and the worldwide number of children out of school has dropped by almost half. There has also been a dramatic increase in literacy rates, and many more girls are in school than ever before. These are all remarkable successes.

Progress has also been tough in some developing regions due to high levels of poverty, armed conflicts and other emergencies. In Western Asia and North Africa, ongoing armed conflict has seen an increase in the number of children out of school. This is a worrying trend. While Sub-Saharan Africa made the greatest progress in primary school enrolment among all developing regions – from 52 percent in 1990, up to 78 percent in 2012 – large disparities still remain. Children from the poorest households are up to four times more likely to be out of school than those of the richest households. Disparities between rural and urban areas also remain high. Achieving inclusive and quality education for all reaffirms the belief that education is one of the most powerful and proven vehicles for sustainable development. This goal ensures that all girls and boys complete free primary and secondary schooling by 2030. It also aims to provide equal access

to affordable vocational training, to eliminate gender and wealth disparities, and achieve universal access to a quality higher education.

SCIENTIFIC CHAIR 2

Name: Dr.Fakhra Aziz

Qualification: PhD in Education from University of the Punjab

Designation: Tenured Associate Professor/Chairperson of Department of STEM Education

Department: Education

Faculty: Arts and Social Sciences

University: Lahore College for Women University

Contribution in Academics and Research:

Her teaching/research fields of specialization in Education are Educational Leadership and Management, Educational Psychology, Higher Education and Quality Education. She has been the beneficiary of Indigenous PhD Scholarship-5000 from 2006-2011 and Erasmus Grant for post doctorate from Dicle university, Diyarbakir, Turkey in 2019.Currently she is supervising PhD and MS level students. She has published her research work in renowned International Journals.

Specific SDG and its role in Pakistan development and globally:

Sustainable Development Goal 4 (SDG 4) is the education goal. It aims to "**ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**." Sustainable Development Goal 4 has 10 targets encompassing many different aspects of education. There are seven targets which are expected outcomes

- Universal primary and secondary education
- Early childhood development and universal pre-primary education
- Equal access to technical/vocational and higher education
- Relevant skills for decent work
- Gender equality and inclusion
- Universal youth literacy
- Education for sustainable development and global citizenship and three targets which are means of achieving these targets as
- Effective learning environments
- Scholarships, Teachers and educators

SUSTAINING THE EQUITABLE QUALITY EDUCATION

Keynote speaker: Dr Farha Sattar
Charles Darwin University Australia.
Email: farha.sattar@cdu.edu.au

Quality education is a key to contributing effectively to sustainable development and acting positively in societies and being a better, responsible global citizen. Sustainable Development Goal4(SDG 4) is focused to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Global competence is a core component to address the global challenges and empower people to build a sustainable world through societal transformation. Lifelong learning includes the knowledge and necessary skills that enable learners to be the creator of new knowledge and apply it in different contexts. 21st-century learning skills; critical thinking, creativity, collaboration and communication are inevitable for teaching and learning practices and to succeed in the information age. Developing strong connections among early childhood, primary and secondary education and ensuring equal access, gender equity and inclusion are the main features of quality education. This presentation describes and enlists the ways to incorporate innovative pedagogies, interdisciplinary knowledge, tools and resources to create an effective, adaptable learning environment to foster problem-solving and higher-order thinking that promote sustainable development.

ABSTRACT PRESENTATIONS

Abstract ID: ICSDG0401

ENGLISH LANGUAGE AS A COMMUNICATION BARRIER FOR QUALITY EDUCATION IN PAKISTAN

Ali Hashim

a.hashim@sussex.ac.uk

Theoretical Abstract

English language has been serving as a medium of Education in Pakistan for decades however there's a huge diversity in the quality of English being taught in different regions. Second language learners have limited proficiency in English since the grammar and vocabulary of this international language is difficult to grasp. Most countries have not adopted the practices of far eastern countries like Korea and Japan which prefer their native languages Mandarin, and Hangeul for higher education and are conscious of the inhibition that English causes in the communication process (Sermsook et al.2017). It is observed that a pidgin variety of native language and English may emerge amongst tradesmen who need to carry on small businesses but in the field of quality education, the teacher is expected to be competent in spoken and adept in written English while the students are taught English language using the direct method or with the use of translation. When learners write in English, they make frequent errors because of first language interference (Sarfraz 2011), over-generalization of grammatical rules, inadequate knowledge of verb tenses and syntax, and rules and conventions of written English (Hussain et al., 2013). English teachers in Pakistan are of the view that English as a language and a medium of instruction in higher education is adversely affected by native language interference, low motivation of learners amidst large classes, low teacher commitment and a general, lack of awareness of modern error analysis methodologies, and instructional methods in educational practice (Butt & Rasul, 2012). Proficiency in spoken English nurtures learners' confidence, morale, and motivation. Nonnative speakers of English experience anxiety and self-consciousness. Speakers of English benefit from corrective feedback although, learners at varying levels of proficiency may

not achieve comparable benefits. Ammar and Spada (2006) advocated use of a communicative classroom environment for developing listening comprehension skills, and fluency in speech even though communicative classrooms do not build accuracy. However, research findings of Schulz (2001) and Fukuda (2003)supported the claim that foreign language learners of English preferred teachers to provide self-correction of their spoken English timely and immediately, using indirect ways rather than elicitation and repetition at the end of class and did not appreciate peer or group correction of their spoken English. English language teachers might not interrupt learners as they make errors, since they do not wish to impede communication flow. In terms of preference, low level learners found corrective feedback from teachers who spoke their home language less frightening than the corrective feedback from only the English-speaking teachers. On the other hand, high level learners do not trust teachers who speak their native language to provide high quality corrective feedback on their spoken English and prefer English teachers. "No correction" of spoken errors is seen as a waste of learning opportunity by the high and low level learners. (Zubeyde,2014). While Truscott (1999) feared correction of learners' spoken English might create feelings of anger, hostility, inadequacy and low confidence in learners, additional research suggested integrated, form focused instruction and communicative interaction in English speaking classrooms for error correction of spoken English (Han, 2001; Lyster&Ranta, 1997; Nassaji, 2000).Communication may be impeded in classrooms because of the teacher's verbosity and use of subject terminology while the learners are unskilled in comprehending and inferring the connotative and denotative uses of English words and phrases. Communication in quality education rests on accuracy in use of grammatical elements such as subject-verb agreement, relative pronouns, spelling errors and knowledge of homophones. Sermsook et al. (2017) in research on the causes of errors in Thai student's writing observed faulty sentence construction, defective subject-verb agreement, spelling mistakes, capitalization, and punctuation errors with phrase and clause blunders in evidence. Errors in written communication impede communication and may be a result of limited command over English grammar as well as negligence of students. This research worked with sentences as comprehensible units of language forms and suggested error analysis of learners' mistakes be remedied by teachers with effective lesson planning, use of teaching materials and methodology. Errors should be perceived as evidence of learning, while teachers and students progress on the way to composing standard written texts. In classification of errors, James (1998) defined five categories

of errors in written communication: grammatical errors (adjectives, adverbs, articles, nouns, possession, pronouns, prepositions, and verbs), substance errors (capitalization, punctuation, and spelling), lexical errors (word formation and word selection), syntactic errors (coordination/ subordination, sentence structure and ordering), and semantic errors (ambiguous communication and miscommunication). Additional explanations for errors in student writing are highlighted by Kaweera (2013) as interlingual interference – negative transfer of learners' native language, and intralingual interference resulting from learners' inadequate knowledge. Interlingual interference defines why learners face problems in writing correctly because they think in their first, native language and then, translate their thoughts in English. (Bennui, 2008; Watcharapunyawong& Usaha, 2013; Rattanadilok Na Phuket & Othman, 2015). Teachers can help learners by highlighting the similarities and differences between the learners' native and the target language so that they can get along with the new language. Since learners did not have proficiency in English language, they improvised and borrowed from Thai and English language showing evidence of intralingual transfer (Sermsook, 2017).

Keywords: English language, Communication barrier, Quality education, Pakistan

Abstract ID: ICSDG0402

ROLE OF HOMEWORK IN IMPROVING THE QUALITY OF EDUCATION AT SECONDARY LEVEL

[1]Iqra Toor, [2]Dr Ghazala Noureen

Lecturer, Department of Secondary Education, LCWU

Chairperson Department of Secondary Education Associate professor of LCWU

Email: iqratoor96@gmail.com

The current study intended to find out the role of homework in improving the quality of education at secondary level. It aimed to explore the suitability and effectiveness of home work for educational attainment of the secondary level students. The study was qualitative in nature. All public and private secondary school teachers of District Lahore were the population of the study. Ten teachers, five from private and five from public schools were selected as the sample of the study by using purposive sampling technique. Data were collected by conducting semi-structured interviews to gain in depth information from the study participants. After completion of data collection, thematic analysis was used to analyze data. Findings of the study revealed that secondary school teachers' assigned homework that helps students for their academic improvement and clarity of the content taught in the classroom that ultimately improve quality of education. The major challenge for secondary school teachers while designing homework is to consider the individual differences of students and time required to give constructive feedback. Teachers in private school take home work more seriously as compared to public schools. The study suggested that the challenges to design effective homework can be overcome through proper training of the teachers, planning of the assigned homework and good time management from teacher part.

Keywords: homework, quality of education, secondary level

Abstract ID: ICSDG0403

SELF-CONCEALMENT, APPREHENSION AND INTERPERSONAL DIFFICULTIES IN UNIVERSITY STUDENTS

Muhammad Bilal, Hira Farhan, Ayesha Jabeen

Department of Clinical Psychology, School of Professional Psychology, University of Management and Technology, Lahore Pakistan

Email: hira.farhan@umt.edu.pk

The current study aimed to find out the relationship between self-concealment, apprehensive temperament style and mental health problems, in university students. A sample of 300 men and with age range 18-25 years studying in government and private universities were given indigenously developed scales of self-concealment (Javaid and Jabeen,2018), Temperament scale (Durrani, Mahmood and Saleem, 2018), and Interpersonal Difficulties scale (Saleem and Ihsan, 2015) along with a demographic Performa. Purposive sampling technique was used to select the sample. The results of correlation analyses revealed a strong positive correlation among introversion, impulsivity, self-concealment and interpersonal difficulties. T-test revealed that students who lived in a nuclear family system scored high on self-concealment and non-significant results were found on the remaining factors and su-factors. The results are discussed in terms of culture background as well as for implications of current research for therapeutic purposes.

Keywords: introversion, self–concealment, interpersonal difficulties, university students

Abstract ID: ICSDG0404

ROLE OF SCHOOL MONITORING IN SCHOOL QUALITY ENHANCEMENT

Naila Latif, Iqra Asim

Lecturer, Department of Secondary Education

Email: aishahsid@gmail.com

ABSTRACT

The main aim of this study was to explore the extent to which school monitoring has an impact upon the school quality enhancement in secondary schools of District Lahore and to give some insights into how it might be organized to influence school quality enhancement. The study was essentially qualitative and employed 21 participants. These were 1 District Education Officer, 10 secondary school teachers and 10 school monitors. Empirical data were collected through semi-structured interviews. The findings indicated that school monitoring plays a potential role towards improving school quality. Teachers perceived the advice and feedback given through monitoring reports and recommendations useful for making improvements in their work performance. However, the study found that monitoring reports and recommendations were not acted upon by the respective authorities to bring about the effective impact on school quality. It was also found that to some extent, school monitors had succeeded in establishing positive relations with teachers. A few of teachers stated that school monitors used friendly language when discussing with them. It was also found that school monitors' working conditions were poor. For example, they did not have a means of transport nor field allowances to facilitate their visits to schools. From the above findings, the study recommends the government to commit its resources towards school monitoring department for effective monitoring of the quality education provided. Classroom observations

should be of the central focus of the school monitors for their impact on school quality. Moreover, for improvements in school to be achieved by the District Education Officer should make use of the monitoring findings and recommendations.

Keywords: school monitoring, school quality, quality enhancement

Abstract ID: ICSDG0405

RATE OF RETURNS TO INVESTMENT IN EDUCATION AND HUMAN CAPITAL IN PAKISTAN

Sadia Intizar

Lahore College for Women University, Lahore.

Email- sadiaintezar97@gmail.com

The experienced and talented human beings are referred as human capital. Knowledge,experience, intellect, abilities, fitness, and other qualities valued by employers, such ascommitment and punctuality, are all examples of human capital. The more a country investsin its personnel, the better its prospects of productivity and success. Human capital has apositive macroeconomic impact and contribution in the growth of an economy. Humancapital is interchangeable, but unlike land, labour, or permanent capital, it is nottransportable. Therefore, for a developing country like Pakistan, it is essential to make allpossible efforts to initiate human capital development initiatives at all levels. In this context,the purpose of this research is to determine the significance of key elements in thedevelopment of human capital in Pakistan. The objective of the study is to investigate rate ofreturn on investment in education to determine human capital. The data used in this study iscollected from world development indicators (WDI) for the time period of 1990 to 2020. Thisstudy is use Vector auto regressive (VAR) model to obtain empirical estimates for modeledvariables. The results indicate that employment in services (ES), labour force participationtotal (LFPT), technology (TECH) foreign direct investment (FDI), mobile cellularsubscription per head (MCSP), and access to electricity (ATE) have a significant relationshipwith the measurements used for estimating Human Capital namely, school enrollmentprimary, school enrollment secondary and school enrollment tertiary.The aim of this study is to measure the quality of education which is the fourth goal ofsustainable development goals (SDG's).

Keywords: rate of returns, investment, education, human capital, Pakistan

Abstract ID: ICSDG0406

FACTORS AFFECTING QUALITY MANAGEMENT AT HIGHER EDUCATION INSTITUTIONS; FROM THE EYES OF INSTITUTIONAL LEADERS

[1]Sana Javed, [2]Dr Aishah Siddiquah

[1]PhD Scholar, Faculty of Education, LCWU

[2]STEM Education Department, LCWU

Email: aishahsid@gmail.com

Quality education not only enlightens but also empowers citizens and enables them to contribute to the maximum extent for the social and economic development of their societies. The main purpose of the study is to explore the factors affecting quality in higher education institutions in terms of challenges, supporting factors, and cultural aspects. The study is carried out using interpretive paradigm that reports the understanding of world as the other people practice it. The study has direct relation with higher education institutions so the population comprises institutional leaders of universities. The data were collected using semi structured interviews. Purposeful sampling technique was used to collect data from participants. Researcher selected one public and one private university and interviewed their Vice Chancellors, Registrars, Controllers, Treasurers, Heads of Quality Enhancement Cell, Deans, Directors, and HODs. Thematic analysis was used to analyze the data. Research findings showed that lack of funding, infrastructure, and technological factors are badly affecting the quality of higher education institutions. Political interference is leading to non-merit based positions, less visionary educational ministries and poor policy making procedures in the institutions. There is lot of gap between industry and research; and theory and practice. Moreover, conventional education system and their previous Practices and precedents of procedures are leading to poor grooming in undergraduates and ultimately quality of higher education institutions. Culture is also one of the factors highlighted by the participants and they said it restricts females more than men in the society. The factors that add up in the quality of

higher education institutions are national and international rankings, trends, and standards given by accreditation councils, presence of standard operating procedures and support from higher education commission as well as higher authorities.

Keywords: Quality Management, Cultural Aspect of HEIs, hindering/challenging factors affecting HEIs, supportive factors of HEIs, Quality of Higher Education Institutions.

Abstract ID: ICSDG0407

RELATIONSHIP BETWEEN TEACHER-STUDENT RAPPORT, LEARNERS' AUTONOMY AND ACADEMIC ACHIEVEMENT AT UNIVERSITY LEVEL

[1]Dr. Sadaf jabeen,[2]Fatima Hanif

[1]Department of STEM Education, Faculty of Education, Lahore College for Women University, Lahore

[2]Department of STEM Education, Faculty of Education, Lahore College for Women University, Lahore

Email: sadaf.jabeen@lcwu.edu.pk, fatimahanif878@gmail.com

The aim to conduct this study was to find the relationship between Teacher-Student Rapport, Learners' Autonomy, and their Academic Achievement at the university level. The study was quantitative, and the Survey method was used to collect data. The population was BS English (undergraduate) students from all public sector universities in Lahore. The data was collected online from 350 BS English (undergraduate) students through a convenient sampling technique. To collect the data the researcher adapted the instruments of the Teacher-Student Relationship Questionnaire (TSRQ) and Learners' Autonomy Profile Questionnaire (Short Form) LAP-SF. The data was analyzed through descriptive statistics (Mean, SD, frequencies, and percentages) and inferential statistics (Pearson's r correlation, simple linear regression). The study found weak, negative correlation between teacher-student rapport and academic achievement (CGPA) and learners autonomy and academic achievement (CGPA) but there was a strong, positive correlation between teacher-student rapport and learners' autonomy and the teacher-student rapport showing 47% variance (which was statistically highly significant) to predict the learners' autonomy. The study recommended that the teacher should focus on their relationship with their students and should engage and encourage their students to participate in those tasks and learning activities in which their autonomy is being developed or improved.

Keywords: Teacher-student rapport, Learners' autonomy, Academic achievement

Abstract ID: ICSDG0408

EXPLORING SUSTAINABLE DEVELOPMENT GOALS AND MORAL VALUES IN THE OXFORD SOCIAL STUDIES TEXTBOOKS FOR PRIMARY CLASSES

[1]Dr QurratulainRehan, [2]Duranayab Farooq, [3]Iffrah Hayat

[1]Assistant Professor, Kinnaird College for Women, Lahore, Pakistan

[2]Kinnaird College for Women, Lahore, Pakistan

Email: qurratulain.rehan@kinnaird.edu.pk

Sustainable development and moral values have become an essential need of our society. We cannot expect our society to exist in the long run without having sufficient knowledge about and moral values. This research study aimed to determine the extent to which Pakistan's social studies textbooks from grade 1 to 5 contained elements regarding sustainable development and moral values. A qualitative research design was preferred and adopted for this research. The data was gathered through content analysis of primary grade textbooks of social studies written by Nicholas Horsburgh and published by Oxford. A checklist was developed depicting elements and themes of sustainable development and moral values. The checklists were approved by experts of the Education Department at Kinnaird College for Women, Lahore. The themes and elements were marked accordingly which further helped in creating the tables of the research. These tables further aided the researchers to explore the finding. Major findings revealed that the textbooks of social studies have a sufficient amount of SD goals i.e. Peace and Justice, Highlighting Importance of Diversity, Integrity, Good Health and Well Being, and much more. As far as the moral values are concerned a few chapters contained a surplus number of moral values in them.

Keywords: Sustainable Development Goals, Moral Values, Social Studies Textbook

Abstract ID: ICSDG0409

Impact of Science Teachers' Attitude on Academic Achievement of Students at Secondary Level in Lahore

Dr.Mubashara Akhtar

Assistant Professor, University of Narowal

Abstract

The current study was designed to find out the impact of science teachers' attitude on the academic achievement of their students at secondary level. A questionnaire was developed, for the science teachers of secondary schools, to find the data related to their attitude and the academic achievement scores were determined by their students' BISE result. This scale was piloted on 80 sampled teachers to check the reliability. The instrument was validated and finalized under the guidance of three experts and the reliability of final instrument was 0.833. The final instrument was administered on 700 secondary school teachers. The collected data was analyzed by using descriptive statistics such as mean, standard deviation, and inferential statistics such as independent sampled t-test and one-way ANOVA. The statistical analysis of the data indicated that attitude of the science teachers were significantly differentacross all the factors i.e. Interest towards Science, Involvement during teaching, Career interest, Social attitude development and Everyday problems with science students' academic achievements.

Keywords: Secondary, Science, Academic achievement, attitude

Abstract ID: ICSDG0410

THE EFFECT OF TEACHER EFFICACY AND EMOTIONAL INTELLIGENCE ON THE TEACHING COMPETENCE OF PROSPECTIVE TEACHERS STUDYING IN PUBLIC UNIVERSITIES OF LAHORE

Dr Saira Taj, AsfaZaigham
Email: Saira.Taj@lcwu.edu.pk

The productivity of teaching and learning process is determined by student's performance or achievement, while the students' accomplishment depends upon various factors which are broadly divided into two domains internal & external, internal aspects like self-motivation, corporeal or cognitive health, self-confidence etc. whereas external aspects include classroom environment, content knowledge, economical background, parental education and so on. However, the foremost significant component among mentioned factors as well as the aspect on whom ample of other factors relay is Teacher Effectiveness or Competence. Teacher effectiveness is a matter that is related to teacher's desire and determination in achieving a set of goals which aims to improve students' achievement. This pivotal element of education system is also associated with sub-factors; personal & psychological. The study aims to investigate the impact of two psychological factors; Emotional intelligence and Self-Efficacy over the effectiveness of prospective teachers in public universities of Lahore, Pakistan. The researcher used purposive sampling technique for the selection 300 participants from three distinct institutes (LCWU, PU & UOE). For the purpose of data collection, researcher used three instruments two of them were standardized (Self-Assessment Instrument for Teacher Evaluation-II & Teachers' Sense of Efficacy Scale (Short form)) whereas the remaining one was constructed by researcher (Emotional Intelligence Scale). Researcher applied three different statistical tests: Pearson r Product Moment correlation, Multiple Regression and t-Independent test. On the basis of analysis and findings, it is concluded that there is a significant positive relationship among the variables of study and it also been observed that there is a significant influence of both independent variables over teacher effectiveness. However, no

significant difference has been found in Teacher competence of preservice teachers on the basis of gender.

Keywords: Effective Teacher, Emotional Intelligence, Self-Efficacy, Teacher Evaluation & Prospective Teachers.

Abstract ID: ICSDG0411

IMPACT OF LEADERSHIP STYLE IN THE ASSURANCE OF QUALITY PERFORMANCE

Dr. Syeda Tehzeeb Alvi

Senior Subject Specialist, SED, Punjab.

Dr.tehzeebarshad-24@yahoo.com

The main objective of this research study was to find out the impact of leadership style in the assurance of quality performance of the employees. The population size of this research study was the 3840 employees engaged in different workplaces in the district of Sheikhupura. The sample of this research study was selected through convenience sampling. The sample was selected in such a way that there was a proportion on various variables like gender age working experience and qualification. The data was collected by the researcher through a questionnaire with 30 statements according to the nature and objective of the research study. A T-test and ANOVA were applied to the collected data to analyze. The findings of this research study show that there is a strong impact of leadership style on the performance of the employees to ensure quality performance. So it was recommended that a leader should not adopt only a single leadership style but instead, the various leadership styles according to the demand of the situation.

Keywords: leadership style, quality performance, assurance, employees

Abstract ID: ICSDG0412

FACTORS AFFECTING THE DEVELOPMENT OF MORAL BEHAVIOR AT SECONDARY LEVEL

[1]Laraib Fatima, [2]Dr. Afifa Khanam

Lahore College for Women University, Lahore

Email: laraib.fatima1997@gmail.com, Dr.khanam.wattoo@gmail.com

Societies sustain by dint of trustworthy, honest and dedicated members who take responsibilities and show morality and compassion towards their fellow men. The current research has brought to light the factors affecting the development of moral behaviour of children at the secondary school level. It was a causal-comparative ex post facto study with a 3x1 factorial design. All male and female, public and private secondary schools of Lahore were the population of the study. A sample of 500 students from 25 schools was drawn conveniently. An instrument, Five point Likert scale, SMB (Student's Moral Behavior), having three sub scales for measuring effect of (i) parents, (ii) school and (iii) media, on the moral behaviour of students was developed by the researcher. The difference in three social factors was calculated by ANOVA and the opinion of male and female was compared through t-test for independent sample. The results revealed that student's moral behavior was substantially affected by their family, school, and media. However, the most significant factor is the parents/family. The second influencing factor was school, and the media affected the moral behavior of student at the least. No significant difference was found between the perceptions of male and female students about the effect of family, institution, and media on student's moral behavior. The study suggests that for the development of a peaceful and sustainable community, all the three social factors; family, school and media need to play specific role at their place so that the society may produce sincere, honest, compassionate and trustworthy citizens.

Keywords: Moral behavior, Family, secondary school, Media

Abstract ID: ICSDG0413

RELATIONSHIP BETWEEN MOTIVATION AND JOB PERFORMANCE OF UNIVERSITY TEACHERS

[1]Dr. Mahvish Fatima Kashif, [2]Dr. Faiza Shaheen

[1]Assistant Professor, Faculty of Education, Lahore College for Women University, Lahore

[2]Assistant Professor, University of Education Lahore, Faisalabad Campus, Faisalabad.

Email: mahvishfatima79@gmail.com, faiza.shaheen@ue.edu.pk

The objective of the study was to explore the relationship between motivation and job performance of university teachers. Correlational research was selected as research design. The population of the study was university teachers of public sector universities of Lahore. Proportionate stratified random sampling technique was used to select the sample. The strata were formed on the basis of gender. The instrument was consisted of three sections; first part was consisted of demographic information (gender, designation, name of the institution). The second part was consisted of scale on Motivation among Teachers (MT), developed by Kelvin (2016) which was used to measure teacher's motivation and the third part was consisted of the questionnaire on Job Performance of Teachers (JP). Both inferential and descriptive statistics were applied to analyze the data. Multiple regression analysis was used to determine the relationship between the variables and Independent sample t-test was used to determine the difference between the motivation of male and female teachers. One-way ANOVA was used to determine the difference between the motivation levels of teachers on the basis of designation. Results showed a significant and positive relationship between the level of motivation and job performance of university teachers.

Keywords: Motivation, job performance, university teachers, co-relational research

Abstract ID: ICSDG0414

INVESTIGATING T OF COMMUNICATIVE AND CULTURAL TOPICS ON THE CONVERSATIONAL SKILLS OF EFL (ENGLISH AS A FOREIGN LANGUAGE) LEARNERS: A CASE OF HIGH SCHOOL STUDENTS

Dr.Mehmet Veysi BABAYİĞİT

Assist. Prof. Batman University

Email: m.veysi.babayigit@gmail.com

Learning English as foreign language has been a main issue globally, and many countries attempt to utilize the best techniques or methods in order to develop the language skills of EFL learners. In Turkey, most of learners come up with a great deal of difficulties though they start language classes at primary school, and they cannot hold a conversation successfully. Hence, the current study deals with possible solutions for boosting conversational aspects of high school EFL learners. Descriptive analysis of literature on the role of communicative and cultural topics about the conversational skills reveal that learners are feel more motivated to describe something in their culture. Thus, the current study was conducted with 18 high school students aged between 16 and 18 to find out the efficacy of cultural topics on the development of conversational skills. The main data collection tool is an open-ended questionnaire interrogating participants' views for adopting cultural topics in the development of conversational skills. The results posited that almost all of the participants are on the idea that cultural topics are really affluent in improving speaking skills because they are able to hold the self-confidence to communicate in the target language and aware of what to claim.

Keywords: English, Cultural topics, Communication, Conversation.

Abstract ID: ICSDG0416

TO PROMOTE GENDER-EQUALITY THROUGH QUALITY EDUCATION IN RURAL AREAS OF LAHORE

Namirah Aslam, Hina Akbar, Gulnaz Fatima

Lecturer, Dept. of Elementary and Teacher Education, Lahore College for Women University

Email Ids: namirah.aslam@lcwu.edu.pk, hinaakbar48@yahoo.com, gulnazfatima59@yahoo.com

Gender equality is fundamental to a country's development and essential to the achievement of the Sustainable Development Goals. In contributing to development for all Pakistanis, female or male, participation of women in, and their voices are heard, across government institutions, civil society, and the private sector. The UNDP Gender Equality Strategy 2014–2017, advancing the empowerment of women by putting their efforts to reduce inequality (UNDP, 2022). This action research focused on to promote gender-equality through quality education in rural areas of Lahore. All genders (female and male) living in rural areas were considered as the population of the study. 150 Genders were conveniently selected for this study. Through observation and field notes researchers collected data. Data was analyzed through check list and field notes. The results of the study showed that those genders both male and female who get education are more self-regulated, empowered, build positive attitude to reduce discriminatory attitudes as compared to others.

Keywords: Gender-equality, Quality Education, Rural areas

Abstract ID: ICSDG0417

ROLE OF OUTCOME BASED EDUCATION IN ACHIEVEMENT OF SDGS

Sadia Murawwat[1*], Ahlam Jameel[2], Ismat Hira[3]

[1,2,3] *Department of Electrical Engineering*

Lahore College For Women University, Lahore

*Corresponding Author's Email: sadia.murawwat@lcwu.edu.pk

With the changing paradigm from conventional education to Outcome Base Education (OBE) system, It is necessary to put efforts for the United Nations Sustainable Development goals. Department of Electrical Engineering at LCWU is providing quality education to the female students achieving the SDGs by implementing the OBE system. In which, multi stakeholder involvement process for development of curriculum, Inclusion of industrial participation in Final Year Project and Continuous Quality Improvement (CQI) leads to the achievement of SDG.
The Final Year Project (FYP) at DEE provide students an opportunity for understanding all SDGs. While solving Complex Engineering Problems (CEP) and Complex Engineering Activities (CEA) from daily life. The targeted SDGs in the overall OBE system are SDG-4, 5, 7, 8 and 17. The flow processes of Electrical Engineering ensures the regular check on CLO, PLO assessment and PEO evaluation. The results lead different corrective actions which need to be recorded and arise the need of an authority to authenticate the corrective actions for B.E. Electrical Program. This process validates the existence of CQI, DQEC, IAB and CRC committees. These corrective actions and results are presented in the respective committees resulting the appropriate mapping to SDG-4 Quality Education goals 3 and 4.

Keywords: SDG, Outcome Base Education, CEP, FYP, multi stakeholders

Abstract ID: ICSDG0418

Evaluation of B.Ed. (Elementary) 4-years program offered by distance and regular universities through CIPP model.

IqraAkram * Dr TahiraKalsoom **

Lahore College for Women University

Abstract

Teacher education is important for the whole education system of country; it produces the competent teacher with well-developed knowledge and abilities which is crucial for the better performance of a teacher. The study will attempt to uncover the current standing of teacher education programs offered in distance and regular universities of Pakistan for comparison of their diversities, with a focus on four universities namely Allama Iqbal Open University, University of Education, Virtual University and Punjab University. The comparison will be based on the collected data from the prospective teachers having experience of two to five years, to uncover gaps in teacher education in distance and regular teacher education universities of Pakistan for implementing solutions. The study will draw on the CIPP model of program evaluation to draw out the perspectives of program executors, teachers and students. Mix method research design will be used. Both qualitative and quantitative research techniques will be used to collect, analyze and interpret the study. Quantitative data will be collected through survey questionnaires to be filled by the teacher. Qualitative data will be collected through the interviews from heads, coordinators and teacher trainers and observation. HEC document will be cross analyzed with university documents. Thematic analysis will be done for qualitative data analysis and for the quantitative data descriptive and inferential statistics will be used.

Abstract ID: ICSDG0419

Service Involvement and Civic Attitudes of NUST University's Alumni Assistant Manager Community Service

Sehrish Hamid Butt

SMME, NUST, Islamabad, Pakistan,

sehrish.hamid@smme.nust.edu.pk

Whether and to what extent obligatory community service during the course of university life affect the later civic attitudes of alumina? The present study attempts to reveals the findings of this study compiled after surveying 300 alumina, whom were contacted after two years of graduation from National University of Sciences and Technology (NUST). This paper endeavors to describe the outcomes from a survey portraying encouraging interpretations of the extensive public service prerequisite students had accomplished before graduating and saw it as persuading their advanced civic approaches and career expansion

Abstract ID: ICSDG0420

Effect Of Servant Leadership On Employees' engagement At Public Colleges Of Lahore

Dr AnamNoshaba, Misham Israr & Sania Rehan
saniarehan16@gmail.com

Abstract ID: ICSDG0421

IMPROVING QUALITY EDUCATION THROUGH ACTS OF VOLUNTEERISM- A PATHWAY OF ACHIEVING SUSTAINABLE DEVELOPMENT GOALS

MAHEEN MUMTAZ

Assistant Manager Community Services, SMME,National University of Sciences & Technology (NUST)

Email: maheenmumtaz@smme.nust.edu.pk

In the present study, the achievement of Sustainable development goal 4 (SDG 4), Quality Education is explored. It argues how little acts of volunteerism can combine together when focused to provide at least a platform in fostering the targets of SDG 4. This paper discusses a volunteer case study of a project lead by a group of students of National University of Sciences and Technology (NUST) in working towards advocating inclusive and equitable quality education. The current study will help in undertsanding how higher education institutes and the young volunteers can do their part to work towards impact rather than providing a roadmap. Conclusions drawn from the case study will help in hihglihgting the gaps that may result in talking about how we can achieve this goal rather than working towards actually achieving the goal. Institutions of higher education can also learn from such perspectives to encourage acts of volunteerism in achieving the goals.

Keywords: quality education, volunteerism, pathway,sustainable development goal

Abstract ID: ICSDG0422

GEOSPATIALLY MODELLING EDUCATION STATUS INEQUALITIES AND DETERMINANTS IN PAKISTAN: A GEOGRAPHIC INFORMATION SYSTEM-BASED STUDY IN CONTEXT OF SUSTAINABLE DEVELOPMENT GOAL-4

Dr. Syed Ali Asad Naqvi

Department of Geography, Government College University Faisalabad, Faisalabad, Pakistan.

Email: draliasad@gcuf.edu.pk

Provisioning of quality education is the fundamental prerequisite in accomplishing Sustainable Development Goal-4 (SDG-4). Concerning this, we here present vital references and insights for education-related interventions and investments viable to be utilized to inevitable local needs within Pakistan. Various spatio-statistical modelling analytics like Moran's I (Global spatial autocorrelation), Cluster and outlier analysis, and multivariate clustering models are employed to discover geospatial patterns and heterogeneities. Furthermore, determinants with significance among various spatio-environmental, infrastructural and socio-economic variables are revealed for educational status through regression modelling. Consequently, a substantial spatial inequality regarding education status is discovered within Pakistan. Even though there is a significant Spatial association, there are 22% of the overall districts (confidence 95%) identified as significant hot-spots regarding higher education status (significant clusters). Most of them (44%) poorly performing are districts located in Balochistan (95% confidence). From an overall perspective, the education status within Punjab province is higher or better relative to other provincial districts. We reveal that four (04) out of seven (07) factors (i.e., being poor; being urbanized; having electric supply, and having infrastructure in school) are statistically significant determinants of education status. While being poor is the most significantly related factor controlling education status with a mean coefficient of 18.848. The results of the study have vital implications for decision-making for gradual or immediate actions. These actions should be in the context of geographically equitable allocation of education with good quality using informed prioritization, especially within low-performing areas. On the basis

of the findings, while urgent and rigorous actions are inevitable for poorly-performing districts and given determinants to enhance the status of education, this research also enlightens the overall mechanisms needed to accomplish Sustainable Development Goal-4, consequently encouraging human well-being via education communities.

Keywords: SGD-4, Sustainable Development Goal 4, GIS, GWR, Spatial Analysis

Abstract ID: ICSDG0423

ENSURING EQUITABLE QUALITY EDUCATION (SDG4) OF DISABLE STUDENTS THROUGH RESOURCE DISTRIBUTION JUSTICE FOR PROMOTION OF LIFELONG LEARNING

Shabnam Khan[1], Dr. Saqib Rehman[2], Dr. Adeel Nasir[3]

[1, 2 & 3]*Department of Management Sciences, LCWU, Pakistan*

**Shabnam.khan08763@gmail.com

Education is the fundamental right of disable students to access academic resources for the prosperity and lifelong learning in educational sphere. Sustainable Development Goal-4 highlights the urgency and need towards immediate attention of researchers and practitioners to promote inclusive and equitable quality education to promote lifelong learning for all. To unleash the research gap, this study aims at exploration of educational avenues and extent of justice towards academic resource distribution for disable students. While applying basic qualitative research methodology, total 13 interviews were conducted through convenience sampling in which seven interviews from disable students and six interviews from managerial staff of educational institutes in Lahore, Pakistan. From the analysis of collected data by using Gioia methodology, it has been inferred that perception of disable students about the research phenomenon vary, while, majority of the informants expressed the grave concerns towards the institution providing educational facilities and justice to access academic resources. In contrast, educational institutions claimed their extra miles efforts to provide equal educational opportunities and access of academic resources like infrastructure, learning resources, teaching facilities and financial support for the disable students. While, the role and involvement of government of Pakistan and HEC (higher academic authority in Pakistan) is almost vague and abstracted. This all happened due to lack of interest, seriousness, and collaboration of academic stakeholders to cater the need of disable students. The injustice claimed by disable students drags an attention towards the dire need of collaboration between academic partners and stakeholders to mutually devise the policy framework for the disable students. This study presents conceptual framework for the academic stakeholders to provide equitable quality education to the disable

students through justice in resource distribution that will promote lifelong learning for all.

Keywords: Resource Distribution Justice, Equitable Quality Education, Disable Students, HEC, Government of Pakistan.

Abstract ID: ICSDG0424

ROLE OF MEDIUMOF INSTRUCTION ON STUDENTS' ACHIEVEMENT AT ELEMENTRY LEVEL

Dr. Tayyaba Batool, Iqra Nasir

batool.tayyaba786@gmail.com

Interaction is the heart and soul of the teaching learning process. All types of interaction in the educational process; instructor-learner, learner-learner, and learner content calls for a medium mainly a language. This language is termed as the medium of instruction. The ultimate aim of this study was to identify the role of medium of instruction on student's achievement. This study signified that the role of native language is vital in students' learning at elementary level. The theorists and practitioners speak for indigenous language as a medium of instruction. The purpose of the present study was to compare the achievement of students in Urdu medium test and English medium test at elementary level. Students from grade 4th and 5th were randomly selected from different schools. Students' achievement test (SAT) was used as a research tool. Paired samples t-test was applied to analyse the data. The results show that students perform better in indigenous language test / Urdu medium of instruction as compared to foreign language test/ English medium of instruction at elementary level. However, approximately 15% students can perform better in English medium-instruction as well as Urdu medium-instruction. Policy implications are provided at the end of the report.

Keywords: interaction, medium of instruction, student's achievement, elementary level

Abstract ID: ICSDG0425

INVESTIGATING TEACHING QUALITY AND TEACHERS' PERFORMANCE FROM STUDENTS' PERSPECTIVE AT UNIVERSITY LEVEL

[1]Abdul Haseeb Mujahid, [2]Dr. Ijaz Ahmed Tatlah,[3]Dr. TahiraKalsoom,

[1]Ph D Scholar, University of Education

[2]Associate Professor, University of Education, Lahore

[3]Assistant Professor, Lahore College for Women University, Lahore

Email: haseab@gmail.com, tatlah@ue.edu.pk, tahira.kalsoom@lcwu.edu.pk

The study aims to explore the factors significant to the level of satisfaction for students in higher education settings. The study focuses on teachers and teaching effectiveness factors considered and evaluated by students. This study is explanatory in nature. Survey was conducted to collect data from students by using "Modified Instructive Perspective Inventory" (MIPI). Data was analyzed statistically. Students of Teacher Education program in universities were the population of this study. Modified Instructional Perspective Inventory is used as a tool to find out teachers' effectiveness in the classroom. Reliability of assessment procedure of teacher effectiveness is measured to predict satisfaction of the teachers with teaching and satisfaction of the students with the learning. The overall reliability of using these instruments has also been established and enhanced the concept that the assessment measures were more objective, practical, and focused on human development than the typical standards offered by many educational administrations

Keywords: Teaching, Quality, Performance, Perspective, Teacher, Student

Abstract ID: ICSDG0426

Relationship between Academic Stress and Academic Achievement at Secondary Level

SeharArif
sahar.arif2016@gmail.com

ABSTRACT

This study was conducted to determine about the impact of stress on students in secondary and higher secondary school education.Students in secondary and tertiary education settings face a wide range of ongoing stressors related to academic demands. Previous research indicates that academic stress can reduce academic achievement, decrease motivation and increase the risk of school dropout. The longer-term impacts, which include reduced likelihood of sustainable employment, cost billions of dollars each year. This narrative review presents the most recent research concerning the impact of academic-related stress, including discussion of the impact on students' learning capacity and academic performance, mental health problems, such as depression and anxiety, sleep disturbances and substance use.

KEYWORDS: Academic, Adolescent Health, Education, Stress

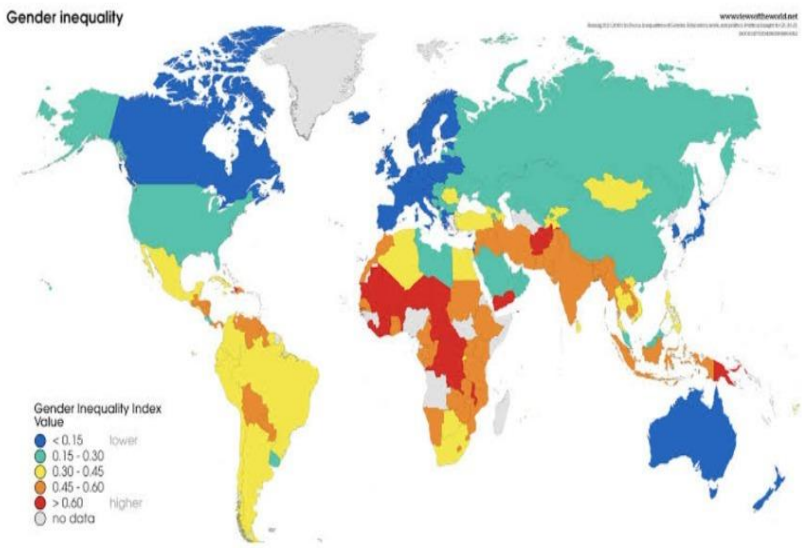
FACULTY PROFESSIONAL DEVELOPMENT AND USE OF ICT AS MODERATORS BETWEEN QUALITY OF EDUCATION AND SLO'S OF PRIMARY SCHOOL STUDENTS

Dr. Rabia Tabbasum
Department of STEM Education lcwu

The study was aimed to analyse the impact of quality education on students' learning outcomes with moderating effect of teachers' professional development and use of ICT as instructional tool in the primary schools of Lahore. The parameters of quality education observed in this study were context, inputs, process, and outputs.Survey was conducted among 357 teachers from primary schools of Lahore with the help of close-ended questionnaire. Collected data was analysed on Smart PLS, using various statistical approaches including construct validity, discriminant validity, and path coefficients. Findings of this research study revealed that the quality of education has significant and positive impact on student learning and this relationship is successfully moderated by faculty professional development and communication technological advancement in the primary schools of Lahore. This result also indicated that by employing new courses to improve teaching and equipping teachers with professional development programs, moderates the students' learning outcomes.


5 GENDER EQUALITY
Goal 5 - Gender Equality
Achieve gender equality and empower all women and girls
69
GUEST ARTICLES
57
POLICY BRIEFS
14
GENERATION 2030
1696
NEWS
230
EVENTS


49 countries
lack laws protecting
women from
domestic violence
GENDER EQUALITY
UN WOMEN


Gender inequality
Gender Inequality Index Value
< 0.15 lower
0.15 - 0.30
0.30 - 0.45
0.45 - 0.60
> 0.60 higher
no data


5 GENDER EQUALITY

SDG5 GENDER EQUALUTY

SCIENTIFIC CHAIR PROFILE:

Name: Prof. Dr. Amina Muazzam

Qualification: PhD, Applied Psychology

Designation: Tenured Professor / Chairperson / Director Research/ Incharge Central Research Lab, LCWU

Department: Applied Psychology

Faculty: Faculty of Arts and Social Sciences

University: Lahore College for Women University, Lahore

Contribution in Research and Academics: She has supervised 10 PhD scholars and 100 MS thesis as HEC approved supervisor. She is visiting faculty of Lake Head University Canada. She has been elected as Director at large at ICP Canada for the terms of 3 years (2018-2021 & 2022-2025). She has published around 100 research papers in prestigious journals. She has written two books and one chapter in IGI. She has been invited as an expert in the area on many TV talks. She is taking BS, MS and PhD classes along with the research work and administration tasks.

Specific SDG and its role in Pakistan development and globally:

SDG-05 (Gender Equality). Gender equality is not only a fundamental human right, but a necessary foundation for a peaceful, prosperous and sustainable world. There has been progress over the last decades: More girls are going to school, fewer girls are forced into early marriage, more women are serving in parliament and positions of leadership and laws are being reformed to advance gender equality. Despite these gains, many challenges remain: discriminatory laws and social norms remain pervasive; women continue to be underrepresented at all levels of political leadership. It is only by addressing and ensuring gender equality and equity that we can build a just world and counter discrimination, violence, prejudice and oppression.

ABSTRACT PRESENTATION

BREAKING CULTURAL BARRIERS FACING PAKISTANI GIRLS' SCHOOLING THROUGH SOCIAL INTERVENTIONS

Keynote Speaker: Dr. Sara Rizvi Jafree

Forman Christian College, Lahore

Email: sarajafree@fccollege.edu.pk

SDG 5 indicators have been outlined by UN as: "providing women and girls with equal access to education, health care, decent work, and representation in political and economic decision-making processes." Improvement in these indicators is expected to "fuel sustainable economies and benefit societies and humanity at large."

This talk will focus on one aspect of this- improving equal access to education, which is an extremely critical area for Pakistan and has become even direr since the coronavirus pandemic. The talk is based on a paper published in ISI e-symposium of sociology. There are two broad reasons why girls do not receive equitable access for educational opportunities in Pakistan. Firstly, structural shortfalls which do not support enrollment and retention for girls from poor, rural-based or remotely-located families; and secondly, cultural barriers which prevent entry in school. We will be concentrating on the latter during the talk.

Estimates suggest that more than 10 million girls remained out-of-school before the pandemic in Pakistan, with this figure having risen post the pandemic to 22 million! A combination of cultural attitudes, traditional values and religious interpretations are a cause for keeping girls out-of-school and preference to provide them with home-based or community-based informal religious education or Madrassah schooling. Not only is the distance, quality and security provision of state schools an additional barrier, but there is extreme mistrust and aversion to Western education for girls exist in culturally conservative region like Pakistan.

The possibility of implementing 9 areas of cultural interventions which could positively impact girls education in Pakistan, will be discussed, including: (i) Parental motivators; (ii) Teacher motivators; (iii) Resources & Services motivators; (iv) Safety & security motivators; (v) Community motivators; (vi) Curriculum reform; (vii) Integrating Women Social Workers; (viii) Distance Learning; and (ix) Improving Financing. The talk will conclude that the ethics and planning for girl's education in

Pakistan, and other LMIC with similar conservative cultures, must recognize and incorporate efforts to transform the social construction of schooling girls. The focus of cultural interventions must be on assisting change in primary agents that control decisions for education including parents, community notables, religious leaders and media. Ultimately, these critical interventions if implemented and effective would benefit Pakistan and also become a benchmark for other culturally conservative regions.

GENDER INEQUALITY IN HUMAN CAPITAL AND SUSTAINABLE DEVELOPMENT GOALS, WAY FORWARD: A CASE OF PAKISTAN

Keynote Speaker: Dr. Syeda Azra Batool
School of Economics, Bahauddin Zakariya University, Multan
Email: azrabatools@yahoo.com

The findings from extensive literature notify that gender inequality in human capital viz., education and health have a significant negative impact on other development goals such as reduction in fertility, child mortality, and undernutrition. Followed by the unfinished agenda of Millennium Development Goals (MDGs) in year 2015, The United Nations brought into light the new agenda titled as" Sustainable Development Goals" (SGDs), 2015-2030, enlisting 17 goals. The SGDs were adopted by all members countries of United Nations as a global call to action: to eradicate poverty; saving the planet, and ensure that everyone should enjoy peace and prosperity by 2030. Following the pledge "to Leave no one behind", nations have committed to prioritize the acceleration of progress for those at the bottom. The 5th goal of SDGs refers towards minimizing the gender inequality. Being patriarchal society, in Pakistan females face gender inequality, especially in human capital; health and education. Following the adoption of the SDGs, the government of Pakistan initiated dedicated efforts to achieve SDG-5. The present study reviews, whether we are achieving the SDGs in health or not? The review of the SDGs exhibits that the practical interventions to lessen gender disparities in health are not adequate. Policy recommendations are also given to boost up the pace of progress in this regard.

Abstract ID: ICSDG0501

FEMALE ENTREPRENEURSHIP AS A SUSTAINABLE DEVELOPMENT GOAL 2030; A STAKEHOLDER'S PERSPECTIVE IN PAKISTANI CONTEXT

*Hassan Ibrahim Tela[1], Sadia Khan[2]

[1, 2] *Department of Psychology, Lahore Leads University, Pakistan*

*Corresponding Author's Email: telahassan1@gmail.com

Women in Pakistan makes up for the 48.8 % of the entire population. With this percentage of population, Pakistan will not be able to meet the 2030 SDG goals of no poverty, gender equality, industry and innovation and other goals without the active contributions from the women in every field of life. The current research explores the problems regarding SDG no. 5 of (gender equality and its connection with SDG no. 1 (no poverty) and SDG no.8 (decent work and economic growth) from stakeholder's perspective. Three main objectives were discussed, 1) role of women in SDG in Pakistan, 2) problems faced by women that effect their contributions in SDG and 3) key areas of action and proposed solutions as a way forward to empower women of Pakistan as major stakeholders in 2030 SDG. A qualitative exploratory research was conducted to meet the objectives of the study. A sample of N=9 (n=6 females, n=3 males) with mean age of 32.3 were recruited from different educational and industrial sectors of Lahore. Convenient and snow ball sampling strategy was used to collect the data through semi structured interviews. The problem areas were identified at personal, social/cultural and economic level. Women's entrepreneurship, specifically in the form of digital and traditional entrepreneurship, was proposed as a tangible way forward to deal with gender equality in labor force by enabling women to work from home and help in eradicating poverty. A recommended course of action to promote digital and traditional entrepreneurship in women was through awareness campaigns at educational and community levels in both males and females, using successful female entrepreneurs as motivational models and creating micro finance systems at governmental and national level. This research can help the

policy makers to invest in specific developmental programs for women at educational and industrial level.

Keywords: Female entrepreneurship, Gender quality, SDG 2030, Digital entrepreneurship for females.

Abstract ID: ICSDG0502

GENDER EQUALITY IN THE TOURISM INDUSTRY OF PAKISTAN: AN ASSESSMENT OF DIFFICULTIES AND CHALLENGES FACED BY TRANSGENDER TOURISTS

Marwa Ijaz, Rabia Khurshid, Suhaib Aamir

Air University School of Management (AUSOM), Air University, Islamabad, Pakistan

Email: suhaibaamir@gmail.com

In Pakistan, transgenders have been experiencing the social stigma that affects them psychologically and physically in all spheres of life. Pakistani society has treated transgenders as an exclusive group with anomalies and lagged behind in formulating an inclusive society in which transgenders can be integrated to have equal rights. Due to these prejudices and injustices, transgenders face difficulties and challenges in their daily life, routines and activities. Planning, experiencing, and enjoying travel and tourism activities have not been an exception for transgenders. In this study, we have focused our interests on studying the touristic expeditions of transgender tourists. The study intends to examine the difficulties and challenges faced by transgenders during the different phases of their touristic expeditions such as planning, organizing, actualizing, experiencing, and finalizing the trips. To study and understand the phenomena of interest, qualitative research design would be used, and semi-structured interviews would be conducted with the transgenders from Islamabad and Rawalpindi region. The findings of the study will be related to the theme of gender equality, which is the goal 5 of Sustainable Development Goals (SDGs), and how its standards can be lifted to offer better life and prospects to the transgenders in Pakistan. Research on gender equality will facilitate the government of Pakistan, policymakers, the regulatory bodies, travel and tourism firms, and destination management organizations (DMOs) in planning, formulating and exercising policies, procedures and practices, which are inclusive of transgenders in Pakistan.

Keywords: Transgenders, gender equality, SDGs, Tourism, inclusive society, equality

Abstract ID: ICSDG0503

SPRING IN WOMEN EMPOWERMENT FOR SUSTAINABLE SOCIETY

Nabeela Nazly[1], Dr. Saqib Rehman[2,] Dr. Adeel Nasir[3]

Department of Management Sciences, Lahore College for Women University, Lahore, Pakistan

Email: Nabeela.nazly@lcwu.edu.pk

Women's empowerment is the ultimate step towards the attainment of the 5th SDG's goal of "Gender Equality" in a sustainable society. The main objective of the present study is to measure the total scale of women's empowerment for working women with mediating effect of self-efficacy. While concentrating the gap of the previous study the element of the self-efficacy is portrayed as "self-trust" to apply control over one's reactions, motivation, behavior at their workplace communities. In fact, the concept of women's empowerment is incomplete without the protentional inner component of self-efficacy. Using the "G-power" convenience sample of 161 working women from manifold departments was selected for the empirical analysis from Lahore and its adjacent areas. To measure the personal, social, educational, and legal & political empowerment. The scale of total women empowerment is incorporated to measure the expression against 70 items for further exploration. Results approved that self-efficacy partially mediates with workplace women empowerment. Personal, educational legal & political empowerment also has a direct relationship with working women's empowerment, and with the effect of mediating variable, this effect strengthens. Measurement of all the aspects of working women empowerment with mediating variable of "self-efficacy" is a new, motivating domain having practical implications and can be the reasoning for new dominions in research for knowledge enhancement. The inner aspect of working women empowerment "self-efficacy" is measured as the most important predictor of women empowerment. Women empowerment is a novel and dynamic concept which is constantly influenced by various other aspects like culture, values, and norms with this consideration present research work is a piece of optimistic knowledge with the prospect of a developing country like Pakistan.

Keywords: - Equality, Working women empowerment, self-efficacy, Personal Empowerment, Social Empowerment, Educational Empowerment, Legal & Political Empowerment.

Abstract ID: ICSDG0504

REASONS OF CRIME, PERSONALITY AND GUILT IN WOMEN PRISONERS

Rehmana Khalil[1], Farhat Jamil[2], Ruhi Khalid[3]

[1]Department of Psychology, Beaconhouse National University, Pakistan

[2]Department of Psychology, Beaconhouse National University, Pakistan

3Department of Psychology, Beaconhouse National University, Pakistan

Email: rehmanakhalil@gmail.com

The purpose of the present study was to explore the reasons of crime among the women prisoners and also their personality and guilt proneness. A sample of 60 women prisoners of age 18 to 65 years was taken from Kot Lakhpat Jail Lahore through purposive sampling. It was hypothesized that openness and agreeableness would be higher than extraversion and neuroticism in women and personality will predict guilt proneness in women prisoners. Mixed research design was used i.e. both qualitative and quantitative designs. Personality and guilt proneness were assessed quantitatively; the reasons of crime were assessed qualitatively. Semi-structured interview was used to explore the reasons of crime, big-five inventory (44 items) (John & Srivastava, 1999) was used to assess the personality traits and guilt proneness scale (GP 5) (Cohen, Kim, & Panter ,2014) was used to find the guilt proneness in women inmates. The results of the study revealed that women prisoners scored significantly high on agreeableness and openness as compared to neuroticism and extraversion. There was a significant positive relation correlation between agreeableness and guilt (r=0.33*) and that personality predicts guilt. Interpretative phenomenological approach was used to analyze the reasons of crime and data was arranged into themes of similar codes. Major themes of reasons of crimes that emerged were socio- status, low income, property issues and revenge. It was interesting to observe that most of the crimes women committed were against their acquaintances. The study provided novel information on the reasons of crime among the women and can help reduce the rate of crime committed by women by helping policy makers to make better policies.

Keywords: reasons of crime, personality and guilt proneness.

Abstract ID: ICSDG0505

GENDER SENSITIVE PUBLIC POLICY INITIATIVES: AN ANALYTICAL STUDY OF WOMEN EMPOWERMENT PACKAGE (2012-2016) PUNJAB

[1]Sadia Jabeen, [2]Dr. Sonia Omer

[1]Incharge, Department of Sociology, Virtual University of Pakistan, Pakistan

[2]Assistant Professor, Department of Social Work, University of the Punjab, Lahore, Pakistan

Email: sadiajabeen@vu.edu.pk, soniaomer78@gmail.com

In Pakistan, different governments and political parties have used the slogan of "Empowerment of Women" in different eras but remains only a slogan with insufficient efforts and limited opportunities. One of the recent steps towards this policy initiative is the "Women Empowerment Package" (WEP) was launched by the Punjab government in 2012, 2014, and 2016 respectively with the motive to safeguard women's rights and enhance their economic participation through economic empowerment. The recommended package could be workable with proper accountability systems and a clear framework for action. The researcher aims at exploring the gender sensitivity of public policy towards women with special focus on WEP. The following analytical framework was used by Centre for International Development Issues Nijmegen (CIDIN). The parameters of the analytical approach cover the structural and action oriented aspects based on three dimensions: (i) access to resources, information, power and networks, (ii) rights, rules and responsibilities (iii) identity, culture and sense of belonging. On the basis of analysis, this study is able to analyse the gender sensitivity of WEP as public policy. The outcomes of this study will be helpful to foresee the effectiveness of this package in the long run for the women of Punjab province.

Keywords: Public Policy, Women Empowerment Package, Analytical study, Pakistan, Women's Rights.

Abstract ID: ICSDG0506

COMPARATIVE STUDY OF ARCHETYPE HEER AND CONTEMPORARY WOMAN IN PATRIARCHAL SOCIETY

Sunnia Malik

Department of English, Bahauddin Zakariya University, Multan, Pakistan

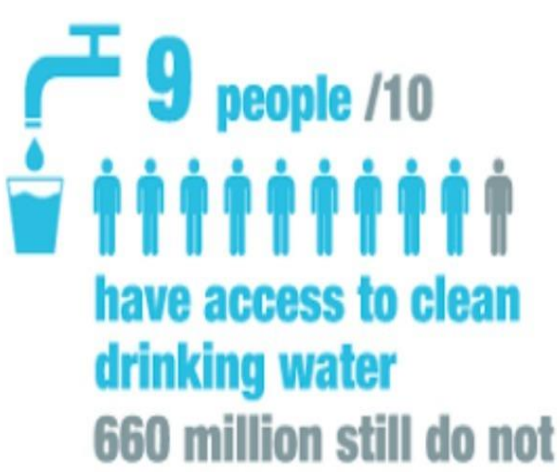
Corresponding Author's Email: sunniamalik3@gmail.com

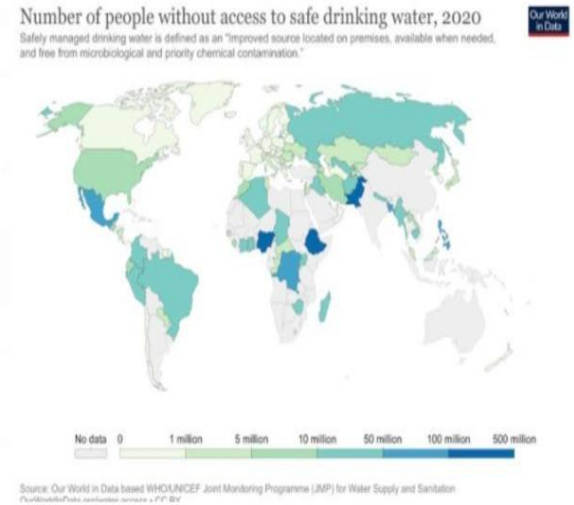
This paper offers a critical approach to Waris Shah's epic 'Heer' and focuses on one of his main characters, namely Heer. He has developed his plot on a patriarchal society and has challenged it. Heer had to battle with a male-dominated society, individual vs society. At that time, eastern women were treated as second-class. Power was related to privileged. Waris Shah presents Heer as an archetype. According to research, archetypes are mental images that we encounter in literature. Archetypes are characters and symbols that initially arise in folklore as part of our collective consciousness. Folklore contains all of the major literary genres in their fundamental form. In Punjabi classical poetry, the lover is the archetype who represents love, Heer. Archetypes can help us better understand our own journey of life, increase communication between our conscious and unconscious minds and trigger a greater sense of meaning and fulfillment in life. Heer rebels against the worldly attitude of her family. The lover feels something absent in society or in her life. The main theme of the poetry of Waris Shah is the story of Heer coming across different barriers in the way of finding love and majesty. The daughter's love is sacrificed for the sake of the relationship, and her lover, conditioned by prescribed gender roles, fails the beloved at crucial moments. The patriarchal discussion has consistently indulged in either a romantic glorification of a woman or her unpredictable accusation and the legend of Heer Ranjha is no exception. Like most of the traditional literature by men, this legend also presents what may be termed as "fictional woman" who is "a male-produced fiction" and suppresses the "historical" woman i.e. the real woman who remains oppressed under a biased value structure and obliterated by the cultural representations of gender. The study targets the gender inequality in our society and through his epic, Waris Shah strengthens his woman in her role towards her family, friends, relatives, and society. Through his verses, he gives the message to his audience to eliminate all forms of violence

against women, in public as well in the private sphere of life. Females should have the lawful right to inheritance and social protection. Today's woman must have her sense of self- worth, her ability to bring change to society and improve her economic, social and political status.

Keywords: Heer, patriarchal society, male-dominated society, archetype,self-worth


6 CLEAN WATER AND SANITATION
Goal 6 - Clean Water & Sanitation
Ensure availability and sustainable management of water and sanitation for all
99
GUEST ARTICLES
51
POLICY BRIEFS
11
GENERATION 2030
1483
NEWS
298
EVENTS


9 people /10
have access to clean drinking water
660 million still do not


Number of people without access to safe drinking water, 2020
Safely managed drinking water is defined as an "improved source located on premises, available when needed, and free from microbiological and priority chemical contamination."
Our World in Data
No data
0
1 million
5 million
10 million
50 million
100 million
500 million
Source: Our World in Data based WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation


6 CLEAN WATER AND SANITATION

SDG6 CLEAN WATER & SANITATION

SCIENTIFIC CHAIR PROFILE:

Name: Prof Dr Zohra Nazir Kayani

Qualification: PhD Solid State Physics (PU)

Designation: Chairperson / Professor Physics

Department: Physics

Faculty: Science and Technology

University: LCWU

Contribution in Research and Academics:

Prof. Dr. Zohra Nazir Kayani is currently working as Chairperson/Professor in Department of Physics, Lahore College for Women university Lahore Pakistan. She obtained her Ph.D. from Centre of Excellence in Solid State Physics, University of the Punjab in 2009. She got indigenous Scholar ship of Higher Education commission of Pakistan in 2004 and International Research Support Initiative (IRSIP) Scholarship from HEC, in 2007. She has more than 170 impact factor. She has 1032 Citations, h index 17 and i10 index 36. She is working on thin films, ferroelectric liquid crystals and nano-particles. So far, she has supervised 50MS and 7 PhD research theses in the fields of Spintronics and nano-materials. She has introduced 10 new courses of MS and PhD.

Specific SDG and its role in Pakistan development and globally: Safe and affordable drinking water for all by 2030 requires, investing in adequate infrastructure and resources. It is important to provide sanitation facilities, and promote hygiene. It is equally important to Protect and restore water-related ecosystems.

ABSTRACT PRESENTATION
Abstract ID: ICSDG0601

Urbanization and associated Domestic Water Consumption Problems in Faisalabad City

Liaqat Ali Waseem[1]*, Asma Majeed[1]
1Department of Geography, Government College University Faisalabad, Punjab, Pakistan.
*Corresponding Author's Email: drliaqataliwaseem@gcuf.edu.pk

The research aims to examine the urbanization and domestic water consumption dynamics of Faisalabad civic population. The study was carried out in four towns of Faisalabad city, the second-largest city of Punjab Pakistan. Both primary and secondary data sources were used to analyze the urbanization impacts on domestic water consumption and problems related to access and quality of water. For primary data, a baseline survey was conducted to investigate the water consumption linked with socioeconomic conditions of urban population of Faisalabad with structured and unstructured questions. In-depth interviews were conducted with Govt official of Water and Sanitation Authority (WASA) and Water and Power Development Authority (WAPDA) to get firsthand information on the dynamics of water quality and quantity. The primary data was analyzed with the help of Statistical Package for Social Sciences (SPSS) for graphical presentation. Geographical Information System (GIS) and Remote Sensing (RS) techniques of change detection of Land use temporal variations were analyzed with image processing acquired from United States Geological Survey (USGS). Secondary data of images was converted into spatial primary data by image processing. The land sat images were processed to acquire spatial primary data that was utilized to detect the urban expansion change detection. The base line survey results revealed about lack of safe drinking water, other qualitative and quantitative issues, housing and family structure, the present urbanization and water supply situation of the study area, sources of fresh drinking water, and their effects on the livelihood of people. This research may help to achieve the sustainable development goals that are related to clean water and sanitation, good health, and well-being. The research will be equally valuable for other national and international megacities.

Key Words: Urbanization, Domestic Water Consumption, Water Quality and Quantity, Socioeconomic Conditions, Change Detection, Faisalabad City

Abstract ID: ICSDG0604

Hydrophobic Membranes for Water Desalination

Aneeqa Sabah[a], Sufyana Idrees[b], Maryam Tahir[b], Asar Inbsat[c]

a. *Assistant professor, Physics department, LCWU, Lahore College for Women University, Lahore, Pakistan.*

b. *Ms. Scholar, Physics department, LCWU, Lahore College for Women University, LCWU, Lahore, Pakistan.*

Corresponding Author's email: aneeqas29@gmail.com

Economical, sustainable, safe and clean water is one of most challenging demand of present world. Membrane for filtration and sensing are getting enormous attention owing to their significant advantages for water purification. Cellulose based, polymeric membranes and thin film technology is being used for membrane synthesis since 1980's. In addition to conventional separation and filtration techniques, transparent and hydrophobic membranes were synthesized by a facile and simple sol−gel method, which has the capacity to control the size of the particles or membranes by controlling the reactions parameters. Trim ethoxyoctylsilane (C_8TMOS) was used as a chemical surfactant; poly (vinyl pyrrolidone) (PVP) as an emulsifier, dissolved in butanol for emulsion; and tetraethylorthosilicate (TEOS) as a precursor and a source of silica. An assembly of silica wires was fabricated various substrates by the dip-coating technique. Wettability and contact angle confirmed the hydrophobic nature of these prepared porous membranes. Modeling for metal oxide doped hydrophobic membranes was also studied by fuzzy simulation to investigate their effects on its structural, morphological, optical, and electrical behavior. These silica-based porous membranes with enhanced transport properties can be tested for desalination of salt water filtration and purification as well as for microbial diagnosis depending on the pore size and wettability. These silica based membranes have profound application for safe, clean and affordable drinking water depending on size of the particles, can meet the challenge of SDG-6: Clean water and Sanitation.

"Email Subject: SDG 6: Clean Water &Sanitation".

Keywords: Silica membranes, Hydrophobicity, Desalination, Sol- gel, Modeling

Abstract ID: ICSDG0605

Agricultural Waste Derived Activated Carbon against Combinational Contaminants of Drinking Water

Ghousia Muzammal [a], Rahat Naseer [b*], Mateen Abbas [c] Shahid Abbas[d]

Institute of Biochemistry and Biotechnology, University of veterinary & Animal Sciences Lahore[1,] [a,b,d]

[c] Quality Operational Lab, University of Veterinary & Animal Sciences,

*Corresponding Author's Email: rahat.naseer@uvas.edu.pk

In the present study, a modified activated carbon was prepared by chemical activation of agricultural waste, rice husk. Compositional analysis of rice husk was done. Parameters of chemical treatment were optimized and characterization and topological alterations were determined with the help of Fourier transform infrared spectroscopy and scanning electron microscopy. Two common and toughest contaminants of water were selected and synergetic adsorption potential against these contaminants were studied. Topological changes after adsorption were also studied. Experimental data were fitted to different isotherms models. The maximum adsorption capacities of Malachite green and chromium mixture were found to be 98% and 92% mg/g respectively. Kinetics isotherms showed that malachite green followed Freundlich isotherm while Chromium followed Langmuir isotherm. Kinetic studies showed that adsorption process followed the second order rate model. The results indicate that the agricultural wastes derived activated carbon can be effectively used for the removal of combinational contaminants although removal potential for individual contaminant is more but not significantly($p<0.05$).

Keywords: malachite green, chromium removal, activated carbon, rice husk

Abstract ID: ICSDG0607

Exploring the Potential of Leaves Extracts Of *Azadirchta Indica* Against Mycotoxins Producing Fungi In Animal Feed

Rahat Naseer [a], Muhammad Imran [b*], Gulbeena Saleem [c] , Sadia Nawaz[d]

Institute of Biochemistry and Biotechnology, University of veterinary & Animal Sciences Lahore[1, 2, 4]

[3] *Quality Operational Lab, University of Veterinary & Animal Sciences,*

*Corresponding Author's Email: rahat.naseer@uvas.edu.pk

Mycotoxins are the major causes of diseases and deaths both in humans and animals and detoxification of these mycotoxins were performed using leaves extracts. The methanolic extracts from leaves of *Azadirachta indica* were prepared using 80% aqueous methanol at 37^0C and 150 rpm. *A. indica* leave extracts were estimated for the presence of antifungal compound such as terpenoids (50mg/25g). The detoxification potential was evaluated by Fungus Inhibition Assay (FIA) using incubation with purified toxins of *Aspergillus flavus* and *Aspergillus ochraceous*. The maximum inhibitions among different neem leaves methanolic extracts (10%, 15%, 20%) were performed while 20% extract gave 69-84% inhibition against *Aspergillus flavus* and 64-83% against *Aspergillus ochraceous*. Toxicity of mycotoxins at biological level was also checked at cell cycle stage with corn germinating seeds. Methanolic extracts of *Azadirachta indica* showed significant inhibition of mold growth. This research activity will boost the antifungal activity of *Azadirachta indica* leave extract against mycotoxins of fungi and proves vital for feed and food industry. Researcher is hopeful to increase shelf life of feed with the help of this organic extract.

Keywords: *Azadirachta indica;* Fungus Inhibition Assay; *Aspergillus flavus; Aspergillus ochraceous;* mycotoxins

Abstract ID: ICSDG0608

Synthesis and characterization of GD doped TITANIA nanostructures for water treatment and clean energy

Amna Hassan [a*], Zohra Nazir Kayani [a]

[a] *Department of Physics, Lahore College for Women University, Lahore, Pakistan*

[*] *E-mail:amnaahassan@gmail.com*

Abstract

Sol-gel dip coating route was used to fabricate Gd doped TiO_2 thin films on glass substrate. To analyze structural, optical and antibacterial properties of the deposited thin films, various characterization techniques were employed. X-Ray diffraction (XRD) was utilized for phase confirmation and structural analysis of the nanostructures. (UV-VIS-NIR) spectrophotometer was used to optimize the optical properties for optoelectronic devices. Fourier Transform Infrared Spectroscopy (FTIR) was used for functional group analysis. Antibacterial activity suggested that Gd doped TiO_2 are promising candidate for antibacterial agent in antibiotics. Photocatalytic properties showed that prepared nanostructures can be used for waste water treatment.

Keywords: Titania; thin films; anatase; optical properties; antibacterial properties

Abstract ID: ICSDG0609

Performance enhancement of Photocatalytic Activity with Co-doped Bi2O4

Madia Sahar, Zohra Nazir Kayani
Department of Physics, Lahore College for Women University,
Lahore, Pakistan
E-mail: zohrakayani@yahoo.com

In this research, Co-doped Bismuth Oxide (Bi2O4:Co) thin films with varying Co concentrations 1–5wt. %were successfully fabricated by sol-gel dip-coating method to act as a good photo catalyst. The deposition of thin films is carried out at room temperature. These thin films were annealed at 450 oC in the furnace. The physical properties of thin films were examined by X-Ray Diffracto meter (XRD), Fourier transform infrared spectrometer (FTIR), UV–Visible-NIR spectrophotometry, and impedance analyzer. Monoclinic Bi2O4 phase of all thin films were confirmed by the XRD spectra. The average crystallite size of pure Bi2O4 is 45.98, which is reduced to 39.23-33.39 nm after Co doping (1-5 wt.%).The band-gap value varies from 2.00 to 1.77eV.The optical properties and modifications in structure are co-related with each other. The photocatalytic performances of undoped and Co doped Bi2O4 nanoparticles were firstly tested using MB dye as a model molecule subjected to irradiation under sunlight light. Compared to undoped Bi2O4, 5% of cobalt doped Bi2O4 showed the highest degradation. MB dye abatement is particularly favored when using of cobalt doped Bi2O4 nanoparticles prepared via sol gel. Compared to undoped Bi2O4, 5% of cobalt doped Bi2O4 showed the highest degradation. This dye was completely abated within 60 min in pure water.

Keywords: Sol–gel, dip coating, Structural properties, Optical band gap.

Abstract ID: ICSDG0610

Studies of enhanced photocatalytic activity of Ba doped TiO_2 thin films prepared by Sol-gel Dip/Spin-coated method

Ifra Sheri[(a)], Zohra Nazir Kayani[(a)]
[(a)]Department of Physics, Lahore College for Women University, Lahore, Pakistan
E-mail: sheriiqra6@gmail.com

Ba doped TiO2 thin films are fabricated by sol-gel dip-coated method. It can be seen that the fabrication process and doping concentration have a significant impact on structural, optical, and magnetic characteristics of titania thin films, which are linked to variations in crystallinity, morphology, stoichiometry, transmittance, band gap, and electrical conductivity. Due to its incredible optical, electric, photocatalytic, and thermal properties, researchers have focused their efforts on TiO2, which has led to promising applications in the fields of sensors, catalysis, and electronic devices, clean water and sanitation. The properties of Ba doped TiO2 will be characterized by using scanning electron microscopy (SEM), Fourier transform infra-red spectroscopy (FTIR) and UV-VIS-NIR spectrophotometry. Optical study exhibits transparency and optical band gap varies with an increase in Ba doping percentage. SEM confirms surface morphology of thin films. Chemical composition of Ba-doped TiO2 thin films is investigated using FT-IR analysis. Methylene blue degrades in the presence of sunshine, making it a promising material for water treatment. TiO2 with 5 wt.% Ba doping shows extraordinary photocatalytic activity.

Keywords: Sol–gel; dip coating; Photocatalytic activity; Structural properties; Optical band gap; Ba doped TiO_2.

Abstract ID: ICSDG0611

Preparation of K doped TiO_2 thin films by sol gel dip coating method and their sunlight-driven Photo catalytic activity

Ammara Iqbal Baig, Zohra Nazir Kayani
Department of Physics, Lahore College for Women University,
Lahore, Pakistan
E-mail: zohrakayani@yahoo.com

The sol-gel dip coating route was synthesized for the first time to produce K doped TiO2 thin films with K doping concentrations (2,4,6,8,10) wt.%. Scanning electron microscopy (SEM) reveals the surface morphology of K doped TiO2 thin films. XRD confirms the anatase phase of K doped TiO2 thin films. Optical study demonstrates that when the K doping percentage increases, the transparency increases and the optical band gap decreases. K- TiO2 has higher photocatalytic activity for methylene blue degradation. Methylene blue is a potential substance for water treatment since it degrades in the presence of sunlight.

Keywords: Sol–gel; dip coating; Structural properties; Optical band gap.

Abstract ID: ICSDG0612

Enhanced photocatalytic Activity of Cu doped TiO_2 thin films Deposited by Sol-Gel Dip coating method. (SDG-06)

Mamoona Ashfaq[(a)]Zohra Nazir Kayani[(a)],
[(a)] Department of Physics, Lahore College for Women University, Lahore, Pakistan
E-mail: mamoona.lcwu@gmail.com

Cu doped TiO2 thin films are formed on a glass substrate using sol gel dip coating process at room temperature with a Cu doping concentration of 0,1,3,5,7,9 at. wt.%. Thin films are annealed at the optimal temperature for them. XRD (X-RAY Diffractometer), scanning electron microscope (SEM), and UV-VIS-NIR spectrophotometry are used to investigate the characteristics of Cu doped TiO2 thin films. Optical studies demonstrate that as Cu doping percentage increases, transparency increases while the optical band gap decreases. SEM confirms surface morphology of thin films. At a concentration of 9% Cu, Cu doped TiO2 showed the maximum Photocatalytic Activity for Methylene blue degradation. Due to their high photocatalytic activity, these nanomaterials are suitable for water treatments and degrade organic contaminants.

Keywords: Sol–gel, dip coating, Structural properties, Optical band gap, Cu doped TiO_2, photocatalytic activity.

Abstract ID: ICSDG0613

Photocatalytic Performance of TiO_2 Thin films Improved by Mg dopant

Hafiza Aqsa Abid, Zohra Nazir Kayani
Department of Physics, Lahore College for Women University, Lahore, Pakistan
E-mail: zohrakayani@yahoo.com

The sol-gel dip coating route is utilized to synthesize Mg doped TiO2 thin films very first time with Mg doping concentration (2,4,6,8 and 10)wt.%. The Structural and optical properties of these thin films are investigated by using different characterization techniques such as X-Ray diffraction (XRD) and Ultraviolet–visible-Near Infra Red (UV-VIS-NIR) spectrophotometer. Surface morphology of Mg doped TiO2 thin films is revealed by Scanning electron microscopy (SEM). The anatase phase of Mg doped TiO2 thin films are confirmed by XRD. Optical analysis shows the reduction in transparency and optical band gap alters with an increase in Mg doping percentage. Mg-doped TiO2 exhibits enhanced photocatalytic activity for the degradation of methylene blue. Methylene blue degrades in the presence of sunlight, making it a promising material for water treatment.

Keywords: Sol–gel, dip coating, Structural properties, Optical band gap.

Abstract ID: ICSDG0614

GREEN SYNTHESIS OF ZINC OXIDE NANOPARTICLES USING LEAVES EXTRACT FOR PHOTODEGRADATION OF METHYLENE BLUE DYE

Zaib Un Nisa, Salma Waseem

Department of Physics, LCWU, Lahore College for Women University, Lahore,

Email: Zaibunnisa1600@gmail.com

Textile industries are the major source of the water pollution by releasing organic and inorganic contaminants in water. Since last few decades, nanoparticles are being synthesized to remove such textile contaminants form the water. In the present investigations, a facile and efficient method i.e. green method has been utilized for the preparation of zinc oxide nanoparticles (ZnO NPs) by using Citrus jambhiri lushi leaves extract. The properties of ZnO NPs such as optical, morphological and structural properties were confirmed by UV-Visible spectroscopy, scanning electron microscopy and x-ray diffraction characterization technique. From the results, ZnO NPs were revealed to possess the band gap and particle size in range of 3.00-3.05 nm and 10-35 nm respectively. Moreover, ZnO NPs displayed and efficient photodegradation efficiency against methylene blue dye in 120 minutes and thus, affirmed as the best photocatalyst to degrade the textile contaminants from water.

Keywords: inorganic contaminants, zinc oxide nanoparticles, UV-Visible spectroscopy

Abstract ID: ICSDG0615

Metal impregnated ZnO Nanoparticles Photocatalyst for the Sonophotocatalytic Degradation of organic pollutants in Aqueous Solution under Visible Light

Fatima Khitab [a], Jasmin shah [b] and M. Rasul Jan [b],
[a] Department of Chemistry, Shaheed Benazir Bhutto women University, Peshawar, Pakistan
[b] Institute of Chemical Sciences, University of Peshawar, Khyber Pakhtunkhwa, Pakistan
FatimaKhitab@sbbwu.edu.pk

Textile industries rapid increase is one among them. This huge population and industrialization results in the growing issue of organic pollutants. Most of industries uses different dyes which emerges out as a pollutant into the environment and made environmental pollution. Dyes are the most persistent organic compound. Azo dyes represent a major class of synthetic organic compounds that are manufactured worldwide. Azo dyes have a variety of applications in textile, paper, food, leather, and cosmetics. These industries produce large quantity of wastewater containing considerable number of organic dyes which are highly carcinogenic, toxic, and mutagenic. Most of these industries drained their wastewater without any treatment which induces serious damage to aquatic life, inhibit growth of biota and threaten the human health. To increase the performance of ZnO from UV to visible light, ZnO nanoparticles were impregnated with copper (Cu) using wet impregnation method. The synthesized impregnated nanoparticles were characterized by different techniques. The extent of sonophotocatalytic degradation was high as compared to photocatalytic and sonocatalytic. The effects of the copper impregnated ZnO (Cu-ZnO) catalyst on the degradation of two textile dyes were investigated using the parameters like pH, catalyst dose, amount of enhancer, radicle scavenger and initial dye concentration. The addition of enhancer improved the degradation efficiency from 35% to 95% at pH 10. At optimum conditions, maximum degradation of dyes was 100% in 20 min using sonophotacatalytic degradation as compared to photocatalytic degradation the degradation efficiency was 95-98% in 60 min. With the addition of radicle scavengers, the degradation efficiency decreased from 100% to 92%, 94% and 92% with 0.025 M concentration of each scavenger, respectively. The degradation efficiency decreased only 5% after repeated use of Cu-ZnO catalyst. Therefore, Cu-

ZnO nanoparticles can be used as a promising sonophotocatalyst for degradation of textile dyes with excellent reusability potential.

Keywords: sonophotocatalyst, carcinogenic, organic pollutants

Abstract ID: ICSDG0616

Production and Testing of La/ZnO/CNT Photocatalysts for Production of Hydrogen Fuel

Shazia Shukrullah*, Muhammad Yasin Naz, Irshad Ahmad, Bilal Shoukat, Abdul Ghaffar
[1]*Department of Physics, University of Agriculture Faisalabad, 38040, Pakistan.*
*Corresponding Author's Email: zshukrullah@uaf.edu.pk

ABSTRACT

In this study, the photoresponse of ZnO was improved by compositing it with Lanthanum (La) and carbon nanotubes (CNTs). For this purpose, a CNT forest was grown over Si/SiO2/Al2O3substrate by using ferrocene catalyst in a chemical vapor deposition reactor. The Raman spectra of CNT forest revealed the defective and graphitic bands in the range of 1344-1364 cm−1and 1571 cm−1-1608 cm-1, respectively. The thermogravimetric analysis revealed 94% purity of CNTs, which were used to shift the photoresponse of La/ZnO composite from ultraviolet region to the visible region of the light spectrum. Some lattice distortions and a decrease in band gap energy of ZnO were observed due to larger ionic radius of La+3 than Zn+2 in the composite. The highest photocatalytic hydrogen evolution rate of 29.56 mmol/g was obtained over La/ZnO/CNTs composite due to inhibited recombination and swift transmission of charge carriers. This work opens the pathway to design ZnO and CNT based photocatalysts with broad optical response and inhibited recombination of charge carriers.

"Email Subject: SDG 6: Clean Water &Sanitation".

Keywords: Zinc oxide; carbon nanotube forest; Lanthanum; photocatalytic activity; hydrogen production.

Abstract ID: ICSDG0617

Colorimetric detection of mercury using prismatic silver nanoparticles capped with PVP

Fouzia Tanvir

Assistant professor, Physics department, LCWU, University of Okarra Pakistan.

Corresponding Author's email: fouzia.tanvir@uo.edu.pk.com

Prismatic silver nanoparticles (AgNPs) were synthesized by chemical method and sodium borohydride was used for reduction and then capped with 0.033 % PVP. The capability of PVP capped AgNP was explored for colorimetric detection of Hg^{2+} in water. The surface plasmon resonance of prismatic AgNPs was changed by formation of amalgam of silver and mercury, the peak shifts confirmed this change. This idea can be applied to determine Hg ions in water.

It was also stated that PVP capped AgNP nanoprisms were able to detect mercury (Hg^{2+}) by colorimetric estimation (blue to yellow color); Spectrophotometry and TEM revealed the change in morphology of the prismatic to spherical shaped AgNPs; energy dispersive x-ray spectroscopy (EDX) also confirmed the formation of amalgam with Hg^{2+}. It was found that Linear relationship exist between surface plasmon resonance (SPR) for the positional shift of the AgNP nano-prisms and Hg^{2+} (Concentation 0-5 µmol/L concentration. limit of detection, 0.5 µmol/L; pH, 7 – 9). A zero valent first metal reacts with the ions of second metal in galvanic redox reaction. If metals show change in redox potentials, this showed the oxidation of the first metal and reduction of the second metal. In the present study, the primary metal is prismatic AgNPs and the second metal is Hg^{2+} ion. The reaction between AgNPs and Hg^{2+} present in traces by means of redox reaction amongst Hg^{2+} and Ag^{0} would result in formation Ag-Hg amalgam.

"Email Subject: SDG 6: Clean Water &Sanitation".

Key Words: Nano particles, Spectroscopy, Morphology, Prismatic

Abstract ID: ICSDG0618

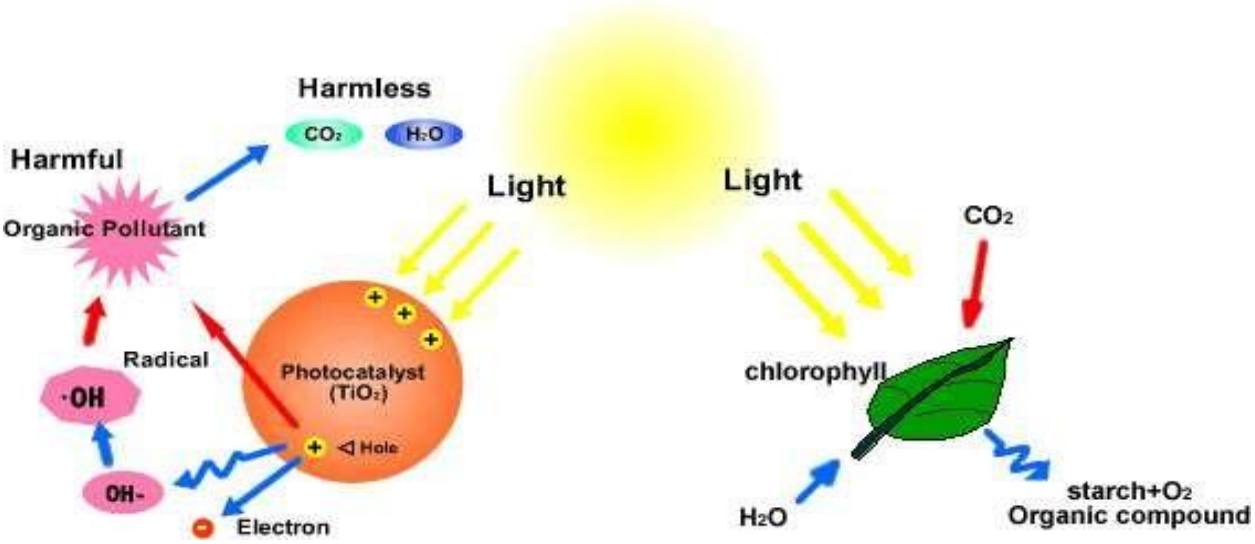
Photocatalysis: Energy and Environmental Applications

Khalid Nadeem Riaz

Assistant professor, Physics department, University of Okara, Pakistan.

Corresponding Author's email: khalid.nadeem@uo.edu.pk

The photocatalytic process using semiconductor nanomaterials is considered to be the most advanced technology for energy and environmental applications. This fact has motivated the researchers to develop clean and renewable energy technologies. The renewable energy development for example production of hydrogen via water splitting is an effective approach. On the other hand, it is also an outstanding approach to decontaminate the pollutants in waste water as well as air. In this study, the fundamental of photocatalysis for energy production and environmental remediation will be discussed.



"Email Subject: SDG 6: Clean Water &Sanitation".

Key Words: Photo-catalytic, semiconductor, nano-materials, renewable energy

Abstract ID: ICSDG0619

Sol-gel synthesized K doped ZnO thin films for Optical applications.

Dr. Zohra Nazir Kayani*, Ayesha Akram
Lahore College for Women University, Lahore, Pakistan
Corresponding Author's email : zohrakayani@yahoo.com

Potassium doped ZnO thin films are synthesized by dip coating method at room temperature on the glass substrate with K doping concentration at (1, 2, 3, 4, 5) wt.%. Thin films are annealed at optimized temperature. The properties of K doped ZnO thin films are characterized by XRD (X-RAY Diffractrometer), fourier transform infra red spectroscopy (FTIR), scanning electron microscope (SEM) and UV-VIS-NIR spectrophotometery. The ZnO hexagonal wurtzite structure is revealed by XRD. Surface morphology of thin films confirmed by SEM. By FT-IR analysis, Chemical composition of K-doped ZnO thin films is examined. Optical study exhibits transparency and optical band gap changes. K-doped ZnO thin films can be useful in optoelectronic applications including, solar cells, sensors, photodiodes, actuators and cellular phones etc.
"Email Subject: SDG 6: Clean Water &Sanitation".

Keywords: Sol–gel, dip coating, Optical band gap.

Abstract ID: ICSDG0620

The challenges and solutions in achieving clean water and sanitation for all in the developing and underdeveloped countries

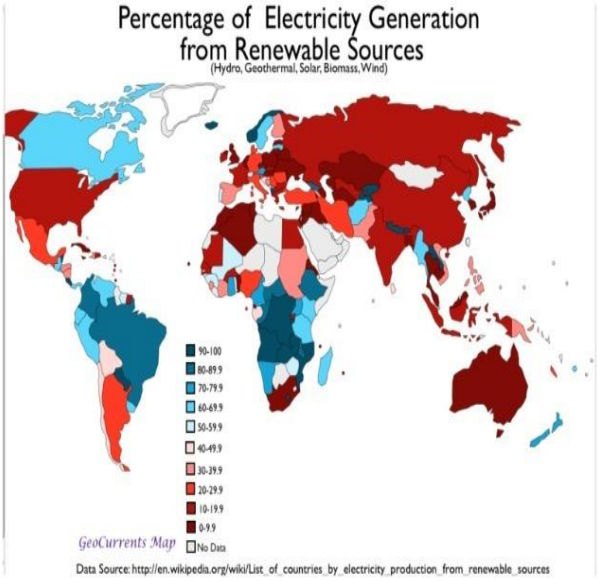
Muhammad Najam Khan [a]
Balochistan University of Information Technology, Engineering & Management Sciences Quetta
*Corresponding Author's Email: Najam.khan@buitms.edu.pk

Convenience to clean, pure drinking water is perhaps the one of the utmost constraint while evaluating quality of life. As the world population increasing progressively, available resources to mankind is shrinking rapidly. Life devoid of water is indescribable. Due to incessant rise of population numerous grave issues have come up ensuing in increased energy usage, water scarcity etc posing serious environmental concerns. Accessible water resources are also constantly contaminated and diminishing due to rapid industrialization and urbanization. More than 2 billion people around the world are dependent upon ground water as their main source of utilization. The results of various investigations and surveys by several agencies have indicated that water pollution has become a serious problem in Pakistan. Most of the reported health problems are directly or indirectly related to water quality. The quantitative and qualitative concerns related to water, call for an action plan for efficient development, utilization and monitoring of the water resources of the country. Advances in nanotechnology provide unmatched and cheaper solutions to water sanitization using nanocatalysts, nanosorbent, bioactive nanoparticles. Due to extremely high surface to volume ratio of the nanoparticles, photocatalysis provide better efficiency than conventional processes, enhanced catalytic properties and better antimicrobial properties. Zinc stannate (ZnSnO3) nanoparticle has been utilized for microplstic degradation from ocean/river water. The pure and composite LDPE polymer were made and characterized by FTIR spectroscopy. The degradation rate of LDPE film due to formation of new function group has been studied. The study successfully validates the photo catalytic degradation of low density polyethylene film under visible light using zinc stannate nanoparticle as a photocatalyst. The pure and composite LDPE films after irradiation showed exceptional results that clearly confirms the polymeric degradation.

"Email Subject: SDG 6: Clean Water &Sanitation".

Keywords: Clean water, Sanitation, Photocatalysis, Microplastic, Zinc Tin Oxide


7 AFFORDABLE AND CLEAN ENERGY
Goal 7 - Affordable & Clean Energy
Ensure access to affordable, reliable, sustainable, and modern energy for all
88
GUEST ARTICLES
68
POLICY BRIEFS
10
GENERATION 2030
1741
NEWS
370
EVENTS


Percentage of Electricity Generation from Renewable Sources
(Hydro, Geothermal, Solar, Biomass, Wind)
90-100
80-89.9
70-79.9
60-69.9
50-59.9
40-49.9
30-39.9
20-29.9
10-19.9
0-9.9
No Data
GeoCurrents Map
Data Source: http://en.wikipedia.org/wiki/List_of_countries_by_electricity_production_from_renewable_sources


7 AFFORDABLE AND CLEAN ENERGY
Ensure access to affordable, reliable, sustainable and modern energy for all

SDG7 AFFORDABLE & CLEAN ENERGY

SCIENTIFIC CHAIR PROFILE:

Name: Dr. Sadia Murawwat.

Qualification: PhD (Information and Communication Engineering)

Designation: Chairperson.

Department: Electrical Engineering.

Faculty: Engineering and Technology.

University: Lahore College for Women University.

Contribution in Research and Academics:

Serving in Academia since last 19 years. During this time, she contributed in curriculum development, delivery and continuous improvement. Having specialization in the field of information and Communication Engineering, she has supervised a number of research students and also published research papers in national and international journals.

Specific SDG and its role globally and in Pakistan development:

The world is moving closer to achieving SDG 7, with indicators that energy is becoming more sustainable and broadly available. In poorer nations, access to power has begun to accelerate, energy efficiency is improving, and renewable energy is making significant progress in the electrical power sector. Every day, renewable energy options become more affordable and efficient. Our present reliance on fossil fuels is unsustainable and detrimental to the environment, necessitating a shift in the way we generate and consume energy. It is critical to implement these new energy solutions as soon as possible in order to combat climate change, which is one of the greatest risks to our own existence.

Pakistan is an energy-deficient country that relies largely on fossil fuels to generate power. Energy prices are rapidly rising, causing substantial affordability problems. SDG 7 is one of Pakistan's most significant targets in the present energy crisis. To accelerate progress on SDG 7, Pakistan has made significant investments in solving energy shortages, boosting energy generation, and extending access to power. Access to power has risen by 8% during the last 10 years. During the same time period, the share of the population relying on clean fuels and technology increased by 11%. The building and operation of the Quaid-e-Azam Solar Park,

Pakistan's first utility size, on-grid solar power facility of 1,000 MW, is a particularly noteworthy endeavor. Similarly, the Jhimpir Wind Power Plant, with a total generating capacity of 50 MW, is erected in the wind corridor of Sindh province.

SDG7: Sustainability Perspective

Keynote Speaker: Dr. MuhammD M. Nawaz
National University of Singapore
Email: geomn@nus.edu.sg

Our population size is immense and the energy consumption is evolving at a rapid pace. These are the main threats to our life-supporting resources. In general, our lifestyle is based on excessive consumption on a large scale has caused excessive pressure on an available life support system and no doubt this has been reached to a scale where environmental change looks imminent – and in this context, the current unsustainable energy use looks like the main underlying cause.

This presentation aims to create an understanding of the abrupt global environmental change under the influence of a multitude of pressures and discuss the planetary boundaries in relation to SDG7 from the perspective of sustainability.

Keywords: Sustainability, ecological footprint, planetary boundary, environmental change.

ABSTRACT PRESENTATION

Abstract ID: ICSDG0702

PRODUCTION AND STORAGE OF ENERGY USING GRAPHENE-BASED NANO-COMPOSITES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Rehana Kousar[1], Tayyaba Raza[2]
Lahore College for Women University, Lahore
Email.id: tayyabaraza134@gmail.com

Energy availability from the last decades has brought transformations in human life. Not only Many of the energy resources have been ascertained, in addition to that diversification from fossil fuels to nuclear and other renewable sources has also been brought up. The world is observing large-scale novelty at energy production and consumption levels. The World needs sustainable and clean energy production as well storage methods. For the full replacement of fossil fuels, a storage system should be renovated to store the surplus amount of energy that can provide output at the instant. Researchers have reported supercapacitors as the best substitute. In the current research work, we have synthesized rare-earth-doped graphene-based nanocomposites containing TiO_2. TiO_2 was selected because it possesses remarkable electronic, dielectric, and physical properties. The hydrothermal method was adopted for the synthesis of composite. Graphene-based TiO_2 nanocomposites were synthesized with different concentrations of lanthanum and cerium. The synthesis of nanocomposites was confirmed through XRD analysis. The synthesized nanocomposites were also analyzed through UV-Vis and FT-IR techniques and SEM. The synthesized nanocomposites were studied for their application in supercapacitors, through electrochemical testing including cyclic voltammetry, electrochemical impedance spectroscopy, and galvanostatic charge-discharge. The results indicated these composites were best in terms of energy production and storage.

Keywords: Energy availability, Renewable sources, Energy production, Graphene-based nanocomposites, XRD analysis

Abstract ID: ICSDG0703

MODEL PREDICTIVE CONTROL AND ACTIVE DISTURBANCE REJECTION CONTROL ALGORITHMS ENSURING CLEAN ENERGY FOR ALL BY REDUCING FUEL CONSUMPTION AND EMISSIONS | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Sadia Murawwat[1], Anisa Batool[2*]
[1]*Electrical Engineering Department, Lahore College for Women University (LCWU), Pakistan*
[2]*Electrical Engineering Department, Lahore College for Women University (LCWU), Pakistan*
*Corresponding Author's Email: batoolanisa64@gmail.com

Energy-optimal adaptive cruise control algorithms are projected in real-world car-following scenarios to reduce fuel consumption and emissions in order to clean energy for all. In this paper, a novel technique of adaptive cruise control (ACC) algorithm based on model predictive control (MPC) and active disturbance rejection control (ADRC) is adopted. To design the ACC system, a hierarchical model consists of an upper-level controller and a lower-level controller is used in which MPC algorithm is used for the upper controller that will give desired acceleration as output to the lower controller. On the other hand ADRC is used as lower controller that will determine acceleration pedal position α and brake pressure P to track desired acceleration and allow the host vehicle to follow the front target vehicle safely when subject to internal or external disturbances and complicated road conditions apart from simple road conditions. Finally, the proposed optimal design of the ACC system was validated in different road tests and the results show that ACC with ADRC can precisely control the tracking of the host vehicle with less acceleration fluctuations even when the slope of road and the mass of the vehicle is changed.

Keywords: Autonomous driving system, Adaptive Cruise Control, hierarchical control mode, Model Predictive Control, Active Disturbance Rejection Control.

Abstract ID: ICSDG0704

BORON-DOPED ZINC OXIDE FILMS; PROBE OF ANTIBACTERIAL AND OPTICAL PROPERTIES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Zainab Bashir[1] , Zohra Nazir Kayani[2]
Department of Physics, Lahore College for Women University, Lahore, Pakistan
E-mail: zainlc25@gmail.com

Sol-gel dip coating deposition technique was used to synthesize boron doped Zinc oxide (BZO) thin films. Highly ordered thin films were achieved by optimizing deposition conditions. The Structural, magnetic, optical and thermal properties of these thin films are investigated by using X-Ray diffractometer (XRD), Vibrating sample magnetometer (VSM), Ultraviolet-visible-Near Infra Red (UV-VIS-NIR) spectrophotometer. B doping changes the optical properties of ZnO, which enhance optoelectrical capability of solar cells. B-doped ZnO with nanosized crystallite, could be applied in nanomedicine, nano fertilizer and in other biological applications

Keywords: Sol–gel; dip coating; Structural properties; band gap; B doped ZnO; solar cells; nanomedicines; antibacterial activity.

Abstract ID: ICSDG0708

USE OF GD-DOPED ZNO THIN FILMS IN OPTOELECTRONIC DEVICES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Maryam Anwar[1], Zohra Nazir Kayani[2]
Department of Physics, Lahore College for Women University, Lahore, Pakistan
E-mail: maryamanwar1994@gmail.com, zohrakayani@yahoo.com

Gadolinium (Gd) doped ZnO thin films are synthesized on the glass substrates by varing percentage of Gd (1%-5 at. wt.%) using sol gel- dip coating method. Thin films are annealed at optimized temperature. After the formation of thin films, their characteristics are studied. The optical properties of Gd doped ZnO thin films are characterized by UV-VIS-NIR spectrophotometery whereas structural and chemical properties are analyzed by XRD (X-RAY Diffractrometer) and fourier transform infrared spectroscopy (FTIR). The ZnO hexagonal wurtzite structure is revealed by XRD. By FT-IR analysis, Chemical composition of Gd doped ZnO thin films is examined. Optical study exhibits transparency and optical band gap changes with an increase in Gd doping percentage. The optical properties show that Gd-ZnO thin films have potential for optoelectronic applications and can be useful for absorbing solar light in solar cells layer.

Keywords: Sol–gel, dip costing, Structural properties, Optical band gap, Gd doped ZnO.

Abstract ID: ICSDG0709

DEVELOPMENT OF A SUSTAINABLE BIOMASS SUPPLY CHAIN IN PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Rubab Nazar[1*], Abdul-Sattar Nizami[1]
[1]*Sustainable Development Study Centre, Government College University, Lahore 54000, Pakistan*
*Corresponding author email: rubabnazar1234@gmail.com

There is a promising potential of biomass energy in Pakistan where most abundant and feasible biomass sources such as crop residues, municipal solid waste, and animal dung can be utilized to reduce electricity crises in Pakistan as adopted in the current study. The aim of the study is to develop a biomass supply chain network design in Pakistan which is cost-effective. In the present study, a biomass supply chain mathematical model has been presented using mixed integer linear programming, and gasification has been considered as the suitable biomass conversion technology. GIS mapping has been done to locate these three biomass sources in the country and suggest some potential locations of gasification plants based on the source locations and road structure. The results presented the optimal locations for supply and storage centers, optimal amount of biomass to be transported to gasification centers, and total biomass available at supply and storage centers. The results of the study show that 350,000kWh, 350,000kWh, 350,000kWh, 500,000kWh, 600,000kWh, 500,000kWh, 400,000kWh, and 3,330,000kWh electricity can be generated at Khairpur, Mianwali, Gujrat, Multan, Faisalabad, Sheikhupura, Tando M. Khan and Karachi, respectively from produced syngas with 20% electric efficiency. The need is to increase reliance on biomass energy as evident from the current study; it will enable to mitigate the impacts of climate change, encourage appropriate solid waste management, and meet the electricity supply and demand gap in Pakistan. The government of Pakistan should promote R&D, devise financial mechanism, and ensure international corporation to flourish biomass industry in Pakistan.

Keywords: Biomass energy, biomass sources, GIS, mixed integer linear programming, Pakistan

Abstract ID: ICSDG0710

SYNTHESIS AND CHARACTERIZATION OF COBALT OXIDE NANOSTRUCTURED THIN FILM FOR AFFORDABLE AND CLEAN ENERGY STORAGE DEVICE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Zohra Nazir Kayani[1], Alvena Shahid[2]
[1]*Department of Physics, Lahore College for Women University, Lahore, Pakistan*
E-mail: alvena.shahid@gmail.com

The energy sector depends on electrochemical renewable energy storage devices. In this research work, Co_3O_4 thin-film were prepared by Sol–gel dip-coating way with different withdrawal speeds. Due to moderate reaction conditions, the structural, magnetic and optical properties of prepared Co_3O_4 nanostructured thin films were analyzed. Their structural, optical, chemical, surface, and magnetic properties were studied through XRD, UV-visible spectroscopy, FTIR, SEM, and VSM characterizations. XRD study shows Co_3O_4 thin films have cubic crystal structure that is useful for optoelectronic devices. By using SEM analysis, films show porous structure. In IR and visible region, direct optical absorption offered low band gap 2.3 eV at 100mms^{-1} withdrawal speed and 2.12 eV at 250 mms^{-1}. Saturation magnetization, coercivity, squareness ratio and remanence were estimated by hysteresis loop. By increasing the withdrawal speed coercivity of Co_3O_4 thin films decreases while their saturation magnetization (M_s) increases.

Keywords: thin films; spin coating; optoelectronic devices; porous structure; withdrawal speed; saturation magnetization.

Abstract ID: ICSDG0706

POWER GENERATION BY FOOT STEPS | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOALS: LOCALIZING SDGS THROUGH ACADEMIA

Asma Naeem[1], Rimsha Musharraf[2], Ayesha Tariq[3]
[1]*Department of Electrical Engineering, LCWU, Lahore, Pakistan*
*Corresponding Author's Email: asmanaeem027@gmail.com

Increase in population has resulted in the rise of energy crisis. Most of the energy generated is from non-renewable resources, due to which the amount of pollutants are increasing day by day in our environment. The demand to adopt an effective renewable method is rising to overcome the issues caused by increasing pollution. Most of the methods to convert any form of energy into electrical energy either causes pollution (e.g., coal and natural gas) or demands a large sum of area (e.g., solar energy).13% of the World's total population does not have access to electricity so, in order to eliminate the deficiency; a smart solution needs to be implemented. In order to reduce the rising energy crisis, the design of power generation by foot-steps is proposed. In this project, Energy Harvesting Tiles are introduced. The power generated by the system is used to run low-voltage devices such as streetlights and vending machines. Piezoelectric sensors sense the mechanical energy and rotors converts this mechanical energy into electrical energy. The power generating tiles slightly displace vertically when a person walks on it. This vertical movement results in a rotatory motion that generates electrical energy.One foot stepon a 7mm tile can glow a 5-Watt LED bulb for 20 seconds. The energy harvesting tiles are low cost; they can be implemented in community parks and on streets to lighten up street lights.

Keywords: Energy Harvesting Tiles,Power generation, Piezoelectric sensor, Foot step, Renewable.

Abstract ID: ICSDG0707

LEAD ACID BATTERY CHARGER| 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOALS: LOCALIZING SDGS THROUGH ACADEMIA

Gohar Latif[1], Kashaf Nasir[2], Aeman[3], Ayesha Tariq[4]
[1]*Department of Electrical Engineering, LCWU, Lahore, Pakistan*
*Corresponding Author's Email: aemanawan415@gmail.com

Being the citizen of a developing country, less resources of centralized power grids are available and the need for efficient resources arises. The objective to design this project was to develop an economical, versatile and effective solution for power generation. Lead acid battery charger have come up as an efficient solution and lead acid batteries as a prominent resource. Battery charger is a utility and necessary device because batteries have become an essential element that powers almost all the electronic products and equipment. Lead acid battery works on the principle on keeping constant current and constant voltage for charging. This project consists of step-down transformer which will step-down the 220V AC voltages to 12V AC, then this 12V AC is converted to 12V DC with the help of a rectifier. To get the pure DC output from the pulsating DC by the rectifier, electrolytic capacitors are used which will refine the output which then is utilized to charge any equipment which need 12V supply to get charged. Lead acid batteries are very cost efficient and easily rechargeable. This lead acid battery project plays an important role as it reduces the need for replacing the batteries again and again because they can be recharged without effecting its performance.

Keywords: Battery charger, Lead acid battery, Power grids, step-down transformer, AC to DC converter.

WATER WHEEL BASED ENERGY GENERATION

Aima Maqbool[1], Maab Akbar[2], Ayesha Tariq[3]
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: aimamaqbool60@gmail.com

Water wheel plays a fundamental role to satisfy the increasing energy demand as the need for sustainable and clean energy production is growing day-by-day. Water wheel appeared to be an innovative component for clean energy generation but they were mostly ignored during the past. Since their use have increased among the scientific community between last two decades with an increasing interest. Water wheel basically is a device which works on the principle that whenever water flows or falls among the mounted paddles of the wheel, the force of flowing or falling water rotate the shaft of wheel to drive the motor. Water wheels are categorized between overshot, undershot and breastshot according to their construction. The proposed project incorporates the use of overshot water wheel which have the behavior that it will start rotating when water falls on it from a specific height. Overshot water wheel is preferred because it gives maximum efficiency in comparison with the other two types. The amount of energy generation is directly related to the height from which the water is falling on the wheel. A water pump is used to move the water to the elevated tank. Then the water falls on the water wheel which will start rotating. This rotating shaft transmits the kinetic energy to the connected circuitry and as a result electrical power is generated. This generated energy can be utilized at the same time by applying a load at the output and can also be stored. This project is an effective application in the field of affordable and clean energy production.

Keywords: Water wheel, Overshot, clean energy, rotating shaft, water pump.

Abstract ID:

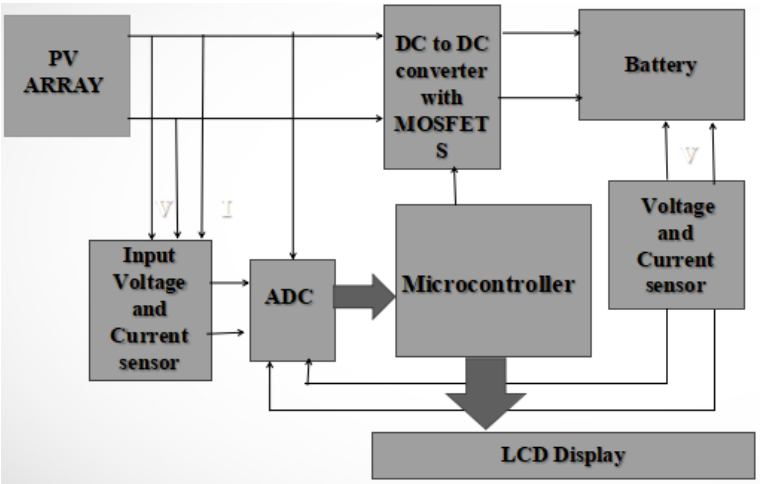
MPPT SOLAR CHARGE CONTROLLER | 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Samavia Nawaz, Mehak Fatima, Maryam Ahmad, Nukhba Shehzad
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: samavianawaz100@gmail.com

Due to the worldwide population growth, diffusion and development of the industry, electrical energy demand has grown exponentially. This leads to the depletion of natural resources that have been used to generate electricity, such as coal, oil, and natural gas. To better control of the resources, the optimum power must be extracted from renewable resources. Renewable energy sources are natural resources such as sunlight, wind, rain, tides, and geothermal heat. These resources are renewable and replenished naturally. Therefore, these sources can be utilized inexhaustible for all practical purposes, unlike dwindling conventional fossil fuels. There is a significant interest in creating an environmentally friendly system that will save money on electricity and maximize the cost return on investment for solar panels. The photovoltaic industry continues to strive to create efficient and inexpensive systems that can be competitive with other energy sources. Solar production throughout the day is limited due to the varying exposure of sun light and to have maximum constant solar production, algorithm of Maximum Power Point Tracking (MPPT) is implemented.

In this project, we will develop a IOT based MPPT solar charge controller in order to extract maximum power from PV solar panel under certain conditions.

An MPPT, or maximum power point tracker is an electronic DC to DC converter that optimizes the match between the solar array (PV panels), and the battery bank or utility grid. To put it simply, they convert a higher voltage DC output from solar panels (and a few wind generators) down to the lower voltage needed to charge batteries. These are sometimes called "power point trackers" for short. Basically, our circuit will have three main portions; Source, Controller and Load.



Internet of Things (IoT) is one of the emerging technologies having a great potential to apply in the area of renewable energy, especially on solar PV cell. In this project, we also develop IoT Power Measurement module that calculates the amount of power generated by my solar panels, that is being utilized by solar charge controller to charge battery pack. This module goes in between the solar panels and the charge controller and gives you all the necessary parameter details on your phone via the Internet.

Advantages on environment:

An MPPT tracks the maximum power point, which is going to be different from the STC (Standard Test Conditions) rating under almost all situations. Under very cold conditions a 120-watt panel is actually capable of putting over 130+ watts because the power output goes up as panel temperature goes down - but if you don't have some way of tracking that power point, you are going to lose it. On the other hand, under very hot conditions, the power drops - you lose power as the temperature goes up. That is why you get less gain in summer.

MPPT's are most effective under these conditions: Winter, and/or cloudy or hazy days - when the extra power is needed the most.

- Cold weather - solar panels work better at cold temperatures, but without an MPPT you are losing most of that. Cold weather is most likely in winter - the time when sun hours are low and you need the power to recharge batteries the most.

- Low battery charge - the lower the state of charge in your battery, the more current an MPPT puts into them - another time when the extra power is needed the most. You can have both of these conditions at the same time.
- Long wire runs - If you are charging a 12-volt battery, and your panels are 100 feet away, the voltage drop and power loss can be considerable unless you use very large wire. That can be very expensive. But if you have four 12 volt panels wired in series for 48 volts, the power loss is much less, and the controller will convert that high voltage to 12 volts at the battery. That also means that if you have a high voltage panel setup feeding the controller, you can use much smaller wire.

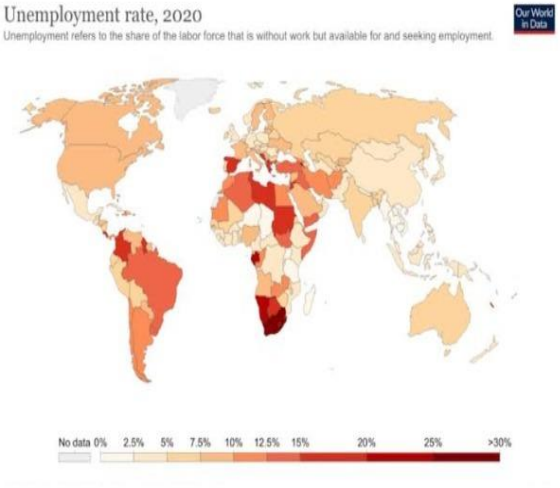
Affordable and clean energy:

Between 2000 and 2016, the number of people with electricity increased from 78 to 87 percent, and the numbers without electricity dipped to just below one billion. Yet as the population continues to grow, so will the demand for cheap energy, and an economy reliant on fossil fuels is creating drastic changes to our climate. Investing in solar, wind and thermal power, improving energy productivity, and ensuring energy for all is vital if we are to achieve SDG 7 by 2030. Expanding infrastructure and upgrading technology to provide clean and more efficient energy in all countries will encourage growth and help the environment

Goal 8 - Decent Work & Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

80	78	15	1899	425
GUEST ARTICLES	POLICY BRIEFS	GENERATION 2030	NEWS	EVENTS



SUSTAINABLE DEVELOPMENT GOAL 8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SDG8 DECENT WORK AND ECONOMIC GROWTH

SCIENTIFIC CHAIR PROFILE:

Name: Dr Samia Nasreen

Qualification: PhD.

Designation: Chairperson

Department: Economics

Faculty: Arts and Social Sciences

University: Lahore College for Women University Lahore

Contribution in Research and Academic: Dr Samia Nasreen is currently working as Chairperson / Associate Professor in the Department of Economics, Lahore College for Women University Lahore. Prior to joining LCWU, she served as Assistant Professor at Govt. College Women University Faisalabad. Her research interests focus on various issues concerning energy, environment, tourism, macroeconomy, growth & development. She has published in various journals of international repute including top ranked journals in the prestigious Financial Times 50 list. Her previous researches have featured in journals such as International Journal of Finance and Economics, Energy Economics, Empirical Economics, Computational Economics, Tourism Management and many others. She is the gust editor of Special Issue (SI) of "Heading toward to a Sustainable World: Ecological Footprint and Energy Consumption" published by the journal "Sustainability" (Impact Factor: 3.251) and editor of Modeling Economic Growth in Contemporary India (2022), Emerald Group Publishing, Bingley, UK.

Specific SDG and its Role in Pakistan Development and Globally:

The SDG8,' decent work and economic growth', promote sustained economic growth, higher levels of productivity and technological innovation. Encouraging entrepreneurship and job creation are key to this, as are effective measures to eradicate forced labour, slavery and human trafficking. With these targets in mind, the goal is to achieve full and productive employment, and decent work, for all women and men by 2030.Countries, including Pakistan, define their Decent Work Objectives in National Plans of Action for Decent Work (NPADW) that align with national development frameworks and international commitments, such as international labour standards (ILS) and the **Sustainable Development Goals (SDGs)**.

The formulation of the Pakistan Decent Work Country Programme (DWCP) has been well aligned to the Pakistan Vision 2025, a long-term development agenda of the Government of Pakistan, the National Labour Policy 2010, the National Textile Policy 2015, the National TVET Policy 2015, the Strategic Trade Policy Framework, 2015-18, the National Human Rights Action Plan 2015, and the One UN Programme, 2013-17 as well as 2018-22

ABSTRACT PRESENTATION:
Abstract ID: ICSDG0801

IMPACT OF TERRORISM ON ECONOMIC GROWTH OF PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Atifa Arif, Asma Asghar

Department of Economics, Lahore College for Women University, Lahore, Pakistan.

Emailattifa.arif22@gmail.com

Terrorism is the usage of threats to pursue religious, political or social goals. Terrorism, conflicts and violence destroy both physical and human capital and affect economic growth. The purpose of this study is to investigate the impact of terrorism on economic growth of Pakistan. In this study Ordinary Least Square (OLS) method is used. Time series data over the period of 1990-2019 have been used in this analysis. Gross Domestic Product (GDP) is a dependent variable. This study uses terrorism, inflation, FDI and Trade as Independent variables. The results indicate positive impact of foreign direct investment on economic growth of Pakistan. Impact of trade and terrorism on economic growth is negative. This study helps the policy maker to devise policies to control the terrorism.

Keywords: GDP, FDI, Inflation, Terrorism, Trade.

Abstract ID: ICSDG0802

TASALSUL; THE ROLE OF FILM IN PAKISTAN TO CREATE AWARENESS ABOUT ENVIRONMENTAL ISSUES

Prof. Dr. Ahmad Bilal
Director, Postgraduate Research Center of Creative Arts
University College of Art & Design, University of the Punjab

A massive increase in the availability of digital, web-based platforms to common people, apart from the professions and education they acquire, has enabled them to get empowered economically. People are facing economic hardships which is further expanding the need for economic stability in Pakistan. Moreover, the COVID-19 pandemic has adversely impacted the neediness of citizens in Pakistan. Lack of career opportunities in society has forced some people to work from home to make ends meet. Notwithstanding expansions lately, the female workforce participation in Pakistan faces the glass ceiling. In such tough scenarios, online freelancing jobs accompany the essence of goodwill in the economy. In problematic pandemic situations, online job platforms brought about great perks of freedom, money, and peace of mind for those females who financially serve their families. It developed entrepreneurship in dynamic fields, magnificently highlighted innovations by those who belong to small regions, encouraged formalization and sustainability which is helpful for the economic growth of Pakistan. This research discusses the impact of access to web-based working platforms in building the economic state of females in Pakistan. It focuses on the case study of a specific female who has been able to upgrade her lifestyle by learning digital marketing training from the E-rozgaar program. The program is specially designed for the jobless youth so that they can acquire freelancing training which allows them to earn an honorable earning and shall facilitate a secure livelihood in the long term.

Keywords: web-based platforms, economic opportunities, economic stability, career opportunities, e-rozgaar program

Abstract ID: ICSDG0803

SENSITIZATION OF WOMEN DOMESTIC WORKERS TO DECENT LIVING: A CASE STUDY OF DISTRICT ABBOTTABAD | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Prof Dr. Abdul Majid Khan[1], Prof Dr. Muhammad Yasir[2], Sadoon Hanif [3]

[1]*Department of management sciences, University of Haripur*

[2]*Department of management sciences, Hazara University*

[3]*Department of Economics, University of Haripur*

*Corresponding Author's Email: sadoonch@gmail.com

The increase in the women domestic workers globally cause the dependence of the household on the women domestic work, The women during the work face the stress and social abuse at job and there has been the cases of the harassment and exploitation. This study aims to investigate the behavior and the attitude of the employer towards the women domestic work on the income and the quality including job nature in the district Abbottabad Pakistan. The survey was conducted from 300 women in Abbottabad using the questionnaire. During the survey the health condition, attitude of employer and the income of the workers were examined. Descriptive analysis was carried out. Participants were found to have the low wages and less satisfaction about their work as they have to work in more than one house to meet their expanses as employers were not ready to offer even the minimum wage to the working women. The employer and the worker are not aware about the rights of the worker including their minimum wage law, holidays, and the nature of the work; the rights of the workers are not protected in the society. Nearly 70 percent of the women showed the interest to learn the new skills of the domestic work in order to quit the current job and find new one so that they are paid enough and they can minimize the physical exertion. The finding serves as the evidence based point for the policies to be aimed at the improvement of

the awareness of the workers and the employer in dialogue so that women domestic worker enjoys their basic rights.

Keywords: decent work, women domestic worker, sensitization, harassment and rights.

Abstract ID: ICSDG0804

IMPACT OF ETHICAL CLIMATE AND EXTRA-ROLE PERFORMANCE BEHAVIOR: MEDIATING ROLE OF EMPLOYEE ENGAGEMENT | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

RABBIA ARSHAD

Instructor (Public Administration & Management), Virtual University of Pakistan.

Corresponding Author's Email Address: rabbiaarshad14@gmail.com

Developing and testing a model on the basis of the theories of social exchange and social learning, the purpose of the present study is to examine the impact of ethical climate (caring, law and code, rule and independence) on extra-role performance behavior (knowledge sharing, creativity and adaptivity). Respondents of the present study will be comprised of Full-time faculty members of the five public sector Universities of Islamabad, Pakistan. To address the purpose, the sample of this study consists of 275 employees from five public sector Universities situated in Islamabad, Pakistan by using questionnaire. The data will be analyzed using simple linear regression and correlation analysis. Statistical tests will be conducted using SPSS and AMOS. The direct and indirect relationship of the current study gives significant positive results.

Keywords: Ethical Climate, Employee Engagement, Extra-Role Performance Behavior.

Abstract ID: ICSDG0805

ACHIEVING A DECENT WORK ENVIRONMENT THROUGH SUSTAINABLE BUSINESS PERFORMANCE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

1* Ms. Rabia Aslam, 2 Dr. Saqib Rehman, 3 Dr. Adeel Nasir
Department of Management Sciences, Lahore College for Women University, Lahore.
*Corresponding Author's Email: Rabia.Aslam @lcwu.edu.pk

Sustainable performance of an organization is the ability to meet the needs and expectations of customers and other stakeholders for a longer period of time through which we can meet the objectives of sustainable economic growth, productive employment and decent work for all**.** The purpose of this study is to examine and provide a comprehensive review of achieving Sustainable Development Goal (SDG-8) through sustainable business performance. Data has been collected from 320 small-medium enterprises (SMEs) of Lahore through structured survey form. Structural Equation Modeling (SEM) technique has applied to explore the casual effect and test the proposed hypothesis. Study findings revealed that sustainable business performance positively accelerated by applying the financial literacy, access to finance and green value cocreation. Moreover, the mediating role of Government support was highlighted as a game changer to achieve the SDG-8. Practical implications of the study are related to the strategic policy making regarding decent work environment that must be initiated by focusing on providing financial support along with the knowledge of green value co-creation. This study contributes to the literature by identifying the importance SDG-8 in relation with Resource Based View (RBV) of an organization with respect to business performance which has not been studied yet.

Keywords: SDG-8, Business Performance, Sustainability, Financial Literacy, Access to Finance, Green value Co- creaiton

Abstract ID: ICSDG0806

GREEN ECONOMIC GROWTH: A ROAD TOWARDS SUSTAINABLE DEVELOPMENT (EVIDENCE FROM SOUTH ASIAN ECONOMIES) | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Amber Pervaiz*
Department of Economics, University of Education, Lahore, Pakistan
Email: amberlcwu1234@gmail.com

It is evident from the applied literature that the area of green economic growth has not been explored properly. The present study, therefore, contributes to the existing debate of green economic growth by examining the role of green innovation, green trade, green energy production, financial development and institutional quality to the green economic growth of South Asian Economies. For this purpose, the study collects the data of selected South Asian Economies for the period of 2000-2018. Data are gathered from different sources such as WDI, IES OECD statistics. The study applied a second-generation unit root test (CIPS) for testing the stationarity of data. Padroni (1999), Kao (1999) and Westerlund (2007) tests of panel-co-integration are applied for examining the long-run association among modeled variables. The study confirms the long-run association among study variables that turn to be stationary at the first difference. Finally, the study applies FMOLS and DOLS to test the hypothesized relationship among the proposed variables of the study. The findings of the study revealed that green innovation, green trade, green energy production, financial development and institutional quality are driving factors in promoting green economic growth of South Asian Economies in the long run. This study provides important policy implications for promoting the green growth of the economy in South Asian Nations.

Keywords: Green Economic Growth; Green Innovation; Green Trade; Green Energy Production; Institutional Quality; Financial Development; South Asian Economies.

Abstract ID: ICSDG0807

EXTERNAL RESOURCES, AND ECONOMIC GROWTH: MODERATING ROLE OF INSTITUTIONAL QUALITY; AN EVIDENCE FROM SELECTED DEVELOPING COUNTRIES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Sidrah Azam[1], Ramsha Saleem[2]

[1]*Lecturer in Economics Government Associate College for Women Eminabaad, Gujranwala*

[2]*Assistant professor at Lahore College for Women University*

Email: **Sidrahaazam6487841@gmail.com, Ramsha.Saleem@lcwu.edu.pk**

The present research is an assessment on the issue by empirically examining the long-run relationship between external resources (FDI, aid, remittances, external debt, exports and imports) and economic growth under the auspices of institutional quality i.e., whether the relationship between external resources and economic growth is moderated by institutional quality. The data for seven selected developing countries is utilized over the period 1996-2018. We find that all variables are cointegrated. The study utilized Fully modified ordinary least square (FMOLS) and dynamic OLS (DOLS) to test the hypothesized relationships among the variables. Results of the study reveals that the economic growth of selected economies is negatively influenced by foreign aid, remittances, external debt and imports while export exerts positive effects. Furthermore, the study did not reveal significant relationship between FDI and economic growth of selected economies in long run. Nevertheless, when the study introduced government effectiveness as moderating variable, the FDI-economic growth relationship become significant with positive sign. The insertion of government lessens the adverse influence of imports and foreign aid while the negative impact of external debt turns out to be positive. Additionally, advantageous impacts of exports are further facilitated. The government does not moderate the remittances-economic growth relationship.

Keywords: External resources, institutional quality, government effectiveness, FDI, aid, GDP, economic growth, external debt, exports, imports, FMOLS, DOLS.

Abstract ID: ICSDG0808

DOES PUBLIC DEBT EFFECT ECONOMIC GROWTH? (ANALYTICAL STUDY OF PAKISTAN) | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Mehwish Gulzar

MS Scholar in Economics, Lahore College for Women University Lahore, (Pakistan)

Email: rukh605@gmail.com

This study is conducted to investigate the relationship between public debt and inflation which indirectly effects economic growth in Pakistan, using time series data from 1991-2020. This study has utilized Johansen cointegration approach for long run relationship and Error correction model for short run estimates. Result shows that there is positive and significant long run relationship between inflation and money supply and public debt in form of external and domestic debt. Results reveals that domestic debt is negatively relates to inflation in the short run while external debt budget deficit and money supply is positively relate to inflation. Furthermore findings demonstrate that public debt in form of domestic debt and external debt reduces GDP growth. On policy in front, our paper suggests that government should design and evaluate fiscal and monetary policies in such a way that proves boosting factor for accelerating economic growth.

Keywords: inflation, external debt, money supply, budget deficit, economic growth

Abstract ID: ICSDG0809

ROLE OF TECHNOLOGY AND SOCIAL FACTORS ON WOMEN EMPOWERMENT IN HIGHER EDUCATIONAL INSTITUTIONS OF PUNJAB, PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Asma Abdul Rehman, Dr Shazia Kousar,Dr. Samia Nasreen
MS Economics, *Lahore College for Women University Lahore*
Email: asma_abdulrehman18@yahoo.com

Women's empowerment is described in the field of development economics as the process by which women gain the ability to make strategic life decisions in situations where they previously did not have this ability (Kabeer, 1999). This study conducted empirical analysis and measure the factors of women empowerment in Pakistan. For this purpose, study used technology and social factors on women empowerment. Study fill the research gap of previous literature. This study is based on primary data with sample size 300. Data collected through questionnaire that filled by higher educational institutes (public and private universities) of Lahore. For empirical analysis smart PLS technique
applied to this study that suggest the measure and solution to this research.

Keywords: women empowerment, development economics, technology, social factors, higher educational institutions

Abstract ID: ICSDG0810

SOCIO-ECONOMIC ANTECEDENTS OF WOMEN ENTREPRENEURSHIP MINDSET IN ACHIEVING SUSTAINABLE ECONOMIC DEVELOPMENT: A CASE STUDY OF PUNJAB, PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

[1]Rubab Aslam Malik, [2]Dr. Hafsah Batool

[1]MS scholar in Economics, Lahore College For Women University, Lahore

[2]Department of Economics, Lahore College for Women University

Email: afzaal7136@gmail.com, batooleconomist@gmail.com

In recent years, the rise of women entrepreneurs and their participation in the growth of the national economy is crucial for a developing country like Pakistan. Women have now started to contribute to the economic growth by their distinctive jobs. They have altered their typical roles of housewives into a substantial business figure having enough ability and enthusiasm to run a business alone and to face any of its threats in order to make a profit out of it. The growing ICT environment is offering new opportunities for women entrepreneurs to expand their businesses and become more effective. This study empirically explores socio-economic determinants of women entrepreneurship mindset especially dual role,operating risk, time management, network information, social interaction and proper training of women .This study also intends to analyse the impact of entrepreneurship mindset on sustainable development as well. This study will construct entrepreneurship mindset index. The study has been conducted by using convenience sampling technique on 200 women entrepreneurs of different districts of Punjab, Pakistan. Through factor analysis, the study has found several factors that lead women to be entrepreneurs and the major challenges faced by them in Pakistan. The paper provides better insight about how women entrepreneurship contributing significantly to achieve SDGs.

Keywords: Women Entrepreneurship Mindset Index, Convenience Sampling, Factor Analysis, SDGs, Punjab.

Abstract ID: ICSDG0811

THE ROLE OF ICT AND FINANCIAL DEVELOPMENT IN SUSTAINABLE ECONOMIC DEVELOPMENT OF ASIAN COUNTRIES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

[1]Faryal Ishtiaq, [2]Dr. Samia Nasreen

MS Scholar in Economics, Lahore College for Women University Lahore, (Pakistan)

Department of Economics, Lahore College for Women University Lahore, (Pakistan)

Email: faryalik@gmail.com, samia.economist@gmail.com

The prior literature on achieving the sustainable economic development with reference to joint effect of financial development and ICT is limited. This study is an attempt to fill this gap by making some contribution to the research in this area. The objective of this empirical study is to investigate the effect of ICT and financial sector development for achieving sustainable economic development using data of 30 Asian economies over the period of 2006-2020. This study also focuses on the moderating effect of ICT on financial development. Considering the multidimensional aspects of financial development, the study employs ten financial indicators, reflecting four financial dimensions, namely financial depth, financial inclusion, financial efficiency, and financial stability to make a composite index of financial development by Principal Component Analysis and then examine its effects on economic development. We also estimate the effect of each dimension (depth, efficiency, inclusion, stability) along with ICT on economic development. By employing Panel data techniques like two-step system GMM, the study will exhibit the impact of ICT and financial sector development for achieving sustainable economic development. The overall results of the study suggest the positive impact of ICT and financial development in Asian economies. We also suggest policies to promote ICT infrastructure and financial development to stimulate sustainable economic development.

Keywords: sustainable economic development, financial development, ICT infrastructure, financial stability, financial sector

Abstract ID: ICSDG0812

LINKAGES AMONG TECHNOLOGICAL SPILLOVER, ABSORPTIVE CAPACITYAND ECONOMIC GROWTH: A NONLINEAR AUTOREGRESSIVE DISTRIBUTED LAG APPROACH | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Bushra Mushtaq[1*], Prof. Muhammad Afzal[2], Dr. Muhammad Afzal[3]

[1]*Department of Economics, Lahore College for Women University, Lahore, Pakistan*

[2]*Department of Economics, Lahore College for Women University, Lahore, Pakistan*

[3]*Agriculture Department (Crop Reporting Service), Government of Punjab, Pakistan*

*Corresponding author's Email: bushrafzal86@gmail.com

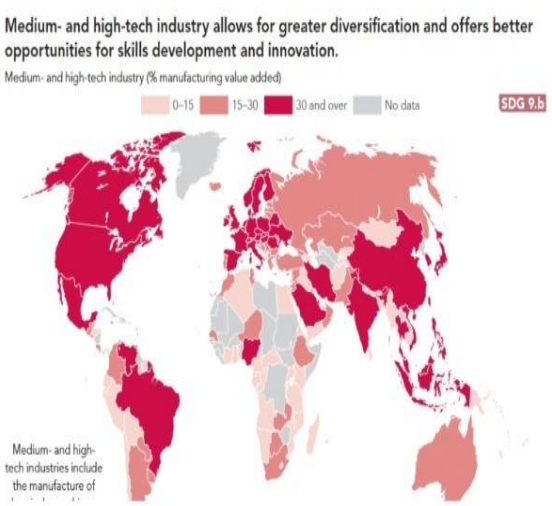
The nexus of spillover effects of foreign R&D capital stock and absorptive capacity in terms of human capital is very crucial for economic growth. This paper aims to investigate the asymmetric relationship among foreign R&D capital stock, human capital, capital imports intensity, and economic growth in Pakistan for the period of 1981 to 2020. The nonlinear ARDL model is developed for time series analysis based upon theoretical linkages. The NARDL bound test results suggest long-run co-integration among the aforementioned factors. Empirical findings show positive shock in foreign R&D embodied imports and human capital causes an increase in economic growth. The imports of capital goods have a positive effect on economic growth in the short run as well as in the long run. Whereas, foreign R&D capital stock has a positive effect in the short but negative in the long run. The human resource shows an asymmetric relationship with economic growth which is due to low investment in education. To be competitive in the 21st century, Pakistan must have to increase capital imports' share in its GDP and high-tech trade partners for the utilization of foreign R&D capital stock. Furthermore, for effective utilization of foreign R&D capital stock, Pakistan must have to upgrade its absorptive capacity.

Keywords: Technology Spillover, Absorptive Capacity, Economic Development

Goal 9 - Industry, Innovation & Infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

64	64	6	1490	378
GUEST ARTICLES	POLICY BRIEFS	GENERATION 2030	NEWS	EVENTS



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

SDG9 INDUSTRY, INNOVATION & INFRASTRUCTURE

SCIENTIFIC CHAIR PROFILE:

Name: Prof. Dr. Aqsa Shabbir

Qualification: PhD (Engineering Physics)

Designation: Associate Professor/ Director ORIC, LCWU

Department: Electrical Engineering

Faculty: Engineering and Technology

University: Lahore College for Women University, Lahore

Contribution in Research and Academics: She has completed her PhD in engineering physics from Ghent University, Belgium in 2016. She has supervised 6 MSc Electrical Engineering thesis and 6 BSc Final year projects in the years 2017-2020. She is the member of IEEE, PEC (Pakistan Engineering Council) and Erasmus Mundus Alumni Association. She has presented with many different awards and honours including best presenter award, Symposium on Energy and Environment 2019, Punjab University, Lahore, Research Productivity Award, LCWU, 2017 and many more. She has published many research papers in prestigious journal.

Specific SDG and its role in Pakistan development and globally:

SDG-09 (Industry, Innovation & Infrastructure). Industry, Infrastructure and Innovation are crucial drivers of economic growth and development with over half the world population now living in cities, mass transport and renewable energy are becoming ever more important, as are the growth of new industries and information and communication technologies. Technological progress is also key to finding lasting solutions to both economic and environmental challenges such as providing new jobs and promoting energy efficiency. Promoting Sustainable industries and investing in Scientific research and Innovation are all important ways to facilitate sustainable development. More than 4 billion People still do not have access to the internet and 90 percent are from the developing world. Bridging this digital divide is crucial to ensure equal access to information and knowledge, as well as foster innovation and entrepreneurship.

ABSTRACT PRESENTATIONS

ABSTRACT ID: ICSDG0901

LINE FOLLOWER ROBOT

Ifrah Tahir*, Isma Tariq, Mubarra Nazir, Amina Ahmad, Ayesha Tariq, Rimsha Musharraf
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: ifrahtahir766@gmail.com

The industrial sector is the backbone of an economy which provides export supplies prepared and transport by the dedicated and repetitive actions of labors. The labor work takes time and more energy for material transportation where on contrary, line follower robot eases the material carriage system. Line follower robot is an automated guided vehicle that follows the black line rooted on light colored floor. The concept of line follower is based on the behavior of light using two infrared sensors. When light (coming from infrared transmitter) falls on a light-colored surface, it is almost fully reflected back and caught by the infrared receiver while in case of black surface light is completely absorbed. The robot stops only when both the sensors detect black line. To get better performance robot movement is controlled through proper alteration of control parameters. In this project, Line follower robot is designed to implement industrial and domestic activities for the purpose of secured and efficient pick and place facility. Line follower robot helps in enhancing the transportation of necessary goods inside industries, health care institutions and restaurants.

Keywords: Line follower, Robot, Light, Infrared sensor, Material transportation.

ABSTRACT ID: ICSDG0902

BIOMETRIC ATTENDANCE SYSTEM USING ATmega32| 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Ayesha AD[1], Ayesha Javed[2], Ayesha Tariq[3]
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: Ayeshaofficial01020304@gmail.com

Technology is advancing day-by-day and machines are taking more and more responsibilities in comparison to humans. As a result, humans always seek for a solution which can do all the tasks independently, well managed and in-time. Attendance management is also a huge time taking task. Previously, the management of student attendance during school hours or lectures was done on registers and it was a difficult task to maintain the record. It created many errors while analyzing the percentage of attendance of a student and it is also time consuming. Biometric attendance system is an effective replacement to solve this problem. Basic aim of biometric attendance system is to automate the attendance procedure of any institution. This system uses the biometric technology; it takes the attendance electronically with the help of the fingerprint sensor, convert it into the specified format and record it as proper defined ID in microcontroller. Microcontroller controls the whole process and LCD shows the registered attendance accordingly. Fingerprint of index finger is taken as the signature for system entry. It shows good results as compare to manual attendance management system. This system has been found to be very reliable, cost effective, and secured.

Keywords: Fingerprint, biometric, student attendance, microcontroller, index finger.

ABSTRACT ID: ICSDG0903

PLANT IRRIGATION SYSTEM| 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Asma Naeem[1], Rimsha Musharraf[2], Ayesha Tariq[3]
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: asmanaeem027@gmail.com

In ecosystem, plants are considered as backbone and human life needs plants for survival but the climate change bring severe weather effects. Many plant species are listed as endangered species and to save these species, they must be protected. For the survival of a plant, it needs water and nutrients from soil. To lessen the daily operations related to gardening, farming and re-foresting; watering plants is the most important cultural practice and it requires labor-intensive work. Most of the plant species consume the same amount of nutrients; but water consumption for each specie varies with the change in temperature and humidity of air. Question arises when and how much water does a plant requires. Thus, the need of a system arises that can take care of water consumption of different plant species. This project uses Arduino UNO; which is programmed for specified plant species which includes aesthetic and medicinal plants. If the plant under test is not from the stored species, then by default it will sense moisture of soil using soil moisture sensor. The sensor will sense the moisture level of plant at particular instance of time. If it senses low moisture than the predefined level (80%); the pump switches on until moisture level reaches the threshold. Earlier projects sensed moisture and automate water without observing the requirements which was not suitable for sensitive plants. The proposed method is suitable for most of the plant species because it considers the plant family and the amount of water it requires. This project will help manage artificial forests; individuals to take good care of their plants and it will reduce the labor for farmers.

Keywords: Plant Watering System, Arduino, Pump, Plant Species, Moisture.

ABSTRACT ID: ICSDG0904

COLOR SENSOR USING ARDUINO | 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Aqsa Iqbal[1], Sarah Rehman[2], Fatima Karamat[3], Ayesha Tariq[4]
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: iqbalaqsa074@gmail.com

A color sensor is named as photoelectric sensor which consists of a transmitter, to emit light and a receiver, to detects the reflected light from the object that is to be sensed. Applications of color sensors includes various industries among which food and beverages, automotive and manufacturing are prominent. The aim of this project is to design Arduino based Color Sensing and Identification system, which has the ability to detect different colors. Tracking sensors are used for this purpose. The proposed embedded system includes an Arduino microcontroller that reads RGB data from the color sensor which when processed, separates the color based on the defined range within the system. The identified color is displayed along with the RGB combination and the response of the identified color is provided using display screen. The color identification success rate is found to be around 93%, during the testing of the designed embedded system. Color sensor project can be applied in medical field to provide aid to color-blind person. A color-blind person with proper training may work just like any other visually impaired person, but there are a few things that can be utilized to improve the life of that person. Being able to see color can help in many ways, such as identifying the colors of clothing or even identifying objects with different colors. This project will help to overcome the challenges that color-blind people face on a daily basis, by creating a color vision system and providing a unique biofeedback for each color.

Keywords: Color-blind, Color-sensor, Arduino, Embedded System, Tracking sensor.

ABSTRACT ID: ICSDG0905

SELF DRIVING CAR

Afifa Azam, Arooj Asad, Huda Naeem, Rabia Saleem
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: s.rabiasaleem0307@gmail.com

The self-driving car is a car capable of sensing its surroundings and moving on its own through traffic and other obstacles with minimum or no human input. This is the current upcoming technology in the automobile industry and even though it has been discussed and worked on for a long time, it was successfully manufactured by TESLA. In recent years, these cars began to roll out in foreign markets as private and public vehicles (taxis etc.). Many companies like Waymo, UBER, Nissan, and Nvidia are involved in this product development. Autonomous cars rely on sensors, actuators, complex algorithms, machine learning systems (python), and powerful processors to execute software. Autonomous cars create and maintain a map of their surroundings based on a variety of sensors situated in different parts of the vehicle. Radar sensors monitor the position of nearby vehicles. Video cameras detect traffic lights, read road signs, track other vehicles, and look for pedestrians. These are the processes that are involved in autonomous cars: Image processing, Obstacle detection system, Lane detection, Stop Sign and Traffic signal detection system, Line changing and Curve detection system. Lidar (light detection and ranging) sensors bounce pulses of light off the car's surroundings to measure distances, detect road edges, and identify lane markings. Ultrasonic sensors in the wheels detect curbs and other vehicles when parking. Sophisticated software then processes all this sensory input, plots a path, and sends instructions to the car's actuators, which control acceleration, braking, and steering. Hard-coded rules, obstacle avoidance algorithms, predictive modelling, and object recognition help the software follow traffic rules and navigate obstacles. Fully autonomous (Level 5) cars are undergoing testing in several pockets of the world, but none are yet available to the general public. We're still years away from that. The challenges range from the technological and legislative to the environmental and philosophical. Here are just some of the unknowns. Lidar and Radar, Weather Conditions, Traffic Conditions and Laws, Accident Liability, Artificial vs. Emotional Intelligence. The scenarios for convenience and quality-of-life

improvements are limitless. The elderly and the physically disabled would have independence. If your kids were at summer camp and forgot their bathing suits and toothbrushes, the car could bring them the missing items. But the real promise of autonomous cars is the potential for dramatically lowering CO2 emissions. In a recent study, experts identified three trends that, if adopted concurrently, would unleash the full potential of autonomous cars: vehicle automation, vehicle electrification, and ridesharing. Reduce traffic congestion (30% fewer vehicles on the road), Cut transportation costs by 40% (in terms of vehicles, fuel, and infrastructure), Improve walkability and livability, Free up parking lots for other uses (schools, parks, community centres), Reduce CO2 emissions by 80% worldwide. With this type of car, the whole automotive transportation's safety, security, efficiency, is increased and the human errors can be eradicated whilst the drive is made to its best. Automation can help reduce the number of crashes on our roads. Government data identifies driver behaviour or error as a factor in 94 per cent of crashes, and self-driving vehicles can help reduce driver error. Higher levels of autonomy have the potential to reduce risky and dangerous driver behaviours. This project has infused the idea of traffic signal responding which is absent in the current models and the above-mentioned advantages can be achieved with much more ease and at a low cost. This type of system can bring a revolution in transporting for differently-abled people and also help blind people travel independently. Most gas is burned when driving at high speeds, braking, and re-accelerating excessively. Self-driving vehicles cut these factors out of their driving style, meaning less gas is burned, or battery power consumed, resulting in less air pollution. Driverless cars also mean fewer cars per household. Smart cars are also designed to consume less fuel or use non-petrol, sustainable fuels, such as electricity, to reduce their emission of greenhouse gasses into the atmosphere. These cars are made small, lightweight, and fuel-efficient, which makes them environmentally responsible.

ABSTRACT ID: ICSDG0906

LOW-COST PORTABLE MECHANICAL VENTILATOR

Dr. Aqsa Shabbir, Javeria Zafeer, Jaweria Aamir Ali, Areeba Ali, Sahiqa Noor
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: jaweriaaamirali@gmail.com

This paper comprises the description of the prototype of a ventilator project. At the time of the COVID-19, the ventilation needs were not fulfilled. The idea is different from the typical ventilators being restricted to the ICUs only. The product follows the sustainable development goal 9 "industry innovation and infrastructure". The product is easy to use and also portable. You do not need an expert to operate it and you can bring it anywhere you are needing it i.e., at home and even at the workplace. Secondly, it aligns with SDG goal 3 which deals with the promotion of healthy wellbeing. As at the time of COVID-19 due to shortage of ventilators, the people who were easy to save were prioritized over the people hard to save. It gives everyone the right to get medical aid at a very low cost. This project involves the ventilator prototype more precisely casual breathing equipment called a low-cost portable ventilator. This mechanical ventilator is made from components that are generally readily available worldwide. Such components are already associated with day-to-day items which do not require specialized manufacturing processes. This ventilator will deliver the oxygen or the air by compressing the plastic bag valve mask with the help of a servo motor. The motor is given with the input through a microcontroller. This is the feedback controller which controls the system. This paper also shows a numerical method for monitoring the patients' pulmonary condition. The method considers pressure measurements from the inspiratory limb and alerts clinicians in real-time whether the patient is in a healthy or unhealthy situation. The sensor goes for the measurement of temperature, flow rate, and breath rate. The control system will proceed in accordance with the inputs. The system will display the value of the input along with the output values. There is an extra thing being added to the project as an innovation. It can be operated on different age groups. All you need to do is to set the age group. It also offers an assist control mode. Future work can be done on it by adding some image-taking equipment to explore the internal areas so it would be easy to diagnose what caused the breathing issue. The time not far that this will

become the part of the first aid tool kit. It's more comfortable than a breathing tube that goes down your throat. It allows you to talk, swallow, and cough. It may lower the risk of side effects and complications, such as infection and pneumonia, which are more common with breathing tube ventilation

ABSTRACT ID: ICSDG0907

THE IMPACT OF ICT ON TOURISM DEVELOPMENT IN ASIA: EVIDENCE FROM PANEL DATA ANALYSIS

Saira Arsh (MS Scholar in Economics), Dr. Samia Nasreen
Department of Economics, Lahore College for Women University, Lahore, Pakistan
Corresponding Authors: sairaarsh44@gmail.com, sami_lcu@yahoo.com

The travel and tourism industry are emerged as the prime and most assorted industry of the world in recent decade. In current decades, the usage of information and communication technology (ICT) has transformed the tourism industry. A developed infrastructure is indispensable for tourism development. Thus, the current paper aims to examine the impact of ICT on tourism development in Asian region using data over the period of 2008 to 2020. This paper has applied the Pedroni (1999) and Kao (1999) panel cointegration and find the existence of cointegration among variables in long run. After that we applied fully modified OLS approach to cointegration to determine long run effect of ICT on tourism development. We have used both the individual indicators of ICT as well as ICT indices. Empirical outcomes explain that the effect of ICT on tourism development is significant positive. In addition, ICT as well as infrastructure are significantly influencing tourism industry in Asia. Thus, ICT and infrastructure can play a vital role in enhancing tourism in Asia. Empirical results confirm the significance of ICT and infrastructure in promoting development of tourism sector in Asian economies by reducing time and money cost and facilitating tourists. Furthermore, regarding the control variable, the effect of income per capita on tourism sector cannot be overlooked. Our paper worth from the perspective of policy making, it is recommended that those policies should be devised that boost tourism development by promoting digital tourism and strengthening infrastructure.

Keywords: ICT; Infrastructure; Tourism development; FMOLS; Asia.

ABSTRACT ID: ICSDG0908

EFFICIENCY ENHANCEMENT THROUGH LIGHT HARVESTING IN ORGANIC INORGANIC HYBRID SOLAR CELLS

S. Nasir, M. Toseef, Gul Baddin, M. Rameez Baig
Physics department, university of Kotli, AJ&K, Pakistan

Mixed organic inorganic halide perovskite solar cells are a class of solar cells which have emerged unprecedented in recent years. The reported efficiency has been reached ~26% to date. To further increase its efficiency, broad range of concepts has been utilized. One way is to tailor the band-gap for extending the absorption edg to lower frequency region of the solar spectrum. This approach on the other hand reduce open circut voltage that compensate for the closed circut current and as a result, there is a little net result. We report on the synthesis of Pb and Sn based organic inorganic mixed halide perovskite thin films and up-converting material that can be used as scaffold material for these cells to further enhance their efficiency. Mostly reported perovskite cells have band-gap around 1.55 nm with the absorption edge at around 800 nm. We prepared up-converting materials that that has absorption edge at around 980 and predominantly up-convert to 800 nm.

ABSTRACT ID: ICSDG0909

DIFFERENTIAL ICT USAGE OPPORTUNITY AMONG THE INDIVIDUALS OF PAKISTAN

Waqas Shair (Corresponding author)
Lecturer, School of Economics & Finance, Minhaj University Lahore, Pakistan
PHD Scholar, Department of Economics, University of the Punjab Lahore, Pakistan
Email: waqasshair689@gmail.com, waqas.eco@mul.edu.pk

The Information and Communications Technology (ICT) revolution has radically improved connectivity across the globe and pervaded into most aspects of modern human life. The 4th industrial revolution is currently taking place and it will be digital. Pakistan has made significance progress last few years in sector of IT but currently Pakistan is ranked at 135 out of 144 in access to internet. This low level of ICT usage is depends on the multiple factors affecting the individual's decision to ICT usage. For this purpose, this study surveys the correlates of ICT use capabilities in Pakistan. ICT usage is composite of specified digital skills. The data of PSLM – HIES survey (2018-2019) used for empirical analysis. The empirical evidence is based on Logit model. The marginal effects of Logit model suggest that socioeconomic, demographic and regional characteristics are well explains the variation in the ICT usage capabilities of the individuals. Moreover, the leading determinants of the digital divide are ICT-infrastructure and access to focal technology. We found large digital divide among the individuals of Pakistan. This study is an implication of target 9c of 9th gaol of sustainable development goals related to increase access to ICT and strive to provide universal and affordable access to the Internet in least developed countries. The findings of the study help the researcher in highlighting the factors hindering the ICT use capabilities of the individuals.

Keywords: Digital Divide, ICT, digital inequality, Internet skills, Internet use

ABSTRACT ID: ICSDG0910

ROBO SERVER FOR FOOD MANAGEMENT SERVICES | 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Asma Shahid[1], Bushra Amjad[2], Samina Naz[3], Iram[4]
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: asmashahid938@gmail.com

Nowadays world becomes more autonomous and does its work with less human interference. This could be happened due to the newest innovations in the field of technologies day by day. As the whole world is suffering from the COVID-19 pandemic for the last two years meanwhile in most of the countries the situation of this pandemic becomes worst. In these destructive circumstances, the only solution to overcome the increasing infective rate of this pandemic among humans is to avoid human interactions. In this situation, in the food industry waiter robot technology plays a vital role. Robo server is basically a robot that works on the principle of line following robot. It serves food in restaurants like a waiter and controls from the kitchen. In this project, the robot follows the track from the kitchen area to the particular table, where the track is drawn on the floor with the help of a black tap same as in the line following. The information about choosing the desired table from the group of tables is provided by the RF controller, which operates from the kitchen. Also, if the robot faces any obstacle or hurdle in its path, then a buzzer of alert will be activated that helps the management of the restaurants to make sure the smooth functioning of the robot. Weight of 3 to 5 kg will be carried in its tray, at the destination table robot will be stopped and wait unlit the customer picks up its meal and move back to the kitchen. Arduino UNO, IR sensors, IR Obstacle detection sensor, 4V 1.2Ah Rechargeable Battery, Motor driver L293D, RF module, and sensors are the major building blocks of Robo server. This automatic serving system in restaurants will help not only in the COVID-19 situation but also be cost-effective for owners with respect to the manual human waiters and reduce the human load. This project is an effective application in the field of industry, innovation, and infrastructure.

Keywords: Line following, Waiter robot, Obstacle detector, RF remote, Restaurant's automation.

ABSTRACT ID: ICSDG0911

OPTIMIZED SOLAR GENERATION MONITORING & CONTROL THROUGH IIOT 4.0 SCADA OVER CLOUD | 1st International Conference on Sustainable development goals: Localizing SDGs through academia)

Khadija Basharat, Sidra Hanif, Filza Fatima, Amna Ameen
Department of Electrical Engineering, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: khadija.basharat60@gmail.com

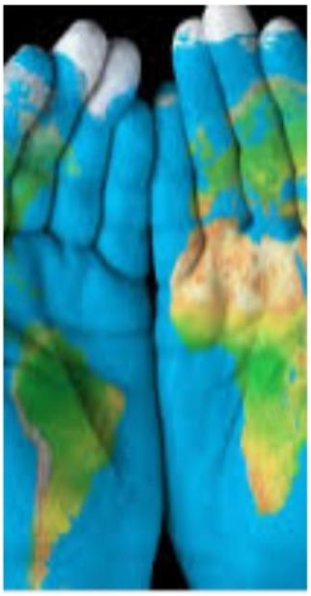
Our project is Scada implementation on solar power system.

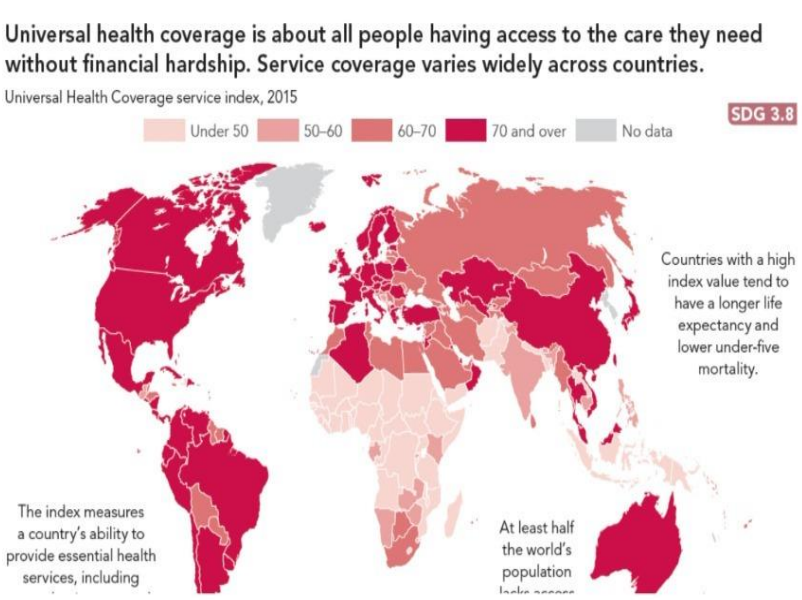
SCADA **(Supervisory Control and Data Acquisition)** is basically a control system that is used for collecting, analysing, processing, monitoring, controlling and visualizing our data. SCADA has become the core of all industries like manufacturing industry, energy generation, distribution, filtration, oil & gas, recycling, transportation, food, water etc. Our project aims to design and implement SCADA to Control Solar power plant. In this project, we have used both hardware and software. We will install a solar plant and gather real time data through sensors and process that real-time data for smarter decisions according to our requirements, and perform necessary supervisory control actions. It will also allow human machine interface (HMI) and historic data storage that is a great innovation towards industrial automation. We will use sensors, actuators & micro controller.

Our project is based on net metering mechanism that allows to get credit for accessible energy sent to the grid, that is most economical and make us able to get revenue by exporting extra power to grid station. Our project follows SDG-9 & SDG-12 that how digital innovation leads to inclusivity and sustainability, responsible for production and consumption. The impact of digital infrastructure on the sustainable development goals. The proposed system offers high reliability and productivity, modern monitoring and low own consumption.

Keywords: SCADA, Industrial Automation, IIOT, HMI, Net Metering, Industry 4.0, Ignition Scada


10 REDUCED INEQUALITIES
Goal 10 - Reduced Inequalities
Reduce inequality within and among countries
71
GUEST ARTICLES
60
POLICY BRIEFS
14
GENERATION 2030
1936
NEWS
328
EVENTS




Universal health coverage is about all people having access to the care they need without financial hardship. Service coverage varies widely across countries.
Universal Health Coverage service index, 2015
SDG 3.8
Under 50
50–60
60–70
70 and over
No data
Countries with a high index value tend to have a longer life expectancy and lower under-five mortality.
The index measures a country's ability to provide essential health services, including
At least half the world's population


10 REDUCED INEQUALITIES

SDG10 REDUCED INEQUALITIES

SCIENTIFIC CHAIR PROFILE:

Name: Dr. Nausheen Mazhar

Qualification: PhD Geography

Designation: Lecturer

Department: Geography

Faculty: Science & Technology

University: Lahore College for Women University

Contribution in Research and Academics: I am an active researcher with cumulative impact factor of 12.7. I have 25 research papers on my credit with 3 in W, 5 in X and remaining in Y HEC recognized category. I have book chapters published in international books, and am a proud Contributing Author in IPCC's AR6 report.

Specific SDG and its role in Pakistan development and globally:

Sustainable Development Goal 10, overwhelmingly focuses on reducing inequalities and overlaps with SDG 1 and 2 that are based on eliminating poverty, hunger, by 2030. Unfortunately, inequality among masses is rampant in Pakistan. The state has remained unsuccessful to eradicate poverty and inequality, due to weak institutional capacity for developing and implementing poverty reduction strategies.

The state has succumbed to the vagaries of poor policy formulation and implementation for the eradication of poverty and inequality. Capacity issues to address poverty and inequality include weak institutional capacity to devise and implement poverty reduction strategies; government devoid of the ability to formulate pragmatic policies will always fail to cater to the needs of masses, including food security and basic necessities of life.

Globally, income inequality is on the rise—the richest 10 percent have up to 40 percent of global income whereas the poorest 10 percent earn only between 2 to 7 percent. If we take into account population growth inequality in developing countries, inequality has increased by 11 percent. Income inequality has increased in nearly everywhere in recent decades, but at different speeds. It's lowest in Europe and highest in the Middle East. These widening disparities require sound policies to empower lower income earners, and promote economic inclusion of all regardless of sex, race or ethnicity.

WHY SOUTH ASIA CONTINUES TO BE ONE OF THE LEAST DEVELOPED REGIONS OF THE WORLD?

Plenary talk: Dr. Munawwar Sabir

CIMR, University of the Punjab

Email: munawar.geog@pu.edu.pk

Once the largest GNP producing region of the world, Called Golden Sparrow is now better called "Sad Asia" as it is having 30% of the total annual population Growth of the world, India is the country with highest net population growth followed by Pakistan. Keeping aside the trajectories of economic growth, development or any prosperity, this region is at the verge to collapse in terms of Environmental variables, as it home of the polluted most cities of the world. This is bizarre most region due to the latest and lethal most environmental problem of Smog, which is better called not the fifth but filthy season. Development or growth words suit to the regions with peace, stability and regional cooperation, but this region is having the oldest rivalries, clashes, contradictions. India being the largest power and trend setter is having contradictions not only with most of the other regional countries but also with the Super Power China, which is under mining the scale and scope of development of South Asia. Only hope and driving engine for this region has surfaced in the shape of China, but due to the belligerent stance of India this region is yet to get full benefits of the might economic tree of China.

As a matter of fact world is having a centuries old bi polarity of east and west, due to which this region needs to understand the presence of war tactics from proxy wars to 5^{TH} GW , get out of it ,neutralize tensions and then go far entente .Similarly this region needs to take measures on war footing basis ,to deal with the environmental Challenges ,which are a clear and present Danger ,making it a war of viability rather than economic growth and development .

ABSTRACT PRESENTATION
Abstract ID: ICSDG1009

REDUCING INEQUALITIES BY NEW CHINESE GLOBAL ORDER PROSPECTS FOR PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Dr. Aisha Shahzad

Political Science Department, Lahore College for Women University, Lahore-Pakistan

E-Mail: aisha.shehzad@lcwu.edu.pk

This qualitative research envisages that socio-economic asymmetries among states principally depend upon global structures led by the major powers. Despite the internal stultifications for modernization, cultural rigidities towards changing status-quo and political complexities constraining to harness diverse identities in LDCs, the global order remained a larger factor to widen gulf between the developed and third world states. The historical antecedents manifest that right from the European Colonial Order creating a divide between Orient and Occident in terms of ontological and epistemological grounds the successive global order based on 'Cold War' and globalization enhanced polarization among states. Cold war established strategic competition, military industrial complex and global arms race which also trickled down among the LDCs and propelled them to become militarily oligopolistic for deterrence. In a due course of time only those states emerged as beneficiaries like Asian Tigers, Japan and Western Europe who focused on their economic strength. Then with the start of new millennium the world underwent a War on Terror led by US aligned with 70 states that further posed challenges to the world system in terms of global inflation. Simultaneously, China extended her influence in the international arena as a balancing factor with the phenomenon of constructive economic engagement under corridor politics like Build Road Initiative. This research epitomizes that SDG10 'Reducing Inequalities' is achievable through competitive advantages, Special Economic Zones and Small & Medium Size Finances in shaping national growth strategies, employment generation and social cohesion by improving standard of living of vulnerable segments of society. In this perspective

the policies encompassing ‘Endogenous Economic Growth’ by Paul Romer based on the concept of R& D (Research &Development) is preferably beneficial for third world states like Pakistan.

Key Words: Socio-economic asymmetries, Globalization, SDGs, R&D, Chinese order.

Abstract ID: ICSDG1002

SOCIO-ECONOMIC FACTORS AFFECTING POVERTY: A FRESH INSIGHT FROM SOUTH ASIA REGION | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Ayesha Awan[1], Mahwish Zafar[2]

Economics and Commerce Department, Superior University Lahore

[1]Ayesha Awan, Email: Awan995@hotmail.com

[2]Assistant Professor, Mahwish Zafar, Email: Mahwish.zafar@superior.edu.pk

The main reason of this study to describe the effect of socio-economic factor affecting poverty reduction. poverty raise due to Socio economic factors like education, inflation, unemployment ,govt policies , & zakat. This study analyses about the idea that how can eliminate the poverty by poverty index. Actually Poverty is a social problem that further can lead to many social and distressing troubles, like, unemployment, crime, despair, the spread of insecurity, crisis, theft, armed theft, kidnapping, ethnic crisis, bribery and corruption, and further more. Studies show empirical evaluation by using secondary quantitative Data to cope with poverty . The regression version is used to examine the independent variables effect on dependent variable in south Asia. The data has been taken from WDI. The time-series of this study statistics to investigate socio-economic factors in poverty for the period of 1997 to 2021. Research has shown that poverty can be reduced by poverty index. Furthermore, this study examines poverty based on socio economy factors index that must be addressed. The study urges policymakers and govt agencies to invest more in poverty index for elimination of poverty and provide opportunity to remove poverty by implementing strong policies, Furthermore, the study recommends that the government review its policies & opportunity for poor ones by reduce poverty by education , to control inflation , corruption and Review of zakat system.

Keywords: Govt policies, poverty alleviation, zakat, inflation, employment

Abstract ID: ICSDG1003

URBAN SLUMS AND ASSOCIATED HEALTH RISK AMONG CHILDREN IN LAHORE, PAKISTAN: A GIS PERSPECTIVE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Faiza Sarwar*[1], Maria Kamal[2], Sidrat-ul-Ain[3] & Sumaira Kausar[4]

Department of Geography, University of the Punjab, Lahore, Pakistan

Correspondence Author: faizasarwar.geog@pu.edu.pk

The poorest quality housing where the conditions are unhygienic, polluted known as the slums. These slums when located in urban areas could be hotspots of marginal activities for instance, crime, and drug abuse. Almost 30 percent of Lahore city is covered by slums. In 2010, the population of Lahore is approximately ten million (2010), and out of these nearly fifty percent people live in slums. For the evaluation of urban slums and associated health risk among children (aged 0-18) major city of Pakistan, Lahore has been selected as study area. The study aimed to examine the Geographic Information System (GIS) based locational analysis, which shows the health risk including mortality rate, growth pattern, food deficiency, drug addiction among children in the study area. Also, identify the factors that might modify any adverse effects. This cross-sectional study included 100 respondents from urban slums areas of Lahore, Pakistan. The data is collected through a structured questionnaire and fieldwork. Based on GIS analysis significant relationship has been observed between urban slums and health risk. The study revealed that the slums area varies according to their income and the living conditions, which are very poor. These unhygienic conditions lead to high infant mortality rate, abnormalities and calcium deficiency among children. Apart from other risks, these are found to be highly visible among children living in slum areas. This is also found that children aged above 10 are mostly drug-addicted which is the same drug used by their fathers. The use of drug *booti* is commonly observed.

It has been analyzed that due to insufficient education facilities in slum areas e.g., awareness about health, safety, and hygiene is considerably low.

Keywords: Urban slums, GIS, Mortality Rate, Unhygienic conditions, Drugs

Abstract ID: ICSDG1005

AN EMPIRICAL INVESTIGATION OF CLIMATE CHANGE IMPACTS ON COTTON PRODUCTIVITY IN PUNJAB, PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Iqra Shahzadi[1], Nausheen Mazhar[2*], Sohail Abbass[3] Asif Sajjad[4]

[1] *Department of Environmental Science, Lahore College for Women University, Pakistan*

[2]*Department of Geography, Lahore College for Women University, Pakistan*

[3]***Climate Research Institute, Department of Geography, Konkuk University, Korea***

[4]*State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, University of Wuhan, China*

*Corresponding Author's Email: Nausheen.mazhar@lcwu.edu.pk

Cotton, an important cash crop of Pakistan forms the backbone of country's economy by contributing 0.8 percent of GDP and 4.1 percent of total agricultural value added. Cotton production is facing a number of challenges, including reduced area under cultivation, unfavorable weather conditions, whitefly attack, crop stunting, bollworms, and other pest insects in Punjab Pakistan. The aim of this study is to determine factors that are responsible for the decline in cotton crop production in the selected districts of southern Punjab Pakistan during the period 2004-2020. The data was collected through secondary sources i.e., articles, journals, books survey reports, Agriculture Department and Pakistan Meteorological Department (PMD). The effects of changing climatic conditions on cotton production was explored through Multiple Linear Regression (MLR) model. The relationship between yield and humidity was assessed through Pearson correlation coefficient, while the fluctuations in the production of cotton crop were assessed through time series analysis. Minimum temperature was identified to have significant impact on cotton production in Lodhran; with a unit decrease of minimum temperature leading to 21947.7% decrease in the production of cotton with 1.2% significance. Pearson correlation revealed that there is weak relationship between humidity and cotton yield in the study area. Time series analysis identified that Khanewal and Multan districts will experience

rising trend of cotton production in future, but Jhang, Sahiwal, Pakpattan, Vehari and Rahim Yar Khan districts will experience declining trend of cotton production in future. This study addresses sustainable development goal no 10, reduced inequality, by identifying the zones of declining cotton production in Punjab and identifying the factors affecting this decline. The study purposes policy framework involving some suitable cotton varieties that will prove to be beneficial for improving the production of the cotton crop in the region and hence raising GDP of the country and contributing in controlling the regional inequality within the Punjab province.

Keywords: Climate change, Cotton, GDP, Kharif crop, SDG 10

Abstract ID: ICSDG1006

CHILD MORTALITY: SOCIO-ECONOMIC FACTOR A FRESH INSIGHT ACHIEVING THE GLOBAL GOAL FOR 2030 (SDG'S) FOR DEVELOPING COUNTRIES| 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

NIMRA RAZAQ[1], MAHWISH ZAFAR[1*]

Superior University

Email: mahwish.zafar@superior.edu.pk

The main reason of this study to explain the effect of socio economic factor on child mortality under the year of age 5 in developing countries. Child mortality is not only for infant's life it's all about the nation development. In this research paper, we usage Autoregressive distributed lag (ARDL) model to learning the correlation concerning the Child Mortality, education, environmental health, climate change, water sanitation, CO2 emissions, and poverty in seven developing countries first of all Pakistan, India, Iran, Indonesia, Afghanistan, Nepal and Bangladesh. This study collected data from the World Development Indicators (WDI) during 1996-2020. The ARDL model has the purpose of bootstrap frequent model designs, so that minor samples can also attain the benefits of better review outcomes. In this research paper, we invention that in the long term, child mortality has co integration relationships in education, water sanitation, environmental health, environmental factor, CO2 emissions, and poverty. With Child mortality as the dependent variable and education, water sanitation, environmental health, environmental factor, co2 emission and poverty as independent variables. Furthermore, the study recommends that the government review environmental policies to reduce child mortality. Government should be concentrate on environment issues. The study urges policymakers and international agencies to invest more in the health sector and provide its residents with clean water and sanitation to meet the required infant mortality rate.

Keywords: Education, climate change, poverty, environmental factor, water sanitation, environmental health, child mortality

Abstract ID: ICSDG1008

EFFECT OF FINANCIAL INCLUSION ON GREEN ECONOMIC GROWTH IN DEVELOPING COUNTRIES | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Urooj Riaz[1], Dr. Samia Nasreen[2]

Lahore College For Women University Lahore, (Pakistan)

Urooj Riaz[1,] Email: orujbseco@gmail.com

Dr. Samia Nasreen[2,] Email:samia.economist@gmail.com

Environmental impact gets ignored while enjoying the economic benefits from GDP, urbanization, industrialization, technology and so on. So the objective of this study is to investigate the linkage among green economic growth and financial inclusion in the context of Developing countries. For this purpose, the study collects the data of Developing countries for the period 2004-2020 from different sources such as World Development Indicators (WDI) and Organization for Economics Co-operation and Development (OECD) statistics. This study basically focus to achieve target of SDG 13 which is urges to take action to combat climate change and its impacts. This study applied Pesaran's second-generation unit root test to test the stationarity. Pedroni and Kao Panel Cointegration technique is used to show cointegration among variables. Moreover, for empirical estimation fully modified least square (FMOLS) applied. The results of study indicates that financial inclusion have negative impact on green economic growth in developing countries. At the end this study provides important ways for pollution control and to enhance green economic growth and different ways to attain the target of sustainable development goal 13. To align the financial inclusion targets with energy usage behavior and environmental policies, efforts are needed on government level.

Keywords: Green economic growth, Financial Inclusion, Developing Countries

Abstract ID: ICSDG1001

COLOR SENSOR USING ARDUINO | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Aqsa Iqbal[1], Sarah Rehman[2], Fatima Karamat[3], Ayesha Tariq[4]

[1]*Department of Electrical Engineering, LCWU, Lahore, Pakistan*

*Corresponding Author's Email: iqbalaqsa074@gmail.com

A color sensor is named as photoelectric sensor which consists of a transmitter, to emit light and a receiver, to detects the reflected light from the object that is to be sensed. Applications of color sensors includes various industries among which food and beverages, automotive and manufacturing are prominent. The aim of this project is to design Arduino based Color Sensing and Identification system, which has the ability to detect different colors. Tracking sensors are used for this purpose. The proposed embedded system includes an Arduino microcontroller that reads RGB data from the color sensor which when processed, separates the color based on the defined range within the system. The identified color is displayed along with the RGB combination and the response of the identified color is provided using display screen. The color identification success rate is found to be around 93%, during the testing of the designed embedded system. Color sensor project can be applied in medical field to provide aid to color-blind person. A color-blind person with proper training may work just like any other visually impaired person, but there are a few things that can be utilized to improve the life of that person. Being able to see color can help in many ways, such as identifying the colors of clothing or even identifying objects with different colors. This project will help to overcome the challenges that color-blind people face on a daily basis, by creating a color vision system and providing a unique biofeedback for each color.

Keywords: Color-blind, Color-sensor, Arduino, Embedded System, Tracking sensor.

Abstract ID: ICSDG1004

VIOLENT EXTREMISM BELIEFS IN UNIVERSITY STUDENTS BELONGING TO VARIOUS ETHNIC GROUPS: ROLE OF PERCEIVED MARGINALIZATION AND NEGATIVE AFFECTIVITY

Faizan Riaz[1], Sobia Masood[2], Maryam Haleem[3]
National Institute of Psychology, Quaid-i-Azam University, Islamabad
Email: Faizanriaz747@gmail.com, s.masood@nip.edu.pk, maryammphil14@nip.edu.pk

As the Sustainable Development Goal 10 aims at reducing inequality between groups based on race, ethnicity, origin, religion, or other status within a country. In this context the current research aimed to examine the violent extremism beliefs in university students belonging to various ethnic groups and the role of perceived marginalization and negative affectivity. For this purpose, Violent Extremism Scale (Haleem, 2021), Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) and Perceived Societal Marginalization (Bollwerk, Schlipphak, & Back, 2021) were used on a sample of N = 326 university students (168 women & 158 men) with an age ranging from 18 to 35 years (M = 23.37, SD = 3.02). The results showed that perceived marginalization had positive relationship with negative affectivity and violent extremism. Negative affectivity was also positively correlated with perceived marginalization. Men exhibited higher scores on violent extremism as compared to women. Findings revealed that participants from minority group exhibited higher levels of negative affectivity and perceived marginalization as compared to other groups. The findings of this will contribute to develop interventions to reduce social issues like discrimination, marginalization, and negative affectivity that in turn will reduce violent extremist beliefs in youth.

Keywords: Violent extremism, psychological factors, youth

Abstract ID: ICSDG1007

IDENTIFICATION OF SPATIO-TEMPORAL VARIATIONS OF THE ARIDITY TRENDS IN SINDH PROVINCE PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Sidra Rasheed[1], Nausheen Mazhar[2*], Sohail Abbass[3] , Asif Sajjad[4]

[1,2] *Department of Geography, Lahore College for Women University, Pakistan*

[3]***Climate Research Institute, Department of Geography, Konkuk University, Korea***

[4]*State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing, University of Wuhan, China*

*Corresponding Author's Email: Nausheen.mazhar@lcwu.edu.pk

Aridity can be considered a major risk factor in the majority of the world's drylands. Assessment and monitoring of such a phenomenon are especially critical in regions where agriculture is a significant component of the tradable economy. Over 20% of the world's population lives in arid regions, which suffer significant impacts from climate change, most notably increased hydrological extremes. Pakistan is predominantly a dryland country and is a frequent victim of droughts, the frequency of which is two to three times out of every ten years. Sindh and Punjab, besides Baluchistan are affected extreme aridity. The aim of study is to explore spatio-temporal changes in aridity of Sindh over 30 years (1991-2020). This study is based on MODIS datasets from which Normalized Difference Vegetation Index (NDVI), Enhanced Vegetation Index (EVI), Land Surface Temperature (LST) and Potential Evapotranspiration (PET) were retrieved. Current study explores in the variation in the Sindh province's aridity trend between 1991 to 2020. The results revealed that the aridity trend is increasing each decade. Results of NDVI, EVI, LST and PET

highly support each other and depict a true picture of spatial and temporal increase in aridity trend in Sindh. 96% change in area of hyper arid, 27% change in arid area, 32% change in sub arid area, -89% change in sub humid area and -97% change in humid area of Sindh from 2000 to 2020 has been reported. Near Indus River NDVI, EVI shows high vegetation. As we move far away from Indus River Aridity increases in areas Karachi, Sukkar, Dadu, Thatta, Umerkot, Tharparkar. This study addresses sustainable development goal no 10, reduced inequality, by demarcating the zones of intense aridity in Sindh province, so that policy measures can be planned by authorities to mitigate the impacts of aridity in the region and thus contribute in controlling the provincial inequality within the country.

Keywords: Aridity, Spatio-temporal change, NDVI, EVI, LST, Sindh, reduced inequalities.

Abstract ID: ICSDG1010

BALOCHISTAN: A LAND OF SOCIO-ECONOMIC AND POLITICAL INEQUALITIES

Saima Butt

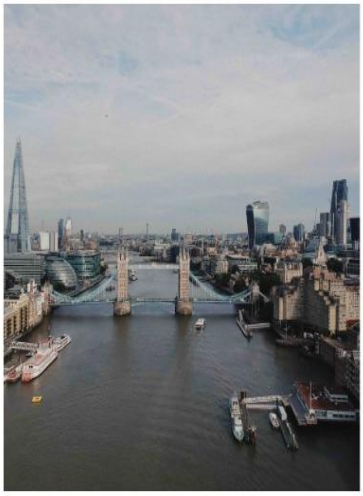
[1]*Department of Political Science, Lahore College for Women university Lahore, (Pakistan)*

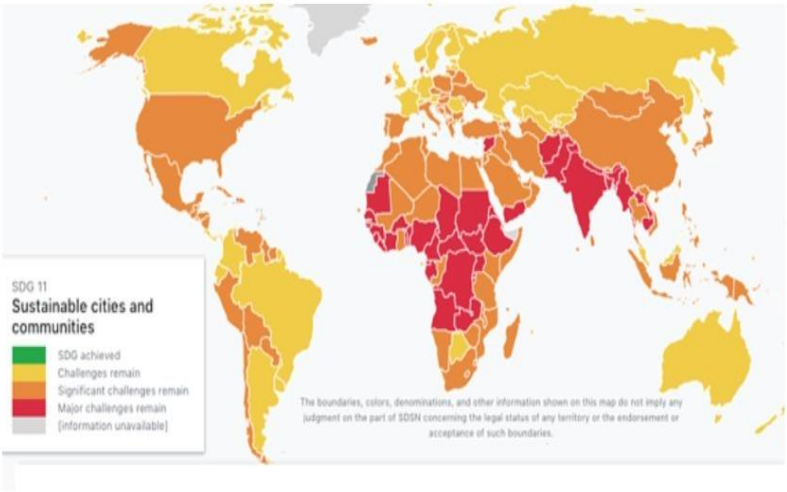
*Corresponding author: saimabtt.16@hotmail.com

SDG rightly highlights the role of socio-political and economic inequalities within and between the states as a hurdle in the sustainable development of states. Balochistan a province of Pakistan underwent unequal distribution of resources since its annexation with Pakistan (1947). Political mishandling has deteriorated the socio-economic web of Balochistan's society. Key social sectors e.g. education and health have long been neglected by the provincial and the federal government. Ownership of natural resources along with employment opportunities are some of the long-standing demands of natives of Balochistan. This research paper will arrange primary and secondary data through historic, descriptive, and analytical methods to carry out this study effectively. The 18th amendment of the 1973 constitution of Pakistan addresses various issues which are all grave concerns of the province of Balochistan. This study highlights the relative unequal treatment of the central government towards Balochistan and how that became the root cause for the socio-political and economic unrest in the society. Furthermore, we will discuss how the state needs to address different inequalities at home if they want to achieve sustainable development within the country and how this will help them to earn the status of a strong and secure actor internationally.

Key Words; Balochistan, Inequality, Natural Resources, Unemployment,18th Amendment


Goal 11 - Sustainable Cities & Communities
Make cities and human settlements inclusive, safe, resilient and sustainable
71
GUEST ARTICLES
57
POLICY BRIEFS
6
GENERATION 2030
1426
NEWS
365
EVENTS




SDG 11
Sustainable cities and communities
SDG achieved
Challenges remain
Significant challenges remain
Major challenges remain
(information unavailable)
The boundaries, colors, denominations, and other information shown on this map do not imply any judgment on the part of SDSN concerning the legal status of any territory or the endorsement or acceptance of such boundaries.


11 SUSTAINABLE CITIES AND COMMUNITIES
Make cities and human settlements inclusive, safe, resilient and sustainable

SDG11 SUSTAINABLE CITIES & COMMUNITIES

SCIENTIFIC CHAIR PROFILE:

SCIENTIFIC CHAIR 1

Name **Prof. Dr. M. Atiq-ur-Rahman**

Qualification Ph.D (Tokyo Institute of Technology, Japan); Postdoc. (Japan)

Designation Professor / Chairperson.

Department City & Regional Planning (CRP).

Faculty Engineering & Technology.

University Lahore College for Women, Lahore.

Contribution in Research Academics

- Founding Chairperson of City and Regional Planning Department
- Started BS. Disaster Management Program
- Several publications in both International and local HEC recognized journals.

Specific, Sustainable Development Goals & its Role in Pakistan's Development

For sustainable outcome of development initiatives, enough stock of qualified human resources in the basic professional as allied field of studies is required. Particularly there has been acute shortage of Town Planners in Pakistan. Being the basic profession the Town Planning profession act as the backbone in the formation of Master Plans, Structure Plans and Local Action Area Plans.

In order to bridge the gap of knowledge and to increase the role of women City Planners as a tool for empowerment and decision making in the planning process, the Department of City and Regional Planning was established in 2012. During last one decade the department had produced 171 qualified female town planners, which is almost 25% of register planners in Pakistan. Effective utilization of this human resource will enhance the capacity to solve planning problems at Local and National Level. The action at local level is the reflection of thinking at Global Level, i.e.Think Globally and Act Locally.

UN Conference on Sustainable Development has provided us the base of thinking from **"Our Common Future…The Future we want".**

This university has taken a lead to play its role of producing qualified City Planner to address various Sustainability Development Goals specially SDG-11 by increasing capacity of Planner for realization of Resilient Cities in Pakistan.

SCIENTIFIC CHAIR 2:

Name: Dr Ayesha Faisal

Qualification: PhD

Designation: Assistant Professor/HoD Geography

Department: Geography

Faculty: Science and technology

University: Lahore College for Women University

Contribution in Research and Academics:

My research focuses on the identification of ecosystem services in urban settings of Pakistan. I have published research papers to highlight the significance of ecosystem services and how to improve them in context of people's perception.

Specific SDG and its role in Pakistan development and globally: Sustainable development goal 11, mainly focuses on managing and building urban areas. The significance of it is increasing with the rapid growth of the cities in Pakistan and globally as well. It is dire need of the time to make cities more sustainable to cater the problems associated with cities. As sustainable cities and communities means to create job opportunities, safe and affordable housing, provision of green spaces and better urban planning and management. So it is important to highlight this goal for the development of cities.

ABSTRACT PRESENTATION

A GLOBAL HORIZON SCAN OF THE FUTURE IMPACTS OF ROBOTICS AND AUTONOMOUS SYSTEMS ON URBAN ECOSYSTEMS AND THE SUSTAINABILITY OF CITIES

Keynote speaker: Dr. Martin Dallimer
University of Leeds, UK
Email: M.Dallimer@leeds.ac.uk

Technology is transforming societies worldwide. A major innovation is the emergence of robotics and autonomous systems (RAS), which have the potential to revolutionize cities for both people and nature. Nonetheless, the opportunities and challenges associated with RAS for urban ecosystems have yet to be considered systematically. Here, we report the findings of an online horizon scan involving 170 expert participants from 35 countries. We conclude that RAS are likely to transform land use, transport systems and human–nature interactions. The prioritized opportunities were primarily centered on the deployment of RAS for the monitoring and management of biodiversity and ecosystems. Fewer challenges were prioritized. Those that were emphasized concerns surrounding waste from unrecovered RAS, and the quality and interpretation of RAS-collected data. Although the future impacts of RAS for urban ecosystems are difficult to predict, examining potentially important developments early is essential if we are to avoid detrimental consequences but fully realize the benefits.

Abstract ID: ICSDG1101

SUSTAINABLE COMMUNITIES: ROLE OF DIGITAL TECHNOLOGIES IN PRESERVATION OF COMMUNAL HERITAGE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Ayesha Bilal[1]

Email: aysamalik@yahoo.com

Cultural heritage resides in the assets that are sometimes tangible or intangible yet holds certain value for people and communities. Cultural heritage in its every form may it be architecture, natural landscapes, literature, performing arts, stories, traditions and values, serves as evidence of the evolution of societies and connects humans with the past to live their present and plan their future in reference to what they have been and what they have been practicing. Regardless of how old the culture, buildings and values of a community are, they always offer coming generations with something new to learn. Preservation of cultural heritage through its sustainability is the only way to embrace the history of individuals and communities. With emergence of digital technologies the process of preserving heritage has gained fast pace by creating endless possibilities for sustainability of communal heritage. Digital imaging of various types is working as enormous support to the processes of physical restoration and in developing virtual data of tangible and intangible heritage. This paper discusses the new trends in documentation and preservation of communal heritage and role of digital technologies in development of a sustainable world.

Keywords: sustainable communities, communal heritage, cultural heritage, digital technology, history, immersive, tourism

Abstract ID: ICSDG1104

COMPARING URBAN HEAT ISLAND WITH SPATIO-TEMPORAL URBANIZATION PATTERNS IN GUJRANWALA CITY | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Hafiza Saba Islam[1, 2,] Amna Shoaib[1]

[1] *Department of City & Regional Planning, University of Engineering & Technology Lahore, Pakistan*

[2] *Department of City & Regional Planning, Lahore College for Women University, Lahore, Pakistan*

*Corresponding and Presenting Author's Email: saba.islam@lcwu.edu.pk

One of the most prominent hazards confronting urban areas in the context of local climatic change is Urban Heat Island (UHI). It has kept cities around the world in the grip of heatwaves with the phenomena intensifying in the last five years. This study utilized multiple datasets to investigate the spatiotemporal urbanization trends in Gujranwala, Pakistan. By identifying thermal drivers and simulating the spatial pattern to visualize the outright nexus between development patterns and thermal properties. The climatic data from the Pakistan Meteorological Department along with multi-temporal Landsat TM/OLI satellite images were processed using GIS and remote sensing techniques to identify hot spots. It also examined urban green spaces through spectral indices such as Normalized Difference Vegetation Index (NDVI). The results indicate that the urbanization trend is intensification in both existing and newly established zones of Gujranwala city. This creates an increasing pressure on land use planning with a negative correlation between Land Surface Temperature, and NDVI. It confirms the urban sprawl at the expense of green spaces reshaping and enhancing the UHI profile of Gujranwala city. The findings conceptualize the nexus of urbanization with heatwave and climate change adaptation through green spaces which relate with the implications of sustainable development. This is captured and presented in the form of a conceptual model which will assist communication

between different stakeholders such as those in academia, developmental authorities, planners, developers, the construction sector, or practitioners in the built environment sector.

Keywords: Urban Heat Island, Spatiotemporal urbanization, LST, NDVI, GIS

Abstract ID: ICSDG1105

CORRELATIVE ASSESSMENT OF URBAN GREEN SPACE RATIO AND URBAN FLOODING: A CASE STUDY OF LAHORE PAKISTAN | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Nikhat Zahra[1], Sahar Zia*[2], Aysha Hanif[3]

[1]*Department of Geography, Lahore College for Women University, Lahore, Pakistan*

* Corresponding author Email: sahar.zia@lcwu.edu.pk

Urban green spaces are considered as one solution to all environmental problems. Likewise, an emerging problem of urban flooding can also be reduced by achieving the world standard of green space ratio of 20-25 percent or green per capita of 9m2 in an area. More than half of global flood damages occur in Asia due to more population concentration and instable economic situations. Any type of floods results in losses of life and damage to properties. Likewise, urban flooding generates serious problems to infrastructure, valuable houses or properties and effects economy for example, water enters into the basements of a few houses, social destructions or accidents in urban flooded areas. The urban flooding results in water inundated streets. Triggering factor includes higher concentration of short spell rainfall, surplus overflow due to less drainage capacity, dense population and properties. Increase in population results in more urbanization, more impermeable surfaces and less penetration and greater flood peak and runoff. The present study is aimed to develop strategies to assess the effect of urban green spaces on frequency of urban flooding in 69 union councils of Lahore. These 69 UCs are selected because these remained effected for last 5 years. The impact of urban green spaces seemed to be an essential measure to overcome this evolving problem. The study demonstrated effect of urban green spaces in controlling situations of floods between monsoon period of years 2013-2019 using various statistical and geospatial analysis and techniques. The data sets mainly include sore points, events of urban flooding, vegetation indices, green per capita and green ratio. Results of the study showed that selected union councils in Lahore lacks urban green spaces as there are only few areas including Ravi town, Siddiqia Colony to Samanabad Town, Androon Bhatti Gate

union Councils with green per capita values ranging from 0.080 to 2.464 that failed to meet the standard values of an average green space and green ratio. The analysis depicts that proper urban planning and strategies should be practiced such as rainwater harvesting, storm water management, proper urban green spaces as it will help to revitalize urban environment. Urban green spaces also provide storm water reduction, thus acting as a measure for flood mitigation. Further environmental benefits contain preservation of biodiversity and nature protection to overcome the evolving problem during an extreme rainfall event in an area that causes huge destructions.

Key words: Correlation, Urban Green Space, Green Ratio, Urban flooding, Lahore

Abstract ID: ICSDG1106

IMPACT OF SELECTED NATURAL AND SYNTHETIC INSECTICIDES ON ECO-BIOLOGY OF SYRPHIDS | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Nazish Kanwal[1], Sajida Mushtaq[2], Razia Ishaq[3], Sadia Maalik4, Moazama Batool[5], Nazia Ehsan[6]

Department of Zoology, G C Women University Sialkot

Corresponding Author: sajida.mushtaq@gcwus.edu.pk

Syrphid flies or hoverflies play essential role as pollinators (adult) and at larval stage these are the active predators of aphids. Use of broad-spectrum insecticides kill the pests immediately and results are fast and effective but these insecticides are toxic to beneficial insects like syrphids. Present study follows the SDG goal two by increasing production and goal 11 (sustainable communities). Diversity of syrphid flies in district Sialkot was determined from four different crops. Seven syrphid species were found throughout the sampling period of four months and *Episyrphus balteatus* was the most abundant specieswith 222 out of 692 specimens. Different concentrations of synthetic insecticides; chlorpyrifos and lambda cyhalothrin and two naturals; neemoil and mustard were applied on *E. balteatus* 3rd instar larvae and adults inlaboratory to determine their lethal and sub lethal effects. Analysis of variance (ANOVA) determine the results revealed that synthetic insecticides were more toxic than natural. Lambda cyhalothrin was the more toxic in synthetic and neem oil showed more toxicity in natural insecticides that directly affected the predatory efficiency of larvae, all experimental specimens eventually died after the experimental trial of 24 hrs. Insecticidal application not only control pest populations, but indirectly effect the predators, that act as important biological control agents. Use of least amount of chemicals along with biological control as Integrated Pest management (IPM) is best way to control pest populations. Focus towards natural insecticides is required as their potential being an

alternative way to avoid environmental contamination and lead towards sustainability of agro ecosystem.

Keywords: Diversity, Insecticides, Syrphids, Agroecosystem, Sialkot

Abstract ID: ICSDG1107

SPATIAL MODELING OF NORMALIZED DIFFERENCE VEGETATION INDEX (NDVI) AND LAND SURFACE TEMPERATURE (LST) OF LAHORE USING REMOTE SENSING AND GIS | 1_{ST} INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

MARYAM KHALID[1]

Email: maryam.khalid257@gmail.com

The application of geo informatics to examine the global vegetation cover and land surface temperature is an important aspect of environmental change studies. In current work, an attempt was made to examine the vegetation cover and thermal environmental conditions of Lahore by integration of Remote sensing, GIS and statistical analysis. Normalized Difference Vegetation Index (NDVI) and land surface temperature (LST) were applied on landsat images to dedect the changes that occured in biomass and surface temperature of study area. The results revealed that rapid increasing population, haphazard urban growth and developmental activities are the major reasons of vegetation loss and increase of surface temperature. The research also revealed that vegetation has a great impact on temperature conditions and an inverse relationship was observed between LST and NDVI. The study highlighted the applicapability of landsat images to dedect environmental changes.

Keywords: NDVI, LST, Geo - Informatics, Lahore.

Abstract ID: ICSDG1111

ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT OF INDUSTRIES IN RESIDENTIAL AREA | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Humaira Munir[1]

Email: humairamunir67@gmail.com

Industries signify the nation's economy. In any case, this commitment invalidates when these businesses work without the eco-accommodating working standards, and thusly, become basic supporters of natural contamination. The indication of this weight on the climate because of Industrialization is looked for in the current review. Pakistan is experiencing rapid growth of Industries in haphazard manners. Increased demand for conversion of land or mixed land use resulted in unfavorable impacts on the residential area, as in the case of Lahore. This research study aims to analyze the perception of the users and residents regarding the industries established in residential areas. This research study includes the identification of the research problem. Results showed that wastewater discharges, noise pollution industries are significant contributors to environmental pollution. The negative consequences of uncontrolled Industrialization on the residential area have a divesting effect on residential space. Then the formation of objectives according to the research problem, to define criteria for the evaluation of the performance of Concerned Authorities, perception, and satisfaction of residents and then reviewing the literature on environmental and social impact assessment of industry operating in a residential area of metropolitan cities and investigating the perception of the residents of the site about various impacts of industries operating in a residential area. It helped understand the multiple criteria adopted in developed and developing countries for addressing this problem. Different measures and policies adopted in developed countries have been investigated in this phase. The exploration depends on both primary and secondary methods of data collection that enable to answer relevant questions, evaluate outcomes and make recommendations about the future. This study has been organized to comprehend the Environmental, social problems of polluted water, ambient air, and noise data collected from forty-five (45) locations (thirty

residential and fifteen industrial). Subsequently, the survey verified the poor health conditions of the inhabitants due to poor water quality, dust, and noise pollution faced by the residents of Daroghe Wala due to the industries established in the residential area and to propose strategies to improve them and enhance the quality of life of its residents.

Keywords: Environment, Social impact, Industries, Residential area, Metropolitan cities

Abstract ID: ICSDG1114

SPATIAL ANALYSIS OF URBAN RESILIENCE IN RELATION TO URBAN FORM IN SELECTED AREAS OF LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Arwa Tariq[1*], Attiya Haseeb[2]

City and Regional Planning Department, Lahore College for Women University Lahore, Pakistan

*Corresponding Author's Email: arwaplanner@gmail.com

Resilience refers to the ability of a city to absorb any disturbance in its social, economic, and technical systems and infrastructure while maintaining its functions, structures, systems, and identity. To increase the capacity of cities for resilience, it is generally established that cities should focus toward following the sustainable development agenda as the urban form of the sustainable city has a huge impact on the entire socio-economic as well as the physical environment and its management. Hence, urban form is actually the spatial composition of elements, and if based on sustainable concepts, can lead the cities toward resilience and sustainability as the urban form facilitates and aid the city to function using its manmade and natural carrying capabilities that are effective as well as environment friendly. The research study assesses the urban resilience in the selected neighbourhood of Allama Iqbal Town using the indicators of urban form and GIS Based Spatial Analysis Technique. The Weighted Overlay Analysis for assessing the final resilience of Allama Iqbal Town has been used on the basis of the weighted values given to each of the indicators of urban form such that the sum of all the values would be equal to 100. According to the final level of resilience that has been calculated for all the six union councils of Allama Iqbal Town, the Union Council Jahanzaib Block has the highest urban resilience while Union Council Karim Block and Kashmir Block have the lowest urban resilience in relation to urban form. Based on these findings, this research thesis suggests recommendations for promoting and endorsing such urban areas in the cities that reduce every form of vulnerability whether it is at individual, societal

or city level and hence, make the structure and urban form of the cities in Pakistan more resilient and sustainable.

Keywords: Urban resilience, spatial analysis, sustainable city, socio-economic impact, physical environment

Abstract ID: ICSDG1118

IMPLICATIONS OF PUBLIC TRANSPORTATION IN POST-COVID-19 CASE STUDY OF LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Siddiqa Amin[1,2]

[1]*Lahore College for Women University, Lahore, Pakistan*

[2] *Universiti Teknology Malaysia, Malaysia*

Corresponding Author's Email: siddiqa@graduate.utm

Covid-19 pandemic has drastically changed the lifestyle particularly the mobility patterns. This pandemic has changed the individual's travelling habits which has affected the transport industry the most, since increasing risk of contagion virus in public transport. Public transport lost its space amid pandemic and the preference of mode of transport shifted to informal mode of transport, particularly rickshaw, taxis, which is shock to the economy and society as well. The impact of pandemic is somehow under control with the invention of vaccine, and public transport has resumed so far. Several developing countries, especially in Asian region, are making a rapid return to pre-COVID-19 times in a bid to restore some normalcy in people's daily lives. This research paper aims to explore the behavioral changes in mobility pattern while using public transport in Lahore in consequence of the development of Covid-19 pandemic and acceptability of users to adapt with. An online survey was conducted in last quarter of 2021. The research reveals that users of public transport return to pre-covid era. It confirms the peoples' adaptability to use the public transportation. It also implies evidence-based framework which could be supplemented to furtherance of public transportation in an efficient way. Findings could be useful for public transport policy makers suggesting practical and efficient strategies for effective utilization of mass transit system toward achieving maximum usage of public transport in post pandemic era keeping in mind the socio- cultural values and travel characteristics.

Keywords: Public Transport, Post COVID-19, Resilience, Mobility Pattern, behavioral Changes

Abstract ID: ICSDG1102

INTEGRATED SOLID WASTE MANAGEMENT SYSTEM IN UNIVERSITY OF KARACHI: A PILOT STUDY| 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Sadia Tariq[1, *], Moazzam Ali Khan [2], Aamir Alamgir[3]

[1]*Institute of Environmental Studies, University of Karachi, Karachi, Pakistan, 75720*

[2]Email of corresponding author*: sadiatariqusmani@gmail.com

Solid Waste management has been a fundamental amount of every human civilization. Waste Management is bone of contention presently in Karachi. Karachi is the largest mega metropolitan city of Pakistan and the capital of Sindh province with a population of about twenty-two million generating approximately 12,000 tons of waste per day. University of Karachi, a public sector university, where waste management system was observed and calculations were done for the amount of waste generated per day, per month and per year using life cycle assessment methodology.

Keywords: Solid Waste Management, Karachi, University of Karachi, Public Sector University, Metropolitan city

Abstract ID: ICSDG1103

MITIGATING THE UHI BY GREEN SPACES IN ALLAMA IQBAL TOWN LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Saba Tariq[1], Dr.Aysha Hanif[2], Dr.Sahar Zia[3]

[1]*Department of Geography, Lahore College for women university, Pakistan*

[2]*Head of Department Geography, Lahore College for Women University, Pakistan*

[3]*Lecturer Geography in Lahore College for Women University, Pakistan*

Corresponding Author's Email: Sabatariq728@gmail.com

According to the World Population Prospects, United Nations (2014) reports that 66% of the world's population is projected to be resided in urban areas by 2050. Climate change and rapid urbanization have become two major issues related to human welfare and development around the world. To highlight the correlation between vegetation and temperature in Allama Iqbal Town. Primary data utilized as thematic mapper (TM) Landsat 5 and Landsat 8 of April for the years of 2000, 2010, and 2020 which were available at USGS EarthExplorer. These Satellite images have been taken to generate the landuse/land cover maps, NDVI and LST. The process of generating land use/land cover, NDVI, and LST maps is done through Arc GIS 10.8 software. The result of LULC indicates that there is a significant increase in built-up areas in Iqbal town. With the passage of time built-up area increases and vegetation decreases. There is a strong correlation between NDVIand LST. The surface of temperature decreases if vegetation increases which indicates that vegetation helps to reduce the LST of an area. The conversion of green areas into residential and commercial areas significantly increases the LST, mature trees will help to mitigate the UHI, So Iqbal town's council need to plantmore trees, and for this purpose, they should involve the public and students and also start awareness campaigns.

Keywords: Green spaces, UHI, NDVI, LST, Remote sensing

Abstract ID: ICSDG1108

COMPARING URBAN HEAT ISLAND WITH SPATIO-TEMPORAL URBANIZATION PATTERNS IN GUJRANWALA CITY| 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Hafiza Saba Islam[1,2], Amna Shoaib[1]

[1]*Department of City & Regional Planning, University of Engineering & Technology, Lahore, Pakistan*

[2]*Department of City & Regional Planning, Lahore College for Women University, Lahore, Pakistan*

*Corresponding and Presenting Author's Email: saba.islam@lcwu.edu.pk

One of the most prominent hazards confronting urban areas in the context of local climatic change is Urban Heat Island (UHI). It has kept cities around the world in the grip of heatwaves with the phenomena intensifying in the last five years. This study utilized multiple datasets to investigate the spatiotemporal urbanization trends in Gujranwala, Pakistan. By identifying thermal drivers and simulating the spatial pattern to visualize the outright nexus between development patterns and thermal properties. The climatic data from the Pakistan Meteorological Department along with multi-temporal Landsat TM/OLI satellite images were processed using GIS and remote sensing techniques to identify hot spots. It also examined urban green spaces through spectral indices such as Normalized Difference Vegetation Index (NDVI). The results indicate that the urbanization trend is intensification in both existing and newly established zones of Gujranwala city. This creates an increasing pressure on land use planning with a negative correlation between Land Surface Temperature, and NDVI. It confirms the urban sprawl at the expense of green spaces reshaping and enhancing the UHI profile of Gujranwala city. The findings conceptualize the nexus of urbanization with heatwave and climate change adaptation through green spaces which relate with the implications of sustainable development. This is captured and presented in the form of a conceptual model which will assist communication

between different stakeholders such as those in academia, developmental authorities, planners, developers, the construction sector, or practitioners in the built environment sector.

Keywords: Urban Heat Island, LST, NDVI, Gujranwala

Abstract ID: ICSDG1109

ASSESSING THE POTENTIAL OF INTEGRATING SPONGE INFRASTRUCTURE TO COPE WITH URBAN FLOODING IN LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Maria Ali[1*], Esha Ashraf Butt[2], Esha Ishfaq[3], Menahil Fatima[4], Nayab Waris[5]

[1] *Department of City & Regional Planning, Lahore College for Women University, Pakistan*

*Corresponding Author's Email: riyya_ali@yahoo.com

The increasing frequency of urban floods worldwide due to climatic extremes, increased demand on urban drainage due to rapid urbanization; necessitates the integration of sustainable urban flood management system. Sufficient surface stormwater runoff causes infrastructural damage, traffic bottlenecks, economic losses, and health problems in metropolitan settings. Recent literature of prevailing urban flood management practices has revealed that developing countries prefer to adopt conventional urban drainage systems, which has reduced the resilience of urban areas. Global Climate Risk Index 2021 alerts that Pakistan is in the list of top 10 most affected countries due to climate change. Second most populous metropolitan city; Lahore frequently encounters urban flood events because of the limited capacity of the city's drainage system and land cover changes. This research interrogates that whether the previously known Garden City has potential to incorporate Sponge Infrastructure in its existing capacity. The Sponge City approach offers the unique opportunity to pursue the Sustainable Development Goals especially "Make Cities Resilient and Sustainable" (SDG 11). Among other practices Sponge Infrastructure is identified as rain gardens, infiltration swales, green roofs and pervious surfaces. This paper aims to propose nature-based solution that not only deals with storm-water but also promotes the sustainable solutions for groundwater recharging and rain water conservation. The methodology adopted involves the identification of urban flood hotspot areas using GIS and to analyze the potential of grey-green infrastructure to serve as sponge infrastructure. By using Rational Method, the expected performance of Sponge Infrastructure has been investigated. Results indicate that the integration of sponge elements into the existing urban environment showed high

performance of sponge infrastructure. To obtain the best performance of Sponge Infrastructure, its criteria to the properties of land-use should be carefully evaluated according to the diverse features of land-use, the share of existing land cover, and climate.

Keywords: Urban flooding, Sponge Infrastructure, Sustainable, Resilient, Stormwater Runoff

Abstract ID: ICSDG1110

IDENTIFICATION OF SOCIAL, PSYCHOLOGICAL, TECHNICAL AND FINANCIAL BARRIERS TOWARDS ADAPTATION OF SOLAR POWER SYSTEM IN HIGHER EDUCATIONAL INSTITUTIONS OF LAHORE| 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Kashmala Tariq[1], Bisma Ashfaq[2], Gull Rukh Aqeel[3], Syeda Rameen Sherazi[4]

City and Regional Planning, Lahore College for Women University, Pakistan

Corresponding Author Email: Kashmalacrp@gmail.com

Solar radiations, in conjunction with auxiliary solar assets, account for the vast majority of the planet's renewable, environmentally friendly energy, with the ability to develop sustainable and resilient cities. The need for electricity in Pakistan has skyrocketed throughout the country, and Lahore is no exception. Higher educational institutions, both public and private, are expanding and becoming a key energy consumer industry in our time. Due to the ever-increasing need for energy, the gap between supply and demand has increased, resulting in the depletion of energy resources and impeding community development. The purpose of this study was to highlight the problems that hinder in the use of solar energy systems in higher educational institutional buildings in Lahore. The research covered social, psychological, technical, and financial barriers towards solar energy system adoption in the higher education institutions. Data collected through semi structural interviews with administration and students of institutions. The results of the study highlighted the issues and constraints to the use of solar energy systems in educational institutions. The study concluded that institutions face financial and technical barriers more than psychological and social barriers. Recommendations included initiatives, structuring the solar industry for educational institutions with urban planning, leading to sustainable cities, and overcoming the obstacles that are confronted. Furthermore, they also included raising awareness about the fundamental benefits

of using solar energy in educational buildings and encouraging various institutions to become helpful to the city and the environment.

Keywords: Sustainable Development, Higher Educational Institutions, Solar Energy, Barriers, Resilient City.

Abstract ID: ICSDG1112

ANALYSIS OF WALKABILITY ENVIRONMENT IN THE VICINITY OF ORANGE LINE METRO TRAIN STATIONS IN LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Fariyal Khalid[1], Arooba Muzma[2], Huma Shahzadi[3], Sajida Parveen[4]

1 City and Regional Planning, Lahore College for Women University, Pakistan

fariyalkhalid@gmail.com

Walking is the simplest and most common form of physical activity among adults, regardless of age, sex, ethnic group, education and income level. It has been increasingly recognized as an important factor for urban development and is the first step in creating sustainable system of transportation in an urban environment. A vital issue in community is providing an easy access to the transport network for different range of community members. The walking environment near most of urban stations is unsafe, uncomfortable and inconvenient, and this problem is worsening day by day. The aim of this research was to study the walking environment for the users of orange line metro train stations. For this purpose, Pedestrian Walkability Index (PWI) was used to assess numerically to which extent the area was walkable for users around urban stations. The research described the appropriate indicators for the assessment of walkability. The study was primarily based on detailed data collection, then selected area was surveyed and a sample size of 100 questionnaire had been filled regarding the perception of people about the provided facilities. Geo-spatial techniques were used to highlight the major problems of walkability around four selected stations (Shalamar Bagh, Lakshmi chowk, Samaanabad and Awan town station) that are at a distance of 5Km. The PWI values indicated that there was shortage of facilities around stations. The results showed that there was no proper walkable environment around train stations because the indicators that define the level of service was not properly given. Based on results the conclusion and recommendations were drawn. This study

will help the city planners to understand the importance of walkability which can be used to improve walkable environment.

Keywords: Walkability, level of service, Pedestrian Walkability Index, Geo-spatial, urban environment.

Abstract ID: ICSDG1113

SUSTAINABLE MANAGEMENT OF TRAFFIC BORNE ELEMENTAL ENRICHED ROADSIDE SOILS BY USING NERIUM OLEANDER L. | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Noreen Khalid*[1], Muhammad Aqeel[2], Zarrin Fatima Rizvi[3]
[1] *Department of Botany, Govt. College Women University, Sialkot, Pakistan*
[2] *State Key Laboratory of Grassland Agro-ecosystems, School of Life Sciences, Lanzhou University, Lanzhou, 73000. Gansu, P.R. China*
*Presenting author email: noreen.khalid@gcwus.edu.pk

Road transportation has become a major source of air pollution. Various vehicular parts produce noxious metals which cause contamination of roadside soils after they settle down from the air and pose a great threat to the ecosystem quality and human health. While planning specific management strategies for roadside verges, contaminated nature of these areas should be kept in mind. Native vegetation along roads not only helps prevent erosion, reduce roadside management costs, and maintain road safety. But, some of them have been proved to be excellent accumulators of the toxic pollutants such as heavy metals from roadside soils. Therefore, this study was performed along a busy road in the Punjab, Pakistan in summer and winter seasons to evaluate the potential of Nerium oleander to uptake and accumulate toxic pollutants known to be released by motor vehicles (heavy metals such as Cd, Pb, Zn, and Ni, and carbon and nitrogen compounds). We also studied photosynthetic pigments (chlorophyll a, b, and carotenoids), physiological attributes (stomatal conductance, photosynthetic rate, internal CO_2 concentration, and transpiration rate), and defense system attributes (amino acids, total soluble proteins, and total antioxidant activity) of N. oleander to evaluate the potential impacts of roadside pollutants. Results indicated a good capacity of N. oleander in absorbing heavy metals Pb and Cd as it showed maximum concentrations of these metals as 8.991mg/kg^{-1} and 0.599mg/kg^{-1}, respectively. It also absorbed high quantities of various nitrogen and carbon compounds emitted from motor vehicles. However, we saw a negative effect of these pollutants on chlorophyll contents, and gas exchange characteristics. Similarly, soluble proteins, and free amino acids also found to be impacted but we

noted a significant increase in the antioxidant activity of N. oleander in both seasons. However, metal accumulation in this plant was higher in the summer. We recommend that a proper management of roadsides with N. oleander can provide minimal contamination of the roadside environments leading to sustainable development of these corridors.

Keywords: Road transportation, Air pollution, Contamination, Roadside soils, Nerium oleander

Abstract ID: ICSDG1115

A GEOSPATIAL ASSESSMENT OF OFF-SITE PARKING IN CENTRAL BUSINESS DISTRICT, LAHORE | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Arwa Tariq[1], Anees Bibi[1], Insha Riaz[1], Kinza Aziz[1], Memoona Sarfraz[1]

[1]*Department of City & Regional Planning, Lahore College for Women University, Pakistan*

Email: arwaplanner@gmail.com

Many Pakistani cities are witnessing a spurt in urban growth. This increase in urban growth is accompanied by the growth in private vehicle ownership. With an explosive growth in the number of automobiles, the demand for parking escalates, which lead metropolitan areas especially Central Business Districts (CBD) to traffic jams and road congestion that warrant the construction of such capital-intensive buildings as off-street public parking facilities. On-street parking is one of the major problems that is created by the increase in road traffic. Nevertheless, having an effective system for managing off-street park remains a major challenge CBD. The research accesses the off-street parking efficiency in case study area Gulberg CBD Lahore, by using Geo Spatial Analysis technique. Analyzed parking characteristics by considering parking statistics through parameters which include parking inventory survey, occupancy, load, duration. Furthermore, the questionnaire-based survey has been conducted for exploring driver's perception regarding existing condition of parking facilities. The findings show that above parameters have varied level of influence on parking. It also includes parking demand exceeding supply and uneven parking space distribution. The overall parking demand for on-street parking was much higher than off street due to tendency of parkers to park near their destination. Moreover, there is lack of parking lots and existing lots are not efficient. This research is structured to recommends creating vertical parking lots instead of giving horizontal space and existing parking lots should be enhanced and enlarged to attract more users. Based on the land use activity parking space should be prioritized. The research

clearly points to the fact that policy tools like E smart, Park mobile and single ramp model should be adopted for parking management.

Keywords: Off-Site Parking, Geo-Spatial Analysis, Parameters, Uneven Distribution, E-smart parking.

Abstract ID: ICSDG1116

ASSESSING SERVICE QUALITY AND RIDERS SATISFACTION (CASE STUDY OF METRO TRAIN LAHORE) | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Siddiqa Amin[1, 2,] Zunaira Ijaz[1], Ayesha Shahbaz[1], Shaiza Rasool[1]
[1]*Lahore College for Women University Lahore, Pakistan*
[2]*Universiti Teknology Malaysia, Malaysia*
Corresponding Author Email: plnr_sidika302@hotmail.com

Service Quality (SQ) increases the efficiency and effectiveness of a service leading towards achieving customers' satisfaction. To achieve the efficiency in transport services, assessing the satisfaction is an effective tool to improve the quality of services. SQ and riders' satisfaction in public transport is important for social, political, environmental, and economic outcomes. The research aims to assess SQ and perspective of users of Orange Line Metro Train (OLMT). Questionnaire based survey was conducted from riders of (OLMT). The average ridership of OLMT in 2020-2021 was 63,114 per month. The research used the random sampling techniques for the selection of riders and a total 397 responses were taken. Data triangulation was used in the research and involves participation of various stakeholders, observational surveys, and perception of riders through questionnaire. SQ and riders' satisfaction were evaluated effectively to ensure the issues such as safety and security, accessibility, comfort and convenience, customer care, infrastructure, amenities, fare satisfaction; environmental conditions are taken into account as indicators in mass transit system. The research concluded that riders were moderately satisfied with SQ at stations of OLMT. Majority of riders highlighted that the behavior of the staff working at stations were not corporative. SQ indicator which needs to be improved is particularly related to comfort and convenience, safety and security, accessibility at stations of OLMT. Observatory survey and riders' perception regarding safety and convenience issues complement each other. Many problems were identified by the researcher based on their own observations and the opinions of riders. The researcher identified facilities that needed to be improved, such as safety and security, staff behavior, comfort, and convenience, in order to improve service quality. The

findings of the study will help authorities and stakeholders in improving factors that identified during the observational survey to make service better for the riders.

Keywords: Riders Satisfaction, Service Quality, Data Triangulation, Observational Survey, Orange Line Metro Train

Abstract ID: ICSDG1117

COMPARATIVE ANALYSIS OF SEASONAL VARIATION W.R.T TEMPERATURE AND RAINFALL SINCE 2000 (CASE STUDY OF LAHORE AND KARACHI) | 1ST INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOAL: LOCALIZING SDGS THROUGH ACADEMIA

Maryam Bashir[1], Dr. Aysha Hanif[2], Rida Intizar[3] & Dr. Sahar Zia[4]

[1'2'3&4]*Department of Geography, Lahore College for Women University, Pakistan*

*Corresponding Author's Email: maryambashir891@gmail.com

The subject of climate change has appeared very strongly during the last two decades on global scale in view of its implications on the environment of vulnerable states. Moderate increase in temperature and its effects on rainfall are noticeable in many regions around the world. Hydrology, ecosystem and agriculture, water resources, health care and disaster management sectors are greatly influenced by rainfall. In the context of Pakistan, it was important to study variations in the climate variables. Different statistical techniques were used to explore the current and remarkable change in minimum temperature. Two stations Lahore and Karachi were taken to estimate contrast in mean temperature and maximum temperature and rainfall. For this purpose databanks encompasses 14 years of weather parameters from 2000 to 2013 and 2021 were acquired from metrological station Lahore. The sum of temperature analysis specifies that the temperature of Lahore experiences more variability than Karachi. On the one hand rainfall data has disclosed an overall decline, but less variation exist in Karachi. It is concluded that climate change happening may be specify key contemplation in planning, designing and implementing developmental schemes, food security and disaster risk management sectors to adapt and attenuate undesirable incidents.

Keywords: Climate change, Minimum temperature, Maximum Temperature, Rainfall, Variation.

Abstract ID: ICSDG1118

Spatial and Temporal Analysis of Smog: A comperative study of Lower Mall and Township

Anum Liaqat, Fatima Saleem, Sheeza khan
University of Punjab, Lahore, Pakistan.Country
Lahore college for women university, Lahore, Pakistan
Department of Geography, Lahore college for women university, Lahore, Pakistan

*Corresponding Author's Email: shizalohani060@gmail.com

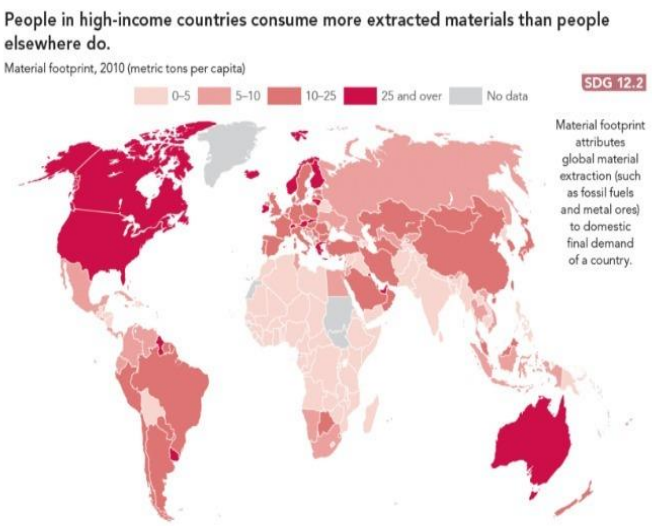
Smog is increasing on accelerating rate. In many cities of Pakistan smog has become an emerging issue due to the excessive industrialization, urbanization, modernization and consumption of fuel. Lahore, the second-largest and most polluted city in Pakistan, has been plagued by a heavy blanket of smog recently. The objective of this research is to study the temporal trends of smog and to investigate the sources that cause smog in lower Mall and Township (Areas of Lahore). The factors like the harmful gases that may lead to the smog but they also tends to aggravate the concentration of pollutant which are emitting from these factors. Vehicles and industrial emission are emitting the CO, NO, NO2, NOx, SO2, O3. The data for this study was collected through GPS, EPA (Environmental Protection Agency), LCCI (Lahore Chamber of Commerce and Industry) and Excise and Taxation Department. The findings of the study help conclude that with the increase of transportation, toxic pollutants increase and they contribute in aggravating the slow increase in the frequency and spatial coverage of smog in recent years. The study identified strong smog trends in Lower Mall as compared to Township because of high vehicular activities in Lower Mall. In order to reduce the smog, this study recommends that the government should develop environmental strategies that will help in future to reduce the rate of pollutant emissions and in turn the intensity of smog, to ensure the development of sustainable Lahore with a healthy community (SDG11).

Keywords:
Smog, Temporal trend, Potential source , GIS analysis

Goal 12 - Responsible Consumption & Production

Ensure sustainable consumption and production patterns

88	87	15	1499	310
GUEST ARTICLES	POLICY BRIEFS	GENERATION 2030	NEWS	EVENTS



SDG12 RESPONSIBLE CONSUMPTION AND PRODUCTION

SCIENTIFIC CHAIR PROFILE:

SCIENTIFIC CHAIR 1:

Name: Dr. Bushra Naseem

Qualification: PhD in Physical Chemistry from Quaid-e-Azam University, Islamabad

Designation: Tenured Professor /Chairperson of Department of Chemistry

Department: Chemistry

Faculty: Science and Technology

University: LCWU

Contribution in Research and Academics:

Her teaching/research fields of specialization in Chemistry are Physical Chemistry, Surface Chemistry, Colloidal Chemistry, Materials and Solution Chemistry. She won Post Doctoral Fellowship Award Phase II (Batch-III 2008), Higher Education commission, Pakistan, (2008). She worked as Postdoctoral Research Fellow (Oct. 2008–Oct. 2009) at Bristol Colloid Center (BCC), School of Chemistry, University of Bristol, UK. She received Certificate of appreciation on Best performance in teaching and research", awarded by Vice Chancellor, Lahore College for Women University, Lahore in years 2017 & 2018. Dr Bushra received Farogh-e-Taleem Gold Medal Award, given by Idara Farogh-e- Taleem Punjab, Pakistan, (2015). Currently she is supervising PhD, MS and BS level students. She has published her research work in renowned International Journals.

Specific SDG and its role in Pakistan development and Globally:

SDG, 12; Sustainable Consumption and Production (SCP) refers to "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations". Sustainable Development Goal 12 includes;

- To achieve the sustainable management and efficient use of natural resources; reducing per capita global food waste at the retail and consumer levels and the reduction of food losses along production and supply chains, including post-harvest losses.
- To achieve the environmentally sound management of chemicals and all wastes throughout their life cycle.
- To reduce the waste generation through prevention, reduction, recycling and reuse.
- To encourage companies to adopt sustainable practices
- To promote public procurement practices that are sustainable.
- To ensure that people everywhere have the relevant information and awareness for sustainable development.

SCIENTIFIC CHAIR 2:

Name: Dr Asma Seemi Malik.

Qualification: PhD in Sociology.

Designation: Head of Sociology Department / Independent Living Centre.

Department: Sociology

Faculty: Arts and Social Sciences.

University: LCWU

Contribution in Research and Academics:

She has more than 23 years of teaching, research, and professional experience by serving the government of Punjab, Health Consultant, and LCWU. She joined Lahore College for Women University in 2013 as Assistant Professor and supervised more than 30 MS and BS research students. She has more than 20 research articles in HEC recognized national and international journals to her credit. She has presented more than 17 research papers related to contemporary social issues at various International Conferences and Congresses in the last 2 years. She has served as a reviewer for various research journals.

Specific SDG and its role in Pakistan development and Globally**:**

The focus of interest is the **SDG-12** which is "**Responsible Consumption and Production".**

The sustainability of resources involves the effective management of our shared natural resources, and the way we as humans dispose of toxic and other waste and pollutants, are important targets to achieve this goal. It is equally important to encourage domestic consumers, industrial and businesses to reduce waste generation through recycling, reusing, preventing, and reducing waste, as it is supporting developing countries to move towards more sustainable patterns of consumption and production.

ABSTRACT PRESENTATIONS
Abstract ID: ICSDG1201

DESIGNING OF CO-SNO_2/S-G-C_3N_4 HETEROJUNCTION FOR BOOSTING PHOTODEGRADATION OF MB AND INACTIVATION OF PATHOGENS

Mohsin Javed[1*], Sana Iqbal[1]

[1]*Department of Chemistry, University of Management and Technology, Lahore*

Corresponding author's email*: mohsin.javed@umt.edu.pk

Environmental pollution is the water, air or food contamination in a manner to cause potential harm to the health of humans and other living and non-living organisms. This project reports the facile synthesis of pure SnO_2 and cobalt doped tin oxide by a simple coprecipitation method. A series of cobalt doped tin oxide (1, 3, 5, 7 and 9 wt %) nanoparticles were synthesized and subjected to the degradation of methylene blue as a standard organic pollutant. It was revealed that as concentration of Co increases, it enhances photocatalytic degradation of methylene blue till 7 % doping of cobalt in tin oxide. Photocatalytic degradation was enhanced to 83 % by cobalt doping as compared to 49 % with pure tin oxide nanoparticles in 150 min. To achieve highest level of degradation of methylene blue, 7 % Co-SnO_2 nanoparticles were made composite with sulphur doped graphitic carbon nitride. A series of nanocomposites by varying concentration of SGCN (10, 30, 50 and 70 wt %) were synthesized. It was found that degradation rate of methylene blue with composites enhanced to 96 % in 150 min. The morphology of the synthesized samples were characterized by XRD and FTIR. Antibacterial activity was carried out against gram negative (*E. coli*) and gram positive (*B. subtiles*) bacterial strains. It was evaluated that all the samples showed good antibacterial activity against both gram positive and gram-negative bacteria.

Keywords: SnO_2, methylene blue, nanocomposites, Antibacterial activity

Abstract ID: ICSDG1202

METAL ORGANIC FRAMEWORKS DERIVED HETEROGENEOUS CATALYSTS FOR SUSTAINABLE ENERGY PRODUCTION

Sobia Dilpazir[1*]
[1]*Department of Chemistry, Lahore College for Women University, Pakistan*
*Corresponding Author's Email: sobia.dilpazir@lcwu.edu.pk

From last few decades due to ever increasing demand and extensive depletion of energy resources, the world is facing energy crisis at relatively very high level. Increased oil prices have been manifested by the high cost of petrol and other energy goods. The current energy resources based on hydrocarbons, oil, fossil fuels and petroleum products are non-renewable energy sources, depleting exponentially and they cause significant environmental pollution as well. It sparks the attention and interest towards the rapid development of green, renewable and sustainable energy resources as alternatives. Therefore deployment of renewable and green energy resources is most needed now than ever. This energy conversion technology currently receives intensive research and development focus because of its high energy conversion efficiency, virtually no pollution, and potentially large-scale applications without being consumed up. Multifunctional catalysts for designing these devices will help to commercialize such devices and replace the fossil fuels leading to industrial development, production and economy improvement in Pakistan. The development of Metal organic framework derived materials for renewable energy technology aligns with "***SDG 12 Responsible Consumption and Production*** of achieving capability to innovate, adapt and create indigenous technology to design, develop and marketing new products; and in turn providing the foundation for local growth and reducing the reliance on consumption of traditional energy resources.

Keywords: Excessive consumption, SDG, fossil fuel, resource depletion, development.

Abstract ID: ICSDG1203

GREEN ECONOMY IS A NUCLEUS OF SUSTAINABLE DEVELOPMENT GOALS

Somia Younas*, Mahwish Zafar
Superior University, Lahore
Corresponding author's email*: mpec-f21-002@superior.edu.pk

Green Economy is an economy which is based on natural resources. In this economy, no need to pay any cost of climate for economic growth. It's environment friendly approach. The aim of this study is to investigate the impact of green innovations on green economy in the region of South Asia. This study explains the impact of green innovations: green technology, green jobs, carbon emission, green energy, natural resource scarcity on green economy by applying a linear autoregressive distributed lagged (ARDL) bounds testing approach for a cointegration link between green innovations and green economy. The results indicate a positive impact of green innovations on green economy and sustainable development. Moreover, associated variables have also positive impact on green economy and economic growth. The findings of this study can be valuable to authorities and policymakers in the terms of installing clean energy and green economy. On the basis of the empirical results acquired, policy proposals are advised to open new horizons for developing countries in urbanization. At the same time it will help the policy makers to design the green revolution polices. Moreover it will help to decide how it can be used effectively to make sure to enhance economic growth. Government may take initiatives to train a layman to take part in this activity and earn through a decent job. Workshops, training programmes, degrees and awareness campaigns should be arranged to execute this programme with its true spirit.

Key words: Sustainable Development Goals, Green Economy, Green Technology, Green Innovations, Green Jobs, Carbon Emission, Green Energy, Natural Resource Scarcity

Abstract ID: ICSDG1204

CARE, GENDER AND CHANGE IN THE STUDY OF SUSTAINABLE CONSUMPTION

Nazneen Zahra (BS sociology, semester 8), Kiran Ikram (Lecturer Sociology, LCWU), Dr Asma Seemi Malik (Assistant professor Sociology, LCWU)
Department of Sociology, Lahore College for Women University
Corresponding author's email*: nazneenzahra515@gmail.com

In Western countries, moving toward more sustainable lifestyles often involves the disruption of well-established routines and habits in relation to consumption domains such as food, washing and cleaning, heating and cooling, transportation, and managing "stuff" more generally. These activities are deeply embedded in our everyday lives and often tied to care, which is the work invested in maintaining the well-being of oneself and the others. Consumption is what drives our economies, and if we are to properly address the climate and environmental crisis as a society, individual practices and household consumption habits do have to change. Care practices—provisioning and cooking food, cleaning the house, doing laundry, maintaining comfort of household members—require the use of resources such as food and energy, meaning that they are inevitably transformed by the adoption of more sustainable consumption practices. At the same time, care work is at the core of family life and relationships within the domestic space, and is more often accomplished by women. In this paper, we are interested in the ways sustainable consumption and care interlock within the household, how they relate to gender inequalities, and how change toward more sustainable lifestyles can both impact and be impacted by these inequalities. With this in mind, we conducted a content analysis of the academic literature by analyzing a corpus of 75 papers out of which 15 papers were finalized based on relevance on household consumption and sustainability from research gate and academia, paying particular attention to the role authors attribute to care and gender. The analysis shed light on the relational character of care and consumption, emphasizing the ways sustainable consumption is dependent on relationships within and outside the home. This insight invites us to rethink the role of households as a site for change. We suggest that the transition toward more sustainable consumption practices within the home relies on reducing and redistributing care work.

Keywords: content analysis, sustainable consumption, care practices

Abstract ID: ICSDG1205

RENEWABLE ENERGY PENETRATION IN PAKISTAN FOR ENERGY SYSTEM FOR SUSTAINABLE DEVELOPMENT

Sadia Tariq[1 *], Abdul Hameed Memon[1], Ahmad Hussain[1]
[1]*Graduate School of Engineering, Science and Information Technology, GSESIT, Hamdard University, Karachi, Pakistan*
Corresponding author's email*: sadiatariqusmani@gmail.com

In this research, an attempt has been pretended to dissect the energy situation of Pakistan to investigate the potential of renewable energy resources and its integration to the country's power generating system. Pakistan is suffering energy shortfall since the last two decades and it was reported to be as high as 4000 MV. This has caused serious problems almost in every sector and has shown a negative impact in the industrial sector. Presently the major proportion of energy requirements is being produced utilizing fossil fuels. In the present work in-depth study was conducted to analyze the energy resources available in the country there share in the energy mix with a focus to identify the potential of alternative fuels particularly renewable energy resources. It was observed that at the moment the available renewable energy resources are very much underutilized and there is a need to consider energy policy for the development of renewable energy plants. This will play a key role in the sustainable development of the country. Renewable energy resources are known as the affordable and clean energy.

Keywords: Renewable energy, Sustainable Development, Alternative fuel, energy mix, supply and demand gap

Abstract ID: ICSDG1206

GREEN SYNTHESIS OF RUTHENIUM NANO-PARTICLES

Ayesha Saddiqa*, Fozia Iram, Bushra Naseem,

Department of Chemistry, Lahore College for Women University, Lahore

Corresponding author email: *ayeshasaddiqaarshad@gmail.com

Employing natural resources for chemical preparation is directly related to renewable feed stock thus supporting SDG 12 “Responsible consumption and production” Plant-mediated synthesis of nanoparticles is a green chemistry approach that connects nanotechnology with plants. Novel methods of ideally synthesizing NPs are thus thought that are formed at ambient temperatures, neutral pH, low costs and environmentally friendly fashion. Keeping these goals in view nanomaterials have been synthesized using various routes. Ruthenium-based compounds have emerged as promising anti-cancer agents that serve as alternatives to cisplatin and its derivatives. Ruthenium (III) complexes have successfully been used in clinical research and their mechanisms of anticancer action have been reported in large volumes over the past few decades. Therefore Ruthenium NPs were prepared by using green method.

Keywords: Green Synthesis Nano particles, antimicrobial activity reducing agents (Plant Materials**)**

Abstract ID: ICSDG1207

OPTIMIZED SOLAR GENERATION MONITORING & CONTROL THROUGH IIOT 4.0 SCADA OVER CLOUD |

Khadija Basharat*, Sidra Hanif, Filza Fatima, Amna Ameen
1Department of Electrical Engineering, LCWU, Lahore, Pakistan
Student level:BS electrical engineering
*Corresponding Author's Email: khadija.basharat60@gmail.com

SCADA **(Supervisory Control and Data Acquisition)** is basically a control system that is used for collecting, analyzing, processing, monitoring, controlling and visualizing our data. SCADA has become the core of all industries like manufacturing industry, energy generation, distribution, filtration, oil & gas, recycling, transportation, food, water etc. Our project aims to design and implement SCADA to Control Solar power plant. In this project, we have used both hardware and software. We will install a solar plant and gather real time data through sensors and process that real-time data for smarter decisions according to our requirements, and perform necessary supervisory control actions. It will also allow human machine interface (HMI) and historic data storage that is a great innovation towards industrial automation. We will use sensors, actuators & micro controller. Our project is based on net metering mechanism that allows to get credit for accessible energy sent to the grid, that is most economical and make us able to get revenue by exporting extra power to grid station. Our project follows SDG-9 & SDG-12 that how digital innovation leads to inclusivity and sustainability, responsible for production and consumption. The impact of digital infrastructure on the sustainable development goals. The proposed system offers high reliability and productivity, modern monitoring and low own consumption.

Keywords: SCADA, Industrial Automation, IIOT, HMI, Net Metering, Industry 4.0, Ignition Scada

Abstract ID: ICSDG1208

DEVELOPMENT OF CONTROLLED PESTICIDE RELEASE SYSTEMS FROM BIODEGRADABLE POLYMERS

Sana Ahmad, Barira Jameel*, Andleeb Tariq
Lahore College for Women University, Lahore.

Only 0.1% of chemicals used in crop protection reach the target pest while the rest enters the environment and may cause hazards to non-target organisms, including humans. In this regard, design and development of controlled release formulations give us an ideal solution to reduce these problems. In the present work alginate-bentonite composites were synthesized. The internal structure and morphology of the composites was evaluated by using X-ray diffraction analysis. Three alginate-bentonite composites were prepared with different ratio of alginate and bentonite. These composites work as a control release formulation for pesticide (lambda-cyhalothrin). Loading and release of lambda-cyhalothrin from composites were studied. Results of the study suggest that the composition of the composites play an important role in the controlled release of the pesticide. The synthesized composites are effective adsorbent and control release formulation for lambda-cyhalothrin. The composites are biodegradable and hence cause no harm to the environment. Our work is related to Responsible Consumption and Production, SDG 12.

Keywords: Pesticide, Controlled release, Alginate, Bentonite, Biodegradable

Abstract ID: ICSDG1209

RECYCLING OF WASTE PAPER TO CONTROL ENVIRONMENT POLLUTION

Sadia Noor*, Bushra Naseem

Department of Chemistry, Lahore College for Women University, Lahore

Corresponding author email: *sadianoor393@gmail.com

The demand for personal protective equipment (PPE) kits is steadily increasing in this pandemic. The kits are being used by doctors and health care professionals to protect themselves from the virus. These kits are discarded after they have been used. The municipal corporation faces a significant challenge in terms of kit usage. Similarly, workplace papers are thrown away once they are utilized. Consumption of these papers is also a challenge because the majority of waste papers in a city's garbage is in the form of waste papers. Waste papers can be recycled and used to make handmade papers after going through a recycling process. Handmade papers will be inferior to traditional papers in terms of quality. By repurposing medical PPE kits that would otherwise be thrown away. The quality of handmade papers could be improved by using used office paper pulp. For the environment and trees, recycling unwanted papers and medical PPE kits is beneficial. In this process the pulp is formed by dissolving the paper in hydrogen peroxide, surfactant solution, chlorine gas and sodium hydrosulfide. In different ratios, the combined pulp of waste papers and medical PPE kits mix which may increase or decrease handmade papers' hardness, refraction, and moisture characteristics which is then examined by photometric test.

Keywords: Waste Paper, Paper Pulp, PPE Kits, Recycling, Hard Paper

Abstract ID: ICSDG1210

EXPLOITING POTENTIAL FOR FOOD SECURITY BY BIOACTIVE POLYMERS

Arooj Fatima Tariq*, Erum Akbar Hussain

Department of Chemistry, Lahore College for Women University, Lahore

***Corresponding Author's Email: arooj699630@gmail.com**

With the increase in world's population, one of the greatest challenges is finding equitable ways to provide food-water-energy security to nourish the growing population. In recent times, the COVID-19 pandemic directly affected the agriculture sector and raised concerns about food inadequacy. In this view, blends of cost-effective, biodegradable materials have been considered as key in providing sustainable food packaging. Therefore, in this research work, formulation of poly-vinyl alcohol and guar gum, have been prepared using sago starch as micro-filler by solution curing technique. The extent of cross-linking has been analyzed through Fourier transform infrared spectroscopy. Eugenol was mixed with these formulations for spraying vegetables to provide them safety against oxidants.

Keywords: food safety, polymeric formulations, antioxidant, Guar gum

Abstract ID: ICSDG1211

SYNTHESIS AND ANTIBACTERIAL ACTIVITY OF TRIAZOLIDINE THIONE DERIVATIVES BY USING AGRICULTURE BIOMASS

Dr. Shahnaz, Zaeema Iqbal, Humaira Yousaf, Hadiya shahbaz, Ayeza Kashif, Anum Mubarak
Lahore College for Women University
Corresponding Author Email: zaeemaiqbal208@gmail.com

Biologically important 5-aryl-1, 2, 4-triazolidine-3-thione derivatives were synthesized by the reaction of thiosemicarbazide with aromatic aldehyde and ketones at room temperature using chemically activated carbon as a reusable catalyst and is related to 12th SDGs **(responsible consumption).** Activated carbon was prepared using **green synthetic approach** from agriculture biomass like wood bark via chemical method by catalyzing with activating agent and carbonization with KOH at high temperature Some derivatives of 5-aryl-1,2,4-triazolidine-3-thione were also prepared by reaction of 5-phenyl-1,2,4-triazolidine-3-thione with benzoyl chloride catalyzed by strong base under ultrasonication at room temperature. Synthesized products were characterized by UV-VISIBLE, FTIR, NMR and XRD. These compounds show good antibacterial activity.

Keywords: Triazolidine, Thione, Green Chemistry, Biomass Antibacterial activity.

Abstract ID: ICSDG1212

A SOLVENT FREE SYNTHESIS OF ALCOHOL-AN ECOFRIENDLY APPROACH

Sehrish Kiran*, Shahana Ehsan

Department of Chemistry, LCWU, Lahore.

*Corresponding Author's Email: sehrishkiran08@gmail.com

Global warming is increasing day by day. Therefore, employing green chemistry protocols for chemical synthesis is an environmentally safe attitude. Organic solvents, being highly volatile, spoil the atmosphere and cause ozone depletion. Organic synthesis is an imperative area of the chemical and pharmaceutical industries and involves the use of huge amounts of organic solvents. Therefore, there is a need to find green methods that provide the required products without destroying the environment. The solvent free method is a tremendous way to overcome volatile organic solvent (VOS) emissions. Alcohols are prevalent products used as sweeteners and in making perfumes, are valuable intermediates in the synthesis of other compounds, and are among the most abundantly produced organic chemicals in industry. In view of the above scenario, this research work has been focused on alcohol synthesis via the cross-Cannizzaro reaction of paraformaldehyde with various aromatic aldehydes in solvent-free conditions. The formation of products was confirmed by spectral analysis. The new adopted procedure furnishes products with a high yield in less time.

Keywords: Solvent free synthesis, Cross-Cannizzaro reaction, Alcohol, Green synthesis.

Abstract ID: ICSDG1213

SYNTHESIS OF HIGHLY POROUS FOAM GLASS USING WASTE GLASS PIECES AND FLY ASH FOR THERMAL INSULATION

Amna Aamir*, Bushra Naseem
Department of Chemistry, Lahore College for Women University, Lahore
Corresponding author's email: *amnaaamir838@gmail.com

Glass residues are used worldwide and disposed of in large amounts in landfills. However, glass waste has great potential to be used as raw material to produce foam glass. Due to the high coal consumption for energy and economic development i; e. in pulverized-coal combustion (PCC) power plants large amounts of coal combustion products (CCPs), especially fly ash, are generated, and the majority are disposed in landfills, potentially resulting in environmental and economic burdens. On the other hand, fly ash has been successfully used for many years in a number of applications. A very promising heat-insulating and soundproof material-foam glass was prepared using mixtures of fly ash and recycled glass pieces (of different colors) for thermal insulation. The foam glass is a porous Foam like material, light enough to float in water and easy to be cut. It has low thermal conductivity, high compression strength, high frost resistance, excellent fire resistant, low water absorption and better durability. Foam glass mainly used as a thermal and sound insulation in walls of the buildings, regulate heat in refrigerating equipment etc. There were no SO_2 and low CO_2 emissions from the foam products which was a positive impact of this process. Highly porous foam glass was obtained by using up to 33.3–43.3% fly ash (as the main raw material) with the aid of Na_2CO_3 (fluxing agent) and SiC (foaming agent) over a range of time and temperature. In Pakistan, the main use of foam glass use is due to the requirement of high energy efficiency standards for energy conservation. The basic building block of all these regulations is the value of the overall heat transfer coefficient.

Key words: Waste glass, Coal fly ash, Foam glass, Thermal insulation

Abstract ID: ICSDG1214

ROLE OF HSA-CELL MEMBRANE BINDING FOR MICRONUTRIENTS DISTRIBUTION IN LIVING CELL

Saba Rashid*, Bushra Naseem

Department of Chemistry, Lahore College for Women University, Lahore

Corresponding author email: *saba0306644@gmail.com

Human serum albumin (HSA) regulates the transport and availability of numerous chemical compounds and molecules in the blood vascular system. Current human serum albumin research aims to enhance albumin's role from an endogenous ligand transporter to also having a role in facilitating the transport of a variety of exogenous compounds. This is an in-vitro study where surfactants are used to mimic the biological membrane instead of in-vivo study which is very expensive and require very Hi-tech advance instrumentation. In this project easy to handle conductometric method was used without sample consumption and multiple spectroscopic studies were carried out using the same sample multiple times. In addition, the effect of different factors such as temperature, pH, chain length of surfactants and their impacts on critical micelle concentration (CMC) of surfactant, binding, stability and thermodynamic parameters were also studied. This research contributes to help the scientific community in understanding how to improve the effectiveness and applications of biomolecules in pharmaceutical and other industries. Further, protein-surfactant interactions can explain the significant phenomena of hydrophobic and electrostatic interactions in biological system using simple non-consumable techniques.

Keywords: Human serum albumin (HSA), Ionic surfactants, protein-surfactants interaction, conductometery, micellization and thermodynamic parameters

Abstract ID: ICSDG1215

SUSTAINABLE BIODIESEL PRODUCTION THROUGH CATALYTIC TRANSESTERIFICATION OF CANOLA OIL

Sana Ahmad, Maida Amjad*, Aamna Ashraf

Department of Chemistry, Lahore College for Women University, Lahore

Renewable energy production may provide a sustainable route to reduce environmental pollution caused by fossil fuels. In the present study, biodiesel production was carried out via transesterification process which is environmentally feasible due to its low emission diesel substitute. In first step, Mesoporous silica SBA-16 was synthesized and incorporated with zinc oxide via incipient-wetness impregnation method using zinc nitrate as precursor. As-prepared SBA-16 and ZnO/SBA-16 were characterized by FTIR, TGA, BET and SEM techniques. The results revealed that zinc oxide was well dispersed in the well-ordered mesoporous channels and mesostructure of SBA-16 was still retained with high thermal stability, high surface area, large pore volume and uniform pore size. The catalytic activity of the ZnO/SBA-16 was investigated for biodiesel production via transesterification reaction of canola oil at 65^{o}C and analyzed by GC-MS. The effect of different oil: methanol molar ratio (1:12, 1:25 and 1:50) on the conversion of canola oil to biodiesel was investigated. The optimum molar ratio was found to be 1:50. The results showed that as-prepared ZnO/SBA-16 exhibited excellent catalytic activity towards biodiesel production. Our work is related to Responsible Consumption and Production, SDG 12.

Keywords:
Renewable energy, SBA-16, mesoporous material, ZnO/SBA-16, trans-esterification reaction, canola oil, biodiesel

Abstract ID: ICSDG1216

GREEN SYNTHESIS OF SUBSTITUTED PYRAZOLINES IN DEEP EUTECTIC SOLVENT

Nayab Siddique[1*], Erum Akbar Hussain[1]
Department of Chemistry, Lahore College for Women University, Lahore
*Corresponding Author's Email: nayabsiddique999@gmail.com

Toxic chemicals and volatile organic solvents are one of the major causes of air pollution. There negative impact on living beings demand responsible consumption and alternate environmental benign solvents that can subsidies their harmful effect. Deep eutectic solvents are new environment friendly solvents and typically characterized as cost effective, less volatile and biodegradable in nature. In this research, substituted pyrazoline derivatives have been synthesized in neutral deep eutectic solvents (NDES) by diketone, acetophenone and hydrazine. Excellent yield in reduced time were significant merits of this protocol that align in the attainment of SDG 12 (Responsible consumption and production). All prepared compounds were characterized through Fourier transform infrared (FTIR) and Nuclear magnetic resonance (NMR) spectroscopy.

Keywords: Eco-friendly solvents, Deep eutectic solvent, Pyrazoline

Abstract ID: ICSDG1217

RESPONSIBLE CONSUMPTION OF HETEROGENEOUS MOF FOR BIODIESEL PRODUCTION FROM WASTE COOKING OIL

Saadia Rashid, Zainab Ijaz*
Lahore College for Women University, Lahore
Corresponding author's email* : zainabijaz462@gmail.com

Cleaner production of biodiesel on an industrial scale requires a stable heterogeneous, low cost and recyclable catalyst. A number of Metal organic frameworks have been used as heterogeneous catalyst for this purpose. Copper and calcium based MOF are especially important as they are prepared from cheaper precursors. These may be prepared by solvothermal process. The heterogeneous catalyst was used for the production of biodiesel from waste cooking oil. Heterogeneous MOF catalyst may prove a better catalyst for the industrial production of biodiesel through a cleaner method. It may not only enhance the production but also would be environment friendly. In this way, it will target **SDG 12** that is related to responsible consumption and production.

Keywords: MOF, solvothermal, biodiesel, heterogeneous catalyst, clean production

Abstract ID: ICSDG1218

DRINKING WATER TREATMENT FOR POLYETHYLENE REMOVAL VIA COAGULATION

Khadija Sani[1], Bushra Naseem[2]
Department of Chemistry, Lahore College for Women University, Pakistan
Corresponding author's email*: Khadija.sani932@gmail.com

Plastic waste particularly microplastics gradually became a growing environmental problem across the globe since its increasing manufacture, disposal and anthropogenic activities. They have serious eco-toxicological effects on marine environment. Polyethylene (PE) is the main constituent of microplastics. PE was the targeted contaminant due to its abundance in drinking water. Coagulation was used to remove PE and Al- and Fe-based salts were used as coagulating agents. In comparison with Fe-based coagulants, Al-based coagulants performed better at removing PE. The smaller the PE particle size, the higher the removal efficiency. However, low removal efficiency was observed via the coagulation process with a conventional dosage. Other factors such as ionic strength, the concentration of natural organic matter and turbidity level had little influence on the efficiency of PE removal owing to its stable chemical properties. With the variation of floc properties induced by solution pH, the removal efficiency of PE increased, especially with anionic polyacrylamide in the presence of a high dosage of Al-based salts.

Keywords: Microplastic, Polyethylene, coagulation, responsible consumption

Abstract ID: ICSDG1219

MICROPLASTIC REMOVAL VIA PHOTODEGRADATION

Fatima Shahbaz*, Bushra Naseem,
Department of Chemistry, Lahore College for Women University, Lahore
Corresponding author's email* :fatimashahbaz5544@gmail.com

Water pollution is attracting continued attention worldwide due to importance of water in everyday life. One of the main contaminants influencing water pollution are microplastics. Due to their small sizes (≤5 mm), microplastic particles can be discharged to the environment from treated wastewater effluents. As microplastic mostly pollutes aquatic system, so it frequently finds it way in drinking water. Hence, there is crucial need to tackle the menace of microplastic pollution. A technique of photocatalysis was employed to remove microplastics from water. Visible light along with glass fiber substrates was used to trap low density microplastic particles such as polypropylene (PP) which in parallel support the photocatalyst material. Major photodegradation by-products were identified using GC/MS and found to be molecules that are considered to be mostly nontoxic.

Key Words: Microplastic, Photocatalysis, Glass fibers, Polypropylene

Abstract ID: ICSDG1220

PRODUCTION AND STORAGE OF ENERGY USING GRAPHENE BASED NANO-COMPOSITES

Tayyaba Raza*, Rehana Kousar, Maria, Saba Rasheed

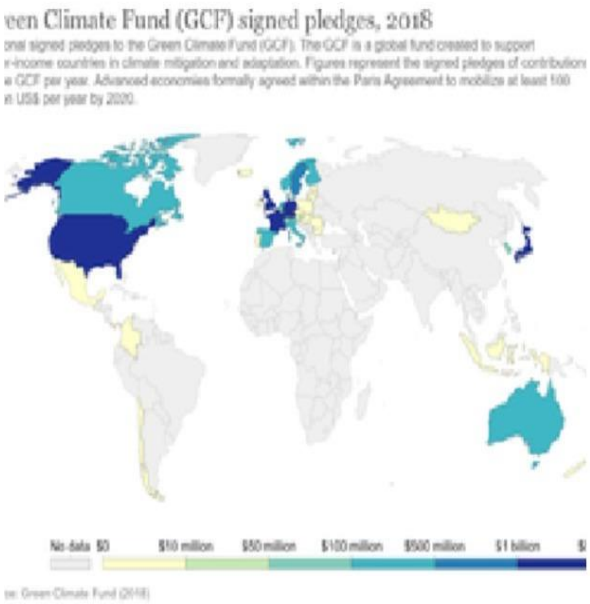
Lahore College for Women University, Lahore

*Corresponding author's email: tayyabaraza134@gmail.com

Energy availability from the last decades has brought transformations in human life. Not only many of the energy resources have been ascertained, in addition to that diversification from fossil fuels to nuclear and other renewable sources has also been brought up. The world is observing large-scale novelty at energy production and consumption levels. The World needs sustainable and clean energy production as well storage methods. For the full replacement of fossil fuels, a storage system should be renovated to store the surplus amount of energy that can provide output at the instant. Researchers have reported the supercapacitors as the best substitute. In the current research work, we have synthesized rare-earth-doped graphene-based nanocomposites containing TiO_2. TiO_2 was selected because it possesses remarkable electronic, dielectric, and physical properties. The hydrothermal method was adopted for the synthesis of composite. Graphene-based TiO_2 nanocomposites were synthesized with different concentrations of lanthanum and cerium. The synthesis of nanocomposites was confirmed through XRD analysis. The synthesized nanocomposites were also analyzed through UV-Vis and FT-IR technique. The synthesized nanocomposites were studied for their application in supercapacitors, through electrochemical testing including cyclic voltammetry, electrochemical impedance spectroscopy, and galvanostatic charge-discharge. The results indicated these composites were best in terms of energy production and storage.

Keywords: SDG 12, hydrothermal, FT-IR technique, XRD analysis


13 CLIMATE ACTION
Goal 13 - Climate Action
Take urgent action to combat climate change and its impacts
212
GUEST ARTICLES
172
POLICY BRIEFS
32
GENERATION 2030
3378
NEWS
898
EVENTS


een Climate Fund (GCF) signed pledges, 2018
onal signed pledges to the Green Climate Fund (GCF). The GCF is a global fund created to support
e-income countries in climate mitigation and adaptation. Figures represent the signed pledges of contribution
e GCF per year. Advanced economies formally agreed within the Paris Agreement to mobilize at least 100
n US$ per year by 2020.
No data
$0
$10 million
$50 million
$100 million
$500 million
$1 billion


13 CLIMATE ACTION
Take urgent action to combat climate change and its impacts

SDG13 CLIMATE ACTION

SCIENTIFIC CHAIR PROFILE:

Name: Prof. Dr. Arifa Tahir

Qualification: PhD in Botany

Designation: Chairperson

Department: Environmental Science department

Faculty: Science and Technology

University: LCWU

Contribution in Research and Academics:

Prof Dr Arifa Tahir is a leading scientist and renowned for her research in the various areas relating to Environmental Scienceespecially, Microbiology, Nanotechnology, and Climate Change. Dr. Arifa Tahir did her PhD in Botany, has previously been a research associate in Biotechnology and food research center PCSIR Labs Complex Lahore, and currently working as chairperson of Environmental Science department. She has extensive teaching experience. She has supervised more than 100 students. Her eminent contributions are development of biosorption process, Climate services, simple method to study mechanism of microwave radiation, biogenic synthesis of nanoparticles, enzyme coated nanoparticles, establishment of Conservation Park at Jallo forest Park Lahore, opening of local Chapter of Society of Ethnobiology. She is member of international Environmental Biotechnology research group. She has also completed research projects funded by HEC, PSF, Asian development bank and Lahore compost. She has also been part of HEC-BC Link projects. With many international publications in the field of her expertise, she has received research productivity award, Malik Meraj Khalid award, and Best performance award, Farogh-e-taleem award due to her contributions in academics and research. She is facilitator of ACP (Active citizen program) of British council Pakistan and has supervised many social action projects. She has remarkable contribution in the development of physical and human resource of the university. In accordance with university's vision, she has been working actively to empower and encourage women to work in different fields

Specific SDG and its role in Pakistan development and globally:

There is no country that is not experiencing the drastic effects of climate change. Greenhouse gas emissions are more than 50 percent higher than in 1990. Global warming is causing long-lasting

changes to our climate system, which threatens irreversible consequences if we do not act. The annual average economic losses from climate-related disasters are in the hundreds of billions of dollars. Supporting vulnerable regions will directly contribute not only to Goal 13 but also to the other SDGs. These actions must also go hand in hand with efforts to integrate disaster risk measures, sustainable natural resource management, and human security into national development strategies. It is still possible, with strong political will, increased investment, and using existing technology, to limit the increase in global mean temperature to two degrees Celsius above pre-industrial levels, aiming at 1.5°C, but this requires urgent and ambitious collective action.

ABSTRACT PRESENTATIONS
Abstract ID: ICSDG1301

Spatiotemporal assessment and valuation of key regulating ecosystem services and linkages with the SDGs in the terrestrial ecosystem of Pakistan

Arshad Ali Shedayi1,2

1Department of Plant Sciences, Karakoram International University Gilgit Pakistan

2University of Chinese Academy of Sciences Beijing, China

Abstract

Ecosystem services are benefits obtained from nature for human wellbeing and are multidisciplinary in nature. This study aimed to assess and evaluate key regulating ecosystem services in Pakistan at a national scale focusing on soil erosion, sediment retention and carbon sequestration. The prevention of soil erosion, avoided nutrients transport, carbon stock and carbon sequestration are linked to the SDG 13 (climate action). To investigate the present status and provision of the services, this study was conducted in the terrestrial ecosystem of Pakistan using input data for soil erosion models, and data on the prediction of carbon sequestration were obtained from remote sensing. . The mean soil erosion was however decreased to 2.2034 t/ha/y and the total SE in Pakistan was 194.32 million t/y by the inclusion of vegetation cover factor (C). The total value of soil/nutrient retention and sediment retention in Pakistan was 147580 (980.08 USD) million PKR per year. The value of offsite (sediment removal) cost was much higher than the onsite (mineral) cost in Pakistan. The major driving forces of oil erosion and sediment transport were vegetation cover, precipitation and slope angle.

The findings of this study at a spatiotemporal scale suggest urgent steps to be taken to impose a carbon tax and accelerate the billion tree plantation program to prevent soil erosion and enhance carbon stock and moderate climate by carbon sequestration. This study provides comprehensive

findings to frame policy to achieve the UN SDG 13 (climate action) in Pakistan.

Keywords: Ecosystem services, SDGs, regulating ecosystem services, carbon sequestration, soil erosion, sedimentation, climate change.

Abstract ID: ICSDG1302

Assessment of air pollution tolerance potential of Alstonia scholaris L., Cassia fistula L. and Ficus religiosa L. commonly grown along the roadsides of Lahore

Tooba Khan, Sammina Mahmood*

*Corresponding author affiliation: Department Of Botany, University Of Education, Bank Road Campus, Lahore

Email# sammina.mahmood@ue.edu.pk

Abstract

Ambient air determines the quality of life. Unfortunately eco-toxicity due to vehicle emissions intensifying the ecological challenges on the roads and nearby vicinities, hence becoming an enigma for human health. In present study three plant species *Alstonia scholaris* L., *Cassia fistula* L. and *Ficus religiosa* L., commonly growing along the roadsides of Lahore, chosen to access their role in air pollution mitigation by considering Jinnah Park as control site. Leaf macro (leaf length, width, leaf area, petiole length), micro morphological (leaf texture/smoothness, color variation, pubescence, phyllotaxy) and biochemical characters (relative water content, pH of leaf extract, ascorbic acid and total chlorophyll contents) were considered to measure air pollution tolerance index (APTI) for all selected species separately. Results revealed that no significant difference observed in macro morphological traits of leaf however micro-morphological traits vary greatly among the polluted and non-polluted sites. All biochemical attributes also showed highly significant difference among control and polluted site. The APTI measured on the basis of biochemical analysis showed the order of air pollution tolerance *Alstonia scholaris* L. (9.3%, tolerant) > *Ficus religiosa* L. (21.6%, intermediate) > *Cassia fistula* L. (27.7%, sensitive) based on % difference in APTI. Tolerant trees act as sink for air pollutants and should be considered in green belt planning and development programs. Pertaining to sensitivity and severity of issue, these types of studies are indispensable in future for structuring

and strengthening of green belts in urban areas with the plant types having maximum air pollution tolerance potential.

Key words: air pollution tolerance index (APTI), vehicle emission, eco-toxicity, macro-micro morphological traits, green belt development.

Abstract ID: ICSDG1303

IMPACT OF GENDER ON PERCEPTION AND ADAPTATION STRATEGIES AGAINST CLIMATE CHANGE IN LAHORE, PAKISTAN: A CROSS-SECTIONAL STUDY

Shariq Waheed[1*] and Hafiza Ufra Allaudin[2]

[1]*Department of Gender Studies, University of the Punjab, Pakistan*

[2]*Institute of Applied Psychology, University of the Punjab, Pakistan*

**Corresponding Author Email: shariqwaheed2@gmail.com*

Abstract

Climate change affects men and women differently which necessitates the need for gender-responsive policies but the scarcity of gender-disaggregated data in Pakistan hinders policymakers to make gender-sensitive policies. In order to address this data gap, the present study aims to analyze the impact of gender on adaptation practices against climate change in Lahore, Pakistan. The study also intends to decipher differences in perceptions about climate change and elements impacting adaptation strategies. The examination was a cross-sectional study of 313 participants recruited across Lahore, Pakistan through social media who completed a sociodemographic survey along with a structured questionnaire. Respondent's climate change perceptions were evaluated by indices of four indicators of Climate change i.e. Changes in Air quality, Temperature change, and Variation in rainfall. The analysis was based mainly on descriptive statistics while the chi-square test was utilized to determine the association between variables. The results indicated that Climate change was perceived by 89.2% of men and 78.9% of women. The study also revealed a significant association between gender and the adaptation strategies of respondents disclosing that adaption strategies against climate change varied by gender. The findings of the present study can be used to map out and ameliorate adaptation strategies to tackle climate change problems in Pakistan. The study recommends methodical collection of detailed information in other areas of Pakistan for the policymakers to chalk out and enact expedient interventions to palliate and handle climate change.

Keywords: Climate Change, Gender Attitude, Environmental Psychology.

Abstract ID: ICSDG1304

PHYTORAEMEDIATION POTENTIAL OF SOME SELECTED TERRESTRIAL PLANTS GROWING AT DIFFERENT CONTAMINATED SITES OF DISTRICT SARGODH

Abdul Ghani[1*], Zarmeena Shehzadi[1], Ali Haider[1], Iqra Saeed[1], Fatima Hayat[1]

[1] *Department of Botany, University of Sargodha, Sargodha, Pakistan*

**Corresponding author's Email:ghaniuaf8@email.com*

Abstract

The purpose of research was to uncover the effects of heavy metals on morpho-nutritive properties and phytoremediation potential of selected terrestrial plants, *Parthenium hysterophorus*, *Chenopodium album* and *Solanum nigrum*, collected from contaminated sites of various tehsils of district Sargodha including Shahpur, Bhalwal and Bhera and their phytoremediation potential. Results of morphological attributes showed that highest fresh weight (41.247g) was noted in *Solanum nigrum* collected from Bhera. The maximum root length (19.740cm), moisture content (72.697%) and crude fat (17.157%) was found in *Chenopodium album* collected from Bhera, and Shahpur. The highest shoot length (176.57cm), number of leaves per plant (50) and maximum crude fiber (39.633%) was found in *Parthenium hysterophorus* collected from Bhalwal. The analysis of soil involving elemental analysis like cadmium (Cd), lead (Pb) and nickel (Ni) and the pH, electrical conductivity, organic matter, phosphorous and potassium was also examined. Highest concentration of proteins (5.266%) and carbohydrate (27.39%) was found in *Chenopodium album* collected from Bhera. *Parthenium* hysterophorus proved to be having good phytoremediation potential for cadmium and lead and good source for protein content. Fluctuation in elemental profile of plants and composition of soil may be attributed to spatial variations or due to agro-climatic conditions that varies in all cities.

Keywords: Phytoremediation, nutritional, heavy metals, terrestrial plants

Abstract ID: ICSDG1305

Climate Change and Perception of Youth: A study of Knowledge, Attitude and Practices

Afshan Ambreen[1] Gulshan Ara[2] Ali Mohib[3]

ali.mohib@vu.edu.pk

Department of Sociology, Virtual University of Pakistan

Abstract

The modernization has brought revolutionary changes in the lives of mankind. It has fulfilled the ever-increasing human demands. On the other side, these changes had also impacted the society in negative terms, one of the consequences is the growing pollution resulting in overall climate change in the globe. These environmental changes have augmented the vulnerabilities of mankind by bringing a wave of environmental hazards ranging from severe floods to extreme weather conditions challenging the human survival on earth. In order to measure the level of understanding and perception of youth towards climate change, this research study aims to examine the knowledge, attitude and existing practices to mitigate the effects of climate change. It also intends to find out the effects of climate change on individual and community health. This study will help the youth as future stakeholders through their contributions, vision and engagement to shape climate change adaptation in community level as well as on societal level. For the purpose of conducting the present study, an online survey will be conducted with university students of different provinces. A questionnaire containing close-ended questions will be deployed as data collection tool. For data analysis purposes, descriptive statistics and correlation will be applied.

Key words: Climate change, Perception, Knowledge, Attitude, Practices

Abstract ID: ICSDG1306

Detection and Classification of Plant Leaf Disease in Balochistan Forests Using Deep Learning

Hafiza Nimra

nimrabinteashraf@gmail.com

Abstract

Plant diseases cost the global economy over $220 billion per year, according to the Food and Agriculture Organization (FAO), and exotic insects cost the global economy around $70 billion each year. Plant diseases are significant factors because they reduce the quality and quantity of agricultural goods. The manual real-time monitoring of the forest to prevent unauthorized activities and observe plant health is practically unattainable. Computer-assisted leaf disease diagnosis techniques are becoming increasingly prevalent these days. However, several limitations range from strong image backgrounds, vague symptoms edge, dissimilarity in the image capturing weather, lack of field leaf image data, variation in early signs from the same infection, multiple infections producing similar symptoms, and lack of efficient real-time system or its usage. This work employs Deep Learning techniques to automatically extract deep features of the diseases from the plant leaf images. PlantVillage dataset has been used in this work. PlantVillage dataset consists of 20,639 healthy and unhealthy leaf images divided into 15 categories by species and disease. The system uses Convolutional Neural Network to extract features and classify data. After extracting deep features of the diseases, the system classifies leaf diseases of plants so that the leaves can be classified into healthy and unhealthy plant leaves. The model achieves 90% training accuracy and 77% testing accuracy. The suggested method can be used to examine the UAV-based plant leaf inspection images of the Balochistan Forest. The detection of illnesses that developed on Juniperus forests is the subject of this study. The collection of data from the Balochistan forest is the main novelty factor of this project. This is going to be the first collected data from Balochistan Forest.

Key words: Plant, village, dataset, Juniperus, Balochistan.

Abstract ID: ICSDG1307

RUSSIA-UKRAINE WAR & ITS IMPACT ON CLIMATE CHANGE

Hafsa Noor1 , Hina Akram2 , Dr. Arifa Tahir3

1Lahore College for Women University 2Department of Environmental Science Email:

hafsanoor2001@gmail.com

Abstract

The ongoing Russia-Ukraine war has caused not only political instability but also paints a grim picture for the overall climate scenario currently and for the future. Ukraine is one of the most energy rich countries in Europe with abundant resources of gas, coal, nuclear energy and oil. Major Ukrainian cities like Kyiv and Vasylkiv are the sites of extensive war damage and are also cities with heavy industries, abandoned mines and non-mined areas filled with fossil fuel reserves; some of which were destroyed in the recent Russian invasion. Due to extensive shelling, missiles and military weapon usage the air quality is being severely degraded with toxins from mines, particulate matter and explosion debris.The conflict has also previously contributed to the extensive, uncontrolled wildfires in Ukraine coupled with the low rainfall rate due to numerous heat waves caused by the polluted air in those regions from industrial activities. Donbas region in Eastern Ukraine has already seen its water contaminated by toxic metals and fumes seeping underground from the war debris. In addition, people are inhaling a mixture of harmful chemicals from air due to the pollution as well as the explosions and asbestos from building debris which in itself is carcinogenic. This deadly combination will have severe health effects on people for generations to come. It is predicted that in the future the Ukrainian population will see a decline in birthrates due to reproductive and genetic diseases induced by the extensive war in an already fragile radioactive zone (Chernobyl Disaster). CO2 levels are continuously being increased with each explosion and military operation contributing to global warming. Therefore, as the world actively tries to mitigate the climate change impacts, it is somewhat futile because it is rapidly being aggravated by this war and until this ends, the climate is continuously being negatively impacted and it will be very difficult to manage the global warming resulting from the emissions and the after effects of war.

Keywords: Climate Change, Land degradation, Global Warming, War.

Abstract ID: ICSDG1308

Air Pollution Detection and Control System

Maroosh Hameed[1], Mehak Sohail[2], Ayesha Tariq[3], Rimsha Musharraf [4], Anum Shaheen[5], Maryam Naveed[6], Sajjad Rabbani[7].

[1]*Department of Electrical Engineering, LCWU, Lahore, Pakistan*

*Corresponding Author's Email: marooshmalik36@gmail.com

Abstract

Every vehicle contains a standard of outflow of gases, but the trouble happens when the emanation is past the standardized values. The prime reason for this infringement of outflow level being the fragmented combustion of fuel provided to the motor which is due to the inappropriate maintenance of vehicles. This outflow from vehicles cannot be totally dodged, but it can be certainly controlled. The aim is to observe and control the pollutants within the vehicle by utilizing the pollution control circuit. This pollution control circuit comprises of CO sensor, GSM, Pulse Width Modulator (PWM) and all of them are integrated and associated with a Controller. When the pollution level of vehicle crosses certain threshold limit, at that point the speed of the vehicle gets consequently slow down. The engine speed control is performed using PWM. CO sensor which is set at the vehicle's silencer to identify the carbon level. Microcontroller is used to constantly monitor the behavior of sensor and show it on LCD in the form of ppm. GSM model is utilized to inform the owner of the engine vehicle through SMS in the event that the level of pollution is approaching or surpassing.

Keywords: Air pollution, CO sensor, Vehicle, Pulse Width Modulator, GSM.

Abstract ID: ICSDG1309

Exploration of agro waste for the extraction of food additive "a greener route to sustainable economy

Saira Riaz[1*], Sofia Nosheen[2]

[1,2]*Environmental Science Department, Lahore College for Women University Pakistan.*

*Corresponding author's email: saira.ria888@gmail.com

Abstract

In recent times production of large amount of agro food waste has attracted producers, customers, and retailers because generation of food waste is not only a hurdle in sustainability goals but also an economic issue that over all influence product profitability. Today world is heading toward sustainability and methods are explored to reduce environmental burden of waste. Agro food waste, generated by different household, industrial, agricultural activities is continuously increasing due to increase in such activities. In Pakistan being agricultural country, food industry is developing rapidly. In current study, the extracts will be prepared by various extraction techniques. Extraction of bioactive compounds from waste is appealing alternation to traditional valorization process. In order to test the importance of high end valorization strategies, this research work will evaluate potential benefits and favorable conditions for high-value agro food waste exploration through a number of extraction conditions and utilizing various types of agro wastes. Naturally extracted bioactive compounds will be explored as naturally available additives and nutraceutical to prepare functional dairy product. Through this study of preparing naturally fortified dairy products we are incorporating SDG 3 of good health and well-being and through sustainable utilization of agrowaste as a source of value-added bioactive compounds hence promoting SDG 8 of sustainable economic growth as well as through replacement of synthetic additives with natural additives, we are aiming to comply with SDG 12 of responsible production and consumption.

Keywords: valorization, agrowaste, SDG, economic,compound.

Abstract ID: ICSDG1310

Impact of foliar fertigation of ascorbic acid and tocopherol with zinc on antioxidant activity of barley (*hordeum vulgare* l.) Under salinity stress

Sibgha Noreen[1]*, Mahamm Sultan[1], Salim Akhtar[1], Nawishta Saleem[1] and Seema Mahmood[1]

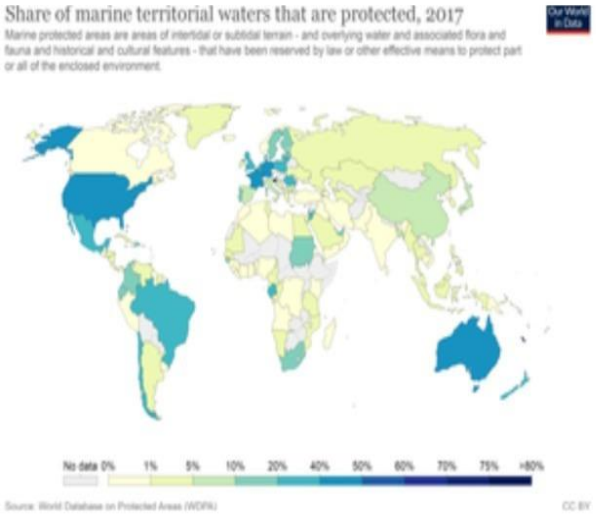
Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan

Abstract

Salinity is one of the most important environmental factors that limits the production of crop plants to the greatest proportion than any other ones. Although Barley (*Hordeum Vulgare* L.) crop is regarded as salt tolerant, but shows great genetic variability in response to salinity. The adverse effects of salt stress could be quenched by exogenous application of hormones and amino acids. Vitamins. So, the influence of aerial sprays of vitamins (vitamin C or ascorbic acid and vitamin E or α-tocopherol) alone and along with Zn ($ZnSO_4.7H_2O$) was examined in salt treated and non-treated plants of barley (*Hordeum vulgare* L.). The experimental work was conducted at botanical garden of Bahauddin Zakariya University, Multan-Pakistan. The experimental design was completely randomized (CRD) with four replicates. Components of experiment were: (a) variety of barley "B-14011" (b) two salt levels (0 and 200 mM) and (c) aerial sprays of 200 ppm concentration of ascorbic acid (ASA) and α-tocopherol (α-TOC) alone and along with Zn (0.03% $ZnSO_4.7H_2O$). Due to salt stress obtrude condition, many attributes of barley plants were reduced significantly including biological yield, green pigmentation, K^+ uptake from roots as well as economical yield. While activities of H_2O_2, MDA, antioxidants and uptake of Na^+ and Zn^{2+} were increased. The aerial application of α-TOC alleviated these traits up to a significant level while the amount of H_2O_2, MDA and Na^+ was reduced. Thus, α-TOC proved to be the best vitamin for foliage spray under salinity stress checked state on barley crop in comparison with other aerial applications.

Keywords: Salt stress, α-Tocopherol, Ascorbic acid, Chlorophyll constituents, Antioxidant system, Wheat crop


14 LIFE BELOW WATER
Goal 14 - Life Below Water
Conserve and sustainably use the oceans, seas and marine resources for sustainable development
71
GUEST ARTICLES
83
POLICY BRIEFS
15
GENERATION 2030
1315
NEWS
375
EVENTS


Share of marine territorial waters that are protected, 2017
Marine protected areas are areas of intertidal or subtidal terrain - and overlying water and associated flora and fauna and historical and cultural features - that have been reserved by law or other effective means to protect part or all of the enclosed environment.
Our World in Data
No data 0% 1% 5% 10% 20% 40% 50% 60% 70% 75% >80%
Source: World Database on Protected Areas (WDPA)
CC BY


14 LIFE BELOW WATER
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

SDG14 LIFE UNDER WATER

SCIENTIFIC CHAIR PROFILE:

Name: Dr. Farzana Rashid

Qualification: PhD Biotechnology

Designation: Professor of Zoology and Chief Warden of the Hostel

Department: Zoology

Faculty: Faculty of Natural Sciences

University: Lahore College for Women University (LCWU)

Contribution in Research and Academics:

She has her expertise in the field of Microbiology and Molecular biology, Spectrophotometer and PCR. She has more than 45 research articles in ISI and Scopus index journals to her credit. She has been a part of various research Seminar, Conferences, Paper Presentations and research article reviews. She is Awarded project amounting Rs.12.308 Million by HEC under NRPU entitled "Antimicrobial properties of nanoparticles (NPs) against Beta lactamases producing bacteria and their cytotoxic potential in prokaryotic and eukaryotic mammalian systems. She has demonstrated vast success in acquiring latest trends in nanotechnology and adopting new pedagogies.

Specific SDG and its role in Pakistan development and Globally: Life below water is one of the important Sustainable Development Goals (SDG) established by the United Nations in 2015. The oceans cover more than 70 per cent of the surface of our planet and play a key role in supporting life on earth and we rely on them for food, energy and water. Marine Protected Areas contribute to poverty reduction by increasing fish catches and income, creating new jobs, improving health, and empowering women. Yet, we have managed to do tremendous damage to these precious resources. We must protect them by eliminating pollution and overfishing and immediately start to responsibly manage and protect all marine life around the world. UNEP is working to develop a coherent approach to measuring the ocean condition and the drivers, pressures, impacts and responses. This is through promoting the measurement of the ocean SDGs where UNEP is the custodian and through working to develop an approach for better ocean accounts.

ABSTRACT PRESENTATION
Abstract ID: ICSDG1401

Effect of different stocking densities of Tilapia on growth and biochemical composition of both rice and fish in integrated rice cum fish farming system

Farzana Abbas[a], Muhammad Hafeez-ur-Rehman[a], Ayesha Bhatti[a], Muhammad Inayat

[a]Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore

Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore

Email: mhafeezurehman@uvas.edu.pk

Abstract

Aquaculture is one of the rapidly growing sectors globally and is now accountable for more than half of the global seafood production. The potential of integrated agriculture-aquaculture systems can contribute to the world requirement for food while addressing the challenges of agricultural land shortage, poverty reduction as well as improvement of small scale farmer livelihood. A field study has been conducted to evaluate the effect of three different stocking density Treatment 1 (60), Treatment 2 (80), and Treatment 3 (120) on the both rice and fish. We measure the water quality parameters, growth parameters, proximate composition and rice characteristics. The results indicated that overall, TDS, pH and DO were highest in treatment 1(T1) having less stocking density of fish and decreased from T1 to T3. Other parameters such as temperature and EC were high in medium density(T2) and low in low density (T1). T1 is better as compared to T2 and T3 in term of AVG, SGR and survival rate (P: 0.0010; 0.0004; 0.0089). Ash, protein and lipids content in tilapia muscles decreased from T1 to T3 as stocking density of tilapia increased from T1 to T3. As the stocking densities of tilapia increased, rice yield also increased. There were significant differences found for plant height, grain no. per spike and grain weight among different treatments ($p<0.05$) except for rice yield ($p=0.0978$). We concluded that T1 with low density showed a better performance in overall parameters. Tilapia with low density was very efficient for the utilization of all resources and promote the aquaculture production.

Keywords: Rice-fish integration, Tilapia, Stocking density, rice yield

Abstract ID: ICSDG1402

Effect of line spacing on the growth performance, chemical composition of paddy fish and rice yield in integrated rice-fish farming in Pakistan

Iqra Anwer, Muhammad Hafeez-ur-Rehman[1], Farana Abbas, Muhammad Inayat, Ayesha Bhatti

[1]Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore

Corresponding author: iqra.anwer@uvas.edu.pk

Abstract

The integration of fish with rice is a superlative method to use land and water for sustainable increase in animal protein and household income. Rice-fish integration can make an important contribution to future world food supply. The integration of rice and fish in traditional agricultural systems can lead to the development of innovative sustainable agriculture. A range of fish species are produced in rice fields, depending on the rice filed. Rice productivity is lead to rice density. Three plots with rice-fish couture system were randomly selected for study proposal and three plots were labelled as T1, T2 and T3. Three different rice planting spacing were maintained as treatment in triplicate: 9 cm × 9 cm , 9 cm × 12 cm, and 9 cm × 15 cm . The trial duration 130 days. Rice was sown in July and after 15 days fingelings of *Labeo rohita* ,*Catla catla* were introduced into each plot by the density of 1000/ha with 1:1. The fish were caught fifteen days before the harvest of rice fish from each paddy field were counted and weighed respectively, the survival rate and specific growth rate (SGR) of each paddy field fish was calculated respectively. The proximate analysis was done at the end of trial for dry matter, crude protein, and ash content. The maximum growth of fish and rice yield is maximum from T2 treatment containing 9cm × 12cm spacing. Our study suggests that 9 cm × 12 cm prove more optimal and suitable for the nutritional value, SGR and the survival rate of fish, and the rice yield indicators and rice stem characters. It is believed that rice production is correlated with the rice planting density (i.e., the planting spacing and rows). The wider spacing will favor the movement of fish, but lead to a lower

rice production. Meanwhile, at 9 cm × 12 cm, the rice yield was not different from other treatments.

Keywords: Rice spacing density, Major Carp's fingerlings, Rice yield parameter, Fish growth performance, Rice-fish integration.

Abstract ID: ICSDG1403

Development Of Fish Cake, Sensory And Proximate Analysis By Utilizing Low Cost Fish Species

Muhammad Hafeez-Ur-Rehman, Farzana Abbas, Muthar Ali, Nimra Mubeen, Amina Shafique, Ayesha Bhatti and Naeem Akhtar

Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore, Pakistan.

Corresponding author's Email: mhafeezurehman@uvas.edu.pk

Abstract

Fish is among the healthiest foods on the planet. It's loaded with important nutrients, such as protein and vitamin D. Fish is also a great source of omega-3 fatty acids, which are incredibly important for your body and brain. Being the source of good protein and other valuable nutrients it's better to convert this source in value added products. The aim of present study was to enrich fish cake by replacing chicken meat with fish meat to enhance its nutritional value. The present study was conducted in the Fish Processing Unit, University of Veterinary and Animal Sciences, Ravi Campus, Pattoki. Low cost fish sliver carp were purchased from Fish Farm of UVAS Ravi Campus, Pattoki. Fish was cleaned, degutted, deboned and minced fish was mixed with spices, chopped vegetables and flour. Small fish cakes were made and fried in vegetable oil on medium heat for 5-10 mints till golden brown. Uncooked, fresh and freezed (paked in aluminum foil for 15 and 30 days at -20 ^{0}C) fish cakes were subjected to the proximate analysis, sensory evaluation and microbial activity. Proximate analysis showed that fish cake contained 3.25%, crude fat, 15.86 % protein, 3.56% ash, 18.20% carbohydrates and 58.22% moisture and the values goes decrease with the passage of time but remains within suitable ranges till 30 days at -20 ^{0}C. Good results were obtained from the sensory evaluation. Most of the nutritional panelist give have acceptability to the fresh and 15 days preserved fish cakes due to their better taste, aroma and colour. Antibacterial analysis showed that in fresh and uncooked cakes there were no colony formation however, in 15

days frozen cakes Mycobacterium spp., Streptococcus colonies were observed with lower cfu counts.

Keywords: Fish cake, Proximate analysis, Sensory evaluation, Microbial Activity.

Abstract ID: ICSDG1404

Optimization of rice spacing density and fish species to improve production and eco-sustainability through rice-fish co-culture

Muhammad Inayat[a], Farzana Abbas[a], Muhammad Hafeez-ur-Rehman[a], Athar Mahmud[b]

[a]Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore

[b]Department of Poultry Production, University of Veterinary and Animal Sciences, Lahore

Department of Fisheries and Aquaculture, University of Veterinary and Animal Sciences, Lahore

Email: muhammad.inayat@uvas.edu.pk

Abstract

Rice (*Oryza sativa L.*) is an essential food for three billion people around the globe. Rice-fish co-culture enhances the production of food that will provide environmental, social and financial benefits. A study was conducted to investigate the effects of three different rice spacing densities (9inch×12inch, 12inch × 12inch and 15inch×12inch), practicing rice-fish co-culture, on both rice yield and fish growth parameters. In this experiment, we measure the water quality parameters, growth parameters, muscle quality (proximate composition and amino acid profile), plankton community; phytoplankton and zooplankton, soil characteristics, rice stem characteristics, rice yield parameters and sensory evaluation parameters of genetically male tilapia (GMT) and *Cyrinus carpio* in field of paddies. The results revealed that T_2 (medium rice spacing density 12inch × 12inch) responded significantly better than other treatment groups. While comparing the species, GMT (Tilapia) showed better weight gain (Wg), specific growth rate (SGR) (303.13 vs 296.41g; P = 0.0298). While comparing rice yield parameters, non-significant difference among other treatment groups were recorded excluding yield/ha; significantly higher in T_1 (P=0.0003), 1000 grain weight and panicle no. (ear/hill) significantly higher in T_3 (P>.0001). In sensory evaluation, T_2 were significantly better than other treatments. Overall, we concluded that the medium rice spacing density improved the growth performance, muscle quality of both experimental species,

soil biochemical profile and water quality. GMT (Tilapia) is more competent species as compared to carp in rice-fish co-culture.

Keywords: Rice-fish Co-culture, Optimization, GMT Tilapia, *Cyprinus carpio*, rice yield parameters, muscle quality

Abstract ID: ICSDG1406

Checklist of Freshwater Fishes Of Pakistan

Mehwish Saleem Khan, Fareeha Habib, Juzeela Zulfiqar, Quratulain Munir, Iqra Akbar

Lahore College for Women University, Lahore

Abstract

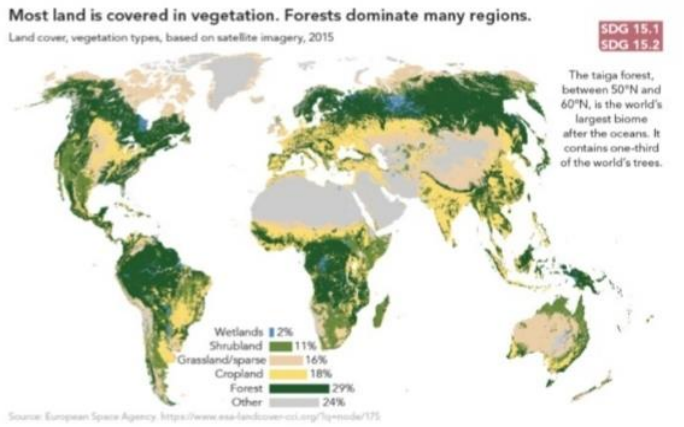
The territory of Pakistan is important from zoogeographical point of view. It has unique hydrography for the biodiversity of fish fauna. Pakistan has great biodiversity of fresh water fishes in its ecosystem. The present study is aimed to develop a checklist of freshwater fishes of Pakistan reported in different short researches. In the present checklist 114 freshwater fishes has been reported from 23 different families belonging to 12 fish orders. The most diverse family is Cyprinidae with 33 species that contribute 28.94 % in aquatic ecosystem while the least contribution is noted by six different families Terapontidae, Synbranchidae, Poeciliidae, Pristidae, Mugilidae, Sillaginidae that contribute upto 0.87 %. The study also provide the general detail of each fish species about its size, its distribution or locality where it is found and the favourable temperature for its growth. Fish species has been distributed into two different groups of native and endemic species on the basis of their location.

Keywords: Hydrography, Biodiversity, Fish fauna, Distribution, Native, Endemic.

Goal 15 - Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

161	100	14	1968	655
GUEST ARTICLES	POLICY BRIEFS	GENERATION 2030	NEWS	EVENTS



We are using **25% more** resources than our planet can sustain each year.

SDG15 LIFE ON LAND

Name: Prof. Dr. ZUBAIDA YOUSAF

Qualification: PhD Quaid-e-Azam University, Islamabad

Designation: Chairperson / Professor

Department: BOTANY

Faculty: Science and Technology

University: LCWU

Contribution in Research and Academics: **Prof. Dr. Zubaida Yousaf** is currently working as Chairperson/Professor Department of Botany, Lahore College for Women University Lahore Pakistan. She completed her postdoc from Chinese Academy of Sciences, China in 2010 under CAS-TWAS program. She obtained her Ph.D. degree from Quaid-e-Azam University, Islamabad in 2007. She secured TASO- PGR, JAICA Japan scholarship during her Ph.D. She is winner of CAS-TWAS associateship 2016- 2019. She has produced number of research papers in national and international journals, books, chapters and monographs. She has 1205 Citations, h index 16 and i10 index 24. She has expertise in medicinal plant taxonomy, genomics and Ethnobotany. So far, she has supervised 45MS and 2 PhD research theses in medicinal plants genomics fields. She has completed project with PARB and NRPU- HEC project and is in the process of completion.

Specific SDG and its role in Pakistan development and globally: Our fate as a species depends on the state of our most important habitat – land. Our future is linked to the survival of land ecosystems. Through photosynthesis, plants provide the oxygen we breathe and the food we eat and are thus the foundation of most life on Earth. They're also the source of a majority of medicines in use today.

LIFE ON LAND: PROGRESS AND CHALLENGES

Keynote speaker: Professor Lindsay C Stringer
University of York, UK
Email: lindsay.stringer@york.ac.uk

Sustainable Development Goal (SDG) 15 considers life on land, seeking to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss". Research has shown that SDG 15 is either inextricably linked to other SDGs; aids achievement of other SDGs; helps create conditions that furthers other SDGs; or is consistent with other SDGs. Life on land is therefore central to the delivery of sustainable development. This means it is vital to understand the major challenges impeding our progress towards SDG 15's achievement if we are to also attain the other goals. This paper unpacks some of the challenges and barriers to progress while also considering how the barriers can be overcome. Barriers are analysed under political, economic and resourcing, social and cultural and legal and institutional categories. Analysis of progress towards SDG 15 shows that major challenges remain in most of the world, with stagnating or decreasing progress in most countries, with the most severe implications for those countries whose populations are heavily directly reliant on the environment for their survival. At the root of challenges is that actions tend to focus on addressing the symptoms rather than targeting the human drivers of environmental degradation. The paper argues that to accelerate progress and reverse the current trends of environmental degradation, we need to re-frame how we conceptualise human-environment relationships and to target actions toward the drivers rather than the symptoms. Using examples that specifically consider SDG target 15.3: "By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world" the paper considers how a socio-ecological systems approach can help, and sketches out the key characteristics of such an approach.

Abstract ID: ICSDG1501

NANO-BIOCHAR INDUCED DEFENSE RESPONSE AGAINST BACTERIAL LEAF SPOT (XANTHOMONAS CAMPESTRIS PV. VESICATORIA) OF CHILIES

Zill-e-Huma Aftab[1]*, Muhammad Waqar Aslam[1], Adnan Akhatar[1], Muhammad Saleem Haider[1]

Department of Plant Pathology, University of the Punjab, Lahore, Pakistan.

*Corresponding Author's Email: huma.dpp@pu.edu.pk

Abstract

Increasing food demand and ever-increasing world population compelled the existing agricultural production systems to rely heavily on chemical pesticides and fertilizers. These chemicals temporarily increased the per acre yield but have long lasting negative effects on food chain and ecosystem. This study was conducted to investigate the effect of Rice Straw Biochar Nanoparticles (RSBNPs) and fly-ash nanoparticles (FNPs) on chilli (*Capsicum annuum*) plant growth and activation of defense response against plant pathogen *Xanthomonas campestris* pv. *vesicatoria* causing bacterial leaf spot (BLS). RSBNPs had shown antibacterial activity, against *Escherichia coli*, *Erwinia* spp., *Pseudomonas syringae*, *X. campestris* pv. *citri* as well as *X. campestris* pv. *vesicatoria*, by inhibiting at least 50% growth of these bacterial pathogens on culture medium, while the highest value (75%) growth inhibition was found against *X. campestris* pv. *citri*. Maximum (82%) anti-fungal activity of RSBNPs was found against *Macrophomina phaseolina.* Generally, RSBNPs had inhibited the growth of different fungal pathogens (*Fusarium solani, F. oxysporum, Alternaria alternata, Rhizoctonia solani, A. solani* and *M.phaseolina*) by almost 50%. Disease incidence (%) was found significantly less (50%) in RSBNPs treated plants followed by FNPs (60%) and control plants (only soil grown plant having 100% disease incidence). Our study indicates positive influence of RSBNPs on plant growth and inducing resistance response against BLS disease in *C. annuum*.

Keywords: Biochar, Fly Ash, Nanoparticles

Abstract ID: ICSDG1502

MORPHOLOGICAL VARIABILITY ASSESSMENT OF WORLDWIDE GERMPLASM OF PHARMACEUTICALLY IMPORTANT PLANT NIGELLA SATIVA L.

Arusa Aftab[1], Zubaida Yousaf[1], Nadia Riaz Qamar[1], Madiha Rashid[1], Bushra Shamsheer[1], Afifa Younas[1] and Hamna Yasin[1]

[1]Department of Botany, Lahore College for Women University, Lahore

*Corresponding Author's Email: arusa.aftab@lcwu.edu.pk

Abstract

Nigella sativa is an important industrial crop globally but neglected crop in Pakistan, hence imported. In the present investigation worldwide accessions of *N.sativa* were cultivated for three years to select the most diverse accessions for cultivation and future breeding purpose in Pakistan. More diverse and acclimatized accessions with enhanced morphological traits were observed. Seed length, seed width, plant height, number of flowers and number of follicles showed maximum considerable variation in three years. Morphological variations observed and collected for all three years were not consistent among all accessions, because of some environmental fluctuations but some of the accessions like ACC 20662, ACC W626529, ACC 20878, ACC 21545, ACC 21428and ACC 20990 showed consistency at some extent among results of different morphological markers (number of flowers, number of stamens, number of follicles, follicle length, follicle width and seed per follicle). In general, the accessions belonging to Gujranwala, Jordan, Lahore, Haripur, Attock and Sargodha were found morphologically more significant and diverse.

Keywords: Accesions; Cluster; Germplasm; Morphology; Population

Abstract ID: ICSDG1503

EFFECT OF DIFFERENT CONCENTRATIONS OF ZINC OXIDE NANPARTICLES AND ZINC SULPHATE ON WHEAT (*TRITICUM AESTIVUM* L.) PLANT GROWTH

Asma Ahmad[1*], Amina Tariq[1], Sumera Javad[1], Anis Ali Shah[2], Kiran Shahzadi[1]

1. *Botany Department, Lahore collage For Women University, Pakistan*
2. *Botany Department, University of Education, Lahore, Pakistan*

Corresponding Author's Email: asma.ahmad3077@gmail.com

Abstract

The present study was conducted to investigate the effect of ZnO NPs in the regulation of growth of wheat variety Chakwal-50. Plant extract of pepper was used for ZnO NPs synthesis followed by characterization through UV–Vis spectroscopy, SEM and particle size analyzer. Different concentrations of ZnO NPs (10, 100, 250, 500, 750, 1000 and 2000 mg/L) were applied to wheat plants. Three treatments were then used i.e., control (water), $ZnSO_4$ salt (500 mg/L) and ZnO NPs (concentrations). Although, ZnO NPs increase morphological growth at all tested combinations, but significant results were observed between 10 to 250 mg/L ZnO NPs. NPs treatment 10 mg/L improved germination, fresh weight, dry weight, plant height. Moreover, studies showed that chlorophyll, carotenoids, phenolic content were also increased respectively but MDA content was slightly increased by applying ZnO NPs. Present research work suggests the potential of ZnO NPs designed by green method as a nano fertilizer to increase the crop production of wheat but its effects on stress indicators are needed to be explored.

Keywords: Green synthesis, germination, nanofertilizers, plant growth, SEM, zinc oxide nanoparticles.

Abstract ID: ICSDG1504

TAXONOMIC AND PHYTOCHEMICAL ANALYSIS OF GEMINIVIRUS INFECTED AND HEALTHY *DURANTA ERECTA* (L.)

Shabnum Shaheen*, Romisha Sonia, Naila Usman, Riffat Sidique, Sana Khalid and Hannan Mukhtar

Department of Botany, Lahore College for Women University, Lahore, Pakistan
**Corresponding Author Email: shabnum_shaheen78@hotmail.com*

Abstract

Duranta eracta L. (Golden dewdrops) is widely grown as an ornamental and medicinal plant belongs to the family Verbenaceae. Like other ornamental plants *D. erecta* is also infected by begomovirus carried by white fly (*Bemisiatabaci*) which belong to Geminiviridae. Begomoviruses are notorious for major crop losses in agriculture, wild and ornamental plants. In the current study, various surveys were conducted for the observation and collection of Geminiviruses infected and non-infected plants of *D. erecta* L. from different areas of Lahore. Morphological analysis based on characters like shape, size, veins thickening, colour of leaves indicated that infected leaves exhibited curling, cupping, veins thickening and stunted growth. In anatomical analysis, size of epidermal cells, presence and absence of stomata, guard cells, subsidiary cells and trichomes were observed on abaxial and adaxial surfaces. Geminiviruses infection was confirmed by using PCR technique, in which universal diagnostic primers CLCV1 and CLCV2 were used. Antibacterial potential was evaluated against *Escherichia coli*, *Staphylococcus aureus*, *Klebsiella pneumoniae* which indicated that healthy samples gave remarkable results (10mm) against *S. aureus* while infected samples showed no activity. Observation of antifungal potential against *Aspergilus. niger*, *Aspergilus. solani*, *rhizopus stolonifer* give no result in both samples. This is concluded by current

study that healthy samples were found good source of antioxidant and phytochemical potential as compare to unhealthy.

Keywords: *Duranta eracta* L., Geminivirus Infection, Anatomical analysis, Antimicrobial activity, Antioxidant potential

Abstract ID: ICSDG1505

ASPERGILLUS SPECIES AS NEW BIOCONTROL AGENTS AGAINST *MACROPHOMINA PHASEOLINA*

Iqra Haider Khan* and Arshad Javaid

Department of Plant Pathology, Faculty of Agricultural Sciences, University of the Punjab, Lahore 54590, Pakistan.

**Corresponding author's Email: iqrahaider_khan@yahoo.com*

Abstract

The present study was carried out to evaluate the antagonistic efficacy of *Aspergillus* species against the soil and seed inhibiting destructive plant pathogen *Macrophomina phaseolina*. The tested antagonists namely *Aspergillus versicolor*, *A. niger*, *A. terreus*, *A. flavipes*, *A. flavus* and *A. sydowii* were confirmed by rDNA sequencing of ITS and β-tubulin regions prior to determine the pathogen sensitivity by using dual culture technique. In dual culture bioassays, *A. versicolor* showed potent antagonist activity and reduced the pathogen's growth by 60% over control. To understand the mechanism of antagonistic fungus, DNA of the pathogenic fungus was incubated in secondary metabolites produced by the *A. versicolor* for 24 and 48 h. After 48 h, metabolites of *A. versicolor* fully degraded the DNA of *M. phaseolina*. Moreover, for the identification of bioactive compounds, the chloroform and ethyl acetate fractions of *A. versicolor* culture filtrates were subjected to GC-MS analysis. A total of 10 compounds were identified in each of the two fractions. Among these, chondrillasterol (37.43%) followed by 1,2-benzedicarboxylic acid, diisooctyl ester (25.93%), decane (16.63%), 9,12-octadecadienoic acid (z,z)- (13.32%), stigmasterol (11.16%), undecane (10.93%), cis-1-chloro-9-octadecene (8.66%), benzene, 1,3,5-trimethyl (8.46%) and hexadecanoic acid, 2-hydroxy-1-(hydroxymethyl) ethyl ester (8.13%) were the major prevailing compounds.. The present study concludes that *A. versicolor* is an effective antagonist against the *M. phaseolina*.

Keywords: Antagonist, *Aspergillus versicolor*, DNA cleavage, GC-MS analysis, *Macrophomina phaseolina***.**

Abstract ID: ICSDG1506

COMPERATIVE BIOCHEMICAL ANALYSIS OF FRUIT EXTRACT OF THE COMMERCIALLY AVAILABLE VARIETIES OF *PUNICA GRANATUM* L

Hannan Mukhtar, Marrium Wasim, Shabnum Shaheen and Sana Khalid

Department of Botany, Lahore College for Women University

Corresponding author's Email: maryamwasim98@gmail.com

Abstract

The fruit extract of four varieties of *punica granatum* named as red, white, bandana and commercially available packed pomegranate juice were studied for comparative biochemical analysis and were compared to each other to find out the most nutritious pomegranate variety. Saponnins, tannins, terpenoids, flavonoids, glycosides, steroids, volatile oils, coumarins and quinones test were performed. White pomegranate had highest content of terpenoids, when compared with other varieties. On the other hand, bandana pomegranate juice had the highest content of tannins, flavonoids and quinones as compared to other varieties. Steroids, volatile oils and coumarins were totally absent in all varieties. Saponnins content was observed only in red and white pomegranate juice, in the same way tannin content was observed only in bandana and commercially available packed pomegranate juice. Highest quantity of flavonoid was observed in bandana pomegranate. In commercially available pomegranate juice, phytochemical constituents were present in least amount as compared to natural pomegranate juices. Hence, it was concluded that bandana pomegranate juice contained highest content of phytochemical constituents as compared to other pomegranate juices, while red pomegranate juice contained the lowest content of phytochemical constituents.

Keywords: Fruit extract, terpenoids, biochemical analysis, phytochemical constituents.

Abstract ID: ICSDG1507

COMPARISION OF PHYTOCONSTITUENTS AND ANTIOXIDANT POTENTIAL OF BEGOMOVIRUSES INFECTED AND HEALTHY *HIBISCUS ROSA-SINENSIS* L.

Riffat Siddique, Shabnum Shaheen, Zaryab Khalid, Sana Khalid, Tabinda Khan, Ibrahim Aliyu Dabai And Atiq- Ur-Rehman

Abstract

Nature blessed us with rich botanical wealth and other natural resources in biotic and abiotic form for different purposes. Begomoviruses members of family Geminiviridae, are transmitted by whitefly *Bemisia tabaci*, cause severe infection in *Hibiscus rosa-sinensis* L. an ornamental and medicinally importance plant. In current study, begomoviruses infected samples were observed and collected from (Rose & Jasmine Park, Lahore College for Women university, DHA-Phase-VI, Jam-e-Shirin Park) five different areas of Lahore. Disease incidence and symptoms severity was also observed. For phytoconstituents analyses and antioxidant potential, extracts of infected and healthy samples were prepared in different solvents. Various kinds of symptoms in infected plants as leaves folding, curling, vein thickening, growth stunting, crumpling, yellowing, enation, cupping were observed. Many other various plant species were also found infected in vicinity of diseased shoe flower plants. Diverse phytoconstituents was observed in ethanol extract of healthy plant. Antioxidant potential was high in the methanolic extract of healthy plant. In future, this study can be useful for the development of begomoviruses resistant plants. High antioxidant potential can be supportive to find different novel compounds those can be used as antioxidant agents

Key Words: Begomoviruses, *Hibiscus rosa-sinensis* L., Phytoconstituents, Antioxidant, Disease Incidence

Abstract ID: ICSDG1508

EVALUATION OF THE EFFECT OF ZINC OXIDE NANOPARTICLES ON SEED GERMINATION AND VEGETATIVE PARAMETERS OF CAPSICUM ANNUU`M

Kiran Shahzadi, Um-e-Rubab, Sumera Javad, Amina Tariq and Ayesha Anwar

Corresponding author:kiran.shahzadi@lcwu.edu.pk

Department of Botany, Lahore College for Women University

Abstract

Nanotechnology is no doubt an enhancing tool for science but nanoparticle exposure in the environment is a new concern. The current study deals with biological process for green synthesis of zinc oxide nanoparticles from zinc sulphate using *Nigella sativa* L. seed extract as reducing agent. Particle size analyser showed the particle size 52nm. The seeds of three species of family Solanaceae *Capsicum annuum* (green chilli) were exposed to six concentration (50, 100, 200, 400, 800 and 1000µg/L) of ZnO NPs along with dist. water and ZnSO4 solution. Results showed that the zinc oxide nanoparticles improved *Capsicum annuum* seed germination up to 64.33%, shoot length up to 18.12%, root length up to 34.29%, plant height up to 25.33%, plant weight up to 79.9%, no. of leaves up to 32.42% and leaf area up to 67.27% as compare to the control (dist. water). This shows that zinc oxide nanoparticles respond positively towards *C. annuum* at any concentration. Overall, from this result it is concluded that ZnO NPs can industrially be used as nano-fertilizers in order to enhance the metabolic process and better developments of crops.

Key words: *Capsicum annuum*, Nanotechnology, Zinc oxide nanoparticles.

Abstract ID: ICSDG1509

IDENTIFICATION OF SSRS IN WITHANIA SOMNIFERA (L.) DUNAL RELATED TO BIOSYNTHESIS PATHWAY OF WITHANOLIDES

Zainab Shahzadi[1], Hamna Yasin[1], Zubaida Yousaf[1]*, Arusa Aftab[1], Zainab Maqbool[1]

[1]Department of Botany, Lahore College for Women University, Lahore

*Corresponding author: z4zubaida@yahoo.com

Abstract

Withania somnifera is a medicinally important species of the family Solanaceae. However, this species is genetically not characterized and most of the medicinal plants have some seed germination problems in field. Therefore, present study was planned to investigate genetic variations and seed priming ability in *W. somnifera*. Four samples of *W. somnifera* were collected from Lahore, Faisalabad, NARC Islamabad and Gujrat. The experiment was carried out under completely randomize design conditions. To check the seed germination performance of all the four samples nano-priming technique was used. All the samples sown under two nano priming treatments, 2 days nano-H2O and 3 days nano-H2O at 25 ºC showed noticeable variations as compared to control. Genomic DNA was extracted from young leaves of all the four Sample and PCR reactions were performed. 220 primers were used for PCR amplification. Total 555 alleles were detected and number alleles per locus ranged from 1 to 18 with an average of 5.49. The potentiality of SSR marker was observed by PIC values, the lowest PIC value was observed 0.132 with primer pair 88 and highest PIC value was observed 0.97 with primer pair 1, with an average of 5.39. A total of 50 different types of repeat motifs were detected. Among all the SSRs, trinucleotide repeats were highly abundant (31.7%) followed by dinucleotide (27.02%), tetranucleotide (7.43%), pentanucleotide (2.02%) and hexanucleotide repeats (0.67%). The current study will help in the selection of parent plants to develop high-yielding varieties in breeding techniques.

Keywords: *Withania somnifera*, seed priming, seed germination, genetic characterization, Simple Sequence Repeats (SSRs)

Abstract ID: ICSDG1510

TOXICOLOGICAL POTENTIAL OF ZINC IN SOIL-VEGETABLES GROWN WITH DIVERSE REGIMES OF IRRIGATION AND THEIR PUBLIC HEALTH IMPLICATIONS

Shahzad Akhtar[1], Zafar Iqbal Khan[1], Kafeel Ahmad[1], Muhammad Nadeem[2], Abdullah Ahmed Al-Ghamdi[3], Mohamed S Elshikh[3]

[1]Department of Botany, University of Sargodha, Pakistan

[2]Institute of Food Science and Nutrition, University of Sargodha, Pakistan

[3]Department of Botany and Microbiology, College of Science, King Saud University, P.O. 2455, Riyadh 11451, Saudi Arabia

**Corresponding author's Email*: 79shahzadrana@gmail.com

Abstract

Zinc (Zn) is an essential nutrient that is needed for appropriate growth, development, and yield, by producing chlorophyll in plants. Plant growth is restricted due to chlorosis, which is caused by a zinc shortage in the soil. As a result, the efficacy of Zn uptake in leafy vegetables treated with wastewater (WW), canal water (CW), and tube well water (TW) was examined in this study. Samples of soils and edible parts of Spinach, Mustard, Coriander, and Mint were taken at random from three different sites. The wet digestion method was used to digest soil, and vegetable samples, by using an atomic absorption spectrophotometer (AAS). In soil and vegetables, Zn concentrations were ranged from 5.36 to 41.3 mg/Kg and 4.11 to 24.86 mg/Kg, respectively, that were within permissible limits of World Health Organization. Pollution Load Index (PLI), Enrichment Factor (EF), Daily Intake of Metals (DIM), Health Risk Index (HRI), and Target Hazard Quotient (THQ) all values were <1, indicating a non- contaminated soil, no impact of anthropogenic activities in soil, less toxicity, no health risk, and non-carcinogenic risk of zinc, respectively for these vegetables in humans. To prevent the excessive accumulation of Zn metals in the food chain, regular monitoring is required.

Keywords: Leafy crops; Pollution; Toxicity; Target hazard; Wastewater.

Abstract ID: ICSDG1511

RESPONSE OF MAIZE TO EXOGENOUSLY APPLIED CHROMIUM: ELUCIDATION OF POSSIBLE TOLERANCE MECHANISM

Abdul Ghani[1*], Rafia Naveed[1], Ali Haider[1], Iqra Saeed[1], Fatima Hayat[1]

[1]*Department of Botany, University of Sargodha, Sargodha, Pakistan*

**Corresponding Author's Email: ghaniuaf8@email.com*

Abstract

Chromium (Cr) is a non-essential element that is found in the environment as one of the dangerous heavy metals. Maize is a cereal that is utilized as a source of food for both plants and humans, and it is also grown on metal-contaminated soils, mostly to feed the world's growing population. As a result, screening low Cr-accumulating maize varieties could be an environmentally friendly option, particularly in Cr-contaminated soils. For this purpose, a pot experiment was carried out at Botany Department, University of Sargodha, Sargodha, Punjab, Pakistan. Seeds of two maize cultivars (Malka-16 and FH-1046) were grown in pots containing soil. The plants were irrigated with different chromium concentrations (0, 10, 20, 30, 40ppm) after two weeks of germination. The plants were harvested after 45 days of germination. Different physiological and morphological characters were measured. Results showed that reduction in all parameters by increasing chromium concentration. Chromium addition increased the concentration of chromium in roots and stem. Leaves accumulated lowest chromium. Results also showed that cultivar FH-1046 accumulated lowest chromium concentration and performed in a sustainable way while Malka-16 accumulated highest chromium concentration. So, FH-1046 might be used to grow at chromium contaminated soils to avoid any loss in nutritional value and its entry to food chain. But field studies are necessary before practical application.

Keywords: Chromium, Maize, Toxicity, biochemical, Exogenous application

Abstract ID: ICSDG1512

PHYTOREMEDIATION POTENTIAL OF SOME SELECTED TERRESTRIAL PLANTS GROWING AT DIFFERENT CONTAMINATED SITES OF DISTRICT SARGODHA

Abdul Ghani[1*], Zarmeena Shehzadi[1], Ali Haider[1], Iqra Saeed[1], Fatima Hayat[1]

[1] *Department of Botany, University of Sargodha, Sargodha, Pakistan*
*Corresponding Author's Email ghaniuaf8@email.com

Abstract

The purpose of research was to uncover the effects of heavy metals on morpho-nutritive properties and phytoremediation potential of selected terrestrial plants, *Parthenium hysterophorus*, *Chenopodium album* and *Solanum nigrum*, collected from contaminated sites of various tehsils of district Sargodha including Shahpur, Bhalwal and Bhera and their phytoremediation potential. Results of morphological attributes showed that highest fresh weight (41.247g) was noted in *Solanum nigrum* collected from Bhera. The maximum root length (19.740cm), moisture content (72.697%) and crude fat (17.157%) was found in *Chenopodium album* collected from Bhera, and Shahpur. The highest shoot length (176.57cm), number of leaves per plant (50) and maximum crude fiber (39.633%) was found in *Parthenium hysterophorus* collected from Bhalwal. The analysis of soil involving elemental analysis like cadmium (Cd), lead (Pb) and nickel (Ni) and the pH, electrical conductivity, organic matter, phosphorous and potassium was also examined. Highest concentration of proteins (5.266%) and carbohydrate (27.39%) was found in *Chenopodium album* collected from Bhera. *Parthenium* hysterophorus proved to be having good phytoremediation potential for cadmium and lead and good source for protein content. Fluctuation in elemental profile of plants and composition of soil may be attributed to spatial variations or due to agro-climatic conditions that varies in all cities.

Keywords: Phytoremediation, nutritional, heavy metals, terrestrial plants

Abstract ID: ICSDG1513

GENOME WIDE IDENTIFICATION OF *NLR* GENE FAMILY IN TOMATO (*SOLANUM LYCOPERSICUM*) AND THEIR RELATEDNESS TO FUNGAL DISEASES RESISTANCE

Nazia Rehman[1], Sehrish Bashir[2], Fabia Fakhar[2], Safeena Inam[1] and Muhammad Ramzan Khan[1]
[1]National Institute for Genomics and Advance Biotechnology, National Agricultural Research Centre, Park Road, Islamabad, Pakistan
[2]PARC Institute for Advanced Studies in Agriculture, NARC, Islamabad, Pakistan
*Correspondence: drmrkhan_nigab@yahoo.com; naziarehman@parc.gov.pk

Abstract

Nucleotide binding leucine rich-repeat receptors (NB-LRR) being the largest groups of plant disease resistance (*R*) gene shave attracted wide attention due to their crucial role in protecting plants from pathogens. Genome wide studies of NLRs facilitated in tomato improved annotated genome based on the conserved domain. Total 332 NBS-encoding genes identified in tomato genome which unevenly mapped on 12 chromosomes. Phylogenetic analysis and classification of NLRs reveal 222 genes share full length domain and clustered into the four major clades CNL, TNL, RNL and NL with sub-clustered LRR group. *A.thaliana*. Synteny and Ka/Ks analyses of orthologous among *Solanum lycopersicum and Solanum tuberosum* reflected the importance of NLRs conservation and diversification from ancestral species million years ago during evolution. RNA-seq data and qPCR analysis for early and late blight resistant genes in tomato revealed consistent expression pattern of NLRs. Up-regulation was observed in diseased plants than control with some exception and serve as key regulator for early blight resistance. Moreover, late blight NLRs (Solyc04g007060 and Solyc10g008240) expression positively regulates *S. lycopersicum* resistance to *P. infestans.* These findings provide insight into important foundational knowledge for understanding NLRs evolution and diversity.

Keywords: NBS-LRR encoding gene, Evolution, Phylogenetic relationship, Synteny, RT-PCR, *Alternaria solani, Phytopthora infestans*, tomato.

Abstract ID: ICSDG1514

ROLE OF USED TEA LEAVES (*THEA SINENSIS*) AGAINST SALT STRESS (NAF) IN CANOLA (*BRASSICA NAPUS*)

[1]Naveera Akhtar, [1-2]Ameer Khan and [2]Humera Nawaz
[1] Department of Botany, University of Sargodha, Sargodha 40100, Pakistan.
2 Department of Botany, Division of Science and Technology, University of Education Lahore, Lahore, Punjab 54770, Pakistan

Abstract

In this study the ameliorating impacts of waste tea in saline (NaF) and non-saline circumstances in two varieties of canola (*Brassica napus)* were studied. Seeds of Dunkled and Oscar were assembled from AARI (Ayub Agriculture Research Institute) Faisalabad, Pakistan. Seeds of canola were sown in pots filled with fine mixed soil. Salt treatment (50 ppm and 100 ppm) of (NaF) were applied after two weeks of seeds germination. Waste tea treatment was given after 7 days of stress application. Data was recorded for various parameters of morphology and physiology. The data collected was evaluated statistically. Salinity influenced the morphological, physiological and bio chemical characteristics of plants. Experimental results depicted that the saline (NaF) medium lessened the root and shoot lengths of plant but waste tea reduced the salinity effects and enhanced their lengths. Likewise, fresh root and shoot weight, chl. a, b and total chlorophyll concentration, carotenoids, amino acids, protein, crude fat and fiber were lowered under salinity influences but 20 g and 30 g waste tea concentrations were suitable in preventing detrimental consequences of salinity. Na^+ concentration increased at a higher rate of increasing salinity from 50 ppm to 100 ppm in brassica varieties Salinity caused declines in brassica levels of K^+, Cl^-, Mg^{++}, and Ca^{++}. Overall, waste tea reduced the salinity effects.

Keywords: Waste tea, Sodium fluoride, canola, Dunkled, Oscar

Abstract ID: ICSDG1515

INSIGHTS INTO SALT TOLERANCE MECHANISM THROUGH RNA-SEQ ANALYSIS OF CANOLA (*Brassica napus* L.) GROWN UNDER NACL STRESS

Mobina Ulfat [1]*, Hafiza Saima Gul[2] and Habib-ur-Rehaman Athar [2]

1 Department of Botany, Lahore College for Women University, Lahore 54000, Pakistan
2 Institute of Pure and Applied Biology, Bhauddin Zakria University, Multan 66000, Pakistan;
** Corresponding author'Email: mobina.ulfat@lcwu.edu.pk*

Abstract

Rapeseed mustard, after soybean and palm, is the third most important source of edible oil. *Brassica napus* L. (canola) is a leading species of rapeseed that is cultivated globally. Salinity stress is a limiting factor that reduces the growth and productivity of crop plants. It is the most important amongst other abiotic stresses, threatening agricultural productivity. Most of the Brassica species have been categorized as moderately salt-tolerant. Oilseed crops with improved salinity tolerance and increased productivity have been developed to meet the requirements of the increasing population by using appropriate biotechnological tools. For understanding the salt tolerance mechanism, there is a vital need for analysis of transcripts and salt stress-responsive genes involved in this mechanism. In the current study, a pot experiment with three replicates was executed according to completely randomized design (CRD). Seeds of two cultivars (Dunkled and Cyclone) were sown in saline and control environment in sand culture. Plants were subjected to 0mM and 200 mM NaCl stress along with Hoagland nutrient solution. After next-generation sequencing (NGS), transcriptome analysis was done for RNA isolated from shoots. RNA-Seq analysis was carried out to workout differential expression of genes. Differentially expressed upregulated genes included Auxin efflux carrier component, Ethylene-responsive transcription factor, Chaperone proteins, Aquaporins, Sodium/Hydrogen exchanger, Peroxidase, Putative Cytochrome c oxidase subunits, Cation/H(+) antiporter, bZIP transcription factor, and Flavin-containing monooxygenase.

Keywords: RNA-Seq analysis, differential expression, DEGs, salt stress, canola

Abstract ID: ICSDG1516

PHYSIOLOGICAL SURVIVAL STRATEGIES IN MAIZE (*ZEA MAYS*) UNDER DROUGHT STRESS

Misbah Amir[1], Habib-ur-Rehman Athar[1], Zaffar ullah Zafar[1]

[1]Institute of Pure and Applied Biology, Bahauddin Zakariya University, Multan 60800, Pakistan

Corresponding email address:misbahamir95@gmail.com

Abstract

The research was conducted to check the photosynthetic activity of two maize (*Zea mays* L.) cultivars under drought/water stressed conditions. Drought is defined as any lack of water that prevents crops to reach their yield potential or that affects quality of harvested products**.** Out of total maize production, about 60% is used in poultry feeds, 25% in industries and remaining is used as food for human and animals. PhotosynQ is a newly developed platform for collaborative research using a chlorophyll fluorescence-based device. Drought treatment was imposed by withholding water from the plants for a period of one week Control plants were watered three times a week. Chlorophyll fluorescence measurements were taken with a MultispeQ. The 2nd and 3rd fully open trifoliate leaves were selected for measurements and were taken at the same time each day. Measures energy loss via downregulation of photochemistry PhiNO (ΦNO): quantum yield of other unregulated (non-photochemical) losses Phi2 + PhiNPQ + PhiNO = 1 .We have found ΦNO and ΦNPQ to be positive indicators of crop status PhiqE (ΦqE): quantum yield of energy-dependent quenching. PhiqI (ΦqI): quantum yield of photoinhibitory quenching. It is due to photoinhibition of PSII photocehmistry (Kramer et al., 2004). The low Phi2 for drought stressed plants was mostly caused by photosystem II photoinhibition. In contrast, in drought-stressed plants both dissipation as heat through the qE response and photoinhibition contributed to this decreased Phi2. The PhiNO signal corresponded well with observed drought as well as yield. Apparently drought susceptible cultivar exhibited the greatest decline in PhiNO.

Keywords: Maize, Drought, Photosynthesis, chlorophyll flourescence

Abstract ID: ICSDG1517

POTENTIAL OF BACILLUS SUBTILIS FOR HETEROLOGOUS EXPRESSION OF HUMAN *INTERLEUKIN-2* (*HIL-2*) GENE

Faiza Saleem, Uzma Nisar, Saira Jamil, Amna Safder, Hafsa Amjad.

Abstract

Interleukin-2 is a cytokine signaling molecule which plays an important role in our immunity. Molecular weight of this cytokine is 15kDa, consisting of receptor chains alpha, beta and gamma chains which are important to stimulate its signal mechanism. It generates major cellular components of adaptive immunity on stimulation of foreign antigens such as proliferation and differentiation of T cells, B cells, natural killer cells and macrophages dependent cytotoxicity. There are considerable research efforts which are ongoing for the development and purification of novel heterologous gene expression system with superior growth and protein purifications. These heterologous proteins were commonly formed in inclusion bodies in *E. coli* which requires tedious purification and refolding. Now it has been analyzed that *Bacillus subtilis* can be the better host for heterologous protein production because it is GRAS status and does not produce proteins in inclusion bodies. Following three *Bacillus subtilis* rare codons CUA AGG and AUA respectively were found in the gene. According to *Bacillus subtilis* rare codons, sequence of hil-2 was synthesized by changing codons with bacillus preferred codons (*Syn hIL-2*). Codon biasness might reduce the expression level of hIL-2 in *B. subtilis.* So, the gene of human *interleukin-2* was synthesized and used in further steps. Then amplified product was cloned in pTZ57/RT. This pSTAB-synhIL-2 recombinant vector was transformed into KO7 after preparation of KO7 competent cells. In this study we tried to get an expression of *SynhIL-2* in *B. subtilis* KO7 and a strain of BT4Q7 simultaneously to evaluate the potential of *B. subtilis* and BT4Q7 to express heterologous proteins. Transformants were analysed for five days under incubation in LB broth medium supplemented with erythromycin. A very low expression was observed in both BT4Q7 and KO7.

Keywords: KO7, *hIL-2,* GRAS, pSTAB, BT4Q7.

Abstract ID: ICSDG1518

EXPLORING THE GENETIC POTENTIAL OF PAKISTANI SOYBEAN CULTIVARS THROUGH RNA-SEQ BASED TRANSCRIPTOME ANALYSIS

Arslan Tariq[1], Zahra Jabeen[1], Sumaira Farrakh[1], Kiran Noreen[1], Waleed Arshad[1], Muhammad Nadeem[1], Haroon Ahmed[1] and Waseem Haider*[1]

[1]*Department of Biosciences, COMSATS University Islamabad, Pakistan.*

*Corresponding Author's Email: waseem_haider@comsats.edu.pk

Abstract

Soybean is largely grown and considered among the top oilseed crops. Three Pakistani cultivars, NARC-II (N), Swat-84 (S), and Rawal-I (R) were employed for RNA-Seq based transcriptome analysis to explore their genetic potential and performance in our local environment. The seeds of NARC-II (N), Swat- 84 (S), and Rawal-I (R) were planted in glass house at same conditions. Trifoliate leaves sample of 32 days old plants were used for RNA-Seq and qRT-PCRs analysis. We retrieved 2225 Differentially Expressed Genes (DEGs) between S vs R, 2591 DEGs between S vs N, and 1221 DEGs between R vs N cultvars. These genes consist of Transcription Factors (TF) representing Basic Helix-loop Helix (bHLH), myeloblastosis (MYB), Ethylene Response Factors (ERF), and WRKY amino acid motif (WRKY) type major families that were up-regulated. KEGG pathway analysis revealed that MAPK, plant hormone signal transduction, and phenylpropanoid biosynthesis pathways were the most dominant pathways involved in plant defense and growth. Comparative analysis showed that Swat-84 (S) cultivar had better gene expression among these varieties having higher number of DEGs, where mostly genes related to important phenotypic traits were up regulated. Validation of the RNA-seq transcriptome analysis was also done through selected DEGs qRT-PCRs analysis. This is a pilot study to investigate and functionally characterize the DEG involved in the stress response in the cultivars studied.

Keywords: RNA-Seq, Pakistani Soybean, Transcription factors, Differential Gene Expression (DGE), Co-expression network analysis

Abstract ID: ICSDG1519

STRESS ALLEVIATION AND INTESTINAL MUCOSAL HEALTH IMPROVEMENT IN RESPONSE TO DIETARY ROSEMARY OIL AND NIGELLA SATIVA IN QUAILS.

Asma afzal[1]*, Saima Masood[1]*, Hafiz Faseeh-ur-Rehman[1], Sajid Khan Tahir[2], Hafsa Zaneb[1], Saima Ashraf[1], Mirza Muhammad Usman[1], Sahar Ijaz[1]

[1]Department of Anatomy and Histology, University of Veterinary and Animal Sciences, Lahore 54000, Pakistan

[2]Department of Physiology, University of Veterinary and Animal Sciences, Lahore 54000, Pakistan

*Corresponding Author's Email: saima.masood@uvas.edu.pk, asmafzal024@gmail.com

Abstract

Stress negatively affects growth of birds by distributing hypothalamic-pituitary-adrenal axis (HPA axis) resulting in higher glucocorticoids in circulation. Dexamethasone was used as stress analogue on day 21st . The experimental groups were allocated as negative control (No dexa-only basal diet), positive control (Dexa-1.25mg/kg BW with basal diet), RO (Dexa-1.25mg/kg BW, RO 0.5% of basal diet), NS (Dexa-1.25mg/kg BW, NS 0.5% of basal diet), RO+NS 0.5 (Dexa-1.25mg/kg BW, RO and NS 0.5% of basal diet) and RO+NS 1 (Dexa-1.25mg/kg BW, RO and 1% of diet). Birds fed with 1% RO+NS had higher ($p<0.05$) weight gain and improved FCR as compared to control groups. Total goblet cell count was significantly increased ($p<0.05$) from upper to lower intestinal regions by addition of 1% RO+NS, suggesting that combined use of RO+NS has affected the appearance of goblet cells. In supplemented groups the length and width of bursal follicles and splenic white pulp were significantly increased ($p<0.05$). in conclusion dietary intervention of RO+NS@1% may be effective in mitigating the adverse effects of stress on growth performance, microarchitecture of the intestine and immune status in experimental birds.

Keywords: Japanese quail, rosemary, nigella sativa, dexamethasone, small intestine, mucosal histology

Abstract ID: ICSDG1520

ANTIHEMOLYTIC AND RADICAL SCAVENGING POTENTIAL OF *CALOTROPIS PROCERA* (AITON)

Shabana Kusar[1], Zeb Saddiqe[2*], Muhammad Hassham Hassan Bin Asad[3], Fatima Kirmani[1]

[1]Department of Botany, Lahore College for Women University, Lahore, Pakistan

[2]Department of Botany, Govt. Queen Mary Graduate College, Lahore, Pakistan

[3]Department of Pharmacy, COMSATS University, Islamabad, Abbottabad Campus

*Corresponding Author's Email: zeb_rukhsana@yahoo.com

Abstract

Calotropis procera (Apocyanaceae) is traditionally used for the treatment of various ailments such as asthma, piles, stomach pain and also acts as laxative, tonic, wound healer and expectorant. The plant is also used as an antidote to snake bite in northern areas of Pakistan. Human red blood cells membrane stabilization method was used for antihemolytic evaluation and radical scavenging potential was determined against DPPH and superoxide radicals. Highest antihemolytic potential (87.3%) was observed in ethyl acetate fraction with IC_{50} value of 3.18 mg/mL. Acetone fraction had the highest capacity to scavenge DPPH (93%) with IC_{50} value of 0.095 mg/mL while maximum superoxide radical scavenging capacity was shown by methanol fraction (91.8%) with IC_{50} value of 0.02 mg/mL. Ethyl acetate fraction had the highest concentration of phenols (90.97 ± 0.54 mg GAE/g dry extract) and tannins (20.71 ± 0.02 mg TAE/g dry extract) while maximum amount of total flavonoids (61.70 ± 0.22 mg QE/g dry extract) was present in *n*-hexane fraction. The study revealed the strong antihemolytic and antioxidant potential of *C. procera* that might be due to high phenol and tannin contents. Thus *C. procera* can be used for the isolation of compounds with strong antihemolytic and antioxidant properties.

Keywords: Antihemolytic, antioxidant, *Calotropis procera*, DPPH, erythrocyte, flavonoid, phenol, tannin.

Abstract ID: ICSDG1521

EVALUATION OF ARSENIC IN CEREAL FOOD CROPS IRRIGATED WITH DIVERSE TYPES OF WATER AND THEIR TRANSFER IN BLOOD OF HUMAN

Asma Ashfaq[1], Zafar Iqbal Khan[1], Kafeel Ahmad[1], Fizza Altaf[1]

Department of Botany, University of Sargodha, Sargodha

Abstract

The concentration of As was considered in soil, water and cereals of Sargodha, Punjab, Pakistan. Samples were nominated from three different sites of Sargodha irrigated with three different water resources. Site I irrigated with Municipal waste water, Site II irrigated with canal water, Site III irrigated with ground water. According to Analysis of water Variance of Arsenic metal the maximum mean concentration of As was found in site 1(0.029mg/liter). Minimum concentration was present in site 3(0.0002mg/liter).And the order of site was Site 1>Site 2>Site 3. And the order of site was Site 1>Site 2>Site 3. Maximum PLI for soil was observed in *Z.mays* (3.02mg/kg).minimum concentration of PLI was found in *L.usitatissimum*(1.83mg/kg). The PLI directive at site 1 was *Z.mays>A.sativa>P.glaucum>L.usitatissimum>T.aestivum*.At site 2 the direction of PLI was *P.glaucum>T.aestivum>A.sativa>L.usitatissimum>Z.mays*.At site 3 the PLI arrangement was *A.sativa>T.aestivum>Z.mays>P.glaucum>L.usitatissimum.*Maximum BCF for soil was observed in *P.glaucum* (0.38mg/kg).Minimum concentration of BCF was found in Z.mays.. Maximum EF for soil was observed in *T.aestivum*(100.8mg/kg).Minimum concentration was found in P.glaucum(10.41mg/kg).at site 1 the order of EF was *P.glaucum>T.aestivum>A.sativa>L.usitatissimum>Z.mays.*at site 2 the of EF was *P.glaucum>A.sativa>T.aestivum>L.usitatissimum>Z.mays*.at site 3 the direction of EF was *A.sativa>T.aestivum>L.usitatissimum>Z.mays>P.glaucum.* Maximum DIM for soil was observed in *Z.mays*(1.46mg/kg).

Keywords: arsenic, cereal food crops, irrigation, soil, waste water

Abstract ID: ICSDG1522

ASSESSMENT OF CADMIUM IN FOOD CROPS GROWN IN WASTEWATER IRRIGATED LAND AND THEIR TRANSFER IN BLOOD OF HUMAN

Zafar Iqbal Khan[1], Asma Ashfaq[1], Kafeel Ahmad[1], Fizza Altaf[1]

Department of Botany, University of Sargodha, Sargodha

aasmashfaq@gmail.com

Abstract

Value of Cd was calculated in soil, water and cereals of Sargodha, Punjab, Pakistan. Samples were selected from three different sites of Sargodha irrigated with three different water resources. Site I irrigated with Municipal waste water,Site II irrigated with canal water, Site III irrigated with ground water. Municipal wastewater contains high level of heavy metals. In Analysis of water Variance of Cadmium metal, the maximum mean concentration of Cd was found in site 1(1.95mg/liter). Minimum concentration was present in site 2(0.60mg/liter). Investigation of variance of data for Cadmium in soil treated with Ground, canal and municipal wastewater showed that at site 1 the maximum value of Cd in *Z.mays*(8.41 mg/kg).And minimum value was in *T.aestivum*(7.23mg/kg). Maximum BCF for soil was observed in *Z.mays* is (0.34mg/kg) and minimum concentration was observed in *T.aestivum* is (0.049mg/kg). Maximum EF for soil was observed in *Z.mays*(2.64mg/kg).Minimum concentration of EF in *T.aestivum*(0.38mg/kg). Maximum DIM for soil was observed in *L.usitatissimum*(3.55mg/kg).Minimum concentration of DIM was observed in *T.aestivum*(0.37 mg/kg). Current value of Cd observed in human blood varied from (0.0005 to o.055 mg/L). WHO (2000) reported Cd concentration in human blood 0.1mg/L. This concentration is higher than our present value of Cd. The concentration of Cd in water was lower than standard value and also less in soil and cereal crops. The value PLI, BCF was less and EF, DIM, HRI was greater than standard limit.

Keywords: cadmium, food crops, irrigated land, waste water, soil

Abstract ID: ICSDG1523

COPPER ACCUMULATION IN SOME WASTEWATER IRRIGATED PLANTS AND THEIR TRANSFER IN BLOOD OF HUMAN

Kafeel Ahmad, Zafar Iqbal Khan, Asma Ashfaq, Fizza Altaf

Department of Botany, University of Sargodha, Sargodha

Abstract

Concentration of Cu was calculated in soil, water and cereals of Sargodha, Punjab, Pakistan. Samples were nominated from three different sites of Sargodha irrigated with three different water resources. Site I irrigated with Municipal waste water,Site II irrigated with canal water,Site III irrigated with ground water. According to Analysis of water Variance of Copper metal Maximum mean concentration of Cu was found in site 1(1.96mg/liter). And the order of site was Site 1>Site 2>Site>3.Maximum PLI for soil was observed in *L.usitatissimum*(6.97mg/kg).Minimum concentration was found in *P.glaucum*(5.53mg/kg).At site 1 the demand of PLI was *L.usitatissimum>Z.mays>P.glaucum>A.sativa>T.aestivum*.At site 2 the dictate of PLI was *L.usitatissimum>P.glaucum>T.aestivum>Z.mays>A.sativa*.at site 3 the direction of PLI was *T.aestivum>L.usitatissimum>Z.mays>A.sativa>P.glaucum*. Maximum BCF for soil was observed in *L.usitatissimum*(0.267mg/kg).Minimum concentration was found in *Z.mays* (0.107mg/kg). Maximum EF for soil was observed in *L.usitatissimum*(0.030mg/kg).Minimum concentration was found in *Z.mays*(0.012mg/kg). Maximum DIM for soil was observed in *L.usitatissimum* (0.0081mg/kg) At site 1 the order of DIM was *L.usitatissimum>P.glaucum>Z.mays>T.aestivum> A.sativa.* Maximum HRI for soil was observed in *P.glaucum*(0.202mg/kg).Minimum concentration was found in *Z.mays*(0.06mg/kg)**.**.The value of Pb in water was less than standard value and also less in soil and cereal crops. The value EF was high and PLI,DIM, HRI,BCF was less than standard limit.

Keywords: copper accumulation, waste water, irrigation

Abstract ID: ICSDG1524

ANTI-BIOGRAM OF MULTIDRUG RESISTANT STAPHYLOCOCCUS AUREUS ISOLATED FROM COMMUNITY ACQUIRED INFECTION IN PAKISTAN: A PHE NOTUPIC AND GENOTYPIC APPROACH

Farah Naz[1], Sana Khalid[1,2], Abdul Munim Farooq[1], MuhammadTariq[1], Ghulam Zahra Jahangir[1], Usman Arif[1] and Saman Riaz[1]

[1]*Center of Excellence in Molecular Biology, University of the Punjab, Lahore, Pakistan.*

[2]*Department of Botany, Lahore College for Women University, Lahore, Pakistan.*

Corresponding authors's Email: farah.naz.cemb.edu.pk

Abstract

Staphylococcus aureus belongs to the group of major contagious mastitis pathogens, whereas coagulase negative *staphylococcai* are also capable of causing community acquired infections. Total eight (8) Multidrug resistant strains have been isolated from 75 patients in five different hospitals at Lahore, Pakistan. Phenotypic identification of 8 isolates was made by different agar selection medium. For genotypic characterization we used standard disk-diffusion and sensitive and specific PCR technique. Results showed that 75% of samples were positive for *S.aureus* both genotypically and phenotypically. Resistance against cefoxitin, ciprofloxacin and vancomycin was determined by oxoid disk susceptibility testing. According to the obtained results from PCR analysis of multi drug-resistant *S. aureus* (MDRSA), *mecA* gene was present in 100% of the resistant isolates. The results obtained from PCR detection of mec*A* gene showed high correlation with standard disk diffusion test.

Keywords: *Staphylococcus aureus*, contagious mastitis pathogens, staphylococcai, PCR technique, drug-resistant.

Abstract ID: ICSDG1525

TAXONOMY AND PHYLOGENY OF PHALLALES FROM PAKISTAN

Nousheen Yousaf[1*] & Abdul Nasir Khalid[2]

[1*] *Department of Botany, Government College University Lahore, Pakistan*

[2]*Institute of Botany, University of the Punjab, Quaid-e-Azam Campus, Lahore, 54590, Pakistan*

[*]Corresponding Author Email: dr.nousheenyousaf@gcu.edu.pk

Abstract

Phallales includes spectacular members of macro fungi commonly called stinkhorns. It contains a great diversity of genera. Genus *Phallus* is characterized by foul smelling mushroom and represented by *P. impudicus* as a type species. Species of this genus are distributed worldwide, mostly in tropical regions. In this investigation, five species of phallaceae belonging to *Phallus* have been collected and described morphologically and molecularly from different regions of Pakistan. These are *P. ahmadii* sp. nov., *P. galericulatus, P. hadriani*, *P. roseus*, and *P. rubicundus*. Among these, *P. ahmadii* is new to science. *P. galericulatus* is a new record from Pakistan and all other species are new reports from different localities of Pakistan. Phylogenetic analysis of *Phallus* spp. based on ITS-nrDNA region is given.

Keywords: ITS-nrDNA, *Phallus*, Phylogeny, Taxonomy.

Abstract ID: ICSDG1526

DEVELOPMENT OF CARROT NUTRACEUTICAL PRODUCTS AS AN ALTERNATIVE SUPPLEMENT FOR THE PREVENTION OF NUTRITIONAL DISEASES

Nadia Riaz[1,2], Zubaida Yousaf*[1], Zarina Yasmin[3], Muneeb Munawar[4], Afifa Younas[1], Madiha Rashid[1,5], Arusa Aftab[1], Bushra Shamsheer[1], Hamna Yasin[1], Muhammad Najeebullah[4] and Philipp W. Simon[2]*

[1]Department of Botany, Lahore College for Women University, Jail Road Lahore Pakistan
[2]Department of Horticulture, University of Wisconsin-Madison, United States of America
[3]Post-Harvest Research Centre, Ayub Agricultural Institute, Jhang Road Faisalabad Pakistan
[4]Vegetable Research Institute, Ayub Agricultural Institute, Jhang Road Faisalabad Pakistan
[5]Department of Botany, University of Education Township Lahore, Pakistan
Corresponding Authors Emails: zubaida.yousaf@lcwu.edu.pk; Philipp.simon@ars.usda.gov

Abstract

Nutraceuticals can serve as alternative supplement to overcome nutritional deficiency for a healthy lifestyle. They can also play a key role in disease management. To develop carrot nutraceutical products, 64 genotypes from four different continents were evaluated for a range of morpho-nutrition variables. Genetic variability, heritability, strength and direction of association among variables, and direct and indirect relationships among physiochemical and nutritional traits with β-carotene content were evaluated. Core diameter, foliage weight, root weight and shoulder weight showed significant association with β-carotene accumulation. Principal component analysis for physiochemical and nutritional assessment divided these genotypes into two distinctive groups, Eastern carrots and Western carrots. Caloric and moisture content had high positive associations with β-carotene content while carbohydrate content was negatively associated. Five genotypes (T-29, PI 634658, PI 288765, PI 164798 and Ames 25043) with the highest β-carotene contents were selected for making three nutraceutical supplements (carrot-orange juice, carrot jam and carrot candies). These nutraceutical supplements retained high β-carotene content coupled with antioxidant properties. Carrot jam (6.5 mg/100 g) and carrot candies (4.8 mg/100 g) had greater concentrations of β-carotene than carrot-orange juice (1.017 mg/100 g). Carrot jam presented high antioxidant activity with the highest values in T-29 (39% inhibition of oxidation) followed by PI 634658 (37%), PI 164798 (36.5%), Ames 25043 (36%) and PI 288765 (35.5%). These nutraceutical products, with 4 -6.5 mg/100 g β-carotene content, had higher values than the USDA

recommended dietary intake of 3-6 mg β-carotene/day can be recommended for daily use to lower the risk of chronic disease.

Key words: Antioxidant, β-carotene, Genetic diversity, Nutraceutical, Heritability, Morpho-nutritional, Physiochemical.

Abstract ID: ICSDG1527

PHYSIOLOGICAL AND BIOCHEMICAL CHANGES INDUCED BY QIANGDI NANO-863 BIOLOGICAL ASSISTANT GROWTH APPARATUS DURING RICE SEED PRIMING UNDER TEMPERATURE STRESS

Afifa Younas, Wang Xiukang*, Zubaida Yousaf*, Nadia Riaz, Arusa Aftab, Sajid Fiaz, Aamir Riaz, Sajid Hussain, Shiwen Huang
Department of Botany, Lahore College for Women University Lahore.

Abstract

A huge amount of rice cultivation and consumption occur in Asia particularly in Pakistan and China. However, multiple abiotic stresses especially high and low-temperature proved to be a substantial threat for rice production ultimately risks for food security. To overcome various types of abiotic stress; seed priming is among the effective approaches to improve the rice seed germination and growth vigor. Therefore, the present study was planned to evaluate physiological and biochemical modifications in Chinese and Pakistani rice varieties by Qiangdi 863 biological assistant growth apparatus nano treated water (NTW), Osmopriming Calcium chloride ($CaCl_2$), redox priming hydrogen peroxide (H_2O_2) and hormonal priming by Salicylic acid (SA) under temperature stress conditions. The experiment was performed with completely randomize design conditions. Five rice varieties, nomenclature as Zhongzoa 39, (Chinese rice variety) KSK 133, KS 282, Super basmati and PK 1121 aromatic (Pakistani rice variety) were sown under low temperature (LT) (17ºC), optimal temperature (OT) 27ºC and high temperature (HT) 37ºC conditions. The present study indicated that nanopriming were the most effective treatments increased Germination Energy Percentage (GEP) (96.1, 100, 100%), Speed of Germination (SG) (27.2, 35.45, 37.1), Final Germination Percentage (FGP) (98.2, 99.1, 99.4%), Seedling Dry Weight Biomass (DWB) (0.1, 0.137, 0.14g), Total Chlorophyll Content (0.502, 13.74, 15.21), antioxidant enzymes Superoxide Dismutase (SOD)(3145, 2559, 3345 $\mu g^{-1}FWh^{-1}$), Catalase (CAT) (300, 366, 3243 $\mu g^{-1}FWh^{-1}$) and decreased Malondialdehyde (MDA) (6.5, 12.2, 6.5 µmol g^{-1} FW) for Zhongzao 39 and KSK 133 rice varieties under low (LT+NTW), optimal temperature (OP+NTW) and high temperature (HT+NTW) stress., Therefore, nano-priming is recommended to cope with

the high and low-temperature stress conditions along with improved productivity of rice.

Keywords: antioxidative enzymes; high temperature; low temperature; seed priming

Abstract ID: ICSDG1528

COMPARATIVE PHYTOCHEMICAL EVALUATION OF DIFFERENT SPECIES OF AMARANTHA FAMILY

Kiran Shahzadi, Hannan Mukhtar*, Sadaf Gull, Shabnum Shaheen, Sumera Javad and Sana Khalid

Department of Botany, Lahore College for Women University, Lahore

*Correspondence author's Email: mukhtarhannan919@gmail.com

The study aimed at examining the phytochemical content of family Amaranthacae that comprises more than 175 genera and 2,000 species of herbs, shrubs, subshrubs and small trees. The foliar extracts of three plants named as *Spinacea oleracea*, *Amaranthus viridis* and *Chenopodium album* were analyzed for phytochemical constituents. The phytochemical tests were performed for detection of tannins, alkaloids, saponins, anthocyanins, carbohydrates, steroids, flavonoids, glycosides, terpenoids and quinones. Chenopodium album contained comparatively more phytochemicals i.e., carbohydrates, saponins, alkaloids, terpenoids, tannins, quinones, glycosides, anthocyanins, flavonoids, steroids than *Spinacea oleracea* and *Amaranthus viridis. S. oleracea* contained least number of phytochemical constituents. Flavonoids and Saponins were absent in *Amaranthus viridis*. Alkaloids were present in abundance in all three plants. Primary Phytochemical profile will be considered as great help in future in uncovering therapeutic, medicinal and dietary importance of these plants.

Keywords: Flavonoids, Phytochemicals, Plant extract, Amaranthacae.

Abstract ID: ICSDG1529

A REPORT ON MICROMYCETES FROM RICE FIELDS OF DISTRICT NAROWAL

S. Ilyas, Sarwat Batool*

[1]*Department of Botany, Lahore College for Women University Lahore, Pakistan*

**Corresponding Author Email: sarwatbatool12@gmail.com*

Abstract

In the present study the analysis of different taxonomic groups of micromycetes found in soil samples of rice fields has been investigated. Isolation of these soil samples that were being collected from different field's sites of Raya Khas district Narowal has been done. Species diversity of micromycetes was examined after seven days of inoculation. Macroscopic and microscopic study has been performed for identification of these fungi. A total of 8 different types of microfungi species viz; *Aspergillus niger, Aspergillus carbonarius, A.flavus, A.fumigatus, Penicillium excelsum, Penicillium echinulatum, Rhizopus stolonifer* and *Trichophyton terrestre* were accessed from collected soil samples of Raya Khas district Narowal. Dominant species found from district Narowal is *Aspergillus niger*. The diversity and community structure in rice soil will provide us baseline data for further study.

Keywords: Micromycetes, Rice Field, *Aspergillus*, *Penicillium*, Narowal

Abstract ID: ICSDG1530

ANTIMICROBIAL ACTIVITY OF LEAF EXTRACTS OF *TINOSPORA CORDIFOLIA* (THUNB) MIERS

Ayesha Kiran[1], Amina Tariq[1*], Sumera Javad[1], Kiran Shahzadi[2]

Department of Botany, Lahore College for Women University, Pakistan

*Corresponding Author's Email: aminapal786@hotmail.com

Abstract

Tinospora cordifolia (guduchi) is a plant belongs to family Menispermaceae and an important herb in both folk and ayurvedic systems of medicines. *Tinospora cordifolia* contains various chemical constituents such as alkaloids, diterpenoid lactones, glycosides and steroids. The purpose of present work was to check the antibacterial activity of different extracts of *Tinospora cordifolia.* Antibacterial activity of plant extract was checked against different bacterial species by using agar well diffusion method. Bacterial strains used were *Pseudomonas aeruginosa*, *Bacillus* sp. and *Brucella* sp. Maximum zone of inhibition observed in methanol + augmentin was (30.14 mm) against *Bacillus* sp. as *Pseudomonas aeruginosa* and *Brucella* sp. (29.04 mm and 25.21 mm) respectively. Maximum zone of inhibition observed in ethyl acetate + augmentin was (42.10 mm) against *Pseudomonas aeruginosa* rather than *Bacillus* sp. (25.96 mm) respectively. Zone of inhibition observed in n-Hexane + augmentin was almost same against *Pseudomonas aeruginosa* and *Bacillus* sp. (40.10 mm and 40.17 mm) respectively. Results showed that ethyl acetate extract in combination with antibiotic increased the efficiency 0f antibiotic against *Pseudomonas aeruginosa* while methanol in combination with antibiotic increased the efficiency of antibiotic against *Bacillus* sp. *Tinospora cordifolia* is used for the treatment of various infectious diseases and to use the *Tinospora cordifolia* extracts for commercial level augmentation of antibiotic to produce new antibiotics.

Keywords: *Tinospora cordifolia,* Antimicrobial activity, extraction, *Pseudomonas aeruginosa*, *Brucella* and *Bacillus* sp.

Abstract ID: ICSDG1531

ANTIMICROBIAL ACTIVITY OF THREE CONDIMENTS OF FAMILY APIACEAE

Nadia Tehseen[1], Muzammil Inayet[1], Sabira Reesham[1], Zubaida Yousaf[1], Arusa Aftab[1], Ayesha khalid[1]

Department of Botany, Lahore College for Women University

*Corresponding Author's Email: *arusakashif@gmail.com*

Abstract

Approximately 80% of the world population depends upon plants for the cure of different ailments as they are organic in nature and have least side effects as compared to synthetic drugs. The chemical constituents of the plants play an important role in their overall activities like antimicrobial, antiviral, antitumor, antioxidant and anticancer. Present study aimed to check the antimicrobial potential of polar (methanol) and non-polar (butanol) solvents extracts of three plants *Foeniculum vulgare* Mill. (seeds), *Cuminum cyminum* L. (dried fruit) and *Trachyspermum ammi* L. (seeds) representative of family Apiaceae commonly used as condiments. Maximum zone of inhibition (mm) against bacterial strains was observed by methanol extract of *Trachyspermum ammi* L. i.e., 25.6 ± 1.89 a against *Acidovorax temperans* while, minimum zone of inhibition (mm) against bacterial strains was observed by *Foeniculum vulgare* Mill. against *Acidovorax temperans* i.e., 6.66 ± 1.52a. Butanol extract of *Trachyspermum ammi* L. observed to have highest zone of inhibition (mm) against fungal strain (*Botrytis cinera*) i.e., 42.5 ± 1 a. The study recommended that phyto-medicines can be used as an alternative to synthetic drug as they have no side effects on the human health and are economically cheap.

Keywords: Condiments, Sulfomethaxonazole, Inoculation

Abstract ID: ICSDG1532

COMPARISON OF MORPHOLOGICAL, ANATOMICAL AND ANTIMICROBIAL STUDIES OF BEGOMOVIRUS INFECTED AND NON-INFECTED *CESTRUM NOCTURNUM* (L.)

Shabnum Shaheen*, Riffat Sidique, Romisha Sonia, Umaira Nasir, Zaryab Khalid and Hafiza Ayesha Raheem

Department of Botany, Lahore College for Women University, Lahore, Pakistan
**Corresponding Author Email: shabnum_shaheen78@hotmail.com*

Abstract

Among various biotic agents infecting plants, viruses have significant impact particularly members of Gammaridae (Begomoviruses) carried by insect vectors causing economic losses in agriculture ornamental and medicinal plants. *Cestrum nocturnum* L. (Night blooming jasmine) which is a common medicinal plant was also found exhibiting begomoviruses infection symptoms. The purpose of the present work was to compare the begomoviruses infected and non-infected plants of *C. nocturnum* via multiple analyses. The comparative morphological and anatomical analyses were performed for both samples. Antioxidant analysis was performed using different extracts prepared in methanol, ethanol, n- hexane and chloroform by observing absorbance at 517 nm with the help of spectrophotometer following DPPH (Diphenyl-1-picrylhydrazyl) assay. Antimicrobial activities of collected samples were performed by well diffusion method against *Staphylococcus aureus*, *Klebsiella pneumonia* and *Escherichia coli*, *Rhizopus stolonifer*, *Aspergillus niger* and *Alternaria solani*. It is concluded from the current study that begomoviruses infection is responsible for reducing antioxidant and antimicrobial potential of *C. nocturnum* while decent

level of phytochemicals constituents were observed in infected plant which may be due to viral infection.

Keywords: *Cestrum nocturnum* L., Begomoviruse, Antioxidant activity, Antimicrobial Potential, Phytochemistry.

Abstract ID: ICSDG1533

A preliminary report on the detection of Pakistani Potato Spindle Tuber Viroid (PSTVd) in ornamentals

Zaryab Khalid Sial, Shabnum Shaheen, Farah Khan

Dept of Botany, LCWU, Lahore

Corresponding author. zaryab.sial1@gmail.com

Abstract

Potato Spindle TuberV iroid (PSTVd) is a smallest, circular, infectious single-stranded RNA, that causes serious losses in infected potato/tomato and ornamental plants in different regions of world. In 2017 PSTVd was detected in different plants in Pakistan and a streamed line study was conducted for ornamental plants especially in *Catharenthus roseus*. 100 of infected samples were tested for PSTVd symptoms in plants. Out of which 87 plants showd positive results for PSTVd infection. The method opted was RNA extraction followed by Reverse transcription polymerase chain reaction. The obtained PCR products were analysed by sequencing and BLAST search tools. The genome sequence was submitted to NCBI. A new accession MN092715 was given for this Pakistani PSTSVd in *Catharenthus roseus* L. The experimental samples were collected from different botanical gardens of Lahore. Spread in different fields can be ruled for this possible infection. This study could provide a baseline data for presence of PSTVd in ornamentals in Pakistan. To best of our knowledge this is first report of this pathogen in Pakistan and new threat to ornamentals.

Key words: PSTVd, RNA, BLAST, ornamentals, PCR, *Catharenthus roseus*

Abstract ID: ICSDG1534

SUSTAINABLE GREEN SYNTHESIS OF MANGANESE NANOPARTICLES AND THEIR POSSIBLE ROLE AS ANTIMICROBIAL AGENTS IN THE AGRICULTURAL AREA

Zaryab Khalid Sial, Shabnum Shaheen, Riffat Siddique, Hannan Mukhtar

Dept of Botany, LCWU, Lahore

Corresponding author. zaryab.sial1@gmail.com

Abstract

All the green synthesized nanoparticles from plant extracts are more cost effective and ecofriendly. These nanoparticles are proved to be more effective then chemically synthesized particles against microbes. These nano particles can help in antivirus medicines and antimicrobial finish in industry effectively without causing any chemicals hazards. During this piece of work effect of Mn nanoparticles on *in vitro* growth of *Brassica rapa* L. was observed as an antimicrobial agent. *B. rapa* is a member of *Brassicaceae.* family. In this study MS medium was supplemented with different PGRs using leaf as explant. The antimicrobial potential of Mn nanoparticles was also checked against microbes. The analyses by TEM showed that the as-synthesized Mn nanoparticles were uniform and spherical particles with an average diameter of 7.67 ± 3.7 nm and confirmed by SEM. Nanoparticles inhibited the growth of microbes from the lowest concentration evaluated (0.8 μg/mL). To develop more practically important nanoparticles from a large varieties of plants, an optimization process of elaboration should be established with coherent protocol to make edible vaccine and different medicine to cope up with the upcoming viruses and diseases. We concluded that Mn nanoparticles synthesized in the present study have potential application as antimicrobial agents in food and medicine industry. These nanoparticles have a potential application in a broad range of industries, mainly food and medicine.

Key words: SEM, PGR, TEM *Brassica rapa* L, antimicrobial

Abstract ID: ICSDG1535

SOL-GEL SYNTHESIZED BA DOPED ZNO FOR ANTIBACTERIAL APPLICATION

Ayesha Farid, Zohra Nazir Kayani

Department of Physics, Lahore College for Women University, Lahore, Pakistan

Telephone: 0092-42-99203801-9 (248); Fax: 0092-42-99203877

E-mail:zohrakayani@yahoo.com

Abstract

Ba-doped ZnO thin films are synthesized by using sol-gel dip coating method at room temperature on glass substrate by varying Ba doping percentage 1-9 wt.%. Optical properties exhibit band gap changes with increase in Ba contents. XRD spectra are used to analyze phase structure and crystallinity of undoped and Ba-doped ZnO thin films. Agar well-Diffusion method is used for anti-bacterial activity of Ba-ZnO. Anti-bacterial activity shows best results with increasing Ba doping. Ba doped ZnO improves antibacterial activity of ZnO so it is very significant for food packing applications.

Key words: Ba; ZnO; band gap; antibacterial activity.

Abstract ID: ICSDG1536

A SURVEY OF ETHNOBOTANICALLY IMPORTANT SHRUBS OF BAGH-E JINNAH

Zainab Maqbool[1], Dr. Arifa Zereen[2*], Dr. Nighat Sana[2], Dr. Zubaida Yousaf[1], Dr. Arusa Aftab[1], Hamna Yasin[1], Zainab Shahzadi[1]

[1]Department of Botany, Lahore College for Women University

[2]Department of Botany, Govt. Post Graduate College for Women Samanabad, Lahore *Corresponding Author: arifazereen@gmail.com

Abstract

The present investigation was undertaken to study the shrub flora of Bagh-e-Jinnah, Lahore including its ethnobotanical values. A total of 106 plant species belonging to 40 families were recorded and described comprising botanical names, local/common name(s), families, type, flower color and ethnobotanical importance. The diversity of these ethnobotanically important shrubs species revealed that there were 36 families belonging to dicotyledons (90%), 2 families to monocotyledons (5%) and 2 to gymnosperms (5%). Fabaceae followed by Oleaceae were recorded as the most abundant families consisting of twelve and seven species respectively. Data were collected through questionnaire and personal interviews of herbalist, gardeners and local inhabitants. The age and education level of a person is affecting traditional knowledge on ethnobotanical plants. Much information was given by men as compared to women. Old aged, people had more know-how of ethnobotanical plants. The shrubs species documented in the present research work are in use by the people for different purposes viz; edible 15.55% (39 species), fodder 1.60% (4 species), medicinal 31.53% (77 species), cosmetics 3.74% (9 species), wood work 6.30% (17 species), construction 1.26% (3 species), ornamental 17.66% (42 species), insect repellent 0.84% (2 species), fuel 4.20% (10 species), poisonous 3.36% (8 species), flavoring agent 4.62% (11 species), dye 4.20% (10 species) charcoal 5.04% (12 species) etc. The medicinal plant species reported in this study were also being sold in the local pansar bazaar/ jari boti stores (markets).

Abstract ID: ICSDG1537

RESPONSE OF DIFFERENT VARIETIES OF *HELIANTHUS ANNUS* L. TO COMPOST UNDER CHROMIUM STRESS

Riffat Jabeen, *Zainab Waheed*, Sumera Iqbal, Khajista Jabeen
Department of Botany, Lahore College For Women University Lahore, Pakistan
Corresponding Author's email: sumeraiqbal2@yahoo.com

Abstract

Plant health is a key condition for a sustainable land use and rural economy. Sunflower is the important oilseed crop of Pakistan. Its growth is preferred because it has high climatic adoption ability, suitable for mechanization, and low effort needs. Heavy metal toxicity and their bio-accumulation in the food chain characterize one of the major ecological and health harms of our current society. Chromium is highly poisonous and non essential element for microorganism and plants. The purpose of present study is to check the performance of sunflower plants growing in soil having compost developed from vegetable waste, to evaluate differences in the response of two varieties of sunflower (HYSUN 33 and HYSUN 39) under chromium stress to compost application. An experiment was conducted using different compost levels (10% and 20%) and one level of chromium stress (50mmol). In this experiment, different physiological, biochemical and yield related parameters were calculated. The results revealed that both compost levels caused an increase in growth and yield related parameters under unstressed conditions as compare to control and this response was more prominent in HYSUN 33 than in HYSUN 39. Chromium stress resulted in significant decrease in all parameters except proline content of leaves which was found to be higher under all stress treatments. It revealed that HYSUN 33 variety is more tolerant to chromium stress as compared to HYSUN 39 variety, so this variety should preferably cultivated under chromium stress.

Keywords: Chromium, Compost, Carotenoid Content, Proline, Sugar.

Abstract ID: ICSDG1538

BIOFUEL PRODUCTION FROM CHLORELLA BY RESPONSE SURFACE METHODOLOGY

Zirwa Sarwar, Maria Hasnain, Shagufta Naz, Neelma Munir*

Department of Biotechnology, Lahore college for Women University, Lahore.

**Corresponding Author Email: neelma.munir@yahoo.com*

Abstract

To meet the increasing demand of energy algal biofuel can play a significant role. The present study focused on use of native algae *Chorella* sp. for the production of Biofuel. For cultivating algae Bold basal media culture media was used. Response surface methodology is a tool that can highlight the interaction of different factors on the production of lipids. Lipids were extracted by Microwave assisted extraction. Three independent variables pH, temperature, and phosphate deficiency are used against two responses i.e. dry biomass productivity (mg) and lipid content (mg).It was observed during present work that varying conditions of pH, temperature (C) and phosphate content (mg/l) significantly affect the biomass and lipid content. Of Chlorella. Maximum lipid yield obtained from *Chlorella* sp. was 500mg. Hence this study was be helpful in understanding the optimization for lipid production (mg) from Chlorella sp.

Keywords: Biofuel, Chlorella, Algae media culture, Microwave assisted extraction, Lipid production

Abstract ID: ICSDG1539

GROWTH IMPROVEMENT IN WHEAT PLANTS DUE TO FOLIAR APPLICATION OF PROLINE UNDER SALINITY STRESS

Ayesha Khalid, Habib ur Rehmna Athar, Zafar Ullah Zafar.

Institute of Pure and Applied Biology, Bahauddin Zikria University, Multan

Abstract

In many developing countries, where wastewater irrigation has become popular, the accumulation of heavy metals by crops treated with wastewater has been regarded as a severe environmental hazard. The highly toxic chemical element cadmium (Cd) in water, agricultural soils, and food crops, as well as the potential damage to human health were the focus of the study, conducted at District Sargodha in Punjab, Pakistan. Samples (edible portion) of vegetables (Spinach, Mustard, Coriander and soil, and mint) treated (wastewater, canal water, and tube well water) were collected from three distinct sites (Sargodha city, Sahiwal, and Shahpur) and evaluated for Cd concentration. The results indicates the range of cadmium metal in soil and crop were 0.41 to 11.18 $mgKg^{-1}$ and 0.16 to 2.79 $mgKg^{-1}$, respectively. The Cd in soils and crops was exceeding the permissible limits of World Health Organization (WHO). Bio-concentration factor of metal values was less than 1, indicates that toxic metals was in less quantity in food crops. Pollution Load index and Enrichment factor, values was greater than 1, indicating a high level of soil contamination and moderate-severe enrichment of soil with Cd.

Keywords: Enrichment factor, Health risk index, Pollution Load index, Target hazard quotient, Wastewater

Abstract ID: ICSDG1540

TOXIC ELEMENT CADMIUM IN SOIL-FOOD CROPS INTERFACE: TRANSLOCATION, BIO-ACCUMULATION AND ANTICIPATION OF TOXICITY AND AMELIORATION

Shahzad Akhtar[1], Zafar Iqbal Khan[1], Kafeel Ahmad[1], Muhammad Nadeem[4] Ghulam Mustafa[1], Rana Muhammad Zubair[1] Ijaz Rasool Noorka[2], Mahpara Shahzadi[2], Tasneem Ahmad[3]

[1]*Department of Botany, University of Sargodha, Pakistan*

[2]*Department of Plant Breeding and Genetics, Ghazi University, Dera Ghazi Khan, Pakistan*

[3]*Thathi Pak Farm House, Toba Tek Sigh, Pakistan*

[4]*Institute of Food Science and Nutrition, University of Sargodha, Pakistan*

*Corresponding Author's Email: 79shahzadrana@gmail.com

In many developing countries, where wastewater irrigation has become popular, the accumulation of heavy metals by crops treated with wastewater has been regarded as a severe environmental hazard. The highly toxic chemical element cadmium (Cd) in water, agricultural soils, and food crops, as well as the potential damage to human health were the focus of the study, conducted at District Sargodha in Punjab, Pakistan. Samples (edible portion) of vegetables (Spinach, Mustard, Coriander and soil, and mint) treated (wastewater, canal water, and tube well water) were collected from three distinct sites (Sargodha city, Sahiwal, and Shahpur) and evaluated for Cd concentration. The results indicates the range of cadmium metal in soil and crop were 0.41 to 11.18 $mgKg^{-1}$ and 0.16 to 2.79 $mgKg^{-1}$, respectively. The Cd in soils and crops was exceeding the permissible limits of World Health Organization (WHO). Bio-concentration factor of metal values was less than 1, indicates that toxic metals was in less quantity in food crops. Pollution Load index and Enrichment factor, values was greater than 1, indicating a high level of soil contamination and moderate-severe enrichment of soil with Cd.

Keywords: Enrichment factor, Health risk index, Pollution Load index, Target hazard quotient, Wastewater

Abstract ID: ICSDG1541

IMPACT OF P-PHENYLENEDIAMINE AND MICRONUTRIENTS COATED UREA ON UREA-HYDROLYSIS AND BULB YIELD OF *ALLIUM CEPA* UNDER FIELD CONDITIONS

Ammara Fatima[1], Sarah Shakeel[1], Rashid Mehmood[2], and Sajid Ali[3]

1: Department of environmental science, LCWU, Lahore
2: Department of soil science, FAS, PU, Lahore
3 Department of Agronomy, FAS, PU, Lahore

Abstract

A field experiment was carried out to investigate the impact of various urea coatings on urea hydrolysis in field soil and yield of *A. cepa*. Urea-N use efficiency of crop plants can be increased by decreasing the rate of urea hydrolysis through soil urease inhibition by soil urease inhibitors. These inhibitors can inhibit urease by reacting with one or more components of the enzyme's active site and changing their structure that disables the site to attach to the substrate molecule. The experiment was conducted according to a randomized complete block design (RCBD) with three replications. The treatment plan comprised of application of no urea, uncoated urea, and various types of coated urea i.e. (B)-full, (B+Zn)-full, (Fe+Zn)-full, PPD-0.8%, and PPD-1.0%. Different coatings on urea were then compared for their inhibitory effect on urea hydrolysis in soil. The recommended rates of B, Cu, Fe, and Zn were considered as 1.0, 2.4, 1.6, and 0.40 kg ha^{-1}, respectively. Onion was cultivated in field and N was applied as coated urea. Ammonia collection traps were constituted by polyvinylchloride (PVC) pipes for ammonia, estimation of bulb yield and nitrogen agronomic efficiency (NAE) were determined. Coated PPD and B coated urea significantly reduced urea hydrolysis and ammonia volatilization losses from onion fields. It was evident from ANOVA results that the treatment effect on average bulb weightof onion was significant at $p < 0.05$.Minimum nitrogen agronomic efficiency (NAE) as noted with uncoated urea, which was statistically like that of coated urea (B+Zn)-full.

Keywords: Coated urea, micronutrients, urease inhibitors, onion field, ammonia volatilization, nitrogen agronomic efficiency.

Abstract ID: ICSDG1542

ASSESMENT OF FUNGISTATIC POTENTIAL OF

SOLANUM NIGRUM L.

Rabia Razi[1], Khajista Jabeen[1*]And Sumera Iqbal[1]
[1]*Department of Botany, Lahore College for Women University, Lahore, Pakistan*
**Corresponding author's Email: khajista_1@hotmail.com*

Abstract

Solanum nigrum L. is an annual or biennial herb which was selected to evaluate the antifungal properties against a ubiquitous, saprobic, necrotrophic fungus *Botrytis cinerea*. Extract of *S. nigrum* roots and leaves was prepared in methanol and its different concentrations were tested *in vitro* against *B. cinerea.* Methanolic extract of leaves reduced the growth of fungus *B. cinerea.* Concentration 4-5% showed more antifungal activity as compared to concentration 1, 2 & 3%. Maximum antifungal activity against *B. cinerea* was observed in 4% and 5% concentration of root extract of methanolic extract. While 2% concentration showed less inhibitory activity against the test fungus and 1% concentration stimulate the growth of *B. cinerea*. Methanolic root extract of *S. nigrum* was partitioned of with different organic fractions viz., *n*-hexane, chloroform, ethyl acetate, *n*-butanol and fungicide. *In vitro* bioassays with different organic fractions and fungicides showed that fungicide and ethyl acetate was found most effective against *B. cinerea* as compared to other fraction. After fungicide and ethyl acetate, chloroform showed maximum inhibition. Whereas n-hexane and butanol were found less effective. This study can be concluded that *S. nigrum* has the lower potential to control the test fungus.

Keywords: Antifungal, Bioassay, Fractions, Mako

Abstract ID: ICSDG1543

EVALUATION OF PRESERVED STAGES IN CAPSICUM ANNUUM L. AND DAUCUS CAROTA L. BY PHYTO-BASED NANOPARTICLES.

LalaRukh Azhar [1], Sumera Javed[1], Iqra Akhtar[1] ,Iqra Naseem[1]

[1]*Department of Botany, Lahore College for Women University*

**Corresponding author' s Email: zif_4@yahoo.com*

Abstract

Biotechnology and Nanotechnology evolved in a new emerging branch which is Bionanotechnology which improve the quality of fruits and vegetables by applying nano composites and also enhance their shelf life. In the present study, the *Capsicum annuum* L. and *Daucus carota* L. were used with AgNPs to enhance its shelf life. Compared preserved slices of both vegetables with conventional preservation method to analyzed the perfection of silver nanoparticles. Green synthesized AgNPs (using plant extract of *Citrus limon* L.) were characterized by UV-Visible Spectroscopy and particle size analysis. Both vegetables slices were treated with different time (30 min, 60 min, 90 min, 120 min, 150 min and 180 min) at different temperatures (600C, 700C, 800C) and concentrations (1, 2 and 3%) with AgNPs solutions, NaCl solution and Sucrose solution. Effect of osmolytes (NaCl and Sucrose) in comparison with AgNPs and including all attributes(physical appearance, solid gain, water loss, phenolic loss and antioxidant activity) were investigated. Results showed positive effect of AgNPs in both vegetables as a preservative agent as compared to NaCl and Sucrose. With increase in concentration, time and temperature, the solid gain and water loss were also increased and AgNPs showed max values at 3% concentration at each temperature.Evaluation of total phenolic loss in capsicum and carrot slices were also showed good results in AgNPs as compared to NaCl and Sucrose. It can be concluded that plant based AgNPs helped to maintain the shelf life and firmness of *Capsicum annuum* and *Daucus carota* as a strong preservative agent in future.

Keywords: Biotechnology, Nanotechnology, Bionanotechnology, Capsicum annuum, Daucus carota

Abstract ID: ICSDG1544

EVALUATION OF THE EFFECT OF ZINC OXIDE NANOPARTICLES ON SEED GERMINATION AND VEGETATIVE PARAMETERS OF CAPSICUM ANNUU`M

Kiran Shahzadi[1], Um-e-Rubab[1], Sumera Javad[1], Amina Tariq[1], Ayesha Anwar[1]

[1]*Department of Botany, Lahore College for Women University, Lahore.*

Corresponding author's Email:kiran.shahzadi@lcwu.edu.pk

Abstract

Nanotechnology is no doubt an enhancing tool for science but nanoparticle exposure in the environment is a new concern. The current study deals with biological process for green synthesis of zinc oxide nanoparticles from zinc sulphate using *Nigella sativa* L. seed extract as reducing agent. Particle size analyser showed the particle size 52nm. The seeds of three species of family Solanaceae *Capsicum annuum* (green chilli) were exposed to six concentration (50, 100, 200, 400, 800 and 1000µg/L) of ZnO NPs along with dist. water and ZnSO4 solution. Results showed that the zinc oxide nanoparticles improved *Capsicum annuum* seed germination up to 64.33%, shoot length up to 18.12%, root length up to 34.29%, plant height up to 25.33%, plant weight up to 79.9%, no. of leaves up to 32.42% and leaf area up to 67.27% as compare to the control (dist. water). This shows that zinc oxide nanoparticles respond positively towards *C. annuum* at any concentration. Overall, from this result it is concluded that ZnO NPs can industrially be used as nano-fertilizers in order to enhance the metabolic process and better developments of crops

Keywords: *Capsicum annuum*, Nanotechnology, Zinc oxide nanoparticles.

Abstract ID: ICSDG1545

PHYSIOLOGICAL EFFECT OF GARLIC EXTRACT ON GROWTH OF CORN (*Zea mays* L.) UNDER SALT (NaCl) STRESS

Irtza Pervaiz, Mobina Ulfat
Department of botany, Lahore College for Women University, Lahore, Pakistan
Corresponding Author's Email: mobina_ulfat@yahoo.com

Abstract

A pot experiment was conducted at research lab of Lahore College for Women University, Lahore (LCWU) to investigate the physiological effect of garlic extract on growth of corn (*Zea mays* L.) under salt stress. Two verities of corn were used i.e. DK-6789(SINGA) and Sugar-75(IND). The experiment was laid out according to CRD (Completely randomized design). The seeds of plants soaked with salinity (50mM NaCl) and garlic extract (20%), separately and with both salinity and garlic extract. Garlic extract was mainly used to overcome the stress of salinity. The seeds soaked with both of 50mM NaCl and 20% garlic extract showed maximum relative increase in germination percentage, root length, shoot length and fresh weight, dry weight, number of leaves, mean emergence time, vigor index and chlorophylls and carotenoids. The values of parameters were moderate when seeds of both verities were soaked with only 20% garlic extract. But the values were so least when they soaked with only 50mM NaCl. The results obtained in the present research suggested that the seeds soaked with 50mM NaCl and 20% garlic extract had maximum biomass and proves that garlic extract can be used to overcome negative effects of salt stress.

Keywords: Physiological investigation, Salt stress, garlic extract, completely randomized design (CRD), Plant yield.

Abstract ID: ICSDG1546

EVALUATION OF KO7 (SEVEN PROTEASE DEFICIENT) ENGINEERED STRAIN OF *BACILLUS SUBTILIS* FOR PRODUCTION OF RECOMBINANT HUMAN INTERFERON ALPHA 2 B

Faiza Saleem, Uzma Nisar, Saira Ashfaq, Imrana Akram, Hafsa Amjad.

Abstract

Interferons are cytokines produced and secreted by virtually all eukaryotic cells in response to stimulation of foreign antigen. IFNs stimulate immune cells, such as natural killer cells and macrophages; they increase host defences by up-regulating antigen presentation by virtue of increasing the expression of major histocompatibilitycomplex(MHC) antigens. Expression analysis of *rhIFNα-2b* in *E.coli* gives disadvantages so therefore scientists switch over to express the gene in Bacillus subtilis and used cyt-1 promoter which is sporulation dependent and therefore any signal peptide is not used. Coding region of Interferon alpha 2 b gene was amplified through RT PCR using mRNA extracted from blood as template. The gene was cloned in T/A cloning vector and then confirmation of gene was done by sequencing. Sequence analysis showed that the gene has a total of five-point mutations at positions 44, 91, 117, 143 and 154. The point mutations at position 91 and 154 were silent. i.e., the amino acid sequence was not affected but mutations at positions 44, 117 and 143 changed the amino acid sequence. At position 44 methionine changed into valine, at position 117 aspartic acid changed into glycine and at position 143 arginine changed into glycine. Further the gene was subcloned into bacillus shuttle vector pSTAB under control of cyt1 promoter and *transformed* in E.*coli* (DH5α). After confirmation, the recombinant plasmid pSTAB-IFN was transferred in *Bacillus subtilis* KO7 strain after preparation of competent cells of KO7. Transformants were analysed for gene expression for five days after incubation in LB broth medium supplemented with erythromycin. The expression of *hIFN α 2b* was observed very low.

Keywords: MHC, RT PCR, pSTAB, KO7.

Abstract ID: ICSDG1547

ANTMICROBIAL ACTIVITY OF LEAF EXTRACTS OF *TINOSPORA CORDIFOLIA* (THUNB) MIERS. (1st INTERNATIONAL CONFERENCE ON SUSTAINABLE DEVELOPMENT GOALS: LOCALIZING SDGs 15 THROUGH ACADEMIA)

Ayesha kiran[1], Amina Tariq[1], Sumera javad[1], Kiran shahzadi[2]
Department of Botany, Lahore College for Women University, Pakistan
Author's email: aminapal786@hotmail.com

Tinospora cordifolia (guduchi) is a plant belongs to family Menispermaceae and an important herb in both folk and ayurvedic systems of medicines. *Tinospora cordifolia* contains various chemical constituents such as alkaloids, diterpenoid lactones, glycosides and steroids. The purpose of present work was to check the antibacterial activity of different extracts of *Tinospora cordifolia.* Antibacterial activity of plant extract was checked against different bacterial species by using agar well diffusion method. Bacterial strains used were *Pseudomonas aeruginosa*, *Bacillus* sp. and *Brucella* sp. Maximum zone of inhibition observed in methanol + augmentin was (30.14 mm) against *Bacillus* sp. as *Pseudomonas aeruginosa* and *Brucella* sp. (29.04 mm and 25.21 mm) respectively. Maximum zone of inhibition observed in ethyl acetate + augmentin was (42.10 mm) against *Pseudomonas aeruginosa* rather than *Bacillus* sp. (25.96 mm) respectively. Zone of inhibition observed in n-Hexane + augmentin was almost same against *Pseudomonas aeruginosa* and *Bacillus* sp. (40.10 mm and 40.17 mm) respectively. Results showed that ethyl acetate extract in combination with antibiotic increased the efficiency 0f antibiotic against *Pseudomonas aeruginosa* while methanol in combination with antibiotic increased the efficiency of antibiotic against *Bacillus* sp. *Tinospora cordifolia* is used for the treatment of various infectious diseases and to use the *Tinospora cordifolia* extracts for commercial level augmentation of antibiotic to produce new antibiotics.

Keywords: *Tinospora cordifolia*, Antimicrobial activity, extraction, *Pseudomonas aeruginosa*, *Brucella* and *Bacillus* sp.

Abstract ID: ICSDG1548

LAB-SCALE BIOGAS PRODUCTION FROM AGRICULTURE AND KITCHEN WASTES USING DIFFERENT ANAEROBIC GAS GENERATING SYSTEMS

Asif Shabbir, Khizar Hayat Bhatti*

[1]Department of Botany, University of Gujrat, Hafiz Hayat Campus, Gujrat-50700, Pakistan

*Corresponding author: khizar.hayat@uog.edu.pk

Abstract

Biogas is produced anaerobically through the digestion of biomaterial by microorganisms involving controlled set of conditions. Agriculture and kitchen wastes were used as raw material for the production of biogas. Agriculture waste was animals' dung and kitchen wastes comprised of food waste, green waste and bakery waste. Anaerobic digestion was maintained in four separate digesters along with automatic temperature control system by means of hot water circulation. Biogas was collected in separate containers for each digester over water. Temperature and pH control was managed by using thermocouple probe in the range of 20^{0}-40^{0}C and pH meter respectively. Data showed that the digester with dung found relatively stabilized system while, kitchen wastes systems were more sensitive and prone to fluctuation in the environment and loading of substrate. The added substrate was properly meshed on daily bases with water to increase the surface area and reduce the digestion time in a specified quantity. Based on data, it is concluded that plastics or related material made biogas generating model/design is low cost and thus, it can be utilized for indoor burning purposes economically.

Keywords: Agricultural waste, Anaerobic digestion, Inflammable gas, Kitchen waste

Abstract ID: ICSDG1549

VARIATION AMONG HERBS IN DIFFERENT FARM LANDS AND CANAL BANK OF DISTRICT OKARA

Nimra Afzal[1], Aimen Razaq[1], Shaheena Umbreen[1],Naila Mukhtar[1*],Gulnaz Parveen[2], Naila Hadayat[3], Mobina Ulfat[3]

[1]Department of Botany, University of Okara, Pakistan

[2]Department of Botany, Women University Swabi, Pakistan

[2]Department of Botany, University of Education, Pakistan

[3]Department of Botany, Lahore College for Women University, Pakistan

*Corresponding Author's Email: nailamukhtar@uo.edu.pk

Abstract

Being considering the community of plants as a social unit, present research was aimed to describe the vegetation of a given territory. District Okara, was exposed to a phytosociological evaluation of herbaceous vegetation in 2021. For identification, plants were taken, collected and mounted on herbarium. Quadrat method was used to collect phytosociological data. Floristic study revealed that study area comprised of 45 species which belongs to 40 Genera and 16 families. Among these families, Poaceae was richest in numbers of species with 13 species and 13 genera, following by the next dominating family was Asteraceae containing 05 genera and possessing 06 species. While Apocynaceae, Aizoaceace, Capparidaceae, cucurbitaceae, Oxalidaceae, Solanaceae, Typhaceae, Verbenaceae, Zygophyllaceae, Asclepiadaceae and Caesalpinaceae possess 01 genera and 01 species. Chenopodiaceae having 03 species and 02 genera. Compositae and Malvaceae contributing 02 species and 02 genera. Euphorbiaceae containing 04 species and 03 genera. Total 7 plant communities were found in area based on important value index (IVI). *Cyprus rotundus, Dactylotenium aegyptium*, *Poa partensis* and *Conyza canadensis* having the highest value. Innovative ideas into taxonomic, ethnobotanical, and other ecological aspects were achieved as a result of this preliminary knowledge.

Keywords: Phytosociological evaluation, Floristic, Taxonomic, Preliminary knowledge, Ethno-botanical and Ecological aspects.

Abstract ID: ICSDG1550

INTERACTIVE EFFECT OF ASCORBIC ACID ON ZEA MAYS UNDER SALT STRESS

Sadia Mushtaq[1], Shaheena Umbreen[1],Naila Mukhtar[1*], Asma Saleem[2] , Naila Hadayat[3], Gulnaz Parveen[4]

[1]Departmentof Botany, University of Okara, Pakistan
[2]Departmentof Botany, Government College Women University Faisalabad. Pakistan
[3]Departmentof Botany, University of Education, Pakistan
[4]Departmentof Botany, Women University Swabi, Pakistan

Abstract

Like other abiotic stresses salinity is also a serious threat in Pakistan. The goal of research was to study the effect of salt and ascorbic acid on *Zea mays* different growth parameters. Different concentrations of NaCl (Control, 40, 80, 120, 160 and 200 mM) and Ascorbic acid (Control, 1.0, 1.5, 2, 2.5 and 3mM) were made and applied in three different experimental sets. *Zea mays* seeds were treated for the period of 14 days under room temperature, Moreover the experimental set treated with both salt and ascorbic acid was evaluated for anatomical parameters also. Results revealed that, NaCl was dramatically decreased the germination rate, root length, root biomass, and diameter, while ascorbic acid (AsA) proved significant results. However, ascorbic acid in combination substantially improved growth (root length, shoot length, fresh and dry weight, number of roots, leave number, length of leave) and anatomical attributes in evaluated *Zea mays* cultivars as compared when applied separately. They have examined the seedling growth of *Zea mays*, which was improved by the application of Ascorbic acid. The production of hybrid maize can be enhanced by AsA, during salt stress.

Keywords: Abiotic Stress, Maize, Morphology, Anatomy, Ascorbic acid.

Abstract ID: ICSDG1551

ANTIMICROBIAL ACTIVITY FROM SEEDS AND CONES EXTRACTS OF CUPRESSUS SEMPERVIRENS L.

Ayesha Feroze[1], Sana Sarwar Khan[1], Ifrah Zahid[1], Zubaida Yousaf[1], Arusa Aftab[1]

[1]Department of Botany, Lahore College for Women University, Lahore

*Corresponding Author's Email: arusakashif@gmail.com

Abstract

Chemical constituents present in the medicinal plants show antimicrobial activity. The antibiotic-resistant and emergence of new microbial strains is a matter of great concern all around the world. The recent study aimed to observe the antimicrobial activity of organic solvents (petroleum ether, chloroform, methanol) and inorganic solvents (water) extracts of seeds and cones of *Cupressus semperiverns* L. the native plant of Malakand Division, District Swat, Pakistan. Agar well diffusion method was followed to check the microbial resistance potential and zone of inhibition of various extracts. Antimicrobial activity was performed against two species of bacteria (*Xanthomonas oryzae*, *Pseudomonas alcaligenes*) and two species of fungi (*Fusarium solani*, *Alternaira alternata*). It was observed that the various extracts of both plant parts showed significant results. The results were compared with the standard drugs discs viz; ampicillin disc was used against *Xanthomonas oryzae*, amikacin disc against *Pseudomonas alcaligenes*, fucanzole against *Alternaria alternata*, and kanamycin disc against *Fusarium solani*. The results concluded that the chloroform extract showed a dynamic zone of inhibition against microbes as compared to other solvents extract. The maximum zone of inhibition against *Xanthomonas oryzae* observed by chloroform extract of female cones of *C. semperiverns* i.e., 37 ± 2a mm, which was very close to the zone of inhibition calculated by standard drug ampicillin i.e., 36 ± 3.60b. The study recommended the use of plant extracts to treat microbial infections against the tested organisms.

Keywords: Phytochemicals, *Cupressus semperiverns*, medicinal plants, antifungal, antibacterial

Abstract ID: ICSDG1552

A SURVEY OF ETHNOBOTANICALLY IMPORTANT SHRUBS OF BAGH-E-JINNAH

Zainab Maqbool[1], Dr. Arifa Zereen[2]*, Dr. Nighat Sana [2], Dr. Zubaida Yousaf[1], Dr. Arusa Aftab[1], Hamna Yasin[1,] Zainab Shahzadi[1]

[1]*Department of Botany, Lahore College for Women University*

[2]*Department of Botany, Govt. Post Graduate College for Women Samanabad, Lahore*

**Corresponding Author's Email: arifazereen@gmail.com*

Abstract

The present investigation was undertaken to study the shrub flora of Bagh-e-Jinnah, Lahore including its ethnobotanical values. A total of 106 plant species belonging to 40 families were recorded and described comprising botanical names, local/common name(s), families, type, flower color and ethnobotanical importance. The diversity of these ethnobotanically important shrubs species revealed that there were 36 families belonging to dicotyledons (90%), 2 families to monocotyledons (5%) and 2 to gymnosperms (5%). Fabaceae followed by Oleaceae were recorded as the most abundant families consisting of twelve and seven species respectively. Data were collected through questionnaire and personal interviews of herbalist, gardeners, and local inhabitants. The age and education level of a person is affecting traditional knowledge on ethnobotanical plants. Much information was given by men as compared to women. Old aged, people had more know-how of ethnobotanical plants. The shrubs species documented in the present research work are in use by the people for different purposes viz; edible 15.55% (39 species), fodder 1.60% (4 species), medicinal 31.53% (77 species), cosmetics 3.74% (9 species), wood work 6.30% (17 species), construction 1.26% (3 species), ornamental 17.66% (42 species), insect repellent 0.84% (2 species), fuel 4.20% (10 species), poisonous 3.36% (8 species), flavoring agent 4.62% (11 species), dye 4.20% (10 species) charcoal 5.04% (12 species) etc. The medicinal plant species reported in this study were also being sold in the local pansar bazaar/ jari boti stores (markets).

Keywords: shrub flora, Bagh-e-Jinnah

Abstract ID: ICSDG1553

PHYTOCHEMICAL PROFILE, ANTIOXIDANT, ANTICANCER AND CYTOTOXIC POTENTIAL OF *FUMARIA INDICA* (HAUSSKAN)

Faiza Ali[1], Zeb Saddiqe[2*], Muhammad Shahzad[3], Ali Rafi[3]

[1]*Department of Botany, Lahore College for Women University, Lahore, Pakistan*

[2]*Department of Botany, Govt. Queen Mary Graduate College, Lahore, Pakistan*

[3]*Pharmacology Department, University of Health Sciences, Lahore, Pakistan*

*Corresponding Author's Email: zeb_rukhsana@yahoo.com

Cancer is a leading cause of death after cardiovascular diseases in developed countries. Several synthetic drugs are currently being used for the treatment of various types of cancer but due to their adverse side effects, scientists are now considering plant based natural products as new chemotherapeutic anticancer agents. *Fumaria indica* is well known for its ethnopharmacological activities. The present study evaluated different solvent extracts *n*-hexane, dichloromethane, ethyl acetate, acetone and methanol of aerial parts of *F. indica* collected from Abbottabad, Pakistan, for cytotoxicity against human breast cancer (MDA-MB-231), human colorectal adenocarcinoma (SW-620) and normal human embryonic kidney (HEK-293) cell lines using MTT assay. IC_{50} value calculated for methanol fraction of *F. indica* for HEK-293 cell lines was 0.1 μg/mL. Phytochemical analysis indicated highest flavonoid (38.21± 1.53 mg QE/g dry extract), saponin (72.12 ± 1.56 mg SE/g dry extract), phenolic (459.46± 2.33 mg GAE/g dry extract) and tannin (2.51± 0.02 mg TAE/g dry extract) contents in methanolic fraction. In brine shrimp lethality assay all the fractions were found to be non-toxic. Spectral analysis using UV-Visible and FTIR also confirmed the presence of bioactive secondary metabolites. The results suggested that *F. indica* particularly its methanol fraction can be an excellent source for isolation of potent plant-based anticancer drugs.

Keywords: Anticancer activity, *Fumaria indica*, FRAP, DPPH, FTIR

Abstract ID: ICSDG1554

Use of Superabsorbent Polymer to amend soil for water holding capacity and its influence on plant growth of *Wathania somnifera* (L.) Dunal

Tahira Zaheer[1], Mehwish Riaz[1], Zoha Abbas[1], Zubaida Yousaf[1], Arusa Aftab[1]
Department of Botany, Lahore College for Women University
*Corresponding Author: arusakashif@gmail.com

Abstract

Agriculture sector is the source of livelihood for millions of people and performing a vital role in the economy of Pakistan (Gross Domestic Product 21%). In the last few decades with the explosive increase in world population, sustainable agriculture and food security are becoming a serious threat meanwhile our land resources are the same and deteriorating day by day. Agriculture is under abiotic stresses (drought, salinity and temperature) which is likely to increase due to land degradation, urbanization and climate change and need the sustainable development plan. Crop yield can be improved under water-limited environments by adopting specific crop and soil management practices such as soil additives including hydrogel that act as a reservoir to store and release a steady stream of water and nutrients which plants need to grow. Agricultural hydrogels had tremendous potential to improve physico-chemical and biological properties of the soil. *Withania somnifera* (L.) Dunal. is a medicinally important plant, mostly cultivated because of its roots. In this study the biodegradable Superabsorbent Polymer (hydrogel) was prepared by combining polymers (guar-gum, starch, and alginate). XRD diffraction pattern of SAP was observed. Four types of soil viz; sandy loam (sand 75%, loam25%), loam (100%), sand (100%) sandy loam (50% sand and 50% loam) were used for its application. Different parameters like water holding capacity, moisture content of soil, plant available water, seed emergence, seed germination and chlorophyll estimation were done.

Keywords: Disc diffusion method, DPPH activity, Hemolytic potential, Plant Available Water (PAW), Superabsorbent Polymer (SAP), X-ray diffraction (XRD)

Abstract ID: ICSDG1555

IMMOBILIZATION OF LACCASE AND VERSATILE PEROXIDASE ON POLYACRYLAMIDE GEL FOR REMEDIATION OF WASTE WATER

Taleeha Roheen

Polyacrylamide hydrogel was synthesized using methylene bisacrylamide as a crosslinker. Optimization study was caried for hydrogel synthesis at different PAM concentrations, different temperatures and for different incubation periods. FTIR and SEM were conducted for gel structure elucidation and surface morphology. Lac and VP were immobilized on to gel surface using glutaraldehyde as crosslinker. Characterization study of loaded gel was carried using FTIR, SEM, EDX and TGA. Loaded gel was used to treat domestic waste water collected from Faisalabad region. FTIR studies were carried for treated and untreated water. HPLC studies were performed for estimation of endocrine disrupting compounds. Untreated and treated water were also checked for various parameters including pH, EC, Total phosphate, TDS, BOD, COD, Nitrites and Nitrates. Studied elucidated remarkable decrease in Bisphenol A content in treated water. Application of treated water was checked using Spinach grown in disposable glasses. Antioxidant activity of spinach leaves using DPPH activity showed improved antioxidant content after application of treated water. Total flavonoids, total phenolics, chlorophyll and carotenoid content were also enhanced.

Keywords: Polyacrylamide hydrogel, Methylene bisacrylamide, Laccase, Peroxidase, Remediation

Abstract ID: ICSDG1556

SPIRULINA AND MUSHROOM SUITABILITY TO DEVELOP SUPERFOOD PRODUCTS

Sofia Qaisar

(Pakistan Council of Scientific and Industrial Research, PCSIR)

Abstract

Spirulina and mushroom have proven health benefits along with their nutritional profiles hence consumed as a source of naturally available food sources. Therefore the compatibility of spirulina and mushroom analyzed to form a palatable product through customer based approach. The extracts and powdered biomass was compared for their nutritional profiles, daily intake values and taste acceptance for the developed product in powder, tablet and capsule forms.

Keywords: Spirulina, Mushroom, Biomass.

Abstract ID: ICSDG1557

ROLE OF COMPOSTING-BASED DECENTRALIZED MUNICIPAL SOLID WASTE MANAGEMENT IN ACHIEVING PRIORITIZED SDGs IN PAKISTAN

Muhammad Shafiq

Sustainable Ecosystem Services Section, Environmental Biotechnology Laboratory (F4), Institute of Botany, University of the Punjab Lahore-54590 Pakistan

Corresponding Author Email: mshafiq.botany@pu.edu.pk

Keeping in view the key socio-economic drivers of municipal solid waste (MSW) management in the light of achieving sustainable development goals (SDGs being the National Development Agenda of Pakistan since Feb 16, 2016) viz. the circular economy, holistic to semi-holistic resource management, climate change, protection of human and environmental health; it is imperative that MSW management strategies must be developed that are indigenously adaptive over long term basis. One such approach is composting-based decentralized MSW management that could help in achieving SDG 2 from Priority-I; SDG 1, 5, 9, 11 and 17 from Priority-II; SDG 12, 13, and 15; as prioritized by the National Initiative for SDGs in Pakistan. The current study envisages the strengths, weaknesses, opportunities, and threats (SWOT) analysis of the composting-based decentralized MSW management in the light of each of the above given SDG in Priority-I, II, and III. Overall, composting-based decentralized MSW management could be adopted as environmental pollution prevention, control, and abatement strategy that could inherently create multiple tangible and intangible resource management prospects.

Keywords: Municipal Solid Waste Management, SWOT, SDGs, Abatement Strategy.

Abstract ID: ICSDG1558

DIVERSITY OF TOXIN PRODUCING MICROMYCETES ON DIFFERENT CEREAL SEEDS COLLECTED FROM LOCAL MARKETS IN PAKISTAN

S. Sarwar[1], Damn e Zahra[1*], Hajra Khalil[2]

[1]*Department of Botany, Lahore College for Woman University Lahore, Pakistan*

Institute of Botany, Punjab University, Lahore

*Corresponding Author Email: damanezahra786@gmail.com

Abstract

The use of seed material, free from pathogen is one of the basic conditions for obtaining healthy crops. If infected seed is used for sowing thus seed will cause diseases in crop and crop yields will be reduced considerably. The main aim of this study was to isolate and identify the fungal species infecting different cereal seeds (*Triticum aestivum, Hordeum vulgare, Pennisetum glaucum* and *Helianthus annuus*). The micromycetes spectrum determine from analyzed samples consists of variety of parasitic and saprophytic fungi which badly effects the seeds and their seedling as well. Species of *Fusarium solani, Fusarium oxysporum, Fusarium lateritium, Alternaria alternata, Aspergillus niger* and *Aspergillus fumigatus* were the most frequently isolated from *Triticum aestivum* cereal sample and some other species *Mucor mucedo, Cladosporium cladosporiodes* and *Ulocladium chartarum* were also isolated from other seed samples. Concludingly, it is highly recommended that seeds should be treated to eradicate such fungal contamination before sowing. Seed sterilization techniques should be promoted for healthy seeds and ultimately disease-free healthy crops.

Keywords: Aflatoxins, Food Technology, Fungal Pathogen.

Abstract ID: ICSDG59

HYPERICUM OLYMPICUM L. EXTRACTS POSSESS ANTIBACTERIAL ACTIVITY AGAINST HOSPITAL ISOLATES OF MRSA

Zeb Saddiqe[1,2*], Ismat Naeem[3], Yasir Cheema[4,5]

[1]*Department of Botany, Lahore College for Women University, Lahore, Pakistan*

[2]*Department of Botany, Govt. Queen Mary Graduate College, Lahore, Pakistan*

[3]*Department of Chemistry, Lahore College for Women University, Lahore, Pakistan*

[4]*Department of Microbiology, University of Health Sciences, Lahore, Pakistan*

[5]*Quadram Institute Bioscience, Norwich Research Park, NR4 7UQ*

*Corresponding Author's Email: zeb_rukhsana@yahoo.com

Abstract

Methicillin-resistant *Staphylococcus aureus* (MRSA) is the major cause of hospital- and community-acquired infections both in developed as well as developing countries. WHO has placed MRSA in high priority category of pathogens for which new antibiotics are to be developed. Novel plant-derived natural drugs are need of the day to combat emerging resistance against antibiotics. In search of natural anti-staphylococcal agents *in vitro* antibacterial activity of different solvent extracts of aerial parts of *Hypericum olympicum* L. from UK was tested against thirty hospital isolates of MRSA. The antibacterial activity of the extracts was tested using agar well-diffusion method for preliminary screening and agar dilution method for determination of minimum inhibitory concentrations (MIC). In agar dilution method the strongest anti-MRSA activity was exhibited by crude methanol extract with MIC value of 256 μg/mL (100% inhibition). *n*-Hexane and dichloromethane fractions had MIC value of 512 μg/mL (100% inhibition). Strong anti-MRSA activity of crude extract indicated synergistic effect of phytochemicals present in *H. olympicum* indicating their multi-targeted effect in inhibiting bacterial growth.

Keywords: Antibacterial activity, *Hypericum olympicum*, MRSA, *Staphylococcus aureus*

Abstract ID: ICSDG60

PHYTOCHEMICAL ANALYSIS AND FUNGISTATIC POTENTIAL OF *ACHYRANTHUS ASPERA* L. AGAINST *COLLETOTRICHUM GLOEOSPORIOIDES* PENZ

Faiza Anum[1], Kiran Sattar[1], Khajista Jabeen[1] and Sumera Iqbal[1]

[1]*Department of Botany, Lahore College for Women University, Lahore, Pakistan*

Corresponding author's Email: khajista_1@hotmail.com

Abstract

The present research work is designed to investigate the antifungal potential of leaves and stems extracts of *Achyranthus aspera* L. against anthracnose causing fungus *Colletotrichum gloeosporioides* Penz. In order to achieve this goal, methanolic extract of test plant was prepared to evaluate *in vitro* antifungal activity against the test fungus. The 25% concentration was found highly effective as leaves and stems of *A. aspera* caused 93% - 90% against the *C. gloeosporioides.* According to phytochemical analysis *A. aspera* leaves contain saponins, tannins, phlobatannins, alkaloids. *A. aspera* with highest antifungal potential was partitioned with four organic fractions and among them n-butanol fraction was found as most effective fraction against the test fungus. Butanolic fraction 20% and 25% reduced fungal biomass up to 55% and 91% respectively. Ethyl acetate fraction also had shown effective result. Six bioactive compounds were identified by GC-MS analysis of n-butanol fraction of *A. aspera*. Major constituents were n-hexadecanoic acid (16.76%), 1,2-benzenedicarboxylic acid, diisooctylester (17.99%), 9,12-octadecadienoic acid [Z,Z]- (18.63%), 9,12,15-octadecatrienoic acid [Z,Z,Z]- (18.89%) and 1,2- bnzenedicarboxylic acid, diisooctylester(19.42%).

Keywords: Anthracnose, Antifungal, Bioassay, Fractions,

Abstract ID: ICSDG61

ACHIEVING POLLUTION ABATEMENT OF TANNERY SOLID WASTE THROUGH BIOCHAR AT OPEN DUMPS – A HUGE THREAT TO RELATED SDGs

Aisha Nazir and Muhammad Shafiq

Applied Phytotechnologies for Environmental Sanitation
Environmental Biotechnology Laboratory (F4),
Institute of Botany, University of the Punjab Lahore-54590 Pakistan
*Corresponding author: aisha.botany@pu.edu.pk

Despite being a huge earner of foreign exchange in Pakistan, the tannery industry has its gross environmental footprints infringing the functionality of biotic and abiotic components of multiple ecosystems in the built environment. Tannery solid waste (TSW) is one such inevitable byproduct of the tannery industry being generated proportionately to the production of tanned leather for export. However, the generation and mismanagement of TSW compromises the true prospects of achieving the prioritized SDGs associated with industrial development in Pakistan. The current study describes the prospects of achieving pollution abatement of TSW through biochar adopted as heavy metal remediation strategy at TSW open dumps, which could potentially reduce threats of tannery industry to achievement of related SDGs. For this purpose, the TSW biochar was applied at TSW open dumps for promoting heavy metal remediation. Application of TSW biochar had increased the bioavailability of heavy metals for uptake by the hyperaccumulator plants while rendering growth promoting substances for the plants. Owing to currently existing challenges of MSW management in Pakistan, the TSW-biochar-based management at open dumps could help in abating the environmental pollution and thereby helping in reducing the environmental footprints of tanning industry.

Keywords: Pollution Abatement, Tannery Solid Waste, TSW-biochar-based management

Abstract ID: ICSDG62

BIOCHEMICAL PROFILE AND IN VITRO BIOLOGICAL ACTIVITIES OF DIFFERENT EXTRACT OF *FAGONIA ARABICA*

Sadia Bashir[1], Ammara Fatima[1*] and Nadia Ghani[1]

Department of Environmental Science, LCWU, Lahore
*Corresponding Author Email: ammara.fatima@lcwu.edu.pk

Plants are the beauty of nature and have great economic and medicinal importance throughout the world. Medicinal plants are an important therapeutic aid for various ailments. To check the medicinal importance of *Fagonia arabica* phytochemical analysis and medicinal significance of *Fagonia arabica* were performed on various extracts of *Fagonia arabica*. Qualitative and quantitative analysis were performed to check the presence and quantity of bioactive compounds in *Fagonia arabica*. Phytochemicals such as phenols, tannins, flavonoids, saponins, glycosides, steroids, terpenoids, and alkaloids were discovered in the plant extracts. It was observed from the result of antioxidant activity of *Fagonia arabica* with different extracts diethylene and ethanol show maximum percentage inhibition at 100ug/ml which was 97% in both. Antibacterial and ant-fungal activity was determined by disk diffusion method. The highest zones of inhibition were formed by positive control as well as benzene extracts against bacterial strains *Bacillus Thuringin* and *Pseudomonas Flourescens* the zones of inhibition observed with positive control and benzene were 23mm and 22mm respectively. Results of this study showed that *Fagonia arabica* plant have important bioactive compounds in it as well as it poses significant medicinal importance due to having antibacertail, anti-fungal,ant-inflamatoty, and anti-oxidant property in all different extracts. Because of these properties Fagonia arabica might have been used in several traditional medications.

Keywords: *Fagonia arabica,* Phytochemicals, Protein denaturation method, DPPH Scavenging method

Abstract ID: ICSDG63

EFFECTS OF GREEN SYNTHESIZED NANOFERTILIZERS ON SUSTAINABLE AGRICULTURE

Ayesha Tariq, Zaryab Khalid Sial*, Sumera Javed, Shabnum Shaheen, Farah Khan

Department of Botany, Lahore College for Women University, Lahore.

*Corresponding Author Email: zaryab.sial1@gmail.com

The world population rate increasing day by day hence the demand of food has increased in comparisons to its production. To overcome this demand of food and energy Food and Agriculture Organization (FAO) develops Sustainable Development Goals (SDG) in agriculture**.** In the present research, we investigated the role of nanofertilizers in agricultural field. For this purposes we have used nanofertilizers in the form of Copper (CuO) nanoparticles (NPs) synthesized from *Trigonella foenum-graecum* L. Which known as 'Methi' is a medicinal herb that belongs to family Fabaceae. Green synthesis of metal oxide nanoparticles by plants is a very cost-effective and environmental friendly method. CuO NPs prepared from the leaves of *Trigonella*. These NPs were characterized by UV-Visible, X-Ray Diffraction (XRD) and Fourier Transform Infrared Spectroscopy (FTIR). To check the fertility of agriculture we applied green synthesized copper NPs to new growing leaves of *T. foenum-graecum*. After 45 days of foliar spray of NPs the leaves harvested, shade dried and make a fine powder. After this metal content was checked Atomic Absorption Spectroscopy (AAS) and metabolomics analysis was done by Gas Chromatography-Mass Spectroscopy (GC-MS). The present study added information in the field of metabolomics and sustainable agriculture. It may help to improve nutritional value**,** yield production and novel metabolites for use in agriculture crops in the future.

Keywords: Green Synthesis, Nanofertilizer, Copper Nanoparticles, Atomic Absorption Spectroscopy, GC-MS.

Abstract ID: ICSDG64

SYNTHESIS AND CHARACTERIZATION OF CE DOPED COPPER OXIDE THIN FILMS

Zohra Nazir Kayani[(a)], Warda Chaudhry[(a)], Riffat Sagheer[(a)], Saira Riaz[(b)], Shahzad Naseem[(b)]

[(a)] Department of Physics, Lahore College for Women University, Lahore, Pakistan
[(b)] Centre of Excellence in Solid State Physics, University of the Punjab, Lahore, Pakistan
E-mail:zohrakayani@yahoo.com

Abstract

Copper oxide thin films doped with Ce (1-5 wt. %) were fabricated via sol-gel dip coating route for the first time. The influences of dopant concentration on structural and optical properties of copper oxide thin films annealed at 450oC have been analyzed using X-Ray diffractrometer (XRD) and Ultraviolet–visible-near infra red (UV-VIS_NIR) spectrophotometry. XRD studies disclosed the dual-phase of copper oxide (CuO-Cu_2O). Photocatalytic activity was found to increase with increase in cerium dopant percentage against methyl blue dye. Bactericidal effect of the undoped and Ce doped copper oxide was studied against four bacterial strains using agar well diffusion method. This work shows the potential of Ce doped copper oxide for wound dressings, bone implants and dental fillings.

Keywords: Ce; copper oxide; monoclinic; red shift; photocatalyst; antibiotic.

Abstract ID: ICSDG65

GENETIC VARIATIONS ARE SUSCEPTIBLE FACTOR FOR AGGRESSIVE BEHAVIOR AMONG CONVICTED CRIMINAL PRISONERS IN PUNJAB, PAKISTAN

Sadia Nawaz* and Tayyaba Fayyaz

University of veterinary and Animal Sciences, Lahore Pakistan
*Corresponding Author Email: sadia.nawaz@uvas.edu.pk, +92-3338028030

Abstract

Genetic behavior disorders are a burden for sustainable development. The causes, consequences and costs of behavioral diseases have implications for public health policy in all countries. Aggression is perceived as hostile, injurious, or destructive behavior often caused by frustration, which can be collective or individual. Genetic studies have associated several genes with aggression in humans. In several criminal studies, it has been reported the SNP in the *TPH2* gene responsible for aggressive behavior. In this study we recruited declared criminals by the court from the jails of Punjab an healthy control from the general population from Punjab ethnicity. The Buss and Perry aggression questionnaire was used to score the physical aggression level in study groups. The questionnaire comprises four scales: anger, hostility, physical aggression, and verbal aggression. The buccal swab and saliva samples of both convicted and control groups were collected. Sequencing was performed to analyze polymorphism. The calculated score for the control group was 19.2±6.21, and for the reported criminal was 28.2±8.314 recorded. Results concluded that variations in the *TPH2* gene could contribute to the low activity of the 5-HT system and result in physical aggressive behavior.

Keywords: Genetic behavior disorders, SNP, Polymorphism, *TPH2* gene, 5-HT system.

Abstract ID: ICSDG66

ENTOMOPATHOGENIC EFFICACY OF *ASPERGILLUS PARASITICUS* AGAINST A*EDES AEGYPTI* AND ITS NON-TARGET TESTING ON FINGERLING OF *HYPOPHTHALMICHTHYS MOLITRIX*

Amina Abrar[1], Zahra Asghar[1], Hina Chaudhry[1], and Salma Khalid[1]
[1]*Department of Environmental Science, Lahore College for Women University, Lahore.*

Abstract

Aspergillus parasiticus has a worldwide occurrence with high entomopathogenic efficacy against *Aedes aegypti*. However, assessment of pathogenic effects of entomopathogenic fungi on non-target organisms is required to evaluate its use as biocontrol agent. Aim of the present research is to study the larvicidal activity of the local strain of *A. parasiticus* (MK371710) against *Aedes aegypti* and its toxicity assessment against aquatic model organism *Hypophthalmichthys molitrix*. *A. parasiticus* was isolated from the soil of Jallo Park, Lahore. The larvicidal effect of *A. parasiticus* was evaluated against 4th instar larvae of *A. aegypti*. 100% mortality of larvae was observed after exposure to $1x10^7$ conidia/ml of fungal suspension after 72 hours post treatment. The LC_{50} value of *A. parsiticus* in 24 hours post treatment and 48 hours post treatment was recorded as $1.0x10^7$conidia/ml $2.99x10^5$conidia/ml respectively For the toxicity assessment fingerlings of *H. molitrix* were exposed to conidial suspensions of *A. parasiticus*. Eye pop (64%), fin hemorrhage (33%) and scale infection (30%) were the major morphological effects observed during the study. Results reveal that although *A. parasiticus* is highly pathogenic to dengue vector but also have significant effects on organisms other than insects and its application as biological control agent requires safety considerations.

Keywords: Entomopathogenic, Aspergillus parasiticus, biological control and Hypophthalmichthys molitrix.

Abstract ID: ICSDG67

DENDROCHRONOLOGICAL STUDIES OF *PINUS ROXBURGHII AND PINUS WALLICHIANA* FROM GHORA GALLI, MURREE

Nadeem-Ullah, Muneeb Akram Ghumman, Mahak Ayyaz
Department of Botany, University of Central Punjab, Lahore.
Corresponding author email: nadeem.ullah@ucp.edu.pk

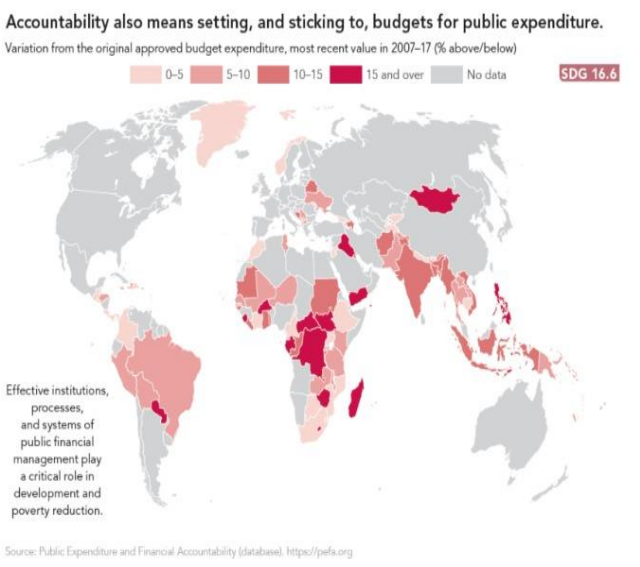
Abstract

The present study described the dendrochronological studies of *Pinus roxburghii* and *Pinus wallichiana* growing in Ghora Galli, Murree. Study area was subdivided into roadside and away from roadside. It was found that along road side the maximum diameter, age, growth rate and height of *Pinus roxburghii* were 71 inches, 304 age, 0.277 and 97 feet respectively. Similarly maximum diameter, age, growth rate and height of *Pinus roxburghii* growing away from road side were 93.5 inches, 328 years, 0.358 inches/year and 99 feet height respectively. Maximum DBH, age, growth rate and height of *Pinus wallichiana* growing along the roadside was 63 inches, 223 years, 0.392 inches/year and 83 feet height respectively. While, studying the trees of *Pinus wallichiana* growing away from road side it was found that the maximum DBH, age, growth rate and height were 56.5 inches, 158 years, 0.437 years/inches and 62 respectively. It was also found that growth rate of trees growing away from the road was greater than those growing along the road. It was found a significant correlation between growth rate and height While studying the correlation between height and DBH and growth rate, it was found that there was no any significant correlation but growth rate and height had a significant relationship.

Keywords: Dendrochronology *Pinus roxburghii, Pinus wallichiana.*


Goal 16 - Peace, Justice & Strong Institutions
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
68
GUEST ARTICLES
58
POLICY BRIEFS
8
GENERATION 2030
1778
NEWS
407
EVENTS


PE CE
A


Accountability also means setting, and sticking to, budgets for public expenditure.
Variation from the original approved budget expenditure, most recent value in 2007–17 (% above/below)
0–5
5–10
10–15
15 and over
No data
SDG 16.6
Effective institutions, processes, and systems of public financial management play a critical role in development and poverty reduction.
Source: Public Expenditure and Financial Accountability (database). https://pefa.org


16
PEACE, JUSTICE AND STRONG INSTITUTIONS

SDG16 PEACE/JUSTICE AND STRONG INSTITUTION

SCIENTIFIC CHAIR PROFILE:
SCIENTIFIC CHAIR 1

Name: Prof. Dr. Syda Faleeha Zahra Kazmi

Qualification: PhD, GC University, Lahore

Designation: Chairperson / Professor

Department: Persian

Faculty: Islamic and Oriental Learning

University: LCWU

Contribution in Research and Academics:

Prof. Dr.S.Faleeha Zahra Kazmi is currently working as Chairperson/Professor Department of Persian, Lahore College for Women University Lahore Pakistan.She is the founding Chairperson of the Persian Department .She has produced number of books and research papers in national and international journals.She is most cited resaerch scholar in Google Academia(2020). She has served as a reviewer for various International and national research journals and awarded national and international projects

Specific SDG and its role in Pakistan development and globally:

SDG 16 “PROMOTING PEACE THROUGH LANGUAGE AND CULTURE:

Language means of communication and the medium of instruction. Its also reflects culture, enhancement of peace and conflict resolution in any society. Language and culture also used for regional enlightenment and addressing problems in the society.

The role of language for peace and conflict resolution could only be appreciated when we recognize that language being an integral part of people’s culture. Since it is an indisputable fact that language is the key of all human activities, and language and culture are the main mediums of explaining human socio-economic activities. It becomes imperative to accept that language and culture are the instrument for peace and conflict resolution in societies. Having too many languages and cultures and diverse dialects within a nation can affect mutual co-existence. Peace and development only accrue in an environment where people’s right and freedom are respected. Language and culture generally perform lot of functions in any community. They determine the co-existence and peace in a society.

Language and culture are the totality of human existence. They are mediums of communication. Language and culture when appropriately used promotes peace and enhances social development.

SCIENTIFIC CHAIR 2
Name: Dr. Shabnam Gul

Qualification: PhD, Lahore College for Women University, Lahore
Designation: Incharge
Department: Internation al Relations Department
Faculty: Faculty of Arts and Social Sciences
University: LCWU.

Contribution in Research and Academics: **Dr. Shabnam Gul** is currently working as Incharge/Assistant Professor Department of International Relations, Lahore College for Women University Lahore Pakistan. She completed her PhD from Lahore College for Women University, Lahore in 2020. She has produced number of research papers in national and international journals. She has more than 20 years teaching and administrative experience at university level. She started her teaching career at government College University, Lahore. After teaching there for four years she joined Lahore College for Women University, Lahore in 2005. Her area of Interest is Terrorism and Counter Terrorism, Conflict and Conflict Management, International Law, Regional Studies and International affairs. So far, she has supervised MS and PhD research thesis in International Relations and Political Science related fields.

Specific SDG and its role in Pakistan development and globally: Justice and peace are crucial to our species' survival. Justice and Peace encourage citizens to take individual and collective action as agents in society to promote world peace and justice. It aims to increase citizen accountability and participation on a local and global level. The most essential goal is to significantly limit illicit financial and arms flows by the year 2030, increase asset recovery and return, and combat all forms of organised crime.

ABSTRACT PRESENTATION:
ABSTRACT ID: ICSDG1601

Women in view of Islamic mystical poets

مقام زن از نظرعرفاو صوفیا

Dr. Faiza Kira
Assistant Professor LCWU, Lahore

چکیده:

زن در همه جهان اهمیت خاصی دارند. ولی اسلام زن را بیشتر اهمیت می دهد. و حقوق ایشان بیشتر از مرد هست.اهمیت زن هر مذهب وملت و قوم قبول می کند.از نظر اسلام وقرآن و حدیث و شیوه اهل بیت مقام زن خیلی بالاتر است.زن را به هیچ وقت و به هیچ عنوان کمتر از مرد ندانسته است.در مقاله حاضر ما از نظر عرفا و صوفیا مانند مولانا روم،سنایی،عطار،و جامی اهمیت زن را توضیح می دهیم و نتیجه میگیریم که زن در تصوف و عرفان اسلامی چه جایگاه و چه ارزشی دارد.

واژگان کلیدی: زن،کلام صوفیاوعرفاء، مانند مولانا روم،سنایی،عطار،جامی

ABSTRACT ID: ICSDG1602

Divine Love: Humanism and Coexistence in the Ghazliyet of Diwan-e-Meer Janullah Shah Rizvi

Dr. Saira Abdul Quddus

Visiting Faculty of LCWU, Lahore

Abstract:

The literature explains the most exciting expression of humanity and coexistence. Because the earth is the cradle of humanity, but humankind cannot stay in the cradle forever. From all the pillars supporting human existence, humanity and coexistence are primary. Love is the expression of someone's affection and happiness towards another individual. This is also how you show your feelings in your behavior towards others. True love is expressed without any expectations of mutual respect. Similarly, humanity is the human race, which includes everyone on earth. It's also a word for the qualities that make us human, such as the ability to love and have compassion, be creative, and not be a robot or alien. Coexistence is the underlying law of the universe. It is the very basis of existential truth. We live so we can learn to coexist; we coexist to learn to live. It is the highest principle about each and element; we can it's the essence of the universe. Mir was a preacher of truth, love, unity, humanity, and sacrifice for a greater cause. This research tries to explore the concept of humanism and coexistence of Ghazaliyat Mir (Mir's Poetry), which is the core part of his writing.

Keywords: Coexistence and Humanism

ABSTRACT ID: ICSDG1603

Study of aesthetics in Rumi's Poetry
بررسی زیبا شناسی در اشعار مولانا رومی

Dr. Maria Umer
Lecturer of LCWU, Lahore

چکیده:
علم زیباشناسی قدمت طولانی دارد و اولین بار در حوزه فلسفه و تفکر فلسفی مورد استفاده قرار گرفت.و امروزه در علوم ادبی جایگاه ویژه ای پیدا کرده است . چرا که یکی از مولفه های مهم در بیان معانی و چرایی و چگونگی آن است ضمن اینکه رعایت نکات زیبایی شناسی در متون نظم نثر بر میزان تاثیرگذاری مفاهیم ادبی بر خوانندگان و شنوندگان بسیار مورد توجه است. سرایندگان زبان پارسی برای جلب و جذب بیشتر خوانندگان اشعار خود کوشیدند تا در فرم آرایه های جدید و بدیع از نشانه های زیبا شناسی به بهترین شکل استفاده نمایند.

.

مولانا جلال الذین رومی چهره ای شاخص از شعرای قرن هشتم هجری قمری است که اشعار او از منظر زیبایی شناسی بسیار غنی است. عناصر زیبایی شناسی در اشعار مولوی را می توان از چند منظر مورد توجه قرار داد که از مهمترین آنها عبارتند از : بیان عواطف، تخیل ، زبان و محتوی . در اشعار مولوی نه تنها کلمات آهنگین و با موسیقی موزون را می توان در در سطح واژه و ابیات دید بلکه نسبت معنا داری نیز در بیان احساس درونی و تخیل با واژگان انتخابی وجود دارد ، ضمن اینکه در موارد زیادی همین نسبت را درپیام اشعار دیده میشود . البته گاهی ضرورت دارد در حفظ و انسجام محتوی و پیام از نسبت های مترادف و یا متضاد استفاده شود. در این مقاله با روش توصیفی – تحلیلی کوشش می شود تا با ملاحظه عناصر زیبایی شناسی گزیده ای از اشعار مولانا را مورد بررسی قرار دهیم.

ABSTRACT ID: ICSDG1604

Mysticism in Kashful Mehjoob
تصوف در کشف المحجوب

Dr. Sara Bukhari
Assistant Professor LCWU, Lahore

چکیده:
نابغہ روزگار و تاجدارِ دبستان تصوف، سلطان طریقت، مبلغ اسلام مولف شہرہ آفاق کتاب "کشف المحجوب" سید علی ہجویری کہ در اوایل قرن پنجم ہجری در ھجویر متصل بہ شہر غزنی چشم بہ جہان گشود و بہ لقب "داتا گنج بخش" یعنی (بخشندہ خزانہ ھا) معروف است۔حضرت علی ہجویری اولین مرد صوفی شبہ قارہ بے شمار می رود۔ کشف المحجوب اثر داتا گنج بخش نخستین کتاب تصوف در شبہ قارہ است موضوع اثر بزرگ وی "تصوف و عرفان" است۔ ایشان این کتاب بہ خواہش و پاسخ پرسش ھای مرید خویش "ابوسعید" نوشت۔این اثر مشتمل بر سہ بخش است۔ در این اثر خود علی ہجویری مردم را برای صلح و امن و آشتی دعوت می کند۔

وازہ کلیدی: تصوف، سلطان طریقت، مبلغ اسلام، کشف المحجوب، سید علی ہجویری، شبہ قارہ

ABSTRACT ID: ICSDG1605

Massage of Peace in Rahat ul Aashiqeen by Khuwaja Muhammad Suleman Taunswi

درس صلح و آشتی در راحت العاشقین از خواجه محمد سیلمان تونسوی رحمۃ اللہ علیہ (با تکیه بر نسخه دست نویس از میاں محمد درزی)

Rimsha Ali
Student of PH.D

چکیده:
خواجہ محمد سلیمان تونسوی رحمۃ اللہ علیہ یکی از خلفاء کبار و نامدار چهره شناسہ از قرن نوزدهم بودـوی عارف کامل ،صوفی با صفا،زاهد بی ریا و عالم مثال بود. در زبان فارسی اشعار پر معنی و بدیع هم سرود و مناجات و نعت و رباعیات و ابیات سروده‌ـوی در تذکره ها دیده می شودـآثار کہ ننوشته ولی ملفوظات وی و ارشادات پر ارزش وی از مریدان و خلفای جمع آمدی شده‌ـشهره عبادت،ریاضت،کشف و کرامات وی از شرق تا بہ غرب رسیده بودـنسخہ راحت العاشقین از میاں محمد درزی کہ مشتمل بر احوال و مناقب و تعلیمات خواجہ محمد سلیمان تونسوی می باشد.یکی از مهم ترین آثار وی می باشد که درین آثار وی در باب هشتم دربیان احوال رویای الجناب و حکام از مومنان و نیز از کافران اهمیت اتحاد و صلح و آشتی بین اتحاد مسلمین تاکید کرده ـدرین مقالہ پژوهش بر معرفی نسخہ این تاکید صلح بین مسلمانان و غیر مسلمان ازین صوفی می باشد و از تحقیق بر این پژوهش می توان مردم را ازین آقای درویش منش صوفی آشنا کرد.

واژگان کلیدی: خواجہ محمد سلیمان تونسوی رحمۃ اللہ علیہ ،اشتی ،صلح،نسخہ خطی،معرفی مناقب،احوال،صوفی

ABSTRACT ID: ICSDG1606

Research in the Mystical Grounds of Fazil Nazari's Lyrics
بررسی بن مایه های عرفانی در غزل فاضل نظری با تکیه بر سه گانه غزلیات

Bisma Ikram
Student of PH.D

چکیده:
اندیشه و جهان بینی عرفانی از جمله میراثی است که در غزال که در غزل نو کلاسیک معاصر نادیده گرفته شد.بیشترین اهتمام شاعران در این دوران به نو آوری های زبانی و ساختکاری غزل و ساز کار ساختن آن با مضامین مرتبط با زندگی روزمره محدود شده است ..در چنین شرایطی رویکرد عارفانه شاعری چون فاضل نظری و بسامد چشمگیر بن مایه های عرفانی در آثارش ، می تواند سر آغاز جریانی به نام «غزل نو کلاسیک عافانه» باشد، که نقطه عطفی در شعر کلاسیک معاصر خواهد بود
با بررسی مفاهیم عرفانی در غزل فاضل نظری بیشترین بسامد، ذیل عناوینی مشهود است که عبارتند از: سلوک و وادی های آن ، اندیشه های. عرفانی ، تاویل و تفسیر برخی از آیات و احادیشع رایج در مبانی عرفان اسلامی ،اندیشه های عرفانی ،اعتقادات شیعی و عرفانی ، غربت و اسارت روح در عالم جسم ،رویکرد عرفانی به هبوط و مرگ.
براین اساس غزل های فاضل نظری ، غزل محتوا گر او متمرکز بر انکار عرفان ارزیابی می شود.
واژگان کلیدی: بن مایه های عرفانی ،غزل نو کلاسیک ،فاضل نظری ، مجموعه شعر سه گانه

ABSTRACT ID: ICSDG1607

War and peace in Mystic Teachings
جنگ و آشتی در آموزه های عرفانی

Hafiza Zainab Khalid
Student of MS

چکیده:
عرفان جنگ و صلح را بخشی از صفات فطری انسان می داند زیرا انسان متشکل از دوبعد متضاد جسم و روح یا خاکی و افلاکی است و اگر جنگی هم باشد جنگ با خود و شکستن نیروهای اهریمنی بر جنگ بیرونی و غلبه بر سپاه شیطان مقدم است. عارفان مسلمان، آشتی و صلح با همه حتی ناهمکیشان را سرلوحه آموزه های خویش قرار داده اند. آنها مدارا و رفق را مقدمه ی صلح و صلح را برطرف کنندهی جنگ میدانند چون با رفق و مدارا میتوان از بروز نزاع جلوگیری کرد.
سلوک عملی صوفیه با مردم، سازگاری، مدارا و تحمل ایذا و اذیت آنان است و در آموزه های آنان به غایت مهم دانسته شده است. برای جلوگیری از وقوع هر نوع جنگ و کشمکش، باید صلح را پیش گرفت. چون صلح نه تنها از جنگ پیشگیری می کند بلکه برطرف کننده آن نیز هست. یکی از زیباترین جلوه های صلح در تعابیر عرفانی، آشتی با معشوق است. یکی دیگر از آداب خانقاه نشینان، ماجرا کردن یا ماجرا گفتن بود و باعث میشد نقاری بین اهل خانقاه باقی نماند. از جذابترین جنگ ها به خصوص از مشرب عرفا جنگ هفتاد و دو ملت است. تعبیر جنگ هفتاد و دو ملت در آموزه های عرفانی صرفا به مفهوم نزاع فرقه ای و لزوما کشمکش مذهبی نیست. از این دیدگاه حتی نزاع های این جهانی و ظاهری نیز اعتباری است. آنها حضور عارفان واصل و انسان های کامل را لطف خدا و سازنده صلح و آرامش و می دانستند.

واژگان کلیدی: جنگ؛ آشتی؛ عرفان؛ رفق؛ مدارا؛ ماجر

ABSTRACT ID: ICSDG1608

Teaching of Islamic mysticism friendship brotherhood & oneness

تعالیم عرفان اسلامی: دوستی، برادری و وحدت

Hafiza Tasmia Tariq
Student of MS

چکیده:
بخش بزرگی از ادبیات فارسی را ادبیات عرفانی تشکیل می دهد، این بخش از ادبیات مشحون از تعالیم اخلاقی است. مفهوم کلی تعالیم ادیان اخلاق است، چنان که رسول اکرم(ص) فرمود: «آنی بعثت لاتم مکارم الاخلاق» (همانان من برای تکمیل مکارم اخلاق برانگیخته شدم). أن حضرت علم اخلاق را کلید بهشت معرفی کرد: «لایدخل الجنه إلا حسن اخلاق» (وارد بهشت نمی شوید مگر افراد نیکو اخلاق)، از تامل در این احادیث نتیجه گرفته می شود که سعادت دنیوی و اخروی انسان رهین علم اخلاق است. در کلیه ادیان پایه اخلاق بر خودشناسی و کشف روابط بین خود و آنچه خارج از ذات انسان است، قرار داده اند. عارفان در خودشناسی با شناخت قوای نفس به تربیت آن پرداخته، با تهذیب از رذایل و رسیدن به مقامات که همان ملکه های عالی اخلاقی است، درون خود را گلستان کرده اند و این همان اقلیم عشق است. در این اقلیم همه ی هستی پرتوی از حق تعالی است و دوست داشتنی است از همین منظر است که شیخ اجل؛ سعدی شیرازی به همه هستی

عشق می ورزد:

به جهان خرم از آنم که جهان خرم از اوست عاشقم بر همه عالم که همه عالم از اوست

عارفان نتنها به خودسازی بلکه با اشاعه فرهنگ خداخواهی در خلال متون عارفانه، انسانها را به دوستی، محبت، اخوت و وحدت ترغیب کرده اند. این قوم نه تنها کوشیده اند با مردمان زندگی برادرانه و توأم با ایثار داشته باشند، بلکه با دلی که به صلح کل رسیده است به همه ی هستی که پرتوی از محبوب است عشق می ورزند.

واژگان کلیدی: تعالیم عرفان اسلامی، دوستی، برادری، وحدت.

ABSTRACT ID: ICSDG1609

Study of role of mysticism in creating peaceful coexistence

بررسی نقش عرفان در ایجاد صلح و هم زیستی مسالمت آمیز

Nimra Farooq
Student of MS

چکیده:
انسان بطور طبيعي و ذاتي طالب آرامش و رفاه است،تشنت و نابسامانی را مخل خوشي و رضايتش مي داند. او براي بهرمندي بيشتر از مواهب حيات و رسيدن به كمال، هم به امنيت بيرون نيازمند است و هم به آرامش درون. دين الهی كه چراغ هدايت و صراط مستقيم نيل به فلاح و رستگاری است براي تأمين آرامش مطلوب در هر دو بعد دروني و بيروني اهميت زيادي قائل است. اين مسئله بويژه در بعد عرفاني اسلام برجستگی خاصی دارد. از اصول مسلم تعاليم اسلامي توجه جدي به اهميت صلح و همزيستی مسالت آميز در بين انسان هاست و يكی از اهداف بنيادين اسلام تحقق بخشيدن به اين ارزش الهی و انسانی است. دين اسلام علاوه بر تعليمات ظاهري، ابعادي باطنی نيز دارد كه به آن عرفان می گويند. عرفان يا تصوف جزيانی است كه به بعد باطنی اسلام توجه دارد. اين آموزه در عرفان به صورتي جدي تر و عميق تر مورد لحاظ قرار گرفته است. عرفان اسلامي براي استقرار صلح تنها به اقدامات سطحی و روبنائي اكتفا نمي كند، بلكه حاوی عناصري است كه توجه به آنها ريشه های بی عدالتی،خشونت و درگيری غير عادلانه را می خشكاند و زمينه هاي رواني و اجتماعي لازم براي استقرار صلح و محبت را تحقق می بخشد. برخی از اين عناصر عبارتند از: رحمت واسعه الهي، عدالت، عشق و محبت، عبوديت و تهذيب نفس. با خودسازی (دروني سازي) و نهادينه كردن ارزش های متعالی می توان به استقرار صلح حقيقي و پايدار دست يافت.

واژگان کلیدی: عرفان، تصوف، صلح، جنگ، رحمت، عدالت، عشق، تهذیب نفس، عبودیت.

ABSTRACT ID: ICSDG1610

Manavi Wali Ram, following of Rumi's Mysticism in subcontinent

مثنوی ولی رام ، تلالو غزنوی و سلوک مولانا در سرزمین شبہ قارہ

Syeda Sana Gillani
Student of PH.D

چکیدہ :
مولانا جلال الدین رومی کی عظیم شخصیت اور شہرت صدیوں سے لے کر آج تک وسعت کی بلندیوں پر پہچنی ہوئی ہے ۔ یہاں تک کہ شعر و ادب کے میدان میں بہت سے نامور لوگوں نے ان کے معجزاتی طرز عمل کی پیروی کر کے دنیائے علم و عرفان میں قدم استوار کئے اور ان کے اسلوب اور تناظر میں شاندار اور منفرد تخلیقات کیں۔ ادب اور تصوف کے میدان ان سربرآوردہ شعراء میں بنوالی رائے نامی ایک ہندو مصنف ہے جس کا نام ولی رام ہے جوہندوستان میں شاہ جہاں کے دربار مصنفین میں سے ایک ہے مولانا رومی روحانی مثنوی سساور مثنوی کے اسلوب کی پیروی کرتےہوئے انہوں نے ایک خوبصورت اور دپرپا تخلیق کی جس میں انہوں نے حق اور راہ تصوف کے حصول اس کی تربیت ، اظہار اور اس راستے پر عمل کی روش بیان کی یہاں تک کہ سالک راہ حق پر چلتےہوئے فنا فی اللہ ہوجائے
واژگانِ کلیدی: عرفان و سلوک، مولانا، مثنوی، شبہ قارہ، ولی رام

ABSTRACT ID: ICSDG1611

Message of peace & in the spitual aspect of Saadi and Hafiz

پیام صلح و انسان دوستی از جهت عرفان در اشعار سعدی و حافظ

Maham Imran
Student of MS

چکیده:
آئمه، بزرگان دین و دنیا، عرفاء صوفیا، شعراء و ادباء در کلام خود کم و بیش پیام صلح و انسان دوستی
می دهند. اما سعدی و حافظ در کلام خود پیام صلح و انسان دوستی بیشتر اشاره می کنند . بنا بر این مقاله حاضر نگاهی بر اشعار سعدی و حافظ به دلایل مختلف از نگاه عرفانی، انسانی و درک جهان بینی و گستردهی فراتر از نژاد، ملیت، مذهب به مقوله صلح و آشتی و انسان دوستی می باشد. این هر دو شاعر، بخشش، بلند نظری، آزاد اندیشی، عیب پوشی... برای صلح و دوستی لازم می دانند.

واژگان کلیدی: عرفان، صلح، انسان دوستی، سعدی ، حافظ.

ABSTRACT ID: ICSDG1612

Peace & Harmony in View of the Book "Tassawuf Dar Islam (Mysticism in Islam by Jalal-ud-Din Humai

صلح واتشی از دیدگاه جلال الدین همایی تکیه بر کتاب تصوف(قرن دوم هجری تا ۸ هجری)

Dr. Zarnosh Mushtaq
Ph.D Scholar Imam Khumini International University, Iran

چکیده:
جلال الدین همایی یکی از معروفترین استاد بزرگ در حوضه ادبیات و گرایش تصوف و عرفان می باشد.
بعد از ۴۰ سال پژوهش در حوضه عرفان کتابی مفصل که بر تصوف نوشته آغاز تصوف قرن دوم و اولین کسانی که اسم صوفی تامنده می شود ابوالقاسم بود .
و اینکه چیطور تصوف اوج گرفته و باعث صلح و آشتی بین مردم اون قرن و قرن بعد می شود .و در کتاب خودش تعریف صوفی میشنویسه «صوفی کسانی هست که نزدیک خدا می باشد». وچیطور صوفی صلح و آرامش شیست اوضاع سیاسی و اجتماعی برقرار می کرد .
واژگان کلیدی: صوفی،جلال الدین همای،قرت دوم ،صلح،ابوالهاشم،تصوف در اسلام

ABSTRACT ID: ICSDG1613

"Seemurgh" in the View of Persian Poets
نقش سیمرغ از منظر شاعران فارسی

Dr.Hira Gilani
Former Student of Persian Department
Vice Principle, The Educators School, LHR

چکیده:
سیمرغ نام یک پرندۀ اسطوره ای- افسانه ای اوستایی و ایرانی است- شاید بتوان سیمرغ را از مهم ترین نماد افسانه ای در ادبیات پارسی بر شمرد- نام سیمرغ از دو جزء تشکیل شده است: سی و مرغ- چنانکه اشاره شد از اساطیر کلیدی ایرانی است که نه تنها در بیشتر متون پهلوی و در شاهنامه و بسیاری از متون فارسی مثل منطق الطیر و آثار مولانا نیز کاربرد و نقش معنی داری دارد- از میان فارسی زبان ها کمتر کسانی هستند که آشنایی با افسانۀ سیمرغ نداشته باشد- بنا بر این حضور سیمرغ محدود به شاهنامه نمی شود بلکه پس از شاهنامه کتاب های دیگری نیز در ادبیات فارسی هست که ذکر سیمرغ دارند- در این مقاله سیمرغ از منظر شاعران فارسی بررسی می شود-

واژه های کلیدی: عرفان، زبان پهلوی، ادبیات فارسی، سیمرغ، شاعرانِ فارسی-

ABSTRACT ID: ICSDG1614

Role of mysticism in oneness of religions

نقش عرفان در وحدت ادیان

Sonia Yaseen
Student of MS

چکیده:
این پژوهش،مقدمه ای است بر" نقش عرفان در وحدت ادیان" دین،فطري بشر وبخشی از اعتقادات لاینفك وجود اوست و آثار عرفاني،نمك ادبیات ایرانی- اسلامی بلکه ادبیات جهان است . عرفا،داعیان عشق به خدا و محبت به انسان بوده،رسالت پیامبران و فراتر از آن نوع بشر را رستگاري در دنیاي مادي و سراي سرمدي دانسته،کلیه ادیان را پرتوی از خورشید وجود الهی می شمارند؛ لذا آشنایی با افکار و اندیشه های آن سرمستان از می عرفان، آرام بخش جان و روان است. مطالعه این آرا بیانگر پیوند دیرینه انسان با چنین عقایدي است،اما از آنجا که زبان عرفان،رمزي است نه علمي و عقلي،براي پي بردن به سرانر و بواطن، باید اصطلاحات عرفانی را رمزگشایی کرد:

گفتن ناگفتنی ها مشکل است

نیست این کار زبان ،کار دل است

هدف نگارنده در تفرجی کوتاه در گلستان عرفان و ادب ایمان به این باورهاست که: جغرافیا، محنت را تهدید نمی کند، انسان ها همگی گوهرهاي ناب خلقتند، دین باید غمگسار مردمان باشد و غایت القصوای همه ادیان،مقصد واحدی است،پذیرفتن این مهم ،مؤندی است بر آنکه مکتب حیات بخش« عرفان» می تواند یگانه راه پایان دادن به تمام ستیزه ها و جدایی ها در جامعه براشوب جهانی باشد چرا که «عرفان»، خم وحدت» است.

آب دریا را اگـر تـوان کشیـد

هم به قدرتشنگی باید چشید"

واژگان کلیدی: نقش مرا وحدت ادیان، عشق به خدا ، محبت به انسان، جامعه بر اشوب جهانی

ABSTRACT ID: ICSDG1615

Glimpses of peace and harmony in malbonnaw behr.ul.Irfan

جلوه صلح و امن و آ شتی در مثنوی بحر العر فا ن

Tuba Rufa
Student of MS

چکیده:
جلوه صلح و امن و آشتی در مثنوی بحرالعرفان چکیده پیوند زبان فارسی با زبان هندی و در زبان کشمیری به زمان های دور باز میگردد . زبان و ادبیات فارسی همراه با توسعه فرهنگ و معارف اسلامی در کشمیر رواج یافت . این خطه نقش مهمی رشد و پیشرات زبان و ادبیات فارسی ایفا نموده است . از اینرو کشمیر را « ایران صغیر » نیز می نامند . دوره چکان (962- 992 ق) در این سرزمین از نظر پیشرفت زبان و ادبیات فارسی ، دور ه ترقی به شمار می رود . شاعران و نویسندگان و صوفیان بسیاریی از ایران به این دیار مهاجرت نمودند که در نتیجه فرهنگ و ادبیات فارسی در دربار فرمانروایان کشمیر جایگاه ویژه ای را از آن نمود . دربار چکان مهد شاعران و نویسندگان فارسی زبان قرار گرفت . در این عهد ، تعداد کثیری از مشایخ ، شاعران و صوفیان از جمله شیخ یعقوب صرفی ، شیخ حبیب الله کشمیری ، شیخ اکمل الدین مرزا محمد کامل بیگ بدخشی و غیره . باعث شهرت و سربلندی این پادشاهان بودند از همان بدو ورود زبان فارسی به کشمیر مثنوی های فارسی رونق شهرت خاصی یافتند . شیخ یعقوب صرفی (م 10023 هجری) از نامداران مثنوی سرای فارسی در کشمیر بشمار می رود وی دیوان اشعاری به زبان فارسی دارد . از دیگر مثنوی سرایان معروف کشمیر شیخ حبیب الله نوشهری و حضرت شیخ اکمل الدین مرزا محمد کامل بیگ بدخشی را میتوان نام برد که از پیروان سلسلة کبروبه بودند . مرزا اکمل الدین با سرودن مثنوی های عرفانی ، ادبیات فارسی را در این خطه به اوج رسانید . مجموعه مثنوی های وی را « بحرالعرفان » نام دارد . البته ناگفته نماند که وی متاثر از دو بزرگ مرد شاعر عرفان بنام های حضرت فریدالدین عطار نیشابوری و حضرت مولانا جلال الدین رومی بود . وی مثنوی بحر العرفان را از رشحات جام حضرت مولوی رومی دانسته ، چنانچه خود در یکی از شعرهای خود ذکر کرده است مرشد مرشدان جلال الدین تا ابد بر روان او تحسین از کتابیکه دارد آن استاد سالکان راست با خدا ارشاد معتقد هر که بر کتابش هست می دهد فتح باب راهش دست شرق و غرب است از نوایش مست صورتش را ببین چه معنی هست

واژگان کلیدی : کشمیر ، مثنوی های عرفانی ، مرزا اکمل الدین بیگ بدخشی ، بحرالعرفان

ABSTRACT ID: ICSDG1616

Message of Peace by Hazrat Nizam ud din view of Fawaid ul Fawaid

پیام امنیت حضرت خواجه نظام الدین اولیاء در تناظر فواید الفواد

Hira Siddiq
Student of MS

چکیده

هر که ما را یار نبود ایزد او را یار باد — وانکه ما را رنجه دارد راحتش بسیار باد
هر که او خاری نهد در راه ما از دشمنی — هر گلی کز باغ عمرش بشکفد بی خار باد

عرفان چیست و عارف کیست ؟ - جایگاه عرفان و عارف در ادبیات فارسی سرزمین شبه قاره پاک و هند از آن سرزمین های ارزشمند خوش بخت است که همیشه جایگاه و پایگاه علم و ادب و عرفان بوده و در طول تاریخ عرفاء و اولیاء کرام که اینجا ظهور کردند سهم شایسته ای در ترویج دین مبین اسلام داشته اند. و پیام امنیت و صلح هم زیستی در این سرزمین پخش کردند . سلطان المشایخ ، سلطان اولیاء حضرت خواجه نظام الدین اولیاء عارف و شاعر نامدار 725 هـ . ق درمیان این عرفا از آن شخصیت های وارسته ای هستند که از خود رها شدند و به خدا پیوسته اند. ملفوظات خواجه نظام الدین اولیاء که مبنی بر سخنان و گفتارهایی است که بعضی از مریدان وی نقل کرده اند، به نام فواید الفواد که امیر حسن علاء سجزی دهلوی آنرا را گردآوری و تالیف کرده است
از مهمترین ملفوظات سلسله صوفیان چشتیه محسوب می شود و از آن کتابی های ست که بسیار مورد استقبال مردم عامه بوده و هست .

کلید واژه : عرفان ، اسلام ، نظام الدین اولیاء ، ملفوظات ، فوائد الفواد ، صلح و همزیستی .

ABSTRACT PRESENTATION
Abstract ID: ICSDG1617

ACCOUNTABILITY FOR HUMAN DEVELOPMENT AND CHALLENGES OF GOOD GOVERNANCE TELESCOPING PAKISTAN

*Dr. Fauzia Ghani
Assistant Professor, Department of Political Science, Government College University, Lahore
*Corresponding Author's Email: fauziaghani@gcu.edu.pk, fauzia29ravian@yahoo.com

The challenges of good governance and human development in Pakistan have continued for last many years. Development of any society is intended to improve the living standard of inhabitants/citizens. Though, where there are challenges of governance and accountability, development is more likely to be an illusion. Even though, accountability and governance are not new phenomena but there is need to re-discover them. Past studies in Pakistan on the challenges of good governance and human development recognized corruption, poverty, lack of effective leadership, poor governance in terms of devising and implying governmental policies. The main objective of this research paper is to sightsee the relationship between accountability for the human development and the challenges of good governance in Pakistan,2007-2019.Findings are inferred through qualitative descriptive methodology while using secondary sources. It has been recognized that lack of accountability for ensuring human development to include the challenges of good governance are the major factors of , poor management inadequate resources distribution, corruption in public offices and insufficient funds to implement plans in Pakistan. This research paper, therefore endorses the need for good governance to induce socio-economic and political responsibilities in citizens which become accountable and admit their responsibilities transparently. Further, this paper suggests government and policy makers to play a creative role and to embrace a more practical method to the promotion of accountability mechanism, a resolute against corruption, proper management of resources, and allocation of more funds to the enactment of developments that could positively affect the lives of the people to empower them.

Keywords: Human, Development, Accountability, Good Governance, Challenge Corruption, Poverty

ABSTRACT PRESENTATION
Abstract ID: ICSDG1618

IMPACT OF TERRORISM ON ECONOMIC GROWTH OF PAKISTAN

*Atifa Arif [1] Asma Asghar [2]
Department of Economics, Lahore College for Women University, Lahore

Terrorism is the usage of threats to pursue religious, political or social goals. Terrorism, conflicts and violence destroy both physical and human capital and affect economic growth. The purpose of this study is to investigate the impact of terrorism on economic growth of Pakistan. In this study Ordinary Least Square (OLS) method is used. Time series data over the period of 1990-2019 have been used in this analysis. Gross Domestic Product (GDP) is a dependent variable. This study uses terrorism, inflation, FDI and Trade as independent variables. The results indicate positive impact of foreign direct investment on economic growth of Pakistan. Impact of trade and terrorism on economic growth is negative. This study helps the policy maker to devise policies to control the terrorism.

Keywords: GDP, FDI, Inflation, Terrorism, Trade.

ABSTRACT PRESENTATION
Abstract ID: ICSDG1619

TYPES OF REGIMES, INSTITUTIONAL IMBALANCES AND PROSPECTS OF DEMOCRATIC FEDERALISM IN PAKISTAN

*Dr. Sadia Mahmood Falki
Assistant Professor, Department of Political Science, Lahore College for Women University, Lahore
*Corresponding Author's Email: saida.falki@lcwu.edu.pk

In contemporary federal literature, federalism is viewed as a political system established on democratic rules, practices and institutions. This leads to the sharing of powers between central and provincial governments with a conflict resolution approach especially in multi-linguistic and ethnically diverse states. The Constitution of a federal country institutes the structure and intents of federal political system however it is the type of regime ruling a state which primarily manifests the politics of federalism. The study predominantly pronounces that due to repeated political shocks and breakdown, an acute centralization of political power and authoritarianism persisted in Pakistan which largely led to provincial autonomy and federal notion under a persistent stress. Owing to intervals of military led politics, federal and political institutions largely failed to devise federal solutions in response to the conflicts stemming out of ethnic and regional discrepancies in Pakistan. The research explicates that institutional imbalance during the civilian decade of 1988-1999 and extended role of military in politics from 1999-2008 augmented the federal challenges in Pakistan. This study identifies those problems of federalism are less associated with federal design and largely exist at operational level. These problems are mainly resultants of unitary discourses of Pakistani state and political despotism within federal governments, political organizations and state institutions. This research mainly focuses on type of regimes which existed in Pakistan and their relevance with their approach towards federalism. The underlying study assumes that democracy is not one of the key mandatory principles for working of federalism however democratic practices and institutions aid to overcome institutional imbalances and federal challenges.

Keywords: Federalism, Regime, Civil-military Relations, Democracy

ABSTRACT PRESENTATION
Abstract ID: ICSDG1620

ETHNIC CONFLICT AND HUMANITARIAN CRISIS: A CASE STUDY OF AFGHANISTAN BEFORE AND AFTER US WITHDRAWAL

*Dr. Adeel Irfan[1] Dr. Shabnam Gul[2]
[1]*Chairperson School of Peace and Counterterrorism, Minhaj University, Lahore*
[2]*Chairperson Department of International Relations, Lahore College for Women University, Lahore*
*Corresponding Author's Email: adeel.rao@homail.com, hodpct@mul.edu.pk [1]
shabnam.gul@lcwu.edu.pk [2]

Afghanistan's history is loaded with inter-ethnic conflicts that runs along the tribal lines. As a result of signed peace agreement, the US forces left the Afghanistan by creating political and social vacuum which provided opportunities to the various centrifugal forces to play their disastrous role in making a vulnerable state more unsafe and fragile. Political analysts claim that there are a lot of political and strategic implications of US withdrawal, but ethnic diversity is being underrated in Afghanistan. The present study analyzes the immortal ethnic rivalry of various tribes, its regional impact, and future perspectives in the current scenario of Afghanistan. In so doing, this study examines continuous escalating instability in Kabul and tries to build a causal relation between ethnic conflict and humanitarian crisis. Max Weber's theory of conflict is the theoretical base for a better understanding internal and external conflicts. The mishandling and isolation of Afghan politics, the accumulation of rough power in Afghanistan, poor management capabilities of TTA, and the Afghan economic crisis, could provide ready-made conditions for civil war or Sunni-Shia conflict supported by global & regional jihadi organizations. To save South Asia to become the next cauldron for the ethnic and sectarian conflict, an in-depth analysis of the root cause of internal conflict, its present and past forms in the region and its future tendency is crucial to counter it. Pakistan, Afghanistan, and Iran's think tanks, political leaders, and military policy advisers should join their shoulders to take adequate measures to reduce the internal rivalry and to contain the internal conflict to lead affairs of the Islamic region of South Asia.

Keywords: Ethnic Conflict, Al Qaeda, Islamic State, Taliban, Humanitarian Crisis, Afghanistan

ABSTRACT PRESENTATION
Abstract ID: ICSDG1621

CVE (COUNTER VOILENT EXTERMISM) IN SCHOOLS AND PUBLIC SECTORS UNIVERSITIES OF PAKISTAN

*Dr. Maryam Azam
Assistant Professor, Department of International Relations, Lahore College for Women University, Lahore
*Corresponding Author's Email: Maryam.azam@ymail.com

Pakistan is a diverse society in terms of ethnic, religious and linguistic identities. On one hand it has incorporated these distinct identities in the form of a federating unit and on the other hand rift between and within these attributes have created deep rooted gaps in the society. In this regard, the menace of extremism has been gradually entrenched in the roots of Pakistani culture. The roots of extremist thought and behavior prevailing in the society has resulted in increasing acts of violence and terrorist activities. Extremism can be referred to such a thought and ideology which negates the basic concepts of democratic culture, adaptability, law, tolerance and peaceful co-existence. Extremism refers to a state of advocating, engaging in, preparing, or otherwise supporting ideologically motivated or justified violence to further social, economic or political objectives. Mostly extremist believes homogenization agenda based on their own faith and thought, which at large is not accepted by the society. In this context, education sector is of immense importance in shaping and reshaping the ideological foundations of an individual and society as a whole. This study entails an observational and discourse analysis of extremist tendencies prevalent in the schools and public –sector universities of Pakistan. The study identifies managerial, content-oriented and campus-culture based attributes that needs to be addressed to curtail extremist manifestations at the university and school level.

Keywords: Counter Violent Extremism, Public-sector Universities, Schools, Pakistan, Co-existence

ABSTRACT PRESENTATION
Abstract ID: ICSDG1622

CHALLENGES OF HUMAN SECURITY IN INDIA: A CASE STUDY OF INDIAN-HELD KASHMIR

*Mrs. Nadia Zaheer Ali
Assistant Professor, Department of International Relations, Lahore College for Women University, Lahore
*Corresponding Author's Email: nadia.zaheer@lcwu.edu.pk

The Kashmir dispute is one of the unsolved bilateral disputes between India and Pakistan. This dispute has witnessed massive violation of human rights. The role of security of the human rights in the building of a stable and peaceful state is highly imperative. Over the seventy-four, Indian security forces deployed in Indian Held Kashmir (IHK) have committed massive human rights violations. The human rights defilements in Kashmir during the dispute made the International Community to take specific measures regarding the Human Rights protection. However, because of the dominant role of the Hindus, the disturbing situation of human security in Kashmir is not the new one and hence, the dispute is the outcome of a process of neglect, discrimination, suppression of the Kashmir identity and the pre-eminence of power centric approach held by India. Abrogation of Article 370 and 35A under BJP government have taken right of self-determination which Kashmiris have previously.

This study will focus on the condition of human security in IHK and the type of Human atrocities taken place in the region by the Indian Military Forces. It will also examine the unconstitutional act taken by current India government in Aug 2019.

Keywords: Human Rights, Human Security, India, Kashmir

ABSTRACT PRESENTATION
Abstract ID: ICSDG1623

CLIMATE CHANGE AND WATER SECURITY: FOCUS ON PAKISTAN

*Dr. Kinza Tasleem Chauhdry
Lecturer, Department of International Relations, Lahore College for Women University, Lahore
*Corresponding Author's Email: kinza.chauhdry@yahoo.com

Climate change has discernibly created imbalance in many bio systems. Among these systems, the water cycle has been conspicuously disrupted, as a primary fall-out of climate change. Water is the fundamental element of life. Accessing good quality of water has become the major concern of mankind. The poorly managed water resources are cause of catastrophes (floods, droughts, heavy rains, famine etc.). Water security, being one of the seven components of human security, has a direct impact on human life. This research draws attention towards the effects of climate change over water security, with a focus on Pakistan. It elaborates the challenges in achieving the sustainable development goal of clean drinking water and sanitation due to rampant climate change. The focus on the impacts of climate change on water security was undertaken at a pivotal time in the region. Notwithstanding the debate, as to whether these observed extremes are evidence of climate change, an investigation is needed regarding the extent to which the country is resilient to these shocks. High temperature, increasing salt-water imposition in coastal ranges, a growing threat of glacier lake outburst floods, more intense rainfall, and changes in monsoon and winter rainfall patterns are just some of the ways in which climate changes are affecting Pakistan's hydrologic resources. These risks amplify an already problematic situation, given that Pakistan is among the most water stressed countries in the world. Per capita access to surface and groundwater sources is expected to continue to decline in the decades ahead, driven largely by rapid population growth and urbanization. It is, thus, timely, and critical, to focus on climate risks for water security in the Pakistan, which are hindering the achievement of SDGs.

Keywords: Climate-change, Water Security, Population, Temperature, Hydrologic, Famine

ABSTRACT PRESENTATION
Abstract ID: ICSDG1624

GENDER INEQUALITY AND HUMAN DEVELOPMENT IN PAKISTAN: AN ANALYSIS

*Bushra Ghani
Department of International Relations, Lahore College for Women University, Lahore
*Corresponding Author's Email: bushlujain@gmail.com

The primary goal of this study is to look at the influence of human development on gender equality in Pakistan. Female labour force participation is utilised as a dependent variable to represent gender equality, while the UNDP's HDI is used as an independent variable, along with various additional control factors. After compiling the data, stationarity is tested using a unit root test and the enhanced dicky fuller test, which shows that all variables are stationary or integrated of order one. We employed cointegration analysis by tracing test and max-gain value to validate long-run relationship among the research variables when all variables were stationary of order one. According to cointegration analysis, the research variables have a long-run relationship, and the HDI contributes favourably and considerably to gender equality in Pakistan. In this context, policymakers may choose to concentrate on the human development index, which appears to be one of the most accurate indices of gender equality in Pakistan.

For this research paper, data has been collected through secondary sources. Further, it has been inferred that gender equality may increase the indices of human development.

Keywords: United Nations Development Programme**,** Human Development Index

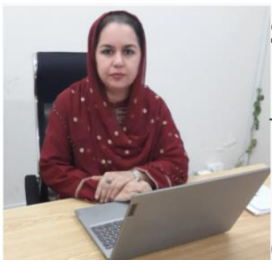

17 PARTNERSHIPS FOR THE GOALS
Goal 17 - Partnerships for the Goals
Strengthen the means of implementation and revitalize the global partnership for sustainable developmen
211
GUEST ARTICLES
216
POLICY BRIEFS
30
GENERATION 2030
4140
NEWS
1229
EVENTS


17 PARTNERSHIPS FOR THE GOALS


17 PARTNERSHIPS FOR THE GOALS
Strengthen the means of implementation and revitalize the global partnership for sustainable development

SDG17 PARTNERSHIP FOR GOALS

SCIENTIFIC CHAIR PROFILE:



Name: Dr. Saima Farhan

Qualification: PhD Computer Science

Designation: Associate Professor and Chairperson Department of Computer Science

Department: Computer Science

Faculty: Engineering and Technology

University: Lahore College for Women University

Contribution in Research and Academics: She has her expertise in the field of image processing and machine learning with a specific focus on medical image analysis. She has more than 35 research articles in ISI and Scopus indexed journals to her credit and has supervised more than 30 MS and MPhil Theses. She has been a part of various research seminars, conferences, paper presentations and research articles review. She has demonstrated vast success in acquiring latest trends in technology and adopting new pedagogies.

Specific SDG and its role in Pakistan development and globally: Pakistan is facing challenge of imbalance trade, lack of foreign investments and domestic mobilization. To get benefit of all SDGs, Pakistan requires an accelerated implementation of SDG 17 in all dimensions. There is a dire need to improve domestic mobilization with the help of international development assistance, cooperation and promotion of technological transfer across the borders. Academia can play its efficient role in establishing partnerships with developed countries to gain benefit of their advancements. At the same time developed countries can be benefitted with the potential of human resources in developing countries. In this way, the vision of sustainable society and ultimately sustainable world can be achieved.

ABSTRACT PRESENTATION
ABSTRACT ID: ICSDG1701

COLLABORATIVE PLATFORM FOR PHYSIOLOGICAL WELLBEING THROUGH EMOTION RECOGNITION TO ACHIEVE HEALTHY AND SUSTAINABLE SOCIETY

Sidra Rafique*, Sabahat Ahmad, Fatima Anjum, Maria Saleemi,
Wajeeha Malik, Rabia Javed
Computer Science Department, Lahore College for Women University, Pakistan
*Corresponding Author's Email: sidra.rafique@lcwu.edu.pk

Psychological wellbeing is a critical area to develop and maintain a healthy and sustainable society. There are various dimensions of psychological wellbeing and not limited to human behavior, mental illness, stress, and anxiety etc. In recent years, research community has taken initiative to investigate human emotions for early diagnosis of emotional disorders and address them to avoid chronic illness. Human emotions are complex and to understand them advanced techniques are required which may precisely classify them particularly overlapping emotions which are challenging. To access precision in emotion recognition, physiological information may play a key role and can be acquired through advanced ubiquitous devices. If classified accurately, this information may be utilized by several fields such as healthcare, psychophysiology, crime prevention etc. Therefore, in this study, efforts are made to extract important nonlinear physiological features from physiological measurements to recognize and classify overlapping emotion especially fear and anger. This research facilitates health organizations, hospitals, and non-profit organizations around the globe to develop understanding of psychological behaviors of healthy/unhealthy subjects/patients and can be employed by practitioners for better diagnosis. With collaboration and partnership of various healthcare organizations and NGOs, the findings of this study may be fully utilized, and further

models may be developed. This may further facilitate in developing shared knowledgebase to facilitate diverse communities and societies. This research has wider implication and is aligned with sustainable development goal (SDG) 17 and associated SDGs such as SDG-3 and SDG-11.

Keywords: Emotion Recognition, Sustainable Development Goal-17, EEG, BVP, Machine Learning, Deep Learning

ABSTRACT ID: ICSDG1702

SMART SOLUTION TO ADDRESS NATURAL DISATERS THROUGH EARLY WARNINGS FOR CROSS BORDER SUSTAINABLE ENVIONMENT AND SOCIETY

Wajeeha Malik*, Fahima Tahir, Rabia Javed, Sidra Rafique
Computer Science Department, Lahore College for Women University, Pakistan
*Corresponding Author Email: wajeeha.malik5@gmail.com

Natural disaster is a phenomenon which may not be avoided however the effects may be contained through predictions and early warnings. In the presence of technology, smart solutions may be devised to facilitate governments, meteorological, agriculture and civil engineering departments to reduce the effects and avoid major catastrophe. Such solutions require large amount of data from diverse source to make efficient and effective predictions with high precision. For early warning system, weather predictions such as rainfalls, cloudburst, or predicting multiple temperature and cloud situations are critical especially rainfalls and cloudbursts which are considered more challenging as they result into outrageous disasters such as flash flooding. These disasters have direct impact on low-income countries where economy is highly dependent on agriculture, fishing, tourism, etc. Further, with limited resources, the reconstruction of infrastructures becomes a huge challenge and cause slow economic growth, degradation in quality of life, and in some case increase in crimes. Therefore, smart solutions with shared knowledge and transferable technologies may facilitate such countries to adopt proactive strategies to reduce the effects and attain some level of sustainability. The solution proposed in this research may be employed by weather departments, agriculture organizations and all other sectors that have direct relation with natural environment. Further, research outcomes may be transferred to wider community around the globe through effective collaboration and partnerships with organizations, NGOS and governmental bodies. The knowledge created through partnerships may facilitate in improving prediction models and achieve high precision. Finally, the research focuses on sustainable development goal (SDG) 17 and is also aligned with SDG-11, SDG-13 and SDG-15. The implications of this research are

global and highly effective to achieve sustainable economic and societal impacts.

Keywords: Big Data, Weather Forecasting, Meteorology Department, Rainfall Prediction.

ABSTRACT ID: ICSDG1703

A CROSS PLATFORM SKIN CANCER TREATMENT TECHNIQUE THROUGH COLLABORATION AND PARTNERSHIP OF HEALTHCARE PRACTITIONERS

Rabia Javed*, Attia Anis, Wajeeha Malik
Computer Science Department, Lahore College for Women University, Pakistan
*Corresponding Author Email: rabia_javeed888@yahoo.com

Skin cancer is a critical dermatological disease and is increasing rapidly around the globe with each passing year. To address this challenge, an early diagnosis may enable healthcare practitioners to save lives of millions and help patients to avoid expensive treatment required in later stages which may not be available to many communities. To provide early diagnosis, technology may play a crucial role by efficiently and effectively recognizing difference in skin types and by employing integrated knowledge of dermatologists having background in various countries. Therefore, in this research efforts are made to provide a cross platform skin cancer treatment solution through integration of knowledge from practitioners and employing that knowledge to devise advanced computational techniques for diagnosis. The outcomes of this research may open opportunities for health organizations, cancer research labs and healthcare centers to collaborate and utilize proposed technique for the wellbeing of their patients and society in general. Under sustainable development goal (SDG) 17, healthcare solution may be transferred to improve quality of health locally and globally through partnerships and collaborations. Further, the solution may be implemented in underprivileged communities through NGOs and facilitate patients to access early treatment with reduced cost. Therefore, this research is further aligned with SDG-10 and have direct relationship with SDG-3.

Keywords: Skin Cancer, Healthcare, SDG-17, Dermatological Disease, Partnership.

ABSTRACT ID: ICSDG1704

AGRICULTURE TRANSFORMATION THROUGH CROSS BORDERS TRANSFERABLE ADVANCED TECHNOLOGIES FOR SUSTAINABLE CROP PRODUCTION

Fatima Anjum*, Komal Bashir, Faria Kanwal, Ayesha Iqbal, Ayesha Afzaal
Department of Computer Science, Lahore college for Women University, Pakistan
*Corresponding Author's Email: fatima.anjum@lcwu.edu.pk

Agricultural reforms are critical to address food insecurities with increasing population worldwide. This is particularly important for the countries having agri-economies. To improve agricultural production, integration of precision and robotics technologies in agricultural practices may transform this area and increase economic growth. At present various solutions are being proposed by research community in academia and industry to facilitate farmers in field activities. Among proposed solutions, spraying is very critical as pesticides not only effect crop health, but they also contribute towards low crop yield which ultimately effects farm revenue. However, spraying without precision may cause problem of over spraying or leaving plants without spray due to dense vegetation. To address this challenge, efforts are made in this research to develop a solution that can spray accurately on pests without harming nearby crops. The proposed technology recognizes individual insect infested plant and process the image to guide the robot to precisely spray the recognized area. The research outcomes may facilitate in improving crop yield and farm productivity. This technology may be commercialized and facilitate farm organizations, or the departments associated with crop production. Further, proposed solution may be produced at low cost through partnerships between governmental organizations, agricultural research institutes, and NOGs working on wellbeing of the farmers particularly in developing countries to achieve sustainability in agricultural produces. The research is aligned with sustainability development goal (SDG) 17 by focusing on technology transfer through collaboration and partnership, and also focuses on other SDGs such as SDG-2 and SDG-15.

Keywords: E-agriculture, Precision Agriculture, Robotics, SDG-17

ABSTRACT ID: ICSDG1705

AN EFFICIENT, EFFECTIVE AND TRANSFERABLE UBIQUITOUS PLATFORM FOR WOMEN AND CHILD SAFETY TO ENABLE SECURE AND SUSTAINABLE SOCIETY

Maria Saleemi*, Maria Anjum, Sidra Rafique, Rabia Asghar
Department of Computer Science, Lahore College for Women University, Pakistan
*Corresponding Author's Email: dr.mariasaleemi@gmail.com

The increase of population and consistently shrinking resources have burdened the governments around the world to provide and maintain high quality of life within the communities particularly living in large cities. Within existing societies, the more vulnerable group includes women and children who require more protection, and safety. To address this challenge, advanced and ubiquitous technologies may facilitate law enforcing agencies and governments to adopt cost-effective, efficient, and effective solutions to avoid any potential threat which may harm the community and country at large. To maintain a healthy, progressive, and sustainable society, secure environment is critical. Therefore, in this research, smart solution is proposed to facilitate women and children to avoid any possible emergencies including threat, harassment and even violence. The proposed ubiquitous solution enables the relevant bodies including family, emergency services and law enforcing organizations to act early. This proactive way of dealing with crimes may effectively reduce the risks of mental health, and traumas caused by incidents between women and children. The results of this research have wider implications and the ability to be adopted by cross border communities. Through collaboration and partnerships, the proposed solution may be customized to meet the needs of relevant societies, organizations and even governments. Finally, transferability and cost-effectiveness of proposed solutions has enabled this research to achieve sustainable development goal (SDG) 17 and associated SDGs such as SDG-11 and SDG 16.

Keywords: Women safety, Child safety, Ubiquitous computing, Smart wearables, Emergency response

ABSTRACT ID: ICSDG1706

DETERMINING SEED VIABILITY THROUGH ADVANCED TECHNOLOGIES TO ADDRESS LOW CROP PRODUCTION IN AGRICULTURAL COUNTRIES

Attia Anis*, Rabia Javed
Computer Science Department, Lahore College for Women University, Lahore, Pakistan.
*Corresponding Author's Email: attiasultana22@gmail.com

Crop production is crucial to address the increased food demands around the world. With increasing population, growth of crops such as wheat, corn, rice and maize are highly important and require drastic transformation of agricultural methods including production of high-quality seeds. To assess seed quality, its physiological attributes may be evaluated through rapid, low cost and robust technologies. By employing spectroscopy, fast and non-destructive analytical methods may be applied on the seed to produce profiles which may be analyzed through machine learning techniques. Therefore, in this research efforts are made to develop a solution to assess seed quality through advanced and cost-effective technology. The findings of this research may facilitate in addressing low crop production challenges and improving agricultural growth by generating more revenue for farmers. The solution may be utilized by agricultural departments and R&D institutes especially in countries where the economy is largely dependent on agriculture. With collaboration and partnerships, a common knowledge base may be created to improve the precision in results and transfer this technology to framers across the corders. NOGs can play a major role in technology transfer especially in low-income countries and facilitate in increasing sustainable crop growth. Finally, this research objectives are aligned with sustainable global development (SDG) 17 and could contribute to addressing the risk of food scarcity. The research is further aligned with SDG-2, SDG-11 and SDG-15 which have high impact towards sustainable environment, and community worldwide.

Keywords: Qualitative analysis, Spectroscopy, Non-destructive technique, Seed Quality

ABSTRACT ID: ICSDG1707

SMART TRAFFIC CONTROL SOLUTION FOR GREEN SUSTAINABLE CITIES THROUGH ADVANCED TRANSFERABLE TECHNOLOGIES

Ayesha Iqbal*, Ayesha Afzaal, Fatima Anjum, Faria Kanwal and Komal Bashir
Department of Computer Science, LCWU, Pakistan
*Corresponding Author's Email: ayesha.iqbal@gmail.com

With increased population, traffic congestion is a growing problem in urban cities around the world. To address this issue, various communities have adopted solutions which may not be truly environment friendly and adding value to improved life in cities such as expanding and constructing transportation routes. In the presence of advance technology, smart solutions may be adopted to use existing infrastructure to optimize traffic control systems especially in large metropolitan cities. Such solution will facilitate in developing smart sustainable cities and improving quality of life. Therefore, in this research efforts are made to propose efficient, and cost-effective traffic congestion control solution by employing machine learning techniques. The proposed solution provides a layer of affordable low-cost technology on exiting traffic control systems in an efficient, precise and effective way. The findings of this research will largely facilitate governments to provide improved quality of life in big cities particularly reducing commute time, quick access to workplaces and emergency services, and facilitating in effective use of time and money. Further, stress and anxiety associated with long delays may be reduced to produce a healthy and productive society. The proposed technique is transferable to organizations and NGOs working on environment friendly solutions and reducing carbon emissions. This research is aligned with sustainable development goal (SDG) 17 and may facilitate collaborating organizations in adopting the solution. The research also addresses other SDGs such as SDG-11, SDG 13 and SDG-15. Furthermore, SDG-3 may be achieved to improve overall health and wellbeing of communities by implementing proposed solution.

Keywords: Smart Traffic Control, IoT, Machine Learning, Smart Cities

ABSTRACT ID: ICSDG1708

TRANSFERABLE AND COST-EFFECTIVE END-USER ENERGY CONSUMPTION TECHNIQUES FOR SMART GRIDS TO ACHIEVE SUSTAINABLE ECONOMIC GROWTH AND IMPROVED ENVIRONMENT

Ayesha Afzaal*, Ayesha Iqbal, Faria Kanwal, Fatima Anjum and Komal Bashir
Department of Computer Science, LCWU, Pakistan
*Corresponding Author's Email: ayesha.afzaal@gmail.com

To maintain reliable delivery of energy with increasing demand has become a challenge for electricity distribution companies around the world particularly in developing economies. Smart grid is an advanced energy production and utilization concept that provides intelligence, networking and bi-directional communication features to the existing energy infrastructure. Adoption of this concept may facilitate in revolutionizing energy sector and attain sustainable economic growth without effecting the environment. An important aspect associated with smart grid is cost effectiveness making this a promising feature for countries that have access of natural energy resources but lack techniques. In this regard, smart energy solution may boost struggling economies by providing efficient, precise and intelligent solution through affordable clean energy. This may further lead to improve industrialization, building sustainable cities, and reducing impact towards climate change. Therefore, to achieve sustainable goals, efficient energy consumption techniques are required at all stages of energy utilization including home users. Optimized electricity load and cost for smart grid may facilitate in predicting loads of various energy consumption resources. Hence, this research focuses on intelligent techniques to increase cost effective and efficient use of electricity at user end to decrease load on grids and overall reduction in electricity demand. The research

findings may facilitate renewable energy providers and consumers in developing and developed countries. Through partnership, the proposed technique may be transferred to other organizations including NGOs working on green, efficient and affordable energy. This research focuses on achieving sustainable development goal (SDG) 17 and is aligned with SDG-7, SDG-11, SDG-12, SDG-13 and SDG-15 by providing environment friendly, clean sustainable, affordable and transferable energy solution for smart grids.

Keywords: Smart Grid, Demand Side Management, Energy Load Prediction, Demand Response

ABSTRACT ID: ICSDG1709

A COLLABORATIVE SUSTAINABLE QUALITY ASSESSMENT AND EVALUATION SOLUTION FOR ONLINE LEARNING PLATFORMS TO ACHIEVE CROSS BORDER EDUCATIONAL TRANSFORMATION

Faria Kanwal*, Fatima Anjum, Komal Bashir, Ayesha Iqbal, Ayesha Afzaal
Department of Computer Science, Lahore College for Women University, Lahore, Pakistan
*Corresponding Author's Email: faria.kanwal@gmail.com

In the era of the 21st century rapid development in advanced technology has opened various opportunities to transform almost all fields of life and education sector is no exception. The wide spread of Information and communication technologies (ICTs) have amalgamated higher education institutes by restructuring and reshaping them into versatile, cost effective and accessible learning platforms. This has further made it easy to transfer knowledge globally particularly to the developing countries that lack resources and skills. To maintain education quality, produce skilled resources and achieve sustainable economic growth; continuous quality evaluation and assessment is required for designing, development and implementation of effective online learning platforms. Further, the quality evaluation of online learning platforms is necessary to ensure sustainable development and adoption of these systems to achieve desired results aligned with teaching and learning standards worldwide. Therefore, in this research efforts are made to develop a solution for evaluation and assessment of online learning platform development to achieve and maintain quality in knowledge delivery. By focusing on its purpose, the research targets sustainable development goal (SDG) 17 to transfer knowledge to other countries, particularly developing economies and communities through partnership. The research findings may facilitate institutions, organizations and NIGO's associated with education and knowledge economy to improve quality of education and make it ubiquitous. This research is also aligned with other SDG goals particularly SDG-4 which focuses on quality of education and SDG-8 by contributing towards sustainable economic growth and improving workforce.

Keywords: E-learning systems, Quality assessment and evaluation, Sustainable development

ABSTRACT ID: ICSDG1710

AGRICULTURE KNOWLEDGE MANAGEMENT THROUGH COLLABORATION AND PARTNERSHIP FOR SUSTAINABLE CROP PRODUCTION AND FOOD SECURITY

Komal Bashir*, Faria Kanwal, Fatima Anjum, Ayesha Iqbal, Ayesha Afzaal
Department of Computer Science, Lahore College for Women University, Lahore, Pakistan
*Corresponding Author's Email: komal.bashir@gmail.com

Knowledge collaboration and management (CKM) plays a significant role in increasing the resourcefulness of any business assets by bringing relevant data at one place, addressing risks, and generating new knowledge which may lead to innovations. With the support of right tools and technologies, CKM may be transformed into a collaborative information dissemination platform to integrate field data and capture tacit knowledge of the skilled resources. In the area of agriculture, such platform(s) may become a backbone for providing timely relevant information to farmers and addressing the problem of agriculture information sharing, crop production and other associated threats. By bringing together relevant bodies in agriculture sector such as governmental departments, famer associations, agri-product companies, NGOs etc., best agriculture practices may be combined and made available worldwide to increase field productions and address issue of food scarcity. Hence, in this research efforts are made to create a ubiquitous CKM environment which may facilitate farmers in accessing agriculture information at one place and contribute to further knowledge creation by sharing their field experiences. The research solution brings relevant stakeholders at one platform and provide critical agriculture information in efficient and effective manner. The proposed knowledge platform may be utilized and extended through partnership with world agriculture organizations, and institutions working on improving crop production through empowering farmers with right resources. This will particularly be effective in countries where economies are largely dependent on agriculture produces. With timely and accurate information, crop production issues may be addressed in many areas around the world and sustainable agriculture practices may be established. This research focuses on sustainable development goal

(SDG) 17 with core emphasis on knowledge collaboration in agriculture. The research is also of aligned with SDG 2, SDG 12 and SDG 13.

Keywords: Collaborative Knowledge Management, Knowledge Management, Resource sharing

ABSTRACT ID: ICSDG1711

TRANSFERABLE PREDICTIVE TECHNOLOGIES FOR EPILEPTIC SEIZURE DETECTION TO IMPROVE HEALTHCARE SERVICES

Huma Tauseef*, Komal Bashir, Arzoo Taj, Humaira Shabbir,
Maheen Akhtar, Sabahat Faria
Department of Computer Science, Lahore College for Women University, Lahore, Pakistan
*Corresponding Author's Email: humaiftikhar@hotmail.com

To improve healthcare services and address challenges raised by life threatening diseases, advanced technological solutions have become very critical. According to World Health Organization (WHO), epileptic seizure affects almost 50 million people around the world, making it the fourth most common neurological diseases after migraine. Epileptic seizure requires continuous monitoring, and immediate medical assistance in case of attack due to unpredictable nature of the disease. To address this challenge, ubiquitous technologies and advanced data analytics may be employed to propose a solution which may intimate healthcare service providers in timely manner to avoid any unfortunate event. Therefore, in this research, a smart solution is developed by integrating predictive and healthcare techniques to efficiently detect epileptic seizure and facilitate patient in accessing immediate healthcare services. Since the epileptic seizure is a worldwide health problem, therefore, the solution may be shared and transferred to health organizations, hospitals, clinics and NGOs etc. through collaboration and partnerships. Through shared knowledge, the identification and prediction of this disease may be improved, and a sustainable solution may be provided to people in a cost-effective manner especially in low-income communities. Therefore, this

research particularly focuses on sustainable development goal (SDG) 17 to improve healthcare services globally through transferable technologies. The research further considers SDG-3 to improve well-being of patients and people around them.

Keywords: Android based application, Convolutional Neural Network, Epilepsy detection system, Wearable devices.

ABSTRACT ID: ICSDG1712

SUSTAINABLE TRANSFORMATION OF AGRICULTURE PRACTICES THROUGH COLLABORATION AND TECHNOLOGY MASHUP

Maria Anjum*, Humaira Kosar, Maria Saleemi
Department of Computer Science, Lahore College for Women University, Lahore, Pakistan
Corresponding Author: maria.anjum@gmail.com

Sustainable development is an important factor for growing economies worldwide. This becomes challenging for the countries which are highly dependent on natural resources to increase their GDP such as agriculture, fishery, etc.. Such economies may be facilitated through transformation of existing practices and integration of cutting-edge technologies. By developing cost-effective, affordable, efficient, and robust solutions reforms may be introduced to adopt better and effective methods in farms. A technology mashup by integrating precision and ubiquitous technologies may address production issues and early forecasts may facilitate fields and farms owners to take proactive actions. This will particularly be effective and useful for small land farmers that make around 50% of the whole farmer community worldwide. By focusing on such a large group of cultivators a shared knowledge base may be created which may act as information dissemination platform, provide analytics related to field finances or may provide predictions which may be used to make better decisions about crop cultivation. Such technologies must be developed by considering end-users in mind which may not be well equipped with digital knowledge and may have different understanding towards technology adoption. By considering this factor, in this research solution is proposed around agriculture by engaging end users in solution design to develop a platform that can be used with less cognitive load. To increase the acceptability and adoption of such solutions involvement of relevant community is critical. The proposed platform may be used locally and across the border through effective partnerships with relevant organizations. Therefore, research focuses on sustainable development goal (SDG) 17 and intends to collaborate with cross border agricultural departments, farmer associations, R&D institutes and NGOs to employ the solution at a wider scale. The research also considers SDG-2, SDG-12 and SDG-15 to address food security and improve natural environment.

Keywords: Precision agriculture, E-agriculture, User experience, User centered design

Thanks to our Sponsors

This event won't have been possible without you!

PLATINIUM SPONSORS

GOLD SPONSORS

ORGANIZERS