World Forum for Women in Science

(WFWIS)

8 – 10 March 2021

Under Patronage of

Prof. Dr. Mosleh Mohammed Saeed

President of the University of Duhok

Conference Leadership

Prof. Dr. Lokman Hadi Hassan

Vice president for scientific affairs

Prof. Dr. Amal Amin

National research center, Egypt

Founding chair for women in science without borders initiative and the forum.

Prof. Dr. Mizgeen Mohammed Hasan

Dean of College of Humanities

Dr. Suhad Abdulrahman Yasin

University of Duhok, Iraq.

List of members of scientific committee

- Prof. Dr. Ahmed Mohammed Salih. University of Duhok.
- Prof. Dr. Ghazwan Faisal Fadhil. University of Duhok.
- Dr. Nashwan Shawkat Mahmood. University of Duhok.
- Dr. Sedki Omer Yousif. University of Duhok.
- Dr. Mahde Saleh Abdulrahman Assafi. University of Duhok.
- Dr. Ahmad B. Al-Khalil. University of Duhok.
- Dr. Hashim Saeed Murad. University of Duhok.
- Dr. khalida A. Hassan. University of Duhok.
- Dr. Ziyad Abdulazeez Alyousif. University of Duhok.
- Dr. Saeed Khudeda Alo. University of Duhok.
- Samya Saeed Khalid. University of Duhok. University of Duhok.

CONFERENCE LEADERSHIP

Prof. Dr. Lokman H Hassan

Received the BSc., MSc. from University of Technology Iraq and PhD from University of Malaya Malaysia. He worked as a site engineer prior to joining University of Duhok in 2002. Lukman H Hasan is the reviewer for several distinguished journals in his field of expertise. His contributions can be seen in more than 35 refereed journals and conferences articles. His most important research concern is control systems design, monitoring and stability, renewable energy and artificial intelligence. He served as deputy dean in the College of Engineering for two years and head of Department of Electrical and Computer Engineering for three years. He is currently the Vice President of the University of Duhok for Scientific Affairs and Postgraduate Studies.

Prof. Dr. Amal Amin, founding Chair of WISWB

The first Egyptian young scientist who attended world economic forum-Summer (WEF) DAVOS 2009 and 2010-China based on the initiative of IAP to empower the young scientists worldwide. She attended and co-organized the founding workshop of global young academy (GYA) in Berlin

(2010) to become one of the few active founders of GYA and its executive committee member for the following three years after foundation (GYA; 2010-2013). She was founding group leader of women in science (WIS), member in science advice group and the selection committee of GYA. Dr. Amal wrote to ASRT to establish the Egyptian young academy of sciences (EYAS) and liaised the fact- finding mission of GYA to launch EYAS where ASRT responded to IAP initiative and launched EYAS (2012-2014). Therefore, Dr. Amal became co-founder and advisory board member of EYAS. Dr. Amal is associate professor at National Research Centre (NRC)-Egypt and she was group leader of the nanostructured polymers at the centre of excellence. She earned her B.Sc. in chemistry from Ain Shams University and her M.Sc. in organic chemistry from Cairo University. With a DAAD scholarship/Egypt joint fund at Ulm University-Germany/Cairo University, she earned her Ph.D. in polymer technology & catalysis. Since then, she has occupied different positions as visiting professor at nanotechnology program-faculty of engineering-Cairo University. Research stays brought her to France, USA and again to Germany for several times. She supervised and headed several international, national projects, postgraduate students and other activities. She organized and attended numerous national, international events/conferences worldwide and carried out two memorandums of understanding between Egypt, Georgia and MTU-USA. She was the founder and president for the Egyptian society for advanced materials and nanotechnology. She has lots of scientific publications in highly ranked journals and acts as reviewer and referee in nanotechnology, polymers and nanocomposites for international journals and organizations. She got several national, international awards and was nominated to IUPAC prize for WIS (2015). Dr. Amal was selected in many scientific reputable

organizations as member as in task force for Islamic young academy (IWAYS, 2014), Arab-German Young Scientists Forum (2011), New York academy of science (NY, 2014-2016), TWAS Young Affiliate (2010-2014), founding member of AETDEW and NARIMA (North Africa research & innovation management association; 2020), etc. She attended the international IAP science communication workshop in Korea (2014) and co-organized several science days with EYAS along Egyptian governorates to enhance public science literacy. She joined workshop on developing global civics courses in the Arab region and was selected to attend world science forum 2015&2017 (moderator of WIS sessions and speaker) & 2019. She was selected for AAAS-TWAS science diplomacy course (Italy, 2016). Dr. Amal represented GYA in 2nd INGSA-EU conference on science policy making (Belgium, 2016). Dr. Amal participated in mentorship programs of NYA, GYA, etc and attended AAAS annual meeting in Boston (2017). Dr. Amal is the founding chair of the women in science without borders (WISWB) initiative and the world forum for women in science which is held every year world-wide where the first meeting was held in Cairo, (March, 2017), the 2nd WISWB was held in South Africa (March 2018), the 3rd conference was held again in Egypt 2019, the 4th forum was held in Brazil (February 2020) and the next meetings will be held in Iraq dedicated for refugees in March 2021 & In Kenya in November 2021. Also, she is chair and organizer of Youth science forum (January 2021) and Saturday science webinars with themes of challenges facing humanity at the age of COVID-19 and beyond, Inspire me-success story, etc. Dr. Amal visited 35 countries tens of times and was invited to tens of high-level reputable meetings as TWAS-TYAN conference (Brazil, 2017, science diplomacy), NASAC international forum on women and sustainable development (Tanzania, 2018), youth employment (Turkey, 2018), renewable energy (Argentine, 2018), INGSA (Japan, 2018), Globlics (Ghana, 2018), etc. Dr. Amal achievements were featured in women in science-inspiring stories from Africa (NASAC-IAP-2017), SAYAS Success stories of young scientists (2016), scientific African (2019), nature (global, April 2020 & middle east 2020), the next truth (2018, 2020), NASAC book on (Women and sustainable development in Africa-2020), royal society of chemistry (2020), Women in Science. Africa edition in commemoration of Women's Month, August 2020, scidev.net/mena (2020) and others. Dr. Amal was selected as one of the most successful 40 women over 40 among (women of Egypt). She is member of SASTA and was advisory board member for Arab science week. She was appointed to act as a Panel Member of Students' Selection Committee with the Pan African University Institute of Life and Earth Sciences (Including Health and Agriculture). Dr Amal was a reviewer of ASM-AAAS-TWAS REGIONAL COURSE ON SCIENCE DIPLOMACY. In December 2020, she cofounded Northern African Research and Innovation Management Association (NARIMA) initiative. Dr Amal has several scientific and societal activities on national and international levels. She is especially interested in science communication, simplified science, increasing public awareness/literacy for science, science advice/diplomacy, innovation, science policy, science education, etc.

Prof. Dr. Mizgeen Mohammed Hassan

Dean of the College of Humanities at the University of Duhok - Kurdistan Region - Iraq (Assistant Professor), specialized in urban problems through the framework of human geography, and interested in human development issues and their dimensions, indicators and the United Nations Development Program (UNDP). In 2016, I introduced the human development subject in the courses of the Department of Geography and its teaching after obtaining a doctorate degree from the Lebanese University in Beirut 2015.I was the first one to include the subject of GIS within the courses of the Department of Geography in 2005 and taught to undergraduate students with other subjects such as principles of maps and others. I was teaching subjects (human problems, urban development, population problems, urban problems) to master's and doctoral students at the universities of Duhok and Soran (Iraq). I have published 14 scientific papers in the field of urban planning, urban problems and services, and human development issues.

Dr. Suhad Yasin

Suhad Yasin is a Ph.D. lecturer at the University of Duhok /Kurdistan region /Iraq. She received her Master's degree in Chemistry/Polymer Chemistry in 2009. During her Master's (2007-2009), she had many published articles focused on preparing new materials for removing heavy metals from aqueous solutions. Since October 2016, her research activities are mainly cantered on nanofibers' preparation to apply water treatment from hazardous materials. She received her Ph.D. degree in polymer chemistry in 2020 from the University of Duhok. She is also a principal investigator at Partnerships for Enhanced Engagement in Research (PEER) under Cycle 6 / IRAQ. The name of her project is "Removal of Hazardous Materials from Aqueous Solution using Nanofiber Membranes." Her project aims to open the first nanotechnology laboratory in her university and support women-scientist researchers. She had many volunteer projects and exhibitions at the University of Duhok/ Chemistry Department.

The Organizing Committee

1-Task force of the meeting

Dr. Ahmad B. Al-Khalil

Dr. Ahmad B. Al-Khalil is A/Prof. in Computer Communication, and the Head of Computer Networks and System Security Research Group in the department of Computer Science, College of Science – University of Duhok. Dr. Al-Khalil has numerous notable achievements in his education and his work experience. The most remarkable achievement was when he has been granted the award of Doctor of Philosophy from the University of Northampton – UK (2016) after successfully defended his PhD thesis, with several publications. A Research Engineer, with an adept facility to manage the whole project life cycle; creating projects from concept to completion whilst capturing, analyzing and documenting requirements to support effective communication and successful delivery. Both a team player and an independent thinker, with valuable analytical, problem solving and decision-making skills and a genuine passion for the new technologies. He is currently a member of IEEE, a professional member of the British Computer Society BCS, the Institute of Engineering and Technology IET and the Association for Computing Machinery ACM.

Dr. Shaheen Abdullah Abdulkareem

Shaheen A. Abdulkareem currently works as a lecturer at the Department of Computer Science at the University of Duhok (Kurdistan-region, Iraq). Dr Abdulkareem teaches Artificial Intelligence and Machine Learning in two semesters for undergraduates, and postgraduates' students. Dr Abdulkareem received her PhD from the Centre of Studies of Technology and Sustainability Development (CSTM), University of Twente, (The Netherlands) and Department of Computer Science, University of Duhok (Kurdistan-region, Iraq) in 2019. Her PhD thesis titled "Enhancing Agent-Based Models with Artificial Intelligence for Complex Decision Making". She received her Master of Science degree in Geoinformatics from Faculty of Geo-Information Science and Earth Observation (ITC), University of Twente (The Netherlands) in 2010. Shaheen's research field of interest is in simulating human behavior, risk perception and Artificial Intelligence using Spatial Agent-based modelling. More focuses on the implementation of machine learning algorithms to steer agents behavior. Her background in computer science and geoinformatics provided the right experience level to work in her research field of interest.

Dr. Berivan Hadi Mahdi

Dr. Berivan Hadi Mahdi is a Lecturer of Applied Physics at Duhok University, Kurdistan Region, Iraq. She received a B.sc degree in physics in College of Science, Duhok University and received Master Degree in Theoretical physics (Quantum Physics) in College of Science, Duhok University. After her graduation she has been employed by University of Duhok as an assistant Physicist and she work in physics laboratory. After she received an M.sc degree, she worked as assistant Lecturer in Branch of Basic Science/ University of Duhok. She received her Ph.D. degree in Applied Physics in 2020 from the University of Duhok. She had many published articles in Applied Physics (Environmental pollution, Meteorology, Artificial intelligence, Artificial Neural Network), in local and international journals and conferences. She had participated as an organizer in many national and international workshops, scientific meetings and Conferences. She received many letters of appreciation for her activities.

Dr. Ayad Ajaj vian

Bachelor of Arts, Department of History (2007-2008), MA in the Faculty of Humanities, Department of Modern History, Master Thesis entitled (Relations between the Kurdistan Workers Party (PKK) in Turkey and the Iraqi Kurdish Parties) 2011-2013. Member of Lalish Media Network and is member of lalish magazine. Occupied the position of camp manager of Khank IDPs camp in Duhok in 2016. He is now in charge of media unit for all IDP camps in Duhok Governorate.

Local organizing committee

Dr. Haval Y. Yaccob

Haval Y. Yaccob, professor of Biophysics. My primary areas of teaching and research activities are Medical Physics and Biophysics from 1992 till now. I completed My PhD at Duhok University in 2006 on the Biophysical Model of Ionizing Radiation. From 2008 to 2009, I was Postdoctoral Associate at the Biomedical Engineering Dept., Lund University, Sweden.

Dr. Ahmed Hussein Ali

Asst. Prof. Dr. Ahmed Hussein Ali is head of the department of medical physics in /college of applied science /the University of Fallujah. I obtained my Bachelor's degree in Physics from the College of Science at Anbar University and a master's in radioactivity physics, Ph.D. in Theoretical Nuclear Physics from the College of Science, University of Baghdad. The number of researches published in international and local journals are 23 paper. The number of latter thanks (thank-you books) from the university president, dean, and service departments is 84. Teaching at the College of Medicine and the College of Applied Sciences.

Asst. Prof. Lazgin Kh. Barany

Lazgin Kh. Barany is an Assistant Professor of Applied Linguistics at the College of Languages, University of Duhok. He has taught English language, TESOL and Applied Linguistics at different academic institutions including university of Duhok, University of Mosul, Mosul Technical Institute and DePauw University in America. He also supervised and examined postgraduate students in TESOL. He was the Director of Training and Development Center of University of Duhok for the period 2010 -2014.Since 2008 he has been a scholar at the Institute of International Education (IIE) in the USA. From February 2010 to September 2010, he worked as a Visiting Scholar and Part-Time Faculty Member in Linguistics and University Studies, DePauw University –, Indiana, USA and two times as a Visiting Faculty to the Department of English and English Language Center, Michigan State University (MSU), Michigan, and USA. Lazgin Barany has attended conferences, professional meetings and symposia in Sweden, France, Austria, Malaysia, the U.S., Germany, Norway, and Jordan among other countries.

Dr. Saad Thabit Jassim Alrawi

A faculty member of the Veterinary Medicine College/ University of Fallujah. Associate Dean for Scientific Affairs and Students, College of Veterinary Medicine / University of Fallujah. Bachelor of Veterinary Medicine and Surgery from College of Veterinary Medicine/ University of Baghdad (2005), and a Master's of Public Health from College of Veterinary Medicine/ University of Baghdad (2008), and Philosophy of Doctorate of Public Health from College of Veterinary Medicine/ University of Baghdad (2014).He held many positions, Associate Chairman of Department of Public Health College of Veterinary Medicine, University of Fallujah, and Chairman of Department of Anatomy and Histology, College of Veterinary Medicine, University of Fallujah, and Chairman of Department of Public Health College of Veterinary Medicine, University of Fallujah, and Chairman of Department of Microbiology and Immunology College of Veterinary Medicine, University of Fallujah, Assistant Dean for Administrative and Financial Affairs. He has numerous scientific publications in national and international journals and conference. He attended and organized numerous national, international conferences, he has contributed as a reviewer in national and international journals and conference. he has evaluated and exam committees of many Master theses and PhD dissertation.

Dr. Omar MS Ghazal

Omar Ghazal was born at March 1984 in Baghdad – Iraq, attended Al-Mustamaizeen (The Distinguished) Highschool for Boy 1996-2002. He enrolled in a joint BSc-MSc degree in Al-Nahrain University Baghdad-Iraq (2002-2008) from which he graduated with MSc in Laser and Optoelectronic Engineering. He was appointed in October 2008 as an assistant Lecturer at the University of Duhok, Electrical and Computer Engineering Department in which he gives various theoretical and practical modules. Based on his performance in his career and the qualifications he had in the university, he was awarded a fully funded scholarship from HCDP program, managed by the ministry of higher education and scientific research in Kurdistan, to pursue his PhD degree. On May 2011 his journey started toward achieving the PhD goal in the field of Optoelectronic Devices and Photonic Integration at the University of Sheffield, one of the Red Brick Universities League and a member of The Russel Group. He successfully achieved his goal on March 2016 after a successful viva held by internal and external examiners from prestigious universities in the United Kingdom. Omar returned to the University of Duhok on September 2016 as a Lecturer and he is filling a permanent position at the university. During his time, he gave a number of Practical Theoretical modules in 3 departments in addition to being a member in a number of administrative committees within the ECE department and the college of Engineering.

Dr. Huda Sami Alhassan

I have got my Ph in (Analytical Chemistry/ Electrochemistry and Renewable Energy from Hull University (UK) in 2018. I am working in the Environmental Research and Studies Centre at the University of Babylon as a lecturer and researcher. I am an associate member of many societies such as ASC, RSC and SCI since 2016 until now. Moreover, I have appointed as an editor at an international journal of multidisciplinary sciences and advanced technology (IJMSAT), I have been a head of the chemicals handling control unit at the Environmental Research and studies centre. I have published many papers and books in highly respected peer-reviewed international scientific journals and publishing house, furthermore, I have participated posters presentation in national and international scientific conferences.

Qais Lazgin Barany

I Started work in University in Duhok College of Science / Scientific Research Center in 2009, I graduated from the University of Mousl College of Science / Biology Department. I got my MSc In Animal Physiology from Ukraine in 2009. And now I'm a PhD student in University of Duhok in Animal Physiology specialty.

The Scientific Committee

Prof. Dr. Ahmed Mohammed Salih

Professor Ahmed Mohamed Salih has obtained his Ph.D. in Molecular Microbiology from collaboration with the University of Nottingham (UK) as a joint program with the university of Duhok in 2006. Also, he has got an M.Sc. degree in molecular medical microbiology from the University of Nottingham (UK) in 2006 and another M.Sc. degree in immunology from the university of Salahaddin- Hawler in 1996. He has been graduated with a B.Sc. degree from university of Mosul, Iraq in 1986. During his carrier, he has been employed for many academic and scientific positions. Recently, he is working as vice president of university of Duhok or administrative and finance affair since 2018 and at the same time he is the dean of the college of medicine. Formerly he was running Duhok medical research centre (DMRC) at the college of medicine since 2015. Before that, he has been appointed as the dean of the college of science at the university of Duhok for four years starting from 2011. In 2008, he has been nominated as the college of nursing and lasted in the position for two years. He has been employed for some other positions since 1998: assistant dean of the college of medicine, head of the postgraduate studies unit and head of the medical microbiology department at the college of medicine. As professor in the field on molecular

microbiology and immunology, he is committed to his teaching duties for both undergraduate and postgraduate students, also spending much of the time in researches through supervising the M.Sc. and Ph.D. students and involved in research teams. He has supervised 23 M.Sc. and Ph.D. Also, he has published 25 research articles in the field of his interest during his academic carrier.

Dr. Nashwan Shawkat Mahmood

Nashwan Shawkat Mahmood is a lecturer in the Civil Engineering Department at University of Duhok (UoD) where he has been a faculty member since 2005. From 2013–2016, he served as head of Civil Engineering Department at UoD. Nashwan completed his Ph.D. in Environmental Engineering at University of Malaya, Malaysia, in 2013 and he is a Fulbright Visiting Scholar Alumni. His research interests lie in the area of urban water management, recalcitrant wastewater treatment, kinetics of biological wastewater treatment and medical hazardous waste management. Nashwan has published many scientific papers in local and ISI journals and he is a reviewer in certain local and international journals. He is professional in design of water and wastewater treatment plants, and design of water and wastewater networks. He has served as consultant and trainer for many government institutions and NGOs.

Dr. Sedki Omer Yousif

Dr.Yousif is an Iraqi lecture at the Physics Department / College of Science / University of Duhok. He was born in Duhok city, Kurdistan Region of Iraq in September 1966. He earned the B.Sc. degree in Physics from University of Mosul/Iraq in 1987, M.Sc. degree in Physics from University of Salahhaddin-Arbil/Iraq in 1995 and Ph.D. degree in Physics from University of Duhok/Iraq in2008. He started his career in 1992 as assistant researcher in the University of Duhok on its first foundation, as assistant lecturer from 1995-1997 at agriculture college and then at the Physics Department /College of Science on its first foundation from 1997, as a lecturer from 2003-2011 and as assistant professor from 2011-still at the same Department/ College of Science/ University of Duhok. Dr.Yousif was and still involved in teaching many courses of physics in various subjects to the students of agriculture, medicine and college of science. These Subjects covered general physics, medical physics, electricity and magnetism, modern physics, solid state physics, semiconductors and practical physics.

Dr. Mahde Saleh Abdulrahman Assafi

I obtained my BSc in Biological Sciences from the University of Mosul (2001) and my MSc in Biotechnology from the Department of Biology, University of Mosul (2004). I employed as a lecturer at the University of Duhok, College of Science, Department of Biology (2005). I got a scholarship and I got a PhD in Biotechnology/Microbiology from the University of Nottingham, UK (2012). Currently, I am the head of Biology Department, college of Science, University of Duhok Kurdistan region-Iraq. I gave lectures for different stages (BSc, MSc, PhD) in different subjects such as Microbiology, Biotechnology, and Molecular biology. My research interests include Microbiology, Molecular microbiology, Bacteriology, Medical bacteriology, infectious disease, host pathogen interaction. In 2014, I got and completed the Fulbright scholarship program to University of Central Oklahoma, Oklahoma / USA for 10 weeks. I have promoted to Assist Prof in 2016. I have published more than 30 papers in different local and international journals.

Dr. Hashim Saeed Murad

I have joined the department of Agricultural Extension and Rural Development since 2014.obtained my M.Sc. in Agricultural Extension from College of Agriculture & Forestry, Mosel University. I have got my PhD in Rural Development College of Agricultural Engineering Sciences. University of Duhok. My general field of interest is agricultural extension and rural development as well as rural women and studying the factors affecting women's social, economic, agricultural and political participation, as well as women's empowerment. In addition, I have research related to rural development and women's rights. I have participated in many international conferences within a specialist in rural development. I have documented many violations against women by society and tried to defend them in official forums by advocating and pushing in this field. I evaluated many papers in many journals as well as discussing and evaluating theses and dissertation. I held many courses and workshops, a dialogue facilitator, a facilitator and a trainer of trainers for many agricultural and development fields and a consultant for international organizations. I have published many research papers in many fields in local and international magazines. I participated in conducting seminars on different topics for different sectors of society, including government employees, youth, students, and refugees in the displacement camps. I conducted several surveys to study to identify problems and needs in many areas. I been and still member of scientific committee in agricultural Extension and rural development as well as been member of many scientific committees. Member of quality assurance committee in our department and representative of my department in college quality assurance unite. Member of high education examination committee in College of Agricultural Engineering Science for many years.

Dr. khalida A. Hassan

She is an Assistant Prof. of Soil Chemistry at Duhok University. Her scientific career began at Basra University; she obtained her BSc. degree in 1978 and worked as a Laboratory Assistant in Soil and Water Department. From 1984 to 1989, she awarded a scholarship gaining a PhD in Soil Chemistry from Manchester University, UK. Between "1989-2001", she worked as a lecturer at Basra University / Agric. College / Water and Soil Department and became an Assistant Prof. in 2002. After that she continued her academic career spent five years at University of Bagdad and recently in the college of Agricultural Engineering Sciences –Soil and Water Sciences Dept. / Duhok University. Her contribution can be seen in many local and international journals and conferences.

Dr. Ziyad Abdulazeez Alyousif

Bachelor from Damascus university and PHD from Russia –Peter burg Doctorate in philosophy of Geography (Geography of Economic and social and political since 1995) I was working in Libya Tahady University in sert city, I am working in Duhok and Zakho university. I was a supervisor of many MA department and I was member in international geography conference the first and the second one.

Samya Saeed Khalid

Samya Saeed Khalid. M.A. in Sociology. Lecturer in Sociology Department -UoD. Ph.D Student. Director of Gender Equality Studies Center at University of Duhok Activist in gender issues and Violence Experts at policy making Conducted researches

1. Family Roles in juvenile delinquent. Field study on young girls in Duhok
2. Social-Cultural Dimensions of Female Genital Mutilations
3.zInternal Displacement influences on Families. field study on internal displacement families from Shingal .in Duhok Governorate
4. Group research about (Family Friends Institutions in Kurdistan Region)

Worked as expert in many policies making in Kurdistan Region like.

1.Strategic plane of combating Violence against women
2. Strategic Plan of women development in Kurdistan Region
3. Strategic Plan of Child Protection in Kurdistan Region

Dr. Saeed Khudeda Alo

First Employment Date at University: November, 1st, 2000. M.A. in Modern History- Department of History-College of Arts- Duhok University, 2004. PhD in Modern History, Federal South University, Federal Russia, 2011. My PhD dissertation was entitled “The Soviet Union and Iraqi Relationships and the Attitude of the Soviet Union toward the Kurdish Question 1958-1991”. Assistant Professor at Duhok University / College of Humanities / Department of History / I am lecturer modern Iraqi history lecturer at the College of Basic Education / University of Duhok / lecture modern history of Iran and Turkey.

Science for Humanity

Gender sensitive planning in post conflict

Dr. Nesreen Barwari
University of Duhok

Abstract

Since the 1970s increased attention has been focused on gender in relation to planning practice. How to improve regional and local planning by applying a gender-sensitive analysis? Regional development projects normally have gender-equality objectives, as these are recognized as one of the cornerstones of regional development. Furthermore, gender perspectives need to be integrated into planning. In particular, integrative thinking is a basic idea of gender planning. Furthermore, gender planning can be a catalyst for valuable integrative approaches in planning which have been less recognized than the mainstream approaches. It is argued that the persistent marginalization of gender sensitive policy measures points to gendered patterns in the administration of development, which makes small-scale changes with policies or projects futile in the absence of more fundamental institutional change. This article focuses on building a resilient sector post conflict based on a unified approach for a comprehensive social, economic and environmentally viable water and sanitation sector development for Duhok Governorate. Peace should be more than a "mere" formula for ending violence. True peace must include a plan for a new political order, based on human rights, equality and inclusion for all. Therefore, peace plans must focus on changing mindsets, taking communities and their social fabric into account. Attention must be paid to identity and social needs for the city to be secure. Studies show that success factors included timing, context, local ownership and foreign development assistance. However, the sustainability and overall impact of the reforms is severely hindered by low technical capacity and weak regulations. To achieve an integrated approach to manage water resources and sustainable water and sanitation services in light of future sector imperatives there is a need to protect water resources while ensuring equitable and efficient water allocations to meet all social and economic development needs. Furthermore, there is a need to revise the institutional and legal frameworks to streamline sector management and administration. In most societies, women have the primary responsibility for the management of household water supply, sanitation and health. However, efforts geared towards improving the management of the world's finite water resources and extending access to safe drinking water and adequate sanitation, often overlook the central role of women in water management. The study aimed at defining gender, introducing key gender concept in the water and sanitation, demonstrating gender sensitive planning work and how to apply it in different policy fields. Engaging stakeholders through gender-sensitive analysis. Finally, presentation of gender analysis matrix and gender mainstreaming self-assessment for the water supply and sanitation services delivery departments in the KRG. Guiding Questions used: gender specific needs, interest and priorities, institutional barriers, and gender balance in decision making through: gender assessment, stakeholder's analysis model (circle of influence) and KRG assessment though direct self-assessment and gender analysis matrix. The assessment highlighted the distribution of power,

resources, and opportunities between women and men, as well as provided a glimpse into the gendered division of labor and social roles. The assessment highlighted the potential for transformational change and some opportunities to be seized to enhance women's empowerment

Biography

Dr. Nesreen Barwari serves across public, non-profit, and academic sectors to promote good governance and conflict management by working with women and youth. As an associate professor of good governance and urban planning, Dr. Barwari serves as an advisor to the Kurdistan Regional Government. She is Country Representative for FWE, a humanitarian NGO supporting displaced people and their host communities. Dr. Barwari has served as Minister of Municipalities and Public Works in the Government of Iraq and Minister of Reconstruction and Development in the Kurdistan Regional Government. Following the 1991 Gulf War, Dr. Barwari served with the International Organization for Migration (IOM) and the UN Refugee Agency (UNHCR) to repatriate and assist displaced persons, the Iraq Relief Coordination Unit (IRCU) of the UN Department of Humanitarian Affairs (DHA) and UN Office of the Humanitarian Coordinator for Iraq (UNOHCI) to coordinate relief services among UN agencies and NGOs, and headed an office of UN-Habitat to reconstruct, rehabilitate, and resettle destroyed communities in the Kurdistan Region. Dr. Barwari has been honored by the UN for her "outstanding commitment to the welfare of displaced and vulnerable persons" in the Kurdistan Region. She was selected by the Arab League as one of ten distinguished women, and by the World Economic Forum (WEF) as a Young Global Leader (YGL). Dr. Barwari holds a bachelor's degree in architectural engineering and urban planning from the University of Baghdad, a master's degree in public policy and management from Harvard University's Kennedy School of Government, and a PhD in Spatial Planning from the University of Dortmund in Germany.

The role of science in constructing pathways to a sustainable and resilient future

Prof. Daya Reddy
President of the International Science Council (ISC)

Abstract

As the world grapples with the ravages of the Covid-19 pandemic, attention focuses on approaches to mitigating the social and economic impact of the pandemic, and on building resilience to future threats. The pandemic crisis has highlighted the scourge of inequality, and the need for equitability, cooperation and social inclusion in planning and actions. These reflections have led also to a reevaluation of approaches to the Sustainable Development Goals, and to addressing crises such as those arising from natural disasters and the consequences of conflicts. This presentation will address the key role and responsibilities of the scientific community as it works with policymakers and civil society towards addressing these major challenges.

Biography

Daya Reddy completed bachelor's and doctoral degrees in engineering at the Universities of Cape Town and Cambridge. He currently holds the South African Research Chair in Computational Mechanics at the University of Cape Town. He was a founder member in 2003 of AIMS, the African Institute for Mathematical Sciences, which is now a pan-African network with centers in six African countries. He is actively involved in bodies that work towards strengthening the scientific enterprise and at the science-policy interface and is currently President of the International Science Council, the largest representative non-governmental scientific organization globally. Daya Reddy is a recipient of the Award for Research Distinction of the South African Mathematical Society, the Order of Mapungubwe, awarded by the President of South Africa for distinguished contributions to science, and of the Georg Forster Research Award from the Alexander von Humboldt Foundation in Germany.

Science for the many, not the few: Science Diplomacy in the core of a Humanitarian (R)Evolution

Prof. Maria Augusta Arruda
Research Development Manager – UKRI Lead – University of Nottingham

Abstract

The History Science shows us that scientific endeavors can very easily be motivated, or motivate, agendas that go against the humanistic ideals of fraternity, equality and freedom. In this session, we will discuss the social responsibility of the Scientist, and how Responsible Research and Innovation and Science Diplomacy are frameworks that guide Research Strategy and Development, creating sustainable scientific ventures. It will also be an opportunity to reflect on the role we all can play in supporting displaced scientists and their families.

Biography

Maria Augusta Arruda is Chair of the University of Nottingham's Black and Asian Minority Staff Network. Maria holds a BSc. and PhD. In Pharmacology from the State University of Rio de Janeiro (UERJ), where she was also a senior lecturer. She chaired the Academic Department of Far manguinhos-Fiocruz, the pharmaceutical arm of the Brazilian Ministry of Health, before joining the University of Nottingham. After a fulfilling 14-year career as an Academic and Researcher, Maria moved to Research Development Management. She is now the Strategic Lead for the COVID-19 Research Portfolio of the University, which spans from economic recovery to immunology, from gender imbalance to mental health. She also manages the University's strategic relationship with UK Research and Innovation Research Councils, and has led the University's Research Development Network. She has been researching and experimenting novel ways of channel ling

her passion and commitment to Equality, Diversity and Inclusion (EDI), particularly concerning (Science) Communication and Diplomacy. Maria is also an advisor for the Black Women in Science Network, and trustee of the Nottingham Counselling Service.

Scientific thinking: A sophisticated method to overcome issues

Mitsunobu R Kano, MD, PhD
(Professor of Pharmaceutical Biomedicine and Vice Executive Director in charge of achieving SDGs, Okayama University, Japan)

Abstract

Our life in the real world is full of unexpectedness. Unexpected experiences, especially those we wish to overcome, motivate us to ask questions. To the questions, we seek for temporary answers (hypotheses). If we can find reproducible observations (evidence) supporting one of the temporary answers, we can now believe the answer should be more correct. This is the scientific thinking: a wisdom to constructively overcome unexpectedness, however it may take certain time to get an answer. My main question motivating my research has been "why some diseases are hard to treat?" The question came to me when I saw relatively young patients (in their thirties for example) suffered from already metastasized pancreatic cancer and died in a month or two, regardless with chemotherapy. Such insufficiency of modern medicine was not taught much in medical school. I learnt it from the real world. In research setting, a major approach has been focusing on tumor cells to explain the intractability. However, I rather focused on the route for drugs: drugs need to reach the tumor cells after they are administered, and tumors are mostly being in tissues. To gather evidence, we needed an interdisciplinary approach: we combined nanotechnology. The hypothesis, that obstacles in the drug delivery are the specific structure of the vessels and fibrotic part in the tumor tissue, has been gradually supported by evidence. A difficulty has been to obtain a suitable model to test the hypothesis. We are making efforts to establish experimental systems to model the point of view. And here comes the SDGs. To achieve the SDGs, including other societal issues, what questions would we ask? The foci of the related questions might be quite diverse that any single discipline may not be able to answer. Collaborative, interdisciplinary efforts might be need. I wish to discuss what collaborations would be powerful to give credible answers to the questions, i.e., scientific answers, while considering limitations of the scientific thinking.

Biography

Started his professional career as a physician in internal medicine and gerontology, Dr. Kano is now undertaking cancer research by applying nanotechnology. His research is motivated by a clinical question: why some diseases are still difficult to treat. He also wishes to contribute to the society with the scientific expertise and has various roles in public services including academies and governmental activities, such as the Science and Technology Co-Advisor to Ministry of Foreign

Affairs of Japan since 2019 and Council Member of Science Council of Japan since 2020, while promoting initiatives toward achieving the SDGs in his university.

Transforming the Girls' Lives Through Science

Ms Salwa Moussa – Iraq
Communications specialist, The United Nations Population Fund (UNFPA)

Abstract

Science-related fields continue to play a crucial role for Sustainable Development and we simply cannot afford to leave behind the full potential for creation and innovation that women can bring. The under-representation of women in Science, Technology, Engineering and Mathematics translates into the loss of a critical mass of talent, thoughts and ideas, which hinders countries from reaching their maximum development potential. Women represent a minority in research and at high levels of responsibility in science both in academia and in decision-making processes. Girls continue to be subject to social and cultural restrictions in some communities, while in others, their access to education, to science and to funding for research continues to hamper their advancement and to prevent them from reaching their full potential. Promoting the participation of women and girls in science means changing mindsets, fighting gender stereotypes and biases that limit girls' horizons, expectations and professional goals since their early childhood. For this reason, end of 2020, UNFPA established computer labs in ten youth centres in Iraq offering young women and girls the opportunities to strengthen their computer skills. As a follow-up, UNFPA plans to develop a computer-based edutainment program on sexual and reproductive health for girls and boys. The program will provide them access to verified information on sexual reproductive health rights to equip them with knowledge and enable them to make informed choices. One of the areas where UNFPA works on empowering girls in Iraq to achieve their goals and reach their full potential is through the creation of an enabling environment through policies and legislation. For this reason, this year, UNFPA will develop an employability framework and design livelihood programs on software development, IT and engineering targeting young girls and women. UNFPA will continue to provide access to an essential package of services aimed towards shifting social and gender norms through community-driven efforts that are critical in accelerating the elimination of harmful practices such as child marriage, honor killing and female genital mutilation.

Biography

Salwa Moussa is a Lebanese national serving as the Communications Specialist for the United Nations Population Fund (UNFPA) in Iraq. Ms Moussa has more than 10 years' experience in the area of communications, journalism and advocacy. She worked in governmental institutions, non-governmental sector and UNFPA. She is particularly passionate about women's rights and gender equity, especially in humanitarian settings. In addition to her role in Iraq, Ms Moussa has recently supported the humanitarian response in Ethiopia, working in camps and hard-to-reach

areas, highlighting the plight of women and girls. Throughout her career, she organized several advocacy campaigns for the United Nations Relief and Works Agency for Palestine Refugees in the Near East in Lebanon and Syria. She worked on donor relations and documented the humanitarian crisis in Syria. Prior to joining the UN, she worked for the National News Agency in Lebanon, reporting on day-to-day political, security and humanitarian developments. She has also experience in the radio journalism working as news reporter. Ms Moussa holds a Master's degree in Communications and Journalism and a bachelor degree in Languages & Translation.

Science Can Bridge the Gap

Professor Dr. Shoji Komai,
Faculty of Technical Sciences
International Professional University of Technology (IPUT), Tokyo

Abstract

We are running a non-profit, peace-building humanitarian endeavor with a unique approach to engage scientists from different cultures and nations to collaborate on specific scientific research themes, called "The Science Bridge". The formation of bonds between different atoms results in molecules with novel properties. Similarly, the encounter of different faiths and cultures leads to new vistas and human progress if peaceful and driven by mutual interest and open exchange. Scientific collaboration is based on common scientific interests and the free exchange of techniques and ideas, and thus ideally suited to build bridges between people of different origins. Scientific research, which is aimed at improving health care for the well-being of humanity is a fundamental need that transcends cultures and religious beliefs and will build trust and cooperation.

Biography

Shoji Komai is a Professor, Behavioral and Neuro Science at International Professional University of Technology (IPUT), Tokyo Japan. He's also a visiting researcher at International Institute for Advanced Studies, Kyoto, Japan. After he received a PhD (biology) at NAIST, he worked in Kobe University as a postdoc studying neuronal plasticity in the hippocampus and amygdala. Then he moved to Max-Planck Institute for Medical Research, Heidelberg Germany for his second postdoc to study the function of a sub-cellular architecture of neuron in vivo. His research interests include minimal unit of neural information processing and behavioral representation as a result of it. Shoji Komai is an alumnus of Global Young Academy and an ex-chairperson of National Young Academy of Japan. He is in charge of empowering not only young researchers but also people in lots of different sectors, which is one of his interests not only in his academic career but also in social service as a human being.

Gender dimension of refugee scientists

GenderInSITE, UNESCO-TWAS, IAP and ISC
Sena Galazzi. Associate Program Officer, TWAS
Dr. Saja Taha Al Zoubi. Visiting Scholar, University of Glasgow
Dr. Ghanya Al-Naqeb. Researcher, University of Trento, Italy
Prof. Roseanne Diab. Director, GenderInSITE
Dr. Peter McGrath. Coordinator, IAP, Italy

Abstract

The session will address the gender dimension of refugee scientists and highlight the challenges that women scientists and researchers face in war-torn countries, their challenges as refugees or displaced scientists, and their experiences in rebuilding their scientific careers in a new country. An overview of The World Academy of Sciences (TWAS)-InterAcademy Partnership (IAP)-International Science Council (ISC) initiative on refugee and displaced scientists will be given. This will be followed by the testimonies of two women scientists, one from Yemen and one from Syria, who speak on their personal experiences and reflect on gender perspectives. Finally, there will be a facilitated discussion on how best to incorporate a gender dimension into the refugee scientists' initiative and how best to support the needs of displaced women scientists.

Biography

Prof. Roseanne Diab is currently Director of the global initiative, Gender In SITE, which is based in Trieste, Italy. She has served as Co-chair of the Gender Advisory Panel of The World Academy of Sciences (TWAS) and represents Gender In SITE on the panel. She is the former Executive Officer of the Academy of Science of South Africa (ASSAf) and Emeritus Professor in the School of Environmental Sciences, University of KwaZulu-Natal. She is a Member of ASSAf and is recognized for her research contributions in the field of atmospheric sciences, particularly air quality, climate change and tropospheric ozone variability. She is a Fellow of the University of KwaZulu-Natal, the South African Geographical Society, The World Academy of Sciences (TWAS) and the African Academy of Sciences. She has been a Fulbright senior research scholar and has been a member of a number of international bodies such as the International Ozone Commission (IOC). She currently serves on the AU High-Level Panel on Emerging Technologies and is co-chair of an OECD Expert Group on Reducing the Precarity of Young Researchers' Careers.

Dr. Peter McGrath has a background in the life sciences, particularly entomology and crop protection. After a research career in the UK and USA, he spent several years as a freelance science writer. He joined The World Academy of Sciences (TWAS) in 2003, initially as writer/editor. From 2006, he began overseeing the implementation of TWAS's core programs designed to build scientific capacity in the South, as well as the activities of the Organization for Women in Science for the Developing World (OWSD). In 2011 he was also handed responsibility for developing and implementing TWAS's Science Policy/Science Diplomacy program. In 2013, he switched to become Coordinator of the InterAcademy Partnership (IAP), overseeing the Trieste office of the secretariat (IAP-Health and IAP-Science) and acting as liaison person for the IAP Science Education Program and the IAP Biosecurity Working Group. He also retains his position as coordinator of the TWAS science and diplomacy initiative, including representing TWAS in the EU Horizon2020-funded S4D4C project, and leads both IAP and TWAS contributions to the Science International Refugee and Displaced Scientists program.

Ms Sena Galazzi is Associate Program Officer at UNESCO-TWAS, where she works across programs in scientific capacity building, science diplomacy and policy. Sena is in the final stages of her PhD in International Politics at SOAS, University of London. Sena's background is in International Law, Politics and Development, with a thematic specialization in migration and forced displacement. Before joining UNESCO-TWAS in 2019, Sena was based in South East Asia, most recently in Myanmar where she designed and oversaw the implementation of migration development programming in the country's northern Chin State, and later co-founded a social enterprise focused on academic capacity building and access to higher education. Sena has worked in a variety of research and project management roles across the UK, Myanmar, Thailand, and Malaysia, mostly in human rights and migration related fields in large international and UN organizations and a host of grassroots groups focused on human rights and political research.

Prof. Ghanya Al-Naqeb is an Associate Professor of Nutritional Sciences, Faculty of Agriculture, Department of Food Sciences and Human Nutrition, University of Sana`a, Yemen. Her research focused in the field of natural products isolated from Yemeni herbal plants for disease prevention with achievement of 30 international publications, h index=13 and RG Score- 23.3 and citation of 666 (ResearchGate and google scholar). She was a postdoctoral fellow in Malaysia 2009-20011 and a Fulbright scholar in USA in 2014. She has been awarded for International Award, the 2016 Elsevier Foundation Awarded for Early Career Women Scientists in the Developing World, in Biological Sciences: Agriculture, Biology, Medicine, Arab Region. Annual Meeting in Washington D.C., USA, and for the 2015 Federation of Arab Scientific

Research Councils Award in Medicinal and Aromatic Plants field. Khartoum Sudan 31 May 2016. -Due to the war and conflict in Yemen Dr. Al-Naqeb had to leave Yemen and she was a Philipp Schwartz-Initiative scholar with the hosting of Chair of Food Chemistry, institute of Pharmacy and Food Chemistry, Würzburg University Germany from December 2017 until February 2019. Currently, Dr. Al-Naqeb has joined the Centre Agriculture Food Environment, University of Trento in Italy as a researcher fellow for the SAR-University of Trento 'Protection Project' 2019/2020.

Dr Saja Al Zoubi is a Syrian development economist who specializes in and teaches Gender and Forced Migration & Middle East Politics. Her research has focused on broadly on issues of gender and rural development, including issues of women's empowerment, and its role in rural development. Since the war broke out in Syria, her concern has been researching ways to improve the livelihoods and food security of affected households (IDPs and refugees), especially women-headed households and supporting young people to educate, enhance capacity building and find work opportunities. Dr. Al Zoubi has worked as a researcher and tutor at the University of Oxford. She was also a tutor and research fellow at the Oxford Department for International Development (ODID) and Christ church college. Currently, she is a visiting scholar at Glasgow university as a mentor to 'International Master in Adult Education for Social Change (IMAESC) (Erasmus Mundus)'. Saja has been working in an academic/research and UN and NGOs overseas foundations for around 15 years. Her book, The Role of Women in Home Economics, where she examined how women can play a significant role in different sectors (economic, agriculture, health, environment, education…etc.) through their efficient participation in household management, was the first academic reference in home economics published in Syria. Dr. Al Zoubi conducted a comprehensive study about enhancing the livelihoods and food security of Syrian refugees in Lebanon for more than one year in the Syrian camps in Bekaa valley with international organizations (International Center for Agricultural Research in the Dry Areas ICARDA and the World Academy of Sciences TWAS). In Syria, she conducted research on the socio-economic and demographic impact of the war, with more focus on women. In parallel, she examined the internal displacement waves through a political lens. Dr. Al Zoubi was selected by The University of North Carolina at Chapel Hill (2016) and Cornell Law School (2017) for post-Doc fellowship. She is the recipient of numerous awards from international and regional Foundations.

The Criticality of Education in Displacement as both an individual Protection and a Community Support Intervention

Mr Peter Trotter – USA/Iraq
Head of Office, UNHCR Sub-Office, Duhok, KRI/Iraq

Abstract

The disruption of education is one of the long-term protection risks faced by refugees, and can have multi-generational impact both on individuals and on their communities, whether in the countries of origin to which they hope one day to return or the countries of asylum in which they reside in exile. Access to education is a key goal of the 1951 Refugee Convention and the Global Compact on Refugees – two of the most widely adopted human rights instruments in the world. In addition to addressing legal constraints to access to education for refugees, UNHCR's DAFI Program seeks to build on general programs supporting primary and secondary education by enhancing access to tertiary opportunities. Through this support to higher education, refugee scholars are empowered, not only as individuals, but as catalysts for rebuilding their countries of origin and positively contributing to their countries of asylum. Two inspiring women, currently in exile in Duhok, are excellent examples of the transformative power of this essential support and the criticality of education in displacement.

Biography

Mr. Trotter has served with UNHCR since 2001 in a range of protection functions with an emphasis on complex and emergency operations. Mr. Trotter is currently the UNHCR Head of Sub Office, Duhok, KRI, and has previously served in Lebanon, Thailand, South Sudan, the Abyei Administrative Area, Zimbabwe, Sudan/Darfur, Sweden, Ghana and Cote d'Ivoire in both UNHCR country Representations and Regional Offices. Before joining UNHCR, Mr. Trotter practiced law for 12 years in Boston, Massachusetts, with an emphasis on civil litigation. Mr. Trotter received his Bachelor of Arts from Simon's Rock Early College (1984), a Juris Doctorate, magna cum laude, from Boston University School of Law (1988), and a Master's of Law and Diplomacy from the Fletcher School of Law and Diplomacy (2001).

Terror and Hope: The Science of Resilience

Prof. Rana Dajani
Hashemite University

Abstract

Conducting rigorous scientific research under humanitarian conditions is not easy. However, the need for scientific research is very important to ensure that humanitarian programs are impactful and to find ways to improve them. This talk will explain the impact of trauma and toxic stress on

refugee health, as well as some of the innovative solutions being developed to undertake community-based research and interventions in contexts of forced migration.

Biography

Rana Dajani Ph.D. molecular cell biology from U of Iowa, currently Cmalakova Fellow at the Jepson school of Leadership at the University of Richmond, Harvard Radcliff fellow, a Fulbrighter, Fulbright Foreign Student Program, Jordan to the United States, 2000; Fulbright Visiting Scholar Program, Jordan to the United States, 2012. Eisenhower fellow, Professor, former center of studies director, Hashemite University, Jordan, Yale and Cambridge visiting professor. World expert on genetics of Circassian and Chechan populations in Jordan. Established stem cell research ethics law in Jordan. Advocate for biological evolution and Islam, speaker at McGill University and MIT. Jordan team leader in studying refugee youth with Yale University and the epigenetics of trauma across generations. Higher education reform expert, member UN women Jordan advisory council. Writer in Science and Nature, established a women mentor network, received Partnerships for enhanced engagement in research (PEER) award 2014. Organized the first gender summit for the Arab world 2017. Most influential women scientists in Islamic World, 12 among100 most influential Arab women 2015, women in science hall of fame 2015, King Hussein Cancer Institute for cancer and biotechnology award 2009 and 2016 Global Changemaker Award for celebrating 70 years of the Fulbright Program. President of the Society for the Advancement of Science, Technology and Innovation in the Arab World. Awarded the Jordan star of science by His Majesty King Abdullah II, University of Iowa, College of medicine, distinguished alumni Award 2018, Higher Education Reform Expert EU-TEMPUS, Jordan, founder service-learning center, Hashemite University, speaker at TEDxDeadsea and TEDxPSUT, World Islamic Economic Forum 2012 and World Science Forum 2015 and 2017. Developed a community-based model “We love reading” to encourage children to read for pleasure received Synergos Arab world social innovators 2009, Clinton Global Initiative 2010, Library of Congress best practices 2013, World Innovation Summit in Education Award 2014, King Hussein Medal of Honor 2014, Star Award 2015, IDEO.org best refugee education program 2015, UNESCO International Literacy Prize 2017, World Literacy Council Award 2018 and the Jacobs social entrepreneurship award 2018, Science, Technology and Innovation Award UN 2019, Ashoka Fellow 2019, UNHCR Nansen Refugee awardee 2020. Author of the book: Five scarves, Doing the impossible: If we can reverse cell fate why can’t we redefine success, Nova Publisher 2018. Reviewed by Nature.

Just another young girl with dreams to be different

Anindita Bhadra
GYA cochair, IISER Kolkata

Abstract

I grew up in a largish family in Kolkata, India. My parents and grandparents drilled it into my little head that my only aim in life should be to do well in studies and grow up an "stand on my own feet", as we say in India. I was just another young girl, growing up in the eighties and nineties, going to a good school, preparing myself to build a career. It was much later that I realised how privileged I was, when I saw classmates in college who were already married and struggling to keep pace with the class while managing household chores. Looking back, I can identify some people and some incidents that have influenced me and changed the trajectories of my life. In a country where higher education is considered incomplete or below par if one doesn't have an experience in the global north, I have been completely home-bred, and I am happy for it. I chose to work on a system that is also very representative of the global south and my journey of a little over a decade as an independent researcher has been rather jolty, but I am wiser for the experience. I will share a few of my experiences and what they have taught me as I took little steps from my cosy home in Kolkata to go out and explore the world.

Biography

Dr. Anindita Bhadra is a behavioral biologist at the Department of Biological Sciences, IISER Kolkata. She founded the Dog Lab at IISER Kolkata, which is engaged in studying the behavior, ecology and cognitive abilities of dogs using the free-ranging /stray dogs in India as a model system. She is particularly interested in understanding the evolution of the dog-human relationship. Much of her work on free-ranging dogs has been highlighted by the scientific and public media. Dr. Bhadra is the recipient of the INSA young scientist award, SERB women excellence award and the IAP young scientist award. She was involved in the founding of the Indian National Young Academy of Science (INYAS) in 2014, and was the Chairperson of INYAS during its first three years of existence. She has been a member of the Global Young Academy since 2016, where she is presently the Co-Chairperson (global), having previously acted as the co-lead of two working groups and the Editor of GYA's annual magazine, Connections in 2019. Anindita believes in the responsibility of a scientist in engaging with the society and is actively engaged in various science outreach activities, including popular science writing in both English and Bangla. She is currently the Associate Dean of International Relations and Outreach at IISER Kolkata. She is also a professional thespian and leads the Bangla theatre group mukhOsh with her husband.

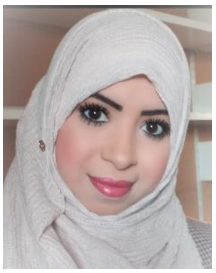
Experience with life and working in a new social, cultural andacademic environment

Eqbal M. A. Dauqan
Department of Nutrition, Faculty of Medicine, University of Oslo, Norway

Abstract

There are several ways that host universities and employers can facilitate career development for the researchers at risk who are hosted/employed. Contact person or mentor is the most important thing can host Universities offer for the scholars at risk and it can assist in successfully integrate into the host country research landscape. Flexibility and adaptation are the keys to working in a multicultural environment. In addition to, the scholar at risk should develop understanding for different cultures and values and respect those differences. From my experience the scholar at risk in the host country or host university should learn to listen well and give others the confidence to be able to communicate with you by showing respect. Thus, the highlight of this presentation will be to review my experience with life and working in a new social, cultural and academic environment as lessons learned.

Biography



Eqbal Dauqan received her Ph.D in Biochemistry from Universiti Kebangsaan Malaysia (UKM), Malaysia, sponsored by the Organization for Women in Science for the Developing World (OWSD). Her main research interest is biochemistry, food antioxidants, and nutrition. She was appointed as a Post-doctoral Fellow at the School of Chemical Sciences and Food Technology, FST, UKM from July 2012 to July 2013. In July 2013 she was appointed as Senior lecturer at Department of Medical Laboratory Sciences- Faculty of Medical Sciences, Al-Saeed University (SU) - Taiz, Yemen, where she became Head of the Medical Laboratory Sciences Department at the same Faculty. In 2014 Eqbal established a new program entitled Therapeutic Nutrition Department in, SU and she selected to be the head of this department as well. She is the president of Yemeni Association for Science and Technology for Development-(OWSD national chapter) in Taiz city. She was selected as one of five winners of the 2014 Elsevier Foundation Award for Early Career Women Scientists in the developing countries (Chemical Sciences). After the war in Yemen; Eqbal was selected to be a visiting scholar in UKM, Malaysia sponsored by IIE_SRF (USA) from Feb 2016 to Feb 2018. She was appointed as an associate professor at University of Agder (UiA), Kristiansand-Norway through the Scholar at Risk (SAR) Network, USA. In September 2018, she had been selected as TWAS Young Affiliate for 2018-2022. In May 2019 she was selected as a member of Global Young Academy (GYA) for 5 Years. In November 2019, she won the UiA bridge cultural builder award for 2019 as a great ambassador for UiA. Currently, she is working in University of Oslo (UiO), Norway through SAR as well.

Science-Based Decision Making in Managing Climate Change Adaptation.

Dr. Mari-Vaughn Johnson
Federal Director of the United States Geological Survey's Pacific Islands Climate Adaptation Science Center

Abstract

The United States Department of Interior established the Pacific Islands Climate Adaptation Science Center (PI-CASC) on October 7, 2011 to address the challenges presented by climate change and variability for federal, state, nongovernmental, community, indigenous Pacific Islanders, and resource managers in Hawai'i and the Pacific Islands region. As the Federal Director of PI-CASC I have moved away from doing scientific research. Now I work with natural and cultural resource managers, community leaders, and scientists to prioritize scientific inquiry in support of regional needs to develop sustainable climate adaptation solutions. The future of science and science-informed management in this region will not revolve solely around technical skills, but will necessarily depend on building relationships between scientists and communities, both in terms of growing a mutual respect for each other and in terms of moving sustainable solutions to the forefront of our work together. In this talk I will share case studies of what it means to develop effective science to address emerging and mounting challenges to help plants, fish, wildlife, water, land and people adapt to a changing climate.

Biography

As Federal Director of the United States Geological Survey's Pacific Islands Climate Adaptation Science Center, Dr. Mari-Vaughn Johnson brings a systems-oriented perspective to developing multi-functional solutions to climate change related challenges posed to cultural and natural resources. Previously, Dr. Johnson served as an Agronomist with the Conservation Effects Assessment Project in the United States Department of Agriculture's Natural Resources Conservation Service, contributing to river basin-scale assessments of the effects of agricultural conservation practices on soil health, water quantity, and water quality. As an AAAS Science and Technology Fellow, she worked as Science Advisor in the Bureau of East Asian and Pacific Affairs at the US Department of State, forming multi-lateral relationships across multiple disciplines, coordinating between the federal interagency, foreign governments, domestic and foreign academic institutions, and multi-national foundations, all with the goal of bringing science to policy more effectively. As a member of the Global Young Academy, she served on the Executive Committee and as co-chair, working to promote science-based solutions to local, regional, and global challenges including poverty, clean water access, biodiversity, and agriculture. She earned an MS in Environmental and Plant Biology at Ohio University and a PhD in Wildlife Science at Texas A&M University.

Barriers to access in higher education for displaced minorities: The case of female Yazidi students in Iraq

Dr Heike Wendt – Austria
Deputy Head of the Institute for Education Research and Teacher Education, University of Graz

Abstract

The Internal Displacement Monitoring Centre estimates that at the end of 2019, some 45.7 million people on planted earth were internally displaced due to armed conflict, generalized violence or human rights violations. The effects of displacement for education have not been well understood and its barely touched in literature, due to the difficulties to studied complex and very dynamic situations in conflict regions. In Iraq, in recent conflicts almost all of the members of the Yazidi minority, making up to half a million people, have been displaced after 2014, with only few being able to return to their homes in Sinjar region. Displacement and war-related trauma also affected educational opportunities of young people at large. Whereas the access and barriers to schooling in Iraq have been at least touched by literature little to nothing is known about access and barriers to higher education of minority students. In my talk I will review literature on access to higher education in conflict and post-conflict setting. I will than related this body of knowledge to discuss the situation of female Yazidi students. For this I will draw on data collected in 2019, comprising a survey component and a focus-group component. In the survey more than 600 students participated, which makes up about 15% of the estimated total population of Yazidi students in Iraq reporting on their study and living conditions. In addition, focus group discussion were held over the years 2016 to 2019 with more than 60 students. My research, as a first puzzle piece, clearly shows the critical study conditions of students from the Yazidi minority, especially women. It became apparent that not just external factors, such as finances and security are obstacles to studying. Also, the universities themselves are required to ensure a safe study environment in which students feel well and supported.

Biography

Prof. Dr. Heike Wendt is Professor for Education Research at the University of Graz, Austria. She has for many years served as in international comparative studies, publishing widely on education systems and issues of equity in education. She is for more than 6 years lecturing at universities in Iraq and coordinates since 2015 leads a higher education partnership between the Universities of Mosul, Dortmund and Graz aiming to strengthen academic reconstruction and reconciliation at Mosul university and the region. As part of her civic engagement, she coheads a small NGO supporting and empowering minority students in Iraq in their educational aspirations.

Driving Innovation and Entrepreneurship in the Arab Region

Kareem Hassan
Executive Director of ESCWA Technology Centre for Development

Abstract

This session aims to shed light on the opportunities available for innovation and entrepreneurship for sustainable development in the Arab region. This session will also demonstrate the UN-ESCWA's support for new start-ups or existing small and medium-sized enterprises. This session will highlight the enabling environment needed to support innovation and entrepreneurship and clarifies the challenges facing the Arab region in this domain. It will also outline recommendations for enhancing the ecosystem and initiatives undertaken by selected stakeholders: governments, the private sector, universities or regional and international organizations, for promoting and developing technology driven entrepreneurship in order to create new job opportunities for women and youth in the Arab region.

Biography

Kareem Hassan is an international innovation expert and sustainability entrepreneur. He is currently the Executive Director of ESCWA Technology Centre (Jordan). Formally he was the Managing Director of BENAA Foundation (Egypt). He was also a Lecturer and Appropriate Technology Researcher at Zewail University for Science and Technology (Egypt). Besides, he worked as a researcher in the field of Environmental Engineering and Sustainable Development at King Saud University (Saudi Arabia), the University of Duisburg-Essen (Germany), The American University in Cairo (Egypt), and Eawag - the Swiss Federal Institute of Aquatic Science and Technology (Switzerland). Kareem got his Bachelor of Agricultural Engineering at Ain Shams University (Egypt), Masters of Science in Environmental Engineering at the American University in Cairo, and a Project Start-up Program for Sustainable Development at Cewas (Switzerland). Kareem has initiated and led more than 60 projects in 20 countries worldwide, including knowledge production, capacity building, participatory innovation, and appropriate technology implementation. In addition to founding and leading four enterprises in the fields of water, agriculture, sustainable architecture, and waste recycling.

The Role of Women's Organizations in Achieving the Women's Agenda of Peace and Security: Opportunities and Challenges

Ms Suzan Aref – Iraq
President of Women Empowerment Organization

Abstract

Resolution 1325 is a paradigm shift in the treatment of the issue of women by the United Nations and the international community. It manifests women's leadership as a fundamental step to

maintain peace and security. Women's organizations in Iraq and the Kurdistan Region have adopted work on the agenda of Women, Peace and Security in partnership with Women's Security and Peace Coalition. The National Plan provided an opportunity for civil society organizations to cooperate with government institutions to support women in general, and survivors of violence in particular. Civil society organizations have launched campaigns for the Strategy for the Advancement of women and Strategy for Violence against Women, the adoption of the Anti-Domestic Violence Act and proposing amendments to the Personal Status Law focusing on child marriage. The Resolution 1325 is a powerful tool to improve the localization of the approaches to the Agenda; give women the opportunity to design programs; and develop participatory work with government institutions; secure women's networks at the local, regional and international levels and highlighting women peacemakers; and match national policies with CEDAW, Sustainable Development Goals and the Beijing Declaration. Finally, the challenges of the implementation of the Agenda are in the lack of financial resources; fragility of the engagement with women's issues; ineffective legislation reforms; the lack of systematic judiciary prosecution of the perpetrators of sexual abuse; insufficient accountability mechanisms and the ineffective participation of women in politics.

Biography

Suzan is a human rights activist, she is the founder and director of Women Empowerment Organization since 2004, she was the coordinator of the Iraq Cross-Sector Task Force (CSTF) 1325 as per the decree of the Iraqi Council of Ministers in 2017. Since 2012, She has been playing a leading role to ensure a robust partnership between CSOs and both governments of Iraq and Kurdistan in developing the Iraqi national action plan 1325 which was adopted by both governments in 2014 and thus Iraq became the first country in the MENA region to have a national action plan (NAP) for UNSCR 1325. She has contributed a lot to develop the Iraqi National Report on the Implementation of NAP 1325 (2014-2018). Suzan is coordinating a large alliance of civil society (Alliance to support the implementation of the UNSCR1325) which included 40 NGOs cross Iraq to support the development of Iraq's national plan and its implementation. Suzan was one of the peer reviewers of a guideline study (Guidance for practitioners in Iraq-International protocol on the documentation and investigation of sexual violence in conflict). In August 2018, Suzan represented the Iraqi CSTF 1325 at the UN Security Council and presented the great achievements and implementation of NAP 1325 for the WPS agenda. She highlighted the partnership of government and civil society, which is a distinctive model in the region. She has also worked with the European Union in 2018 as a gender expert on a report on gender analysis in Iraq on the situation of women in Iraq in terms of political and economic participation. She has Worked as a Consultant with UNODC in 2019 on a research study titled “Strengthening the Capacity of Women Professionals Working in the Counter-Terrorism Sector in Iraq. Suzan Aref consolidates efforts and promotes participatory action among

government institutions, local organizations, international organizations, embassies, and UN agencies on supporting women's agenda, security, and peace.

Science for Humanity: Issues pertaining to Women and Science, and Some Championnes of Science in some Developing Countries and the World

Moneef R. Zou'bi PhD FWAAS FAETDW
Science Advisor, InterAction Council (IAC); and
Co-Founding Director, World Sustainability Forum (WSF)

Abstract

This paper will attempt to highlight briefly the role of women in the scientific enterprise historically; as well as women's role on the science-related socioeconomic development scene at the present time, particularly in relation to global and national efforts to achieve the 2030 Agenda for Sustainable Development and the Sustainable Development Goals to hopefully, be revisited in our post COVID-19 world. To shed further light on the role of women in the scientific enterprise as well as in academies of sciences, some female champions (championnes) of Science, Technology and Innovation (STI) will be identified in order to encourage young females from around the world, particularly the Developing world, to delve into science.

Biography

Dr Moneef R. Zou'bi has been active in global Sustainable Development particularly through Science, Technology, and Innovation (STI) for around 30 years. Born in Amman, Jordan, he studied for his undergraduate and postgraduate degrees in Civil Engineering Technology and Management at Brighton and Loughborough Universities in the United Kingdom, 1980 - 1987. After becoming involved in global development issues, he successfully pursued further postgraduate work at the Department of Science and Technology Studies at the University of Malaya. Dr Zou'bi is a Founding Director of the World Sustainability Forum, Santa Fe, NM, USA, since October 2020. He also serves as the Science Advisor to the Interaction Council (IAC) which is an independent international organization that mobilizes the experience of a group of former heads of state and statesmen from all over the world. Previously, he worked for the Islamic World Academy of Sciences (IAS) (an international scientific NGO based in Jordan and affiliated to the Organization of Islamic Co-operation (OIC)) firmly positioning the IAS on the international scientific and technological collaboration landscape. After serving in various capacities at the IAS, he was appointed as Director General, IAS, May 1998 – September 2019; and then as Emeritus Director General since October 2019. He has worked extensively on science and technology issues, science education, and sustainable development, as well as on water issues from a Middle Eastern perspective, and has lectured on such topics in over 30 countries including Canada and the United States. He has published over 60 papers and edited and co-edited 20 books on topics such as higher education, the environment as well as transformational technologies. In 2010, he co-authored the ground-breaking Arab States Chapter of the 2010 UNESCO Science

Report that foresaw the advent of the Arab Spring and the associated turmoil in the Middle East. In 2015 and 2020, he was commissioned again to co-author the Arab States Chapter of the 2015 and 2020 editions of the UNESCO Science Report. Moneef has visited more than 60 countries and enjoys high-level contact in most; he speaks Arabic, English and some French, and is a member of many international organizations including the UNESCO International Centre for South-South Co-operation in Science, Technology, and Innovation (ISTIC), Malaysia; the New York Academy of Sciences (NYAS); World Academy of Art and Science (WAAS) and the European Association for the Study of Science and Technology (EASST); and is a Founding Fellow, of the Academy of Engineering and Technology for the Developing World (AETDEW), based in Kuala Lumpur (Malaysia). He is also a member of the University of California International Water Forum, USA, since 2007; a member of the American Association for the Advancement of Science (AAAS), since 2013; a member - Board of Judges for the Templeton Prize for 2018, 2019, 2020 and 2021, and a member of the International Advisory Board, Economic Cooperation Organization Science Foundation (ECOSF).

Science Diplomacy for Early Career Researchers

Science Diplomacy for Early Career Researchers (ECRs)

Dr. Pierre-Bruno Ruffini. Introduction to Science Diplomacy Professor at the University Le Havre-Normandie, France

Biography

Dr. Pierre-Bruno Ruffini Professor at the University Le Havre-Normandie, France Introduction: Pierre-Bruno Ruffini is a professor at the Faculty of International Affairs at the University of Le Havre-Normandie (France) and a member of EDEHN (Equipe D'Economie – le Havre Normandie). He is a former Counselor for Science and Technology at the Embassy of France in Russia (2007-2010) and Italy (2010-2013). He acts as expert in the ongoing European research project "Inventing a Shared Science Diplomacy for Europe" (InsSciDE - H2020).

Pedro Ivo Ferraz da Silva. Scope and Importance of Science and Innovation Diplomacy for developing economies.

Head of Science, Technology and Innovation, Embassy of Brazil in Berlin

Biography

Pedro Ivo Ferraz da Silva Head of Science, Technology and Innovation, Embassy of Brazil in Berlin Introduction: Secretary Pedro Ivo Ferraz da Silva is a carreer diplomat and is the Head of the Science, Technology & Innovation Section of the Brazilian Embassy in Berlin and is the co-founder of the São Paulo Innovation and Science Diplomacy School, InnSciD SP. Previously, he worked in the Brazilian Embassy in New Delhi, as Deputy Head of the Division of Information Society of the Brazilian Ministry of Foreign Affairs and as the Brazilian representative to the Internet Corporation for Assigned Names and Numbers (ICANN). Prior to joining the Brazilian Foreign Service, Pedro was the Director for Customer Services at Comptel Communications in São Paulo, Brazil, and Software Development Coordinator at Siemens AG in Munich, Germany. Pedro holds a BSc in Electrical Engineering (2000) and in Philosophy (2009) and a MSc in Philosophy of Technology (2013) from the University of São Paulo.

Muhammad Adeel. Careers in Science Diplomacy for Early Career Researchers Career Diplomat, Ministry of Foreign Affairs, Pakistan

Biography

Muhammad Adeel. Career Diplomat, Ministry of Foreign Affairs, Pakistan Muhammad Adeel is a Career Diplomat at the Ministry of Foreign Affairs, Pakistan and is also a PhD Scholar in Agricultural Biotechnology at the WA State Agriculture Biotechnology Centre, Australia. He holds an B.Sc (Honours) and M.Phil in Biotechnology from Forman Christian College in Lahore, Pakistan, where he also authored two dissertations on microbial diversity and biotechnology. From 2014 to 2016, he was the Manager of Pakistan Biotechnology Information Centre, which sought a multi-stakeholder engagement for the progress of Biotechnology in the country. Adeel's PhD research has a significant component of science diplomacy in dealing with governance of biotechnology. During his stay in Australia, he organized multiple science diplomacy trainings aimed at Early Career Researchers. During his university days, he was an avid parliamentary debater, and has also spoken at forums such as TEDx on the potential blend of biotechnology and social media. Currently, he is part of the Arms Control, Disarmament and Science Diplomacy Division at the Ministry of Foreign Affairs, Pakistan assigned to the Science Diplomacy Directorate.

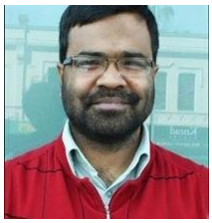
Dr. Almas Taj Awan. Effective Communication for Science Diplomacy Co-founder and Scientific Researcher Zikalab Diagnostics

Biography

Dr. Almas Taj Awan. Co-founder and Scientific Researcher Zikalab Diagnostics. Dr. Almas T. Awan received her PhD degree in Chemistry from the Campinas State University, Sao Paulo, Brazil. She has four major focuses for her scientific research career: renewable energy from waste biomass, water, wastewater and sediment quality analyses and biomarkers research linked to Zika and Breast cancer. At present, she is running her startup company with the name `ZikaLab Diagnostics` as principal investigator. She is an elected member of Global Young Academy (GYA), Cherie Blair Foundation Mentee in Mentoring Women In Business Program (London, UK), Alumni at Global Innovation through Science and Technology initiative Program by AAAS (American Association for the Advancement of Sciences) and an Independent Scientific Research Collaborator. She is also an independent science diplomat and founder of science diplomacy working group within the GYA. She was elected as Executive committee member in 2017 and again in 2020 by GYA membership.

Dr Monir Uddin Ahmed: S&T Cooperation Agreement as a Science Diplomacy tool for Scientific Advancement of a country

Biography



Monir Uddin Ahmed, a Bangladeshi microbiologist, is currently an Assistant Professor at Qassim University in Saudi Arabia. He is also the founder and editor of Scientific Bangladesh, a bilingual science magazine. He is one of the co-leaders of the Science Diplomacy in South Asia working group of the Global Young Academy (2020-2021) and a founding member of the National Young Academy of Bangladesh (2019-2024).

Science Communication

The power of narrative. Policies, Politics and Pandemics

Mrs Nerina Finetto – Sweden
The founder and director of Traces & Dreams

Abstract

"Science will win" is the Pfizer slogan. Science and scientists were and are indeed in the focus of the public discourse during the covid19 pandemic. But how did narratives and the way we communicated about the virus change and influence the outcomes? What lessons can we learn for future communication strategies?

Biography

Nerina Finetto is the founder and director of Traces.Dreams. A platform that brings knowledge and wisdom out of academia beyond borders, disciplines and tribes and fosters interdisciplinarity, narrative and future literacy through workshops and educational projects. She has worked for newspapers and television, made documentaries and programs about innovation and technology for German broadcasts, created corporate videos for small and big companies for the internal and external communication, and worked as a chief producer for one of the biggest business television projects, at DaimlerChrysler in Germany. Nerina Finetto collaborates with different research institutes and organisations such as, for example, the Global Young Academy, EuAboutLap, Unrisd, Brazilian Academy of Science, and Women in Science without Borders.

How to Talk about Your Working Life and Research to the Media

Dr David Payne – UK
Managing Editor, Careers and Supplements, Nature

Abstract

The COVID-19 pandemic has piqued public interest in science and the work of researchers based in academia and industry. Hopefully this will create additional and lasting opportunities for scientists to talk about their research, collaborations, motivations and career journeys. Many of these messages are communicated via media professionals, but how best to get your message across to journalists? In this session, David Payne, a managing editor at the science journal Nature, describes what he and his colleagues who work in print and online newspapers, magazines and broadcast outlets need from scientist interviewees, and how you can best promote your work to them.

Biography

Managing Editor, Careers and Supplements, Nature, London, UK. He joined the science journal Nature in 2016. In his current role as managing editor, he and his team oversee careers and supplementary content, including Nature Index and Nature Outlooks. He has worked as a journalist and editor for more than 30 years, mostly on health and science titles. Prior to joining Nature, he worked at online editor at The British Medical Journal.

How Journalists Can Improve the Portrayal of Refugees

Mrs Rasha Faek – SyriaEditor-Al Fanar Media

Abstract

While the story of the refugee crisis has often been told through the journeys of refugees across borders and their attempts at resettlement, important perspectives have been missing. Indeed, the refugee's own voices and goals are often left out, especially women. The refugees' quest for education and employment, for instance, just as important as dramatic sea voyages, needs to be explored. This session will discuss how journalists can do a better job of covering refugee issues, and how refugees can better explain key features of their situation to journalists.

Biography

Rasha is a Syrian journalist, who has joined Al-Fanar Media, an online publication covers higher education, research and culture in the Arab region, since its launch early in 2013. She has contributed to international publications such as USA Today and Bloomberg BAN. Rasha holds three bachelor's degrees in English literature from Damascus University, in dramatic arts from the Higher Institute of Dramatic Arts in Damascus, and in journalism from Damascus Open University. She was a keynote speaker at the Denver University Internationalization Summit in 2017, titled: Refugees, Migration and the Internationalization of Higher Education. Rasha contributed to a manual on Education Journalism, produced by Al-Fanar Media in 2014, and put an Arabic guideline on how to write about Women, security and peace, published by the Syrian Female Journalists Network in 2018. She has also contributed a 7,000-word chapter entitled "Syria: Educational Decline and Decimation" for the book Education in the Arab World, published by Bloomsbury in 2017.

Communicating science: important skills for researchers

Mrs Bothina Osama
EgyptThe Regional Coordinator of SciDev.Net-the Middle East & North Africa

Abstract

Awareness of different science issues is the main key for cooperation between different stakeholders, like scientists, policy makers, and media workers. It is the Key for activating processes that helps in finding solution for major challenges. But whom to blame for lack of awareness around science issues? Is it the journalists, as they are not doing their work efficiently in informing public? Or researchers who are not familiar with dealing with media, and don't possess science communication skills that can help delivering their science jargons to both journalists and policy makers? This session will try to find out the importance of science communication skills for researchers, and ways to possess these skills.

Biography

Bothina is a science editor working as the regional coordinator of SciDev.Net for the Middle East & North Africa, and the managing editor of the Arabic edition. She is a founding member of the Arab Science Journalists Association. Also, a trainer and a mentor for science journalism skills, and a speaker in many science and development related conferences. She is a co-author of Practical Guide for the Arab Science Journalists book. She was the organizer of several prizes for science journalists in the Arab region.

Effective and Successful Science Communication: Top Tips and Best Practices

Mr Mohamed Elsonbaty Ramadan
Co-founder Arab Forum of Science Media and Communication, Egypt/Belgium

Abstract

Science Communication is the art of communicating science to a layperson in an understandable language. This presentation is aiming to introduce science communication to researchers, academics and established scientists who are interested in communicating their research and science to the public. It will discuss the principles of science communication as well as share top tips and best practices to communicate scientific content to wide range of non-specialist audiences effectively and successfully.

Biography

Mohamed Elsonbaty is an Award-winning Science Journalist and a Science Communication Consultant and Trainer with 9 years of experience. He has published more than 650 pieces about scientific topics in reputable outlets including Scientific American, SciDev.Net and Popular Science. He has provided consultancy for many international organizations as British Council, 1001 Inventions and the American University in Cairo, where he developed and delivered various

science communication projects and events. He has delivered training sessions and workshops for researchers and scientists to develop science communication skills in Egypt, Qatar and Germany. Mohamed holds a Master degree in Science Communication and Public Engagement from the University of Edinburgh, through the prestigious Chevening scholarship. He is a member of Public Communication of Science and Technology (PCST) network and the Association of British Science Writers (ABSW) and co-founder of Arab Forum of Science Media and Communication.

Women in STEM

Shaimaa ElBanna
British Council Egypt

Abstract

The British Council Egypt in Cooperation with the Egyptian academy for scientific research and technology (ASRT) conducted a study on women in science, technology, engineering and mathematics (STEM) in Egypt to look at women's perception of their engagement and representation in STEM in Egypt. Through face-to-face interviews and focus groups, surveys, phone interviews and data gathered from national and international organizations, our research creates a picture of how the women, surveyed and spoken with, are engaged in and contributing to furthering scientific pursuit; as well as what factors have supported or hindered their overall participation. The research study unpacks and examines the multiple thresholds of women and girls in higher education and employment in STEM fields in Egypt. The research central objective is to support women in STEM professionals, women and scientists working in the field of gender equality and to help us in paving the way for young girls to take the STEM subjects and to continue their studies in the STEM Fields.

Biography

Shaimaa ElBanna is the Head of Science at British Council Egypt. She manages a 55 million GBP science programs between Egypt and UK. Shaimaa Has more than 20 years of work experience. She started as a researcher and got promoted over years. She has a direct experience in Development and empowering marginalized categories of the society like women, youth and small farmers. She has more than 14 years' experience in program management which includes developing and delivering detailed work plans, budgets, and output for the program; monitoring and reporting on the impact and effectiveness of the program activities; designing, managing, coordinating, and monitoring subcontracts and consultancies; providing general supervision, guidance, and mentoring to local program staff. Shaimaa was the Off-shore programs manager at Midwest Universities Consortium for International Activities (MUCIA) - AERI Value-Chain Training Project. Before that she was the Senior Training specialist of the Goldman Sachs Women's Entrepreneurship and Leadership Program. She also worked as a media and public relations consultant to some reputable International NGOs and Agencies such as

ASHOKA Arab world, Save the Children, UNDP, BBC and Arab league. She is also accredited Social auditor for Fair Labor Association (FLA) & Virtue in Egypt. She received BA in Political sciences from the Cairo University (1999) with honorary degree she was top 10 on her class. She received a diploma in Public Administration with focus on transparency (2000). She received executive course in Human rights in Denmark (2001) and were chosen by the American Embassy in Cairo to be part of Young Political Leaders Program and spent a month in USA to be introduced to the key political and development figures.

Health- Biology-Medicine-Pharmacy

Lessons from HIV for SARS-CoV-2

Prof. Quarraisha abdool karim
Associate Scientific Director of CAPRISA, South Africa

Abstract

The SARS-CoV-2 pandemic is the most recent and challenging pandemic facing humanity in the 21st century. Country responses have had to tread a fine balance between saving lives, livelihoods and containment of the spread of the virus. The role of science and knowledge generation has been unprecedented. The development of several efficacious vaccines within a year of discovery of the virus has been unheard of. The emergence of new variants of concern of SARS-CoV-2 even as SARS-CoV-2 vaccines are being rolled out across the globe; continued high rates of infections and deaths underscore our inter-dependence and the many research questions that remain unanswered. Global responses to the HIV pandemic have important lessons for responses to SARS-CoV-2. This presentation will share lessons learnt from three decades of responding to HIV for Covid-19 that include: the critical importance of a nuanced and granular understanding of the epidemic at a local level; the centrality of scientific evidence in the response; the role of political leadership; need for array of evidence based prevention and treatment options; access to rapid point-of-care diagnostics; understanding the challenges of changing behaviors; engagement and partnerships with communities; recognizing and addressing disparities and inequities; strengthening access to quality health care and the importance of mutual interdependence and solidarity in pandemics.

Biography

Quarraisha abdool karim, PhD, DSc(hc) is an infectious diseases epidemiologist who has focused for the past 32 years on preventing HIV infection in adolescent girls and young women. She is Associate Scientific Director of CAPRISA, Professor in Clinical Epidemiology at the Mailman School of Public Health, Columbia University, USA and Pro Vice-Chancellor of African Health at the University of KwaZulu-Natal (UKZN) in South Africa. Her research has garnered several thousand citations, including her findings on tenofovir gel that have more than 2000 citations. She is an Editor of the 6th and 7th Editions of the Oxford University Textbook on Global Public Health, which is one of the most widely used textbooks used to teach public health throughout the world. She is the co-editor of a book on HIV/AIDS in South Africa (Cambridge University Press), which is used as a reference text in South Africa and a book on HIV Clinical Trials (Springer). She is on the Editorial Board of AIDS and the Journal of the International AIDS Society. She is the UNAIDS Ambassador for Adolescents and HIV and co-chairs the UNAIDS Advisory Group to the Executive Director, member of the PEPFAR Scientific Advisory Board, and the Icipe Governing Council. She is a member of the US National Academy of Medicine and a Fellow of the Royal Society of South Africa, the Academy of Science of South Africa, the African Academy of Sciences, and The World Academy of Sciences (TWAS). She is co-recipient with Salim Abdool Karim of the 2020 John Dirks-Gairdner Global Public Health Award and the 2020

Christophe Merieux Award for Infectious Diseases Research. She is an Executive Group member of the World Health Organization's Solidarity Covid-19 Therapeutic and Vaccine Trials.

Is biology universal, and what does it mean to be human?

Dr. Martin Dominik
Reader in Physics & Astronomy at the University of St Andrews in Scotland

Abstract

We readily accept that physics and chemistry should follow universal principles, but is life a fluke or a direct consequence of universal principles as well? It seems puzzling that the only place in the vast Universe that is known to us to harbor life is planet Earth, while all known life on Earth is described by a common code. While there is no shortage of planets nor of chemical building blocks, we neither know the necessary nor the sufficient conditions for life to emerge. Life co-evolves with its environment, and the path to identifying it beyond home is far from straightforward and full of substantial methodological gaps. Many approaches might well turn out to result in a dead end. Exploring the Universe provides a mirror on our existence and a guide for reflecting on what it means to be human.

Biography

Martin Dominik is a Reader in Physics & Astronomy at the University of St Andrews in Scotland, and has completed his doctorate (Dr. rer. nat.) at the University of Dortmund, Germany, in 1996. Since 1993, Martin's research has focused on applications of the gravitational bending of light, and in particular its potential for studying planets orbiting stars other than the Sun. Martin is a strong advocate of communication being an essential part of science, and science being an integral part of society and culture. He has served on the Executive Committee of the Global Young Academy, is member of the Advisory Board of the Vietnam Young Academy and the SETI Permanent Committee of the International Academy of Astronautics, and President of the Network of Researchers on the Chemical Evolution of Life (NoRCEL). He is engaged in shaping research environments that make creative minds flourish, in fostering links across national borders, as well as across the sciences, humanities, and arts, in building capacity in fundamental sciences, and in improving education.

AL-MOF Optical Chemosensors for Instant Detection and Trapping of Mercury Ions in Water

Prof. Hassan M. E. Azzazy
Department of Chemistry, School of Sciences & Engineering
The American University in Cairo, Egypt

Abstract

Contamination of water with toxic metals mainly occurs due to the anthropogenic release of heavy metals (arsenic, cadmium, lead, mercury, etc) into the environment. Toxic metals can leach into drinking water from household lead plumbing and pipes, mining operations, petroleum refineries, electronics manufacturers, and natural mineral deposits. Heavy metals, from industrial activities or natural deposits, can also contaminate private wells through groundwater movement and surface water run-off. Consumption of high levels of heavy metals leads to acute and chronic toxicity, organ damage, and cancer. Therefore, accurate detection of heavy metals in water supplies is warranted in order to protect humans and the environment. A low cost optical chemosensor for sensitive detection of mercury ions in water was developed. Aluminum metal−organic framework (Al-MOF) were prepared and loaded with mercury ion thioketone derivative chromophore. The developed chemosensor changed color from yellow to green in presence of mercury ions in water. Sensitivity of the sensor (0.8 ppb) is lower than the WHO permissible drinking water mercury limits. Moreover, superior adsorption capacity of the fabricated thioketone Al-MOF (TAM) nanorods as adsorbent was achieved (1110 mg/g). The developed chemosensor is stable and can be used several times with high efficiency. The TAM optical chemosensor has great potential for visualizing and trapping of mercury ions and can be assembled in a portable kit for sensitive detection of mercury ions in water.

Biography

Dr. Hassan Azzazy is a tenured full professor and Chairman of the department of Chemistry at the American University in Cairo (2003-present). He is also the director of the International Medical Technology Training program accredited by the Board of Certification of the American Society for Clinical Pathology (Chicago, IL). Before joining AUC in 2003, Dr. Azzazy was a postdoctoral fellow and assistant professor at University of Maryland School of Medicine, Baltimore, MD (1995-2002). Dr. Azzazy received his B.Sc. and a post-graduate diploma in Biochemistry both from Alexandria University and a PhD in Biochemistry and Molecular Biology from University of North Texas Health Science Center, Fort Worth, TX (1994). He holds two board certifications in Clinical Chemistry and Molecular Diagnostics from the American Board of Clinical Chemistry, Washington, DC. He is certified as a Specialist in Chemistry by the American Society for Clinical Pathology in Chicago, IL. Dr. Azzazy has over 30 years of biomedical research experience and established Novel Diagnostics & Therapeutics Research Group at AUC with a focus on developing novel diagnostics for detection of infectious agents and cancer biomarkers,

development of innovative biosensors for monitoring health and environment, development of biodegradable drug nanocarriers, and development of novel electrospun nanofibers for use as wound dressings. He has authored over 200 publications in peer-reviewed journals, international conferences, and textbooks. He has co-edited two books on “Diagnostic Enzymology” and “Entrepreneurship & Innovation in Egypt”. Dr. Azzazy is an inventor on several patent families. He is a strong advocate of technology-based innovation and entrepreneurship and has co-founded two nanomedicine startup companies. Throughout his professional career Dr. Azzazy has received many awards and honors from various organizations, universities, and countries including the Excellence State Prize in Advanced Technological Sciences (2010); State Prize in Laboratory Medicine and Blood Diseases (2012), the Global Innovator Award from Texas Christian University (Fort Worth, TX, USA; 2014), Arab Innovation and Entrepreneurship Award (Ministry of Commerce, Dubai, UAE), 2015; Shoman Foundation Award for Arab Researchers in Medical Sciences, (Amman, Jordan) 2018; Life Achievement Award from the American Society for Clinical Pathology (ASCP), Chicago, IL, USA, 2018. In 2020, he has won the State Merit Award in Advanced Technological Sciences.

Molecular targeted therapy: Honing in on cancer with precision

Yi jer tan1, yeuan ting lee1, sven h petersen2, koji kono2,3,4, gurjeet kaur1, soo choon tan1 & chern ein oon1*

1 Institute for Research in Molecular Medicine (INFORMM), Universiti Sains Malaysia, Penang, 11800, Malaysia

2Cancer Science Institute of Singapore, National University of Singapore, Singapore, Singapore

3Department of Surgery, National University of Singapore, Singapore, Singapore

4School of Medicine, Fukushima Medical University, Fukushima, Japan

Abstract

Molecular targeted therapies are revolutionized treatments that target specific molecules to hamper cancer communication as a strategy to inhibit tumor growth. Colorectal cancer (CRC) is a common malignancy with high mortality rate. 5-fluorouracil (5-FU) is a standard drug used in CRC treatment. Unfortunately, many patients acquire resistance to chemotherapies, highlighting the need to explore novel agents for use as adjuncts. Sirtuins (SIRTs) are NAD+ -dependent class III histone deacetylases (HDACs). The modulation of SIRT1/SIRT2 has been suggested for the treatment of cancer. We have recently synthesized a novel patent-pending sirtuin inhibitor (BZD9L1) with demonstrated anti-proliferative activities in CRC. This study aims to investigate the mode of action of BZD9L1 either as a standalone or in combination with 5-FU in colorectal cancer cells. HCT116 and HT29 cell proliferation was assessed using CyQuant assay post-treatment with BZD9L1 and/or 5-FU. Apoptotic cell death and cell cycle were assayed through annexin V/ propidum iodide staining by flow cytometry. The effects of combination treatments on tumor growth were assessed in nude mice. BZD9L1 reduced the viability of HCT 116 and HT-29 cells but displayed minimal effect on normal human colon epithelial CCD841 CoN cells. The novel

compound also significantly inhibited cell migration in both colorectal cancer cell lines. Although BZD9L1 had no effect on cell cycle distribution, it promoted apoptosis in both cell lines. However, combined treatments reduced survival but induced cell cycle arrest, and apoptosis in HCT 116 cells. In addition, combined treatment was found to reduce tumor growth in vivo through the reduction of tumor proliferation. On its own, BZD9L1 exhibited anti-cancer activities as a cytotoxic drug that mediates apoptotic cell death in CRC. However, its potency varies in colorectal cancer with different mutation profiles, thus this needs to be further studied. Its high selectivity towards CRC cells compared to normal cells suggests that BZD9L1 could be a promising therapeutic strategy in the treatment of colorectal cancer.

Biography

Associate Professor Dr Oon Chern Ein completed her BSc (1st Class Hons) in Biotechnology at Universiti Kebangsaan Malaysia and furthered her DPhil in Medical Oncology at University of Oxford, United Kingdom. She then trained at Karolinska Institutet, Sweden as a postdoctoral fellow and now serves as a lecturer at Universiti Sains Malaysia. Chern is a member of the Global Young Academy, a fellow of the Association of Union for International Cancer Control and an ambassador of European Association for Cancer Research. She served as an EXCO member of the Young Scientists Network- Academy of Sciences Malaysia from 2016 to 2018. In 2014, she won the Exiqon Young Scientist Award- South East Asia. Chern continues to receive numerous awards for her work on molecular targeted therapy in cancer including the prestigious L'Oreal-UNESCO for Women in Science National Fellowship in 2015, the Union for International Cancer Control ICRETT Fellowship and National Cancer Council Cancer Research Award in 2016. In 2018, she was awarded the UK based prestigious Women of the Future Awards-South East Asia (Science, Technology and Digital Category) and the National Young Scientist Award (The Ministry of Energy, Science, Technology, Environment and Climate Change) for forging new grounds in science and for being a game changer in her scientific pursue in the discovery of new potential targeted therapy in cancer. In 2019, she was honored with The Most Promising Academician Award by the Malaysian Ministry of Education. She recently added two other accolades to her achievements namely the UK Alumni Award 2020 (Professional Achievement Category) by the British Council, and the Malaysian Invention and Design Society (MINDS) Young Women Scientist Award 2020.

Metagenomic analysis of the gut resistome of diarrheal patients in Kolkata reveals diarrheal gut as a reservoir of antimicrobial resistance

Rituparna De*1
1National Institute of Cholera and Enteric Diseases, Beliaghata, Kolkata-700010

Abstract

Most bacterial pathogens are resistant to more than one antibiotic, a phenomenon known as multi-drug resistance (MDR). It is a global crisis affecting the therapeutic regime of diarrhea. It arises due to the acquisition of antimicrobial resistant genes (ARGs). ARGs are usually borne on MGEs. Dissemination of ARGs can occur by VGT or by HGT. The microbiota is a complex polymicrobial community. It acts as a reservoir of ARGs. It affords an optimum milieu for genetic exchange. Resident members of the gut act as reservoirs of ARGs. Therefore, routine surveillance is essential to track the emergence and spread of AMR. We conducted a metagenomic analysis of the gut resistome of diarrheal patients using diarrheal fecal samples to meet this objective.5 samples were screened for the presence of ARGs against the major classes of antibiotics using WGS on the Illumina MiSeq platform. Assembly of raw reads using metaSPAdes v3.9.1 was performed. ABRicate was used to assign ARG function and AntiSMASH to determine BGCs. Genomes recovered from the 5 fecal samples were aligned using metaWRAP.491 resistance determinants were identified. These were annotated to encoding resistance against tetracycline, aminoglycosides, β-lactams, quinolone, macrolide, phenicol, glycopeptide, fosfomycin, trimethoprim, sulfonamide,lincosinamide,metronidazole,streptothricin, pleuromutilin.
In 80% of the sample's tetracycline resistance was the highest. NRPS was the only BGC that was present in all samples. 41 MAGs were reconstructed and predicted to be the source of ARGs. Eschericia sp. was found to be the major contributor of ARGs. The results revealed that the diarrheal gut is a reservoir of AMR. The association of AMR determinants with common resident bacterial flora of the gut is ominous showing that the commensal flora is a source of AMR. The study helped us to gain insight into the resistome of the diarrheal gut and will help in tracking the emergence and spread of AMR.

Biography

Dr. Rituparna De completed her graduation and post-graduation from Bangalore University, India in the year 2004 and 2006 respectively. Thereafter, she completed her Phd from Jadavpur University in 2013, conducted her PhD thesis work in the area of V.cholerae genomics under the supervision and mentorship of Dr.G.Balakrish Nair, at the National Institute of Cholera and Enteric Diseases, Kolkata with a fellowship from the Okayama University, Japan. Thereafter she pursued her postdoctoral research at the Ohio State University, USA and Umea University, Sweden in the area of host-pathogen interaction, microbiome and cancer genetics. Apart from that she has undergone short-term training in reputed institutes like Karolinska Institute, Sweden, European Bioinformatics Institute (EBI), Cambridge,

England and ICDDRB, Dhaka. Her work has been published in reputed international peer-reviewed journals. She is a member of the Indian Science Congress Association, OWSD (Organization for Women in Science for the Developing world) and ESCMID (The European Society of Clinical Microbiology and Infectious Diseases). At present she is working at the National Institute of Cholera and Enteric Diseases, Kolkata as Scientist-DHR-NRI. She is working on Metagenomics and Antimicrobial Resistance in diarrheal diseases. Her main interest is in the area of pathogen genomics and pathogen-pathogen and host-pathogen interaction.

Three-Dimensional Quantitative Structure-Activity Relationship (3D-QSAR) Studies on New Class of Alpha-Glucosidase Inhibitors

*§Shamsun Nahar Khan, M. Iqbal Choudhary§ and Atta-ur-Rahman§
*East West University, 43 Mohakhali, Dhaka-1212, Bangladesh, §H. E. J Research §Institute of Chemistry, International Center for Chemical Sciences, University of Karachi, Karachi-75270, Pakistan

Abstract

α-Glucosidase enzyme inhibitors (AGIs) are one of the approaches to control the blood sugar levels for type-2 diabetes. Diabetes mellitus is occurred due to the deficiency in production of insulin by the pancreas. α-Glucosidase is a membrane bound enzyme at the epithelium of the small intestine that catalyzes the cleavage of glucose from disaccharide. α-Glucosidase enzyme inhibitors act by suppressing the digestion process of dietary carbohydrates. AGIs are given with meals and they function by slowing the breakdown of the complex sugars into glucose. This cause a delay in glucose absorption and lower blood sugar levels, following meals. The AGIs may be used alone or in combination with other medications for diabetes. Inhibition of α-glucosidases causes abnormal functionality of glycoproteins because of incomplete modification of glycans. Suppressions of this process are involved expected for antiviral activity and decreasing of growth rate of the tumor. We have recently focused our efforts on the discovery of potent α-glucosidase inhibitors due to its important role in different clinical and pathological condition. As an outcome of this study, several classes of natural compounds such as terpenoids, flavonoids, iridoids, phloroglucinols, anthranols, physalins, and acridone alkaloids were identified as new inhibitors of the enzyme.

Biography

Prof. Shamsun Nahar Khan obtained her Ph.D. in 2008 from International Center for Chemical and Biological Sciences, University of Karachi, Pakistan with PhD fellowship awarded from the World Academy of Sciences (TWAS), Trieste Italy with the joint supervision of Professor Dr. Atta-ur-Rahman and Professor Dr. M. Iqbal Choudhary. Afterward she joined East West University as an Assistant professor at the Department of pharmacy, East West University in 2008. Later she joined Harvard University as a postdoctoral fellow at the Department of molecular and cell

biology and worked under the guidance of Professor Victoria D'Souza from 2010-2013. After her post-doctoral training she joined back at East West University as an Associate professor. She published an important ground breaking discovery of structure and role of 7SK snRNA in the pathogenesis of HIV-1 virus (Nature Communications, 9:4266, 2018) in 2018. In 2019 she is promoted as a Professor.

Bacterial Taxa Migrating from the Mediterranean Sea into the Red Sea Revealed a Higher Prevalence of Anti-Lessepsian Migrations

Esraa Elsaeed, Nora Fahmy, Amro Hanora, and Shymaa Enany
Suez Canal University

Abstract

Suez Canal paved the way for species migration from Red Sea to Mediterranean Sea through Lessepsian migration, while the migration from Mediterranean Sea to Red Sea is called the anti-Lessepsian migration. It has been argued that the migrating species had negative consequences for host environment as well as of humans. Few studies to date have attempted to map microorganism migration problem because the traditional ways of measuring community's richness and dissimilarities failed to provide enough detection of migrating taxa. We collected 22 seawater samples from different locations in Egypt, in relationship to migration across and to/from Suez Canal. The V3–V4 regions of 16s genes were amplified and sequenced by next generation Illumina MiSeq sequencer. Bioinformatics analysis revealed 15 taxa migrated from the Mediterranean Sea to the Red Sea such as the genera Fluvicola, HTCC2207, and Persicirhabdus. The family OCS155 is the only one that migrated from the Red Sea to the Mediterranean Sea. Seven anti-Lessepsian migrants colonized the Suez Canal more than the Mediterranean Sea such as the genera Marinobacter and Halomonas. These findings suggest that the anti-Lessepsian migration is more predominant than the Lessepsian migration in the bacterial community. This study paves the way for future research questions as well; why is the anti-Lessepsian migration more common than the Lessepsian route in bacteria? Why do certain taxa stop migration at the Suez Canal? What is the impact of the anti-Lessepsian migration on the bacterial community? Understanding microbial diversity in a context of microorganism migration across seas and oceans remains a prime topic in biodiversity research and systems science.

Biography

Dr. Shymaa Enany is an associate professor of Microbiology, Suez Canal University, Egypt. She received her PhD from School of Medical Sciences, Niigata University, Japan. Her postdoc was in USA and Japan. She was the first Arab scientist applying bacterial proteomic techniques helping in revealing good markers for microbes spreading in community. She received many awards for her scientific contributions. Recently, she awarded the most prestigious award in Egypt; the state encouragement prize for women in the field of health and

pharmaceutical sciences, 2019. Also, she was awarded TWAS Young Arab Scientist Prize 2018 for Scientific Achievement in Medical Sciences. She was selected as a member of Egyptian Young Academy of Science, an evaluator on Academy of Scientific Research and Technology, and an affiliate of The World Academy of Sciences. She is one of Microbiology National Committee in Egypt. She was appointed as an Egyptian ambassador in Next Einstein Forum, and the co-chair of the COVID-19 Clinical Research Coalition (Immunology, Virology and Diagnostics Working Group).

Comprehensive chromatographic profiling of cannabis from 23 USA States marketed for medical purposes

Ramia Al Bakain, Yahya Al-Degs, James Cizdziel, Mahmoud Elsohly
The University of Jordan

Abstract

Cannabis is an important medicinal plant. To validate medicinal cannabis marketed in USA as a predictable medicine and to use cannabis plant as a medicinal drug, it is necessary to quantify their contents. Herein, cannabis varieties from 23 different USA States were analyzed by GC-FID. Results showed that 45 cannabinoids and terpenoids were quantified in all samples, where 8 cannabinoids and 18 terpenoids were identified. Δ9-THC, CBN and Fenchol showed the highest levels, and were the most important compounds for cannabis classification. Washington, Oregon, California and Hawaii states have the highest cannabis content. Quantitative data was analyzed using PCA and HCA to find (1) the variation on cannabis chemical profiles as a result of growing plants in different States and with deviations in growth time, (2) to reveal the compounds that were responsible for grouping cultivars between clusters and (3) to develop a database that can predict the origin of unknown cannabis based on its chemical profile. The 23 cannabis were grouped into three clusters based on only Δ9-THC, CBN, C1 and Fenchol content. Cannabis classification using a full profiling of compounds will more closely meet the practical needs of cannabis applications in clinical research, patients' self-production in USA, contribute to the standardization of commercially-available cultivars in support of a continuously growing market and facilitate the future rapid profile prediction of unknown cannabis.

Biography

Ramia Al Bakain holds a PhD with honor degree in Analytical and Bioanalytical Chemistry from Université Pierre et Marie Curie (UPMC) and Ecole Supérieure de Physique et de Chimie Analytique (ESPCI), Paris - France. She is working now as an associate professor at the University of Jordan- Jordan/ Dep. of Chemistry, where her duties include teaching Analytical, Bioanalytical and Environmental courses for both undergraduate and graduate levels as well as supervising MA and PhD students. Her research focuses in the impact of using analytical chemistry for developing new green methods in water- agriculture-

food security, green technique for water and wastewater treatment, and sustainable application in saving natural resourses, where she has wide international scientific research collaborations in this field with USA, France, and Lebanon. She is leading many international scientific projects and interdisciplinary team of graduate students working in Water-Food-Agriculture security in the Mediterranean and MENA regions. In addition, she is a member in the editorial board of Science Journal of Analytical Chemistry. She received many awards, such as: ‘’L’Oréal-UNESCO Award For Women in Science 2015”, ‘’Fulbright fellowship – USA’’, ‘’Award of the Academy of Medical Sciences,“ IUPAC Award for Periodic Table of Young Chemist-”, ‘’International Scientific Excellence Award- Lebanon’’, , “TWAS Young Affiliates (2016-2020) from the World Academy of Sciences”, “The 1st place in senior division, 22nd International scientific Conference of LAAS–Lebanon”, ‘’Post-Doctorate award from the Scientific Research Fund- Jordan’’, “DFG Fellowship-Germany”, ‘’TWAS Prize for Young Scientists in Developing Countries – Italy”, ‘and “Elsevier Foundation - TWAS Sustainability Visiting Expert Programme fellowship”.

Digital Implant Dentistry in the computer age

Yara A. Kammoun
Assistant Lecturer, Prosthodontic Department, Faculty of Dentistry, Damanhour University, Damanhour City, Egypt.

Abstract

Digital technology positively affected the prosthodontic rehabilitation field. Time-consuming procedures could be carried out in a few minutes. Thus, research in the field of dentistry is currently focusing on exploring the many probable beneficial applications of digital technology, Computer-generated designing, and manufacturing for the dental practice. All prosthodontic rehabilitation steps; Digital radiographs or photographs, impression making, recording mandibular movements or constructing restorations, entirely have transformed to digital. Digital workflows are becoming more popular and more accurate. However, some procedures are still being developed, and not all the steps have been digitalized. Nevertheless, virtual environments constitute the present and future of the field.

Biography

Yara A. Kammoun is a Ph.D. candidate in Implant Prosthodontics Science Department of Prosthodontics, Faculty of Dentistry, Alexandria University. She has Master's degree in Prosthodontics from Alexandria University, Egypt (2011). She is currently an Assistant lecturer of Removable Prosthodontics Department, Faculty of Dentistry Damanhour University. she won the 2nd place master award in annual post graduate student research conference, faculty of dentistry, Alexandria University, 2103 and the 2nd place award in oral presentation competition, 8th student conference for research and innovation, faculty of science, Alexandria University, 2019. She is

interested in implant dentistry, prosthodontics and TMJ problems. She had participated as an organizer in national and international workshops and scientific meetings.

Phenylketonuria in Iraq – How to Identify and Treat?

Daniele Suzete Persike de Oliveira1,*, Kendra J. Bjoraker 2
College of Pharmacy, University of Dohuk, Kurdistan Region-Iraq; 1
3:1 Neuropsychology Consultants, LLC

Abstract

Phenylketonuria (PKU) is a a rare autosomal recessive inborn error of metabolism caused by deficiency in the enzyme phenylalanine hydroxylase resulting in elevated levels of phenylalanine. Left untreated, PKU results in increased phenylalanine concentrations in blood and brain, which cause severe intellectual disability, epilepsy and behavioral problems. Management of PKU should be maintained throughout the life and initiated as soon as possible after diagnosis via newborn screening (NBS). NBS is the principal population-based public health screening program which is being practiced at present across the globe. However, in Iraq (including Kurdistan Region-KRG; Northern Iraq), NBS has not yet become prevalent. As a consequence, the screening for metabolic disorders or phenylalanine level measurement is commonly requested if a patient is already experiencing symptoms. The management of PKU comprises the reduction of dietary intake of Phe by low-protein diets and Phe-free amino acid supplements and may include low-protein supplements/foods. The special formula prescribed for babies, toddlers and adults diagnosed with PKU cannot be found in the KGR-Iraq. The purpose of this work is to raise awareness and highlight solutions to Iraqi healthcare providers and community center personnel working with individuals with the PKU population. To bring to the forefront the urgent need for prevalent NBS and treatment of these children in Iraq. This information may allow early PKU diagnosis and treatment ultimately preventing irreversible damage such as neurological impairment and intellectual disability. Support for the families in Iraq, including the availability of Phe-free amino acid supplements, which may include low-protein supplements and foods is critical in preventing these detrimental outcomes.

Biography

Daniele is a Brazilian Research, Professor and Visitor Researcher at University of Dohuk (UOD), Kurdistan Region-Iraq. She has joined the College of Pharmacy at UOD since 2017. She is graduated in Pharmacy and MSc in Biochemistry, both at Universidade Federal do Paraná (UFPR), Brazil. She received her PhD in Pharmacology at Universidade de São Paulo (USP), Brazil, which was followed by two Post-Doctoral positions at Universidade Federal de São Paulo (UNIFESP). Daniele's focus on protein biochemistry has involved studies on cell signaling and apoptosis, enzymology (mainly proteolysis, caspases and proteasome), neuroproteomics, and search for new compounds for the treatment of epilepsy, which has resulted

in valuable published articles. Research Interest: Protein biochemistry (enzymology and proteomics), cell signaling and apoptosis, and biochemistry of neurological diseases.

Predicting COVID-19 Severity with a Specific Nucleocapsid Antibody plus Disease Risk Factor Score

Gregory Weiss, Sanjana Sen, Emily C. Sanders, Kristin N. Gabriel, Brian M. Miller , Hariny M. Isoda, Gabriela S. Salcedo, Jason E. Garrido, Rebekah P. Dyer, Rie Nakajima, Aarti Jain, Alicia M. Santos, Keertna Bhuvan, Delia F. Tifrea, Joni L. Ricks-Oddie., Philip L. Felgner, Robert A. Edwards , Sudipta Majumdar
University of California, Irvine (USA)

Abstract

Given the urgent need for effective methods for predicting COVID-19 disease trajectories, my lab developed an emergency program to identify ineffective antibodies associated with a hyper-active and ineffective immune response. ELISA and coronavirus antigen microarray (COVAM) analysis were used to map antibody epitopes in the plasma of COVID-19 patients (n = 86) experiencing a wide-range of disease states. Antibodies to a 21-residue epitope from nucleocapsid (termed Ep9) were associated with severe disease, including admission to the ICU, requirement for ventilators, or death. Importantly, anti-Ep9 antibodies can be detected within six days post-symptom onset and sometimes within one day. Furthermore, anti-Ep9 antibodies correlate with various comorbidities and hallmarks of immune hyperactivity. We introduce a simple-to-calculate, disease risk factor scores to quantitate each patient's comorbidities and age. For patients with anti-Ep9 antibodies, scores above 3.0 predict more severe disease outcomes with a 13.42 Likelihood Ratio (96.72% specificity). The results lay the groundwork for a new type of COVID-19 prognostic to allow early identification and triage of high-risk patients. Such information could guide more effective therapeutic intervention. During this talk, I'll discuss how the COVID pandemic has forced my lab and others to work remotely where possible, collaborate more broadly, and adopt new work habits. I'll also describe how I met Prof. Amal Amin and Co-Founded the Global Young Academy with her and others. This experience could offer some insights for rebuilding science in damaged areas.

Biography

Gregory Weiss, a tenured Professor of Chemical Biology in the Departments of Chemistry, Molecular Biology and Biochemistry, and Pharmaceutical Sciences at UC Irvine, earned a BS from UC Berkeley and PhD from Harvard. Awarded an NIH postdoctoral fellowship, he pursued post-doctoral studies with Dr. Jim Wells at Genentech. In 2000, he joined the faculty at UCI. His laboratory focuses on the interface between chemistry and biology, including studies of enzymes, molecular recognition, and bioelectronics. He has been named Outstanding Professor in Physical Sciences at UCI, Beckman Foundation Young Investigator, AAAS Fellow, and won an

Ig Nobel Prize. Co-founder of two biotech companies, he was named UCI's Entrepreneurial Leader of the Year in 2018 and a Faculty Innovation Fellow in 2019.

services for forcibly displaced communities

Prof. Muhammad Hamid Zaman
Professor of Biomedical Engineering at Boston University

Abstract

Access to quality health services remains one of the grandest, and most acute challenges for communities that are forcibly displaced from their homes due to conflict and persecution. While international and regional aid agencies try to provide health services to the displaced persons, these services often lack the basic quality needed to tackle the complex health challenges facing forcibly displaced communities. Poor quality medicines, for examples, increase mortality and morbidity, add additional financial strain on the vulnerable and exacerbate drug resistant infections. In this talk, I will discuss a systems level approach to address two complimentary aspects needed to improve health outcomes among forcibly displaced communities - namely access and quality. These issues are going to be even more relevant in the post-COVID-19 world where access to quality health services is likely to be negatively affected. Our approach to tackle the dual challenge of access and quality is rooted in a multi-disciplinary framework. This framework, on one hand includes computational modeling of health systems and basic science studies to understand the molecular mechanisms of disease, and on the other hand uses field surveys and policy gap analysis. Using case studies with a focus on Syrian refugees and internally displaced communities in Yemen, this talk will discuss a multi-disciplinary system approach to improve access and quality of health services and how this approach can potentially improve health outcomes in the era of COVID-19.

Biography

Muhammad Hamid Zaman is Howard Hughes Medical Institute Professor of Biomedical Engineering at Boston University. A major research theme in his lab focuses on developing solutions to improve access to quality care in low-income settings, including in refugee settlements. In addition to over 130 peer-reviewed research articles, he has also authored two books for broad audiences. His first book, Bitter Pills (Oxford University Press, 2018), looks at the global challenge of substandard and counterfeit drugs. His second book Biography of Resistance (Harper Collins, 2020), is focused on global antimicrobial resistance. It is a story of science and evolution that looks to history, culture, attitudes, our own individual choices and collective human behavior in creating one of the biggest public health challenges of our time. Professor Zaman has also developed research and education programs focusing on refugee health at Boston University. He co-founded the university wide initiative on forced displacement in collaboration with academic, public and private sector partners in Lebanon, Uganda and Colombia. Professor Zaman has written extensively on innovation, refugee and global health in newspapers around the world. His

newspaper columns have appeared in over 30 countries and have been translated into eight languages. He has won numerous awards for his teaching and research, the most recent being Guggenheim Fellowship (2020) for his work on antibiotic resistance in refugee camps.

How does exposure to probiotics block stress-induced depression-like and anxiety-like behaviors in male and female mice?

Nafissa Ismail
School of Psychology at the University of Ottawa

Abstract

Puberty is a sensitive and vulnerable period to environmental stress. Exposure to certain stressors during this period has been associated with mental illnesses like depression and anxiety. Interestingly, exposure to an immune challenge during puberty can also result in enduring depression-like behavior in females and anxiety-like behavior in males, and alters stress-reactivity. It also alters the gut microbiota differently in males and females. However, pubertal probiotic treatment changes the acute immune response in a sex-specific manner and mitigates the effect of pubertal immune challenge on the neural mechanisms involved in stress and immune responses, such as glucocorticoid and toll-like receptor 4 expressions. Pubertal probiotic treatment also blocks stress-induced depression-like and anxiety-like behaviors in males and females. These findings show that the gut-brain axis plays an important role in the development of mental illness during puberty and that manipulation of the gut-brain axis with probiotics can lead to a resilience to stress-induced mental illnesses in males and females.

Biography

Dr. Nafissa Ismail is an Associate Professor at the School of Psychology at the University of Ottawa and the holder of a University Research Chair in Stress and Mental Health. She obtained her PhD from Concordia University in 2009. She then completed a post-doctoral fellowship at the University of Massachusetts and joined the University of Ottawa in 2012. Her research expertise is in Neuroimmunology and Neuroendocrinology. She was recently awarded Young Researcher of Year by the University of Ottawa and Early Researcher Award by the province of Ontario. She is also a member of the Global Young Academy.

Real-Time Monitoring System for Epidemic Diseases Patients in IoT Environment

Fadwa Alhalaiqa
PhD, Associate Professor, Dean of Faculty of Nursing/Philadelphia University. Jordan

Abstract

Epidemic diseases patients need constant monitoring of their health, whether in the hospital or at home, and this requires great costs. The employment of information and communication

technologies (ICT) and artificial intelligence concepts helps reduce these costs. Internet of Things (IoT) is one of these technologies that applied to interconnect available resources of medical service in addition to provide valid, effective smart service in health care to variety of population. During COVID-19 , there is a need to have adequate number of health care professionals. This paper introduces a remotely real-time monitoring system through smartphones or internet-connected devises for COVID-19 patients. By using this proposed system, nurses and doctors can monitor, evaluate, detect, maintain follow-up, enter and edit data in the database and intervene in emergency situations by controlling the oxygen flow to the patient. To verify the proper functioning of this system, a real-time monitoring device was developed. This system allows monitoring patient's parameters (heart rate, body temperature, Oxygen saturation (SpO2), health of muscles (EMG), heart's rhythm (ECG) and Lung functionality (Spirometer). All these data will be collected through set of wireless sensors network and data acquisition unit then will be sent to the online web server. This system can be used in both clinical and non-clinical settings (home, camp, etc.). The device can also be used as a tool for real-time monitoring and assisting in the healthcare of the elderly at home by taking advantage of the web capabilities and wireless sensors provided by this system to communicate directly with the specialist remotely. The experimental results of the several tests indicate the importance of using both wireless sensor networks and internet of things services to achieve high efficiency of the network and enable the doctor or specialist to follow the patient's condition and adjust the parameters of the device according to the immediate health status.

Biography

I'm associate professor of psychiatric / mental health and dean of faculty of nursing at Philadelphia University, Jordan. I finished my PhD in Nursing from University of East Anglia UK, 2013. My research interests are health policy, adherence, mental health problems, chronic diseases, health technology and nursing sciences. I have more than 35 research papers that were published in high prestigious journals. I'm also, a treasurer of OWSD Jordan Chapter, board member of Psychological Sciences Association (PSA)/Jordan, and member of Cochrane hypertension group. I have more than 30 TV shows and broadcasting news. I'm an active person in voluntary work in Jordan community.

A personal perspective on applied and experimental science in Argentina: challenges faced and the role of young scientists

Prof. Dr. Franco M. Cabrerizo
National University of San Martín (UNSAM)

Abstract

The talk will cover two distinctive aspects: (i) a brief description of Dr. Cabrerizo's research interests focus on understanding the molecular aspects of mechanisms underlying the processes

triggered by UVA and/or visible light (molecular photobiology). A special emphasis on the development of biotechnological tools to attend unresolved and/or neglected infectious and chronic diseases will be placed; (ii) an overview of the main role of young scientists and young international organizations are playing to build a more equitable and balanced S&T system, a society guided by facts and policies based on scientific evidence.

Biography

Franco M. Cabrerizo is a Research Member of The National Scientific and Technical Research Council (CONICET, Argentina) and Associate Professor at National University of San Martín (UNSAM, Argentina). Briefly, he holds a BSc in Chemistry (2002) and a Ph.D in Chemical Sci. (2005) form the National University of La Plata (UNLP). He was a Postdoctoral Research Fellow (CONICET) (2005 – 2006). Throughout his career, Dr. Cabrerizo has carried out multiple researches stays at several prestigious Institutions in Germany, Japan, Denmark and China. In 2006 he was appointed as Research Member of CONICET (current position: Principal). In 2010 he took the position as the director of Photochemistry and Molecular Photobiology Research Group at INTECH. In 2013 he was appointed as Associate Professor at UNSAM. He is member of the Executive Committee of TWAS Young Affiliates/Alumni Network (TYAN, since 2016) and also member of the TWAS-LACREP Executive Council (since 2020). His current research focuses on understanding the molecular aspects of mechanisms underlying the processes triggered by UVA and/or visible light. This knowledge provides valuable information for the development of different biotechnological applications that might contribute to attend unresolved and/or neglected socially relevant local and global problems related to some infectious and chronic diseases as well as to changes in the current energy matrix towards more sustainable and renewable sources of energy. Dr. Cabrerizo has authored more than 60 scientific research articles in peer-reviewed journals. He has supervised more than 20 PhD and postdoctoral students and five Assistant Research Members of CONICET. Dr. Cabrerizo was awarded the “G. Cilento Award” (by The Inter-American Photochemical Society, 2006); the “Ranwel Caputto Award” (by the National Academy of Science of Argentina, 2009), the “Dr. Eduardo Gros prize” (by the National Academy of Exact, Physics and Natural Sciences, ANCEFN, Argentina, 2015), the “Dr. Eduardo Gros Award” (by the Argentine Society of Research in Organic Chemistry, 2015), Young Affiliate Member of The World Academy of Science TWAS (2015-2020), The CAS President's International Fellowship Initiative (PIFI, 2018), among others.

Materials – Engineering

"From 3D Printing To 4D Printing: To Design, to 3D Print, & To Move" Synopsis

Professor Moataz Attallah
Chair of Advanced Materials Processing – University of Birmingham

Abstract

3D printing involves making structures in a layer-by-layer fashion based on a computer model. The applications of 3D printing have enabled the development of customized products in a number of sectors, including medicine, space, defense, and, jewelry. The technology has evolved recently to use 3D printing for printing structures out of functional (smart) materials, allowing us to harness an additional functionality by create a shape changing structure with time under the influence of a stimulus, which is referred to as 4D printing. The talk gives an overview on 3D printing techniques and applications, highlighting the potential of 4D printing in creating a new class of smart engineering products.

Biography

Prof Moataz holds a chair in advanced materials processing. He received his PhD in metallurgy and materials science from the University of Birmingham (2007), BSc (highest honors) and MSc degrees from the American University in Cairo (AUC) Egypt, in mechanical engineering, and materials/manufacturing engineering respectively. Following his PhD, Moataz worked as a research fellow at the University of Manchester Materials Science Centre from January 2007, prior to his appointment at the School of Metallurgy and Materials at the University of Birmingham in June 2010. His research focuses on developing a metallurgical understanding of the material-process interaction in advanced manufacturing processes (additive manufacturing, powder processing, friction joining, and superplastic forming) of metallic materials, focusing on the process impact on the microstructure and structural integrity development.

A Sustainable Mother Earth: Play your Part!

Prof Esther T. Akinlabi
The Director of the Pan African University for Life and Earth Sciences Institute

Abstract

A lot of interest and research have recently been invested in modern manufacturing processes in the creation of manufactured products that employ processes that minimize negative environmental impacts, conserve energy and natural resources, and safe for employees. This is against the common practice of Extract, Process, Manufacture, Use and Discard! This talk looks into some ways to enhance a sustainable mother earth and that everyone has a role to play.

Biography

Professor Esther Titilayo Akinlabi is a Full Professor of Mechanical Engineering. She is currently serving as the Director of the Pan African University for Life and Earth Sciences Institute (PAULESI), Ibadan, Nigeria. Prior to joining PAULESI, Prof Akinlabi had a decade of meritorious service at the Department of Mechanical Engineering Science, Faculty of Engineering and the Built Environment, University of Johannesburg (UJ), South Africa. During her period of service at UJ, she had the privilege to serve as the Head of Department of the Department of Mechanical Engineering Science and as the Vice Dean for Teaching and Learning of the Faculty. Her research interest is in the field of modern and advanced manufacturing processes. She is a rated National Research Foundation (NRF) researcher in South Africa and has demonstrated excellence in all fields of endeavors. Her leadership, mentorship and research experience is enviable as she guides her team of postgraduate students through the research journey. She is a recipient of several local and international research grant awards. Prof Akinlabi has received many awards of recognition to her credit. Prof Akinlabi is an alumnus of the Prestigious South African Young Academy of Science (SAYAS). She is a registered member of many professional bodies, which include; the Engineering Council of South Africa (ECSA), Council for the Regulation of Engineering Profession in Nigeria (COREN), South African Institution of Mechanical Engineers (SAIMechE), the Nigerian Society of Engineers (NSE) and the American Society of Mechanical Engineers (ASME), USA. She has filed two patents, edited four books, published seven books and authored/co-authored over 500 peer reviewed publications. She is married to Dr Stephen Akinlabi and blessed with two children (Akinkunmi and Stephanie).

Plasmonic and Magnetic Nanoparticles for Biomedical Application

Nguyen Thi Kim Thanh FInstP FRSC FIMMM FRSB
Biophysics Group, Department of Physics and Astronomy, University College London, and UCL Healthcare Biomagnetic and Nanomaterials Laboratory
21 Albemarle Street, London W1S 4BS, London, UK

Abstract

The development of new chemical methods for the next generation of nanoparticles with very high magnetic moment, fine tuning Au nanorods and novel hybrid and multifunctional nanostructure is presented. Detailed mechanistic studies of their formation by sophisticated and advanced analysis of the nanostructure allows tuning of the physical properties at the nanoscale; these can subsequently be exploited for diagnosis and treatment of various diseases. The studies are conducted to provide insight for future material design approaches. It will also help to identify the critical process parameters that can be manipulated in order to obtain the suitable physical properties for the intended applications. In collaboration with chemical engineers in designing the reactors in microfluidic systems, this allowed for the first time to detailed study the physical

properties such as X-ray diffraction (XRD), magnetic moment and morphology to unravel the particle formation mechanism during co-precipitation synthesis of iron oxide magnetic nanoparticles, which is very important for their robust, reproducible formation process for cancer treatment.

Biography

Professor Nguyễn Thị Kim Thanh, FRSC, FInstP, FIMMM FRSB (http://www.ntk-thanh.co.uk) held a prestigious Royal Society University Research Fellowship (2005-2014). She was appointed a Full Professor in Nanomaterials in 2013 at University College London. She leads a very dynamic group conducting cutting edge interdisciplinary and innovative research on the design, and synthesis of magnetic and plasmonic nanomaterials for biomedical applications. In 2019, she has been honoured for her achievements in the field of nanomaterials, and her impactful project proposal and was awarded highly prestigious Royal Society Rosalind Franklin Medal. She published over 130 research papers, book chapters, theme issues, proceedings. Among them 19 papers were featured in cover pages. With total 12500 citations, h index 35, i10 index of 72 and over 19 papers with over 100 citations among them 1 attracted over 2800 citations. She has been Visiting Professor at various Universities in France, Japan, Singapore. She has been invited to speak at over 250 institutes and scientific meetings. She has been chairing and organising over 40 high profile international conferences. She is Editor-in-chief of the Royal Society of Chemistry book Series, Nanoscience and Nanotechnology. She edited 4 theme issues: The Royal Society (2016), Interface Focus, “Multifunctional nanostructures for diagnosis and therapy of diseases”; The Royal Society Chemistry, RSC (2014), Faraday Discussions, “Physical Chemistry of Functionalised Biomedical Nanoparticles"; RSC (2013) Nanoscale, Special issue "Functional Nanoparticles for Biomedical Applications" and Philosophical Transactions of the Royal Society A (2010), “Nanoparticles”. She is the sole editor of two seminal books on Magnetic Nanoparticles from Fabrication to Clinical Applications (https://tinyurl.com/y5bgxb3r) and Clinical Applications of Magnetic nanoparticles (https://tinyurl.com/yyjawnz2). She is coorganising a Magnetic Carrier Meeting in Jun 2022 in London http://magneticmicrosphere.com/meeting-thirteenth.

Green synthetized lycopene-coated selenium nanoparticles rescue renal and damage in glycerol-induced acute kidney injury in rats

Ashraf Al-Brakati 1, Khalaf F Alsharif 2, Khalid J. H. Alzahrani 2, Saeed M. Kabrah 3, Osama Al-Amer 4,5, Atif A. A. Oyouni 4,5, Ola A. Habotta 6, Maha S. Lokman 7,8, Amira A. Bauomy 9, Rami B. Kassab 10,8, Ahmed E. Abdel Moneim 8,*

8Department of Zoology and Entomology, Faculty of Science, Helwan University, Cairo, Egypt

Abstract

Selenium nanoparticles (SeNPs) have recently gained much attention in nanomedicine applications owing to their unique biological properties. Biosynthesis of SeNPs using nutraceuticals as lycopene (LYC) maximizes their stability and bioactivities. In this context, this study aimed to elucidate the renoprotective activity of SeNPs coated with LYC (LYC-SeNPs) in the acute kidney injury (AKI) model. Rats were divided into six groups: control, AKI (glycerol-treated), AKI+sodium selenite (Na2SeO3) (0.5 mg/kg), AKI+LYC (10 mg/kg), AKI+LYC-SeNPs (0.5 mg/kg) and treated for 14 days. Glycerol treatment evoked significant increases in rhabdomyolysis related markers (creatine kinase and LDH). Furthermore, relative kidney weight, Kim-1, neutrophil gelatinase-associated lipocalin (NGAL), serum urea, and creatinine in the AKI group were elevated. Glycerol-injected rats displayed declines in GSH, SOD, CAT, GPx, and GR levels, paralleled with downregulations in Nfe2l2 and Hmox1 expressions and high renal MDA and NO contents. Glycerol-induced renal inflammation was evident by rises in TNF-α, IL-1β, IL-6, and upregulated Nos2 expression. Also, apoptotic (elevated caspase-3, Bax, and cytochrome-c with lowered Bcl-2) and necroptotic (elevated Pipk3 expression) changes were reported in damaged renal tissue. Co-treatment with Na2SeO3, LYC, or LYC-SeNPs restored the biochemical, molecular, and histological alterations in AKI. In comparison with Na2SeO3or LYC treatment, LYC-SeNPs had the best nephroprotective profile. In conclusion, our findings authentically revealed that LYC-SeNPs co-administration could be a prospective candidate against AKI-mediated renal damage via antioxidant, anti-inflammatory, anti-apoptotic and anti-necroptotic activities.

Biography

Ahmed Esmat Abdel Moneim was born in Cairo in 1977. He received his higher education at Helwan University in Egypt, where he studied science. In 2009, he awarded his philosophy degree in science. Now, Abdel Moneim is a professor of physiology in the Faculty of Science at Helwan University. Abdel Moneim awarded post-doctoral grants and travelled to Spain and Slovakia several times to work with other scientists and to study. Additionally, he was selected by the World Academy of Sciences for the Developing World's Arab Regional Office (TWAS-ARO) Young Affiliate for 2013-2017. Currently, He also is severing as an associate editor for BMC Complementary Medicine and Therapies and reviewed many articles for many international journals. His research interests are in toxicology, physiology, and neuroscience,

focusing on the ability of natural products to ameliorate the different environmental toxins and chronic diseases.

Preparation and characterization of colloidal Au-ZnO Nanocomposite via laser ablation in deionized water and study their antioxidant activity

Taha M Rashid, Majid S Jabi and Uday M Nayef*
Department of Applied Science, University of Technology, Baghdad-Iraq.

Abstract

A synthesis is carried out with Au-ZnO nanoparticles (NPs), using fundamental laser neodymium-doped yttrium aluminum garnet; Nd:Y3Al5O12 Nd:YAG (1064 nm) of Au and ZnO colloidal solution, with the metal objectives in deionized water being extracted, accompanied by laser radiation a second harmonic Laser 532nm with the mixed colloidal solution, The UV-visible display the Au nanoparticle peak at 525nm, and the ZnO peak at 415nm. The Au-ZnO NPs show a shift of the ZnO absorption at 390nm, which is excited, and a change in the Au absorption at 530nm, as the Au NPs plasmon resonance is transmitted through an interface charge. The optical band gaps of the ZnO, Au and Au-ZnO NPs are increased with laser fluence up to 13.8 J/cm2. The transmitted electronic microscopic (TEM) show the shape for Au and ZnO NPs with an average size of 40nm and Au NPs were almost spherical in form with an average size of 35nm, and the colloidal solution was slightly turbid after ablation. The antioxidant activities of prepared nanoparticles were measured using DPPH assay. The results showed the ability to scavenging of free radicals. Taken together, the results of this study demonstrated that the Au-ZnO nanocomposite could be used in future for therapeutic purposes. The antioxidant activity of Au nanoparticles is 56.33 ± 5.487 for ZnO nanoparticles is 47.00 ± 2.887. While, for Au-ZnO nanocomposite was 79.67 ± 4.372. The result demonstrated that the Au-ZnO nanocomposite can give hydrogen atoms and remove the unstable electron from DPPH more than Au nanoparticles and ZnO nanoparticles alone.

Biography

I have joined the department of Physics since 2011. obtained my M.Sc. in Atomic physics from Faculty of Science, almustansiriyah University. My PhD in biophysics at faculty of application science, technology University. General field of interest is the study of biophysics, study characterization of the metal and semiconductor with natural product to make it as a Drug delivery for cancer treatment and antibacterial activity. Also, I am interested in the search for new drug candidates from natural resources with variable biological activities as antitumor, antimicrobial, and antioxidant. I have participated as an organizer in national and international workshops and scientific meetings. Also, participated in more one conferences. Finally, I have IC3 Certificate good experiences in Computer programs.

The Fruitful Weirdness of Water

Prof. Marcia Barbosa
Director of the Brazilian academy of sciences
Chair of WISWB 2020-Brazil

Abstract

In this talk we will show how water even though present in the planet it is not a common material. We will analyze the unusual properties of water. We will also illustrate how the anomalous properties of water can be employed to produce more clean water.

Biography

Graduated (1981), master's (1984) and doctorate (1988) in physics from the Universidade Federal do Rio Grande do Sul. She is member of the Brazilian Academy of Sciences, the World Academy of Sciences (TWAS) and serves as a full professor from the Universidade Federal do Rio Grande do Sul and director of the Brazilian Academy of Sciences. She has experience in Physics, with an emphasis on Condensed Matter Physics, working mainly in water. For the study of water anomalies, she was awarded in 2013 the Loreal-UNESCO Award for Women in Physical Sciences. In parallel, she works on gender issues and in 2002 she co-organized the IUPAP First International Conference in Women in Physics. For supporting women in science, she won the American Physical Society's Nicholson Medal in 2009. For her post-graduate work, she won the Anisio Teixeira da Capes Award in 2016 and for her work in favor of science, in 2018 she received the Medal of Scientific Merit as a commendator from the presidency of the republic. In 2020 she was recognized by UN-Women as one the seven women scientists who have shaped our world.

Ameliorating redox couple-based dye-sensitized solar cells using two different iodide salts and ultrasonication CuO nanofiller.

S. Ramesh, N.K. Farhana, K. Ramesh
Centre for Ionics University of Malaya, Department of Physics, Faculty of Science,
University of Malaya, 50603 Kuala Lumpur, Malaysia.

Abstract

Solar energy is a promising solution to global energy-related issues because it is greener, inexhaustible, and readily available. However, the development of traditional photovoltaic cells based on silicon is still limited by cost, so alternative, more cost-effective approaches are sought. Thus, dye-sensitized solar cells (DSSCs) are considered as one of the best replacements for old-style solar cells. As the “core” of DSSCs, electrolytes play an important role in DSSCs performance. Gel polymer electrolytes have drawn attention as one of the replacements of liquid electrolytes due to their unique properties that are able to overcome the problems encountered previously in the dye-sensitized solar cells (DSSCs). However, host polymer-salt complex suffers from low ionic conductivity and poor mechanical strength due to slow ion mobility within the

polymer system. Incorporating metal oxide nanofiller into GPE is one of the approaches that can be used to obtain improvement in ionic conductivity and efficiency due to their large surface area which provide cross linking centres for the polymer segment. In this research, gel polymer electrolyte (GPE) employing poly (vinyl butyral-co-vinyl alcohol-co-vinyl acetate) (P(VB-co-VA-co-VAc)) terpolymer as host polymer, tetrapropyl ammonium iodide (TPAI) and sodium iodide (NaI) as dopant iodide salts and copper (II) oxide (CuO) nanoparticles as nanofiller was produced. CuO nanoparticles were synthesized through sonochemical method and incorporated into the GPE to form polymer composite gel electrolyte (PCGE). The two different types of iodide salts based GPE were compared in terms of electrochemical and photovoltaic performance. The effect of different amounts of CuO nanoparticles on the structure and ionic conductivity of the GPE was observed through X-ray diffraction (XRD) and electrical impedance spectroscopy (EIS) analyses, respectively. DSSC was assembled and its performance was evaluated in terms of their open-circuit voltages, close-circuit current densities, fill factor and efficiencies. The highest photovoltaic conversion efficiency that was achieved with incorporating CuO nanoparticle is 6.38% at 100 mW cm-1.

Biography

Prof Dr. Ramesh T Subramaniam is a material scientist experienced in preparation, development and characterization of polymer and polymer electrolytes as a source of energy for use in various electrochemical devices. The novelty of his research was the successful invention of highly adhesive polymer membranes, environmentally friendly polymer electrolytes and techniques in the fabrication of green electrochemical devices. Prof Dr. S. Ramesh is well recognized in his field, internationally and locally, evidenced by the many international and national awards he has received. He was selected as a “TWAS Young Affiliate Fellow” in 2009 by The World Academy of Sciences - one of the five from the South & Southeast Asia and Pacific region. He also received the “UTAR Annual Research Excellence Award” in 2009. In 2010, he received the “Pacifichem Young Scholar Award” from the American Chemical Society and in 2011, the “Young Scientist Award” from IUPAC. In 2012, he received the “IAP Young Scientist Award” and the following year was selected as a “Young Scientist of the Global Young Academy (GYA)”. In 2014 he was selected as one of the “Top Research Scientists Malaysia (TRSM)”. It was a great honor for him to be elected as a “Fellow of the Academy of Sciences Malaysia (ASM)” in 2016 and in the same year he received the “International Association of Advanced Materials Scientist Medal” (IAAM Scientist medal) from the International Association of Advanced Materials. In 2017, he was conferred the “Established Scientist Award” by Royal Society and also elected as a “Fellow of Royal Society of Chemistry (RSC)”. He is also a recipient of the “Fulbright Fellowship 2017” with a tenure at the Princeton University, USA as a Visiting fellow and a recipient of the “International Senior Research Fellowship 2018” at Durham University, UK where he had a tenure as Visiting Senior Fellow. He was awarded the “MTSF

Science & Technology Award" by Malaysia Toray Science Foundation (MTSF) in 2018. He has also been honored the University of Malaya Excellent Lecturer (Sciences) Award 2019. In 2020 he was recognized and placed as World's Top 2% Scientists for Career-Long Citation Impact by Stanford University. On the global front, he was the Invited Scientist for World Science Forum and World Economic Forum. He has won awards in several innovation exhibitions such as ITEX, Bio Malaysia, MTE and PECIPTA. He walked away with the BEST of the BEST Award during PECIPTA 2013. He also won the "Gold and Special Award" during Malaysia Technology Expo 2020. His major contribution to society is through the service and knowledge as a Young Scientist of the Global Young Academy. He has contributed under the "Science 4 Youth" and "Global State of Young Scientists" Programs which focuses on development of science and technology among the youth of this world and to study the problems faced by mainly 3rd World countries on this issue.

From lighting devices to photodynamic therapy: Contributions from LEMAF for the development of photonic and biophotonic materials

Andrea S. S. de Camargo
São Carlos Institute of Physics, University of São Paulo, Brazil.
Scientific Director of the Brazilian Materials Research Society

Abstract

In the Laboratory of Spectroscopy of Functional Materials (LEMAF) from São Carlos Institute of Physics, University of São Paulo (IFSC/USP) we devote to interdisciplinary and diversified research in the area of optical and luminescent materials for photonic and biophotonic applications. Besides the accumulated, long term, experience in the area of trivalent rare earth (RE) ion doped glasses and glass ceramics, recent research includes the design synthesis and characterization of luminescent host-guest hybrid materials. In this case, highly emissive guest molecules as organometallic complexes, dyes, nanocrystals and quantum dots are dispersed and immobilized in silicate, organo-silicate and clay host matrices in order to: i) prevent molecular aggregation that can hinder the materials quantum efficiencies; ii) prevent toxic leakage in biological media; iii) passivate the cytotoxicity of the active molecule and attain biocompatibility; iv) increase solubility in biological media; v) offer protection against luminescence quenching agents such as O2; vi) allow application in the form of films, gels, nanoparticulate powders, fibers and transparent bulk materials. The resulting systems are promising for lighting, sensing, solar radiation absorption/conversion in PV cells, bioimaging and photodynamic therapy applications. Current ongoing studies include the development of upconverting RE-doped fluoride nanoparticles associated to other molecules for the development of a sensor to detect antibiotic resistant bacteria, and for the development of oxide nanoparticles exhibiting persistent luminescence and/or the capacity to detect high energy radiation (scintillators). In this presentation, an overview of our work and motivations over the 10 past years will be given.

Biography

Prof. Andrea de Camargo holds a BSc (1996) and MSc in Chemistry (1999) from the State University of São Paulo, and a PhD in Sciences: Applied Physics (2003) from the University of São Paulo, Brazil. In 2006 she became an Assistant Professor and since 2015 is an Associate Professor of the São Carlos Institute of Physics IFSC/USP. Her research is in the areas of Materials Science and Physics: Optical and Spectroscopic Properties in Condensed Matter, particularly, the development and structural- functional characterization of optical and luminescent materials, with applications in a variety of fields from infrared lasing, solar concentrators and lighting, to photodynamic therapy. Prof. De Camargo is ad hoc reviewer of several funding agencies and peer reviewed journals and, since 2020, she is an Editor of J. Materials Science. In 2007 she was granted the L´ORÉAL Prize for Women in Science Brazil and nominated Affiliated Member of the Brazilian Academy of Sciences (2008-2013). From 2016 to 2018, she acted as a member of the Gender Study Group of the Brazilian Physics Society. In 2020 she became Scientific Director of the Brazilian Materials Research Society (SBPMat) and Brazilian Ambassador Scientist of the Alexander von Humboldt (AvH) Foundation. She has published more than 100 peer-reviewed papers which have received more than 1500 citations.

Structure Manipulation for the Development of Highly Sensitive Nano-Biosensing Techniques

Amal Kasry

Director; Nanotechnology Research Centre (NTRC), the British University in Egypt (BUE)

Abstract

Developing biosensing technologies became very vital for early diagnosis, and consequently saving many lives. Within the past two decades, several highly sensitive techniques have been developed for this purpose, in which plasmon-based techniques are one of them. Plasmonics are the collective oscillations of electrons that lead to a propagating wave at the interface between a metal and a dielectric. The combined electromagnetic and surface charge characters of these waves lead to the creation of an evanescent field. As a surface plasmon, plasmonics are very sensitive to any change near the interface, which allows for studying the interaction between biomolecules with one attached to the surface and the other used as an analyte. Metal plasmonics have been widely investigated for several applications like energy harvesting and optical sensing, however, metals encounter several drawbacks including high cost, lack of tunability and their intrinsic losses. The urge to search for new materials that can operate without high losses become an ultimate requirement. In this work I will show our efforts in the group to investigate new materials, e. g. graphene, to be used for this purpose. Graphene is a material with unique properties, it has been recently demonstrated as a new emerging plasmonic material that experience surface plasmons in the mid IR wavelength range. We show probing localized surface plasmonic resonance (LSPR) in

graphene patterned with nano holes without any external applied voltage or using metallic layers. By designing graphene patterned with nanoscale holes of specific dimensions, LSPR is excited at wavelength, leading to noticeable absorption. We use finite difference time domain to investigate the excitation of LSPR in nano meshed graphene at the mid IR wavelength range with absorption value reaching 35 %. We also found an interesting absorption in the UV region, which open new avenues for using graphene in UV-based applications. I will also demonstrate our efforts in developing other types of sensors to detect some cardiovascular biomarker as well as novel pH sensors.

Biography

Amal Kasry is currently the director of the Nanotechnology Research Centre (NTRC) at the British University in Egypt (BUE). She is an academic/ scientist with a wide range of international experience in Materials Science and Nano-Biotechnology. She received a fellowship for PhD at the Max Planck Institute for Polymer Research (MPIP), and got her degree from the Johannes Gutenberg University, Mainz, Germany in 2006, where her major work was using surface plasmon fluorescence spectroscopy (SPFS) in biosensing applications. She was then appointed in several places around the world in academic places like UConn Health Center, Cardiff University, and Austrian Institute of Technology, and Industrial places like IBM (USA) and Nitto Denko (Singapore). She joined the BUE in 2015, her current research is focusing on developing high sensitivity biosensing techniques. Dr. Kasry is an author of one book and 7 book chapters, a corresponding author and co-author of peer reviewed articles, and holds three patents. She is also a reviewer for AIP, ACS, Elsevier, and Wiley. She is the founder of the Egypt Group of the Max Planck Alumni Association (MPAA-Eg), and currently she is the Ambassador of the MPAA in Egypt.

Phosphate and phospho- silicate based planar wave guide and optical amplifier applications

Prof. Inas Battisha – Egypt
National Research Center

Abstract

Er3+ ions - activated both nano-composite phospho-silicate and amorphous phosphate were prepared using self-modified sol gel and conventional melt quenching technique. Two phosphate series were prepared with the following composition {60% P2O5 + 8% Al2O3 + 2% Na2O + 13% BaO + (17-x)% K2O + x% Er2O3, where x = 0.5 and 1 % molar ratios} and {60% P2O5 + 8% Al2O3 + 2% Na2O + 17% K2O + (13-x)% BaO + x% Er2O3, where x = 0.5 and 1 % molar ratios}, referring as PANBK0.5Er, PANBK1Er PANKB0.5E and PANKB1.0Er, respectively. While for sol gel materials different concentration of Er3+ ions were used. From the absorbance measurement, the absorption coefficient and absorption cross-section were calculated in case of

melting phosphate. The gain as a function of population inversion was estimated for the prepared samples. The obtained data showed that the amplification would be achieved around 1.5 µm at low population inversion value (20 %). The room temperature photoluminescence (RTPL) quenching was observed at lower temperature 100oC for (S20P3.5Er) T&M in case of sol gel prepared thin film samples. Emission at 1.5 µm upon excitation at 514.5 nm was detected characteristic to the 4I13/2→4I15/2 erbium ion intra-4F transition. Both prepared nanocomposites form morphology was characterized by Field Emission transmission electron microscope (FETEM).

Biography

Prof. Dr. Inas Kamal Battisha is a specialist in advanced new nano-structure materials as preparation, characterization and applications (such as photonics, ferrroelectric, multiferroic, biomaterials and photonic applications). She is a professor at the Solid-State Physics Department, National Research Centre (NRC), Egypt. She is the head of The Electric and Dielectric Measurements unit, NRC. She was Secretary of the Egyptian society for Advanced Materials & Nanotechnology Group, center of excellence, 2012-2013. Dr. Inas was a member and coordinator of Advanced Materials & Nanotechnology Group, center of excellence, 2014. She is the principle-author of more than 70 publications in international journals. She was involved in numerous national and international projects (19) concerning glass nano-structured materials, up-conversion, solar cell up-down shifting, phosphate glasses for optical amplifier, wave guide and laser applications. Prof Inas was the head of the Solid State Physics Department in the period between 2009 and 2012, and from July 2014 up to 2015, and she actively shared in 75 national and international conferences and workshops in Egypt, USA, Japan, China, Morocco, Saudi Arabian, United Emarate, Republic of Czech, Spain, France, Poland, Italy, etc…She got 3 prizes including the third local prize for the best industrial patent for 1998 & the Encouragement state prize from the Egyptian government, 2004 – 2005 and Prof. Dr. Fawzi Hamad prize for new materials from the Egyptian academy in Cairo 2007- 2008. She travelled in several scientific missions to Italy, France, Sweden. Prof Inas supervised 17 PhD and Master degrees/ theses.

Low-Cost and High-Performance Asymmetric Supercapacitor

Gomaa A. M. Ali a, *

Chemistry Department, Faculty of Science, Al-Azhar University, Assiut, 71524, Egypt

Abstract

Electrochemical materials, namely MnO2 and reduced graphene oxide (rGO), have been prepared in diverse morphologies (nanoflowers and nanosheets, respectively). Different physical and chemical characterizations were conducted to investigate the material structure and morphology. Electrochemical properties of these materials have been studied comprehensively using cyclic voltammetry, galvanostatic charge–discharge, and electrochemical impedance spectroscopy to

evaluate their suitability for super capacitive energy storage. MnO2 nanoflowers were obtained by recycling spent batteries. The single electrodes of MnO2 nanoflowers and rGO nanosheets exhibit a high specific capacitance of 208.5 F g−1 and 145 F g−1, respectively. Therefore, an asymmetrical supercapacitor was fabricated from both materials and electrochemically evaluated. It shows a superb super capacitive performance of up to 2.0 V in Na2SO4. The asymmetrical supercapacitor produces a high specific capacitance (177.6 F g−1), energy density (24.7 Wh kg−1) and stability (95.2% over 4000 cycles). The findings recommend using MnO2 nanoflowers and rGO nanosheets as an asymmetric supercapacitor.

Biography

Dr. Gomaa A. M. Ali is an assistant professor at Chemistry Department, Faculty of Science, Al-Azhar University, Assiut, Egypt. He has 13 years of experience working in research area of Materials Science, Nanocomposites, Humidity Sensing, Graphene, Supercapacitors, Water Treatment and Drug Delivery. He obtained his B.Sc. (2006) and M.Sc. (2012) in Physical Chemistry from Al-Azhar University, Egypt. He was awarded his Ph.D. (2015) in Advanced Nanomaterials for Energy Storage from UMP, Malaysia. He is the recipient of some national and international prizes and awards. Dr. Gomaa has published over 90 journal articles, as well as 6 book chapters on a broad range of cross-disciplinary research fields including advanced multifunctional materials, nanotechnology, supercapacitor, water treatment, humidity sensing, biosensing, corrosion, drug delivery, and materials for energy applications. Dr. Gomaa has served as both a Senior Editor and board member of many international journals, as well as reviewer for more than 45 WoS journals. To date, Dr. Gomaa's published articles have accumulated total (Google Scholar) citations of 1634 with h index of 22 (citations from Scopus of 1148 with 21 h index).

Exploring the Synthesis and Potential Applications of Lanthanide (III) Coordination Polymers and Metal Organic Frameworks

Marvadeen A. Singh-Wilmot, PhD.
Department of Chemistry, The University of the West Indies, Mona, Kingston 7, Jamaica.

Abstract

From MRI contrast enhancement agents, phosphors and nuclear reactors to hybrid cars and windmills, the world relies on lanthanide (III) containing compounds for both current and future technologies. This is largely due to their unique photophysical, catalytic and magnetic properties. However, lanthanide (III) ions have unpredictable coordination chemistry and this limits a design approach to functional materials. To overcome these challenges many more lanthanide (III) complexes must be synthesized and studied to extract trends that can inform the development of predesigned compounds for targeted use. Herein we discuss the synthesis and potential applications of novel lanthanide (III) coordination polymers and metal organic framework materials which show promise as luminescent sensors for metal ions and nitroaromatic compounds. The role of

supramolecular interactions, molecular building blocks, and the lanthanide contraction is discussed.

Biography

Dr. Marvadeen Singh-Wilmot is Lecturer in Inorganic Chemistry at the University of the West Indies, Mona, Jamaica. She leads an active research group in the areas of lanthanide chemistry and metal-organic framework materials. She was inducted as the Caribbean's first young affiliate fellow of TWAS in October 2010 and is now a member of TYAN. Singh-Wilmot has a passion for science and is committed to the promotion of science as a tool for development. In light of this she continues to serve in various capacities as an advocate for science in her country. She is currently a member of Scientific Organizing of Commonwealth Chemistry and contributed to the deliberations which gave birth to this organization in June 2018.

Photovoltaic Energy for canarian greenhouse

Kabira Ezzaeri*1, A. Aharoune1 and L. Bouirden1

1 Thermodynamics and Energetic Laboratory, Faculty of Sciences, Agadir, Morocco

Abstract

In a policy to paying increasing attention to the development of renewable energy in the agricultural word; the photovoltaic greenhouse represents a unique and innovative method to answer the challenges of the sustainable development of the agricultural sector and the countries in general, it allows maintaining the agricultural activity, in addition to producing electricity of photovoltaic origin. In the context of the integration of photovoltaic energy in agricultural greenhouses, the objective of our work is to study the effect of the presence of the flexible photovoltaic panels on the microclimate and the development of tomato. The experiments were performed in two adjacent canarian greenhouses. Each greenhouse occupies a surface area of 172m2, with the dimensions, 11.0 m wide, 15.6 m long, 4.0 m gutter height, 5.0 m in the ridge and a roof slope of 10°.and its maximum height reaches 5 m. These greenhouses were located in the experimental site at the Regional Center of Agricultural Research (INRA) in Agadir (Latitude: 30° 13, Longitude: 9° 23, Altitude: 80 m) on the Atlantic coast of Morocco. The results of the comparison in two greenhouses, photovoltaic and control show that a 40% occupation of the roof of a canary type greenhouse with flexible photovoltaic panels in checkerboard format does not have a significant effect on the microclimate, the tomato production and on the overall yield of tomatoes. Additionally, during the hot period, the photovoltaic panels reduced the temperature inside the greenhouse and sometimes falling in the optimum range for the tomato's growth.

Biography

I have joined the department of physics since2013.obtained my Master's in energy materials engineering and environment from Faculty of Science, Ibn Zohr University. I have got my PhD in

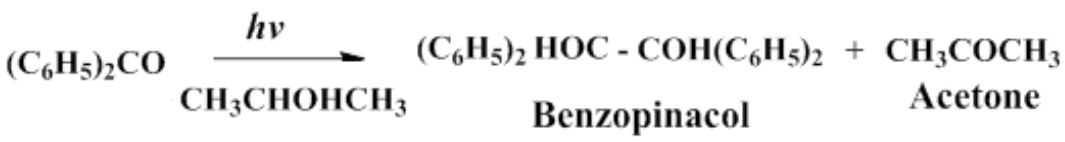
physics from faculty of science, Ibn Zohr University. My general field of interest is the renewable energy sources applied to agricultural systems specially the study of photovoltaic greenhouses. I am interested in the search for study and development of an innovative system of agricultural production and electricity: photovoltaic canary greenhouse. For this study, I did a theoretical, experimental and numerical study. So I spent 4 years of the experience in the experimental area Melk Zhar of INRA in Agadir, Morocco I have been an effective participant in the project funded by the National Scientific Research Center 'CNRST'. So far, I have published my work in highly respected peer-reviewed international scientific journals and had oral and poster presentation in national and international scientific meetings in Morocco, France, Spain, Turkey, and Malaysia... My h-index= 5 with a total citation of 106. I have participated as an organizer in national and international workshops and scientific conferences.

Green Chemistry Reactions in Duhok City: Part III. Optimization of Rose Bengal dye concentration as oxygen quencher in the Photosynthesis of benzopinacol

Ibtehaj T. Subhey* 1 and Ghazwan F. Fadhil 2
1 College of Veterinary Medicine, Department of Pathology and Microbiology, University of Duhok. Duhok. Kurdistan Region. Iraq.
2 College of Science, Department of Chemistry, University of Duhok. Duhok. Kurdistan Region. Iraq.

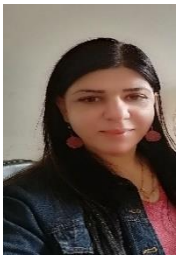
Abstract

Green chemistry reaction is a vital discipline to reduce the pollution hazards that is threatening our environment. Many polluted waste materials are through in the water streams due to industrial. Redox reactions usually use chemicals either oxidizing agents such as acids or reducing agents such as metals both requires clean up conditions to prevent the leak of these reagents to the environment. The scope of this research is to investigate the role of organic dye on the photochemical synthesis of benzopinacol from benzophenone. The solar photo-reduction of benzophenone to benzopinacol is well known reaction [1]. In this reaction the benzophenone was dissolved in isopropanol and subjected to five hours sunlight produced benzopinacol. The atmospheric oxygen is a well-known quencher to the reactant. If a dye is added like rose Bengal that might act oxygen quencher and save the benzophenone from the quenching effect of the atmospheric oxygen. In this investigation we used several different concentrations of the rose Bengal in different experiments to eliminate the quenching effect of oxygen in the benzopinacol



synthesis. The best rose Bengal concentration was 1mg/100 ml of solvent which gave 86.1% of benzopinacol and the reaction time 4.30 h.

Biography



I am instructor in the College of Veterinary Medicine, Department of Pathology and Microbiology, Duhok University since 2003, my B.Sc in chemistry from College of Science, Almustansyria University – Baghdad and my M.Sc. in Organic Chemistry from College of Education, Chemistry Department, Duhok University. Now I am PhD student in major of organic chemistry at College of Science, Duhok University. My general field of interest is the study reactions related to Green Chemistry reactions to prepare new organic compounds that have several applications in medicinal and industrial fields by less toxic methods of photosynthesis. I am interested in the research in Photochemistry, Green chemistry, Organic Synthesis, Natural Product (extraction of chemicals from plants).

Preparation of activated carbon from Cacao pods for supercapacitor electrodes application

Dr. Yuli Yetri, M.Si
Politeknik Negeri Padang

Abstract

Agricultural and agro-industrial residues are ordinary wastes in the forestry industry and their valorization is an important issue. Cocoa pods waste was chosen as an activated carbon material and studied as active materials for supercapacitor electrodes. The carbon electrode has been made using 0.3M and 0.4M KOH activators at 700oC. Physical properties were tested by measuring density, XRD, and SEM, while the electrochemical properties were tested using the Cyclic Voltammetry method. Activated carbon electrodes were constructed by a combination of chemical activation, and physical activation methods. The technique of making carbon electrodes were started from pre-carbonization, milling, chemical activation, pellet making, carbonization, and physical activation. Analysis of dimensions, density, and specific capacitance (Csp) in the manufacture of carbon electrodes showed the mass, diameter, thickness and density of the electrodes decreased with the addition of KOH concentrations from 0.3M to 0.4M. While the Csp value of the electrode was directly proportional to the increase of KOH concentration. In XRD measurement data, the values of 2θ in the range of 23.569o - 24.747o was obtained for the reflection field 002, and 44.634o - 44.781o for the reflection plane 100. XRD curve data showed a 0.4M at 700oC sample having an Lc value and a lattice distance smaller than the sample of 0.3M at 700oC. Therefore, it could be indicated that the surface area of the sample of 0.4M at 700oC was greater than the sample of 0.3M at 700oC. The electrochemical test showed that the method of chemical activation variation of 0.4M produced electrodes with better performance than 0.3M. The Csp value obtained at a concentration of 0.3M was 90.2 F/gr with a density of 0.850 gr/cm3, while at a

concentration of 0.4 M was 140.2 F/gr with a density of 0.802 gr/cm3. These results indicate the high potential of agricultural cocoa pods based activated carbon as supercapacitor electrode.

Biography

Dr. Yuli Yetri, M.Si was born in Bukittinggi on July 06, 1963. Currently, Yuli Yetri is a Senior Lecturer in Department of Mechanical Engineering, Politeknik Negeri Padang (Padang State Polytechnic), Padang, Indonesia. She completed his undergraduate studies in the Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas (UNAND). Furthermore, she continued her postgraduate education at University of Indonesia (UI) and completed his studies as a master of material (M.Si) in 2000. She continued her doctoral in in the Department of Chemistry, Faculty of Mathematics and Natural Sciences, University of Andalas, and completed her research at Tohoku University, Japan. She received her Dr. degree from Andalas University, Padang, Indonesia in material chemistry. She specializes in corrosion inhibitor from natural product especially cacao pods, material and green chemistry. Up-to-date, she has published papers in International Refereed Journals, and also participated in many seminars or conferences, both national and international level. Since the year 2017, under the Ministry of Research, Technology, and Higher Education, Republic of Indonesia, she has been appointed and approved to be one of reviewers for several international refereed journals and grant competition, helping to develop one of the Ministry's programs in improving lecturer's performance. In addition, she is now an active member of Indonesia Chemical Society, Global Illuminator, Global Research & Development Service (GRDS), the IRED Institute of Research Engineers and Doctors, Hong Kong Chemical, Biological & Environment Engineering Society (HKCBEES), and Association of Chemical Physics Indonesia.

A Kinetic Study of Removing Methylene Blue from Aqueous Solutions by Modified Electrospun Polyethelene Terephthalate Nanofibres

Hozan A. Ahmed (1), Parween H. Saleem (2), Suhad A. Yasin (2), Ibtisam A. Saeed (2)
1- Pharmacy Department, Technical Institute Duhok, Duhok Polytechnic University, Iraq
2- Department of Chemistry, College of Science, University of Duhok, Iraq (2).

Abstract

The present research study investigates the potential use of the novel polyethylene terephthalate (PET) nanofibers extracted from waste bottles. The electrospinning process creates nanofibers which are then impregnated with dibenzo-18-crown-6 (DB18C6) (crown ether) to obtain a modified PET nanofiber. The use of modified PET nanofibers to remove methylene blue (MB) from aqueous solutions at different contact times, temperatures and initial dye concentrations is the prime concern of the present study. The amount of MB adsorbed at equilibrium (qe) is calculated at different temperatures (303, 313, and 323 K) and different concentrations (5, 10, 15 mg/g). The Kinetic and equilibrium studies of MB removal are carried out. The results indicate that the

adsorption kinetics of MB can be described by the pseudo-second-order model. The activation energy value is below 40 kJ/mol and this gives an idea about the physisorption process.

Biography

I have joined the Department of Chemistry, College of Science/ Dohuk University since 2005. I obtained my M.Sc. in analytical chemistry from college of Science, University of Mousel, and then I have got my Ph.D. degree in analytical chemistry from the college of science, Zakho University. My main interest is the study of analysis of chemical compounds. Research interests focus on flow injection analysis, chromatography and spectroscopic methods. I have participated in a number of conferences and have published many papers in national and international scientific journals.

Butanol Production by Clostridium acetobutylicum Grown on Yeast Industry Wastewater (YIW)

Othman Al-sharafat
Biology and biotechnology department, Hashemite university

Abstract

Butanol is a four-carbon primary alcohol. Butanol is widely used in the form of butyl acrylate and methacrylate esters used in latex surface coating, enamels, and lacquers. In Jordan, industries produce wastes as a result of the manufacturing process. One of the wastes is Yeast Industry Wastewater (YIW) that is produced in large quantities. This research aims to study the ability of C. acetobutylicum NCIMB 13357 to utilize Yeast Industry Wastewater (YIW) as a fermentation medium to produce butanol and to enhance butanol production by immobilization of C. acetobutylicum using sodium alginate in batch and continuous mode of operation. As a result, in agar plates, undiluted YIW was the suitable media for growing of C. acetobutylicum. Effect of shaking on clostridium and on the production of butanol revealed that the maximum production of butanol was 11.73 g/L in culture that supplied with 16 and 20 g/L of glucose and ammonium acetate as a nutrient, respectively. In column bioreactor the production of butanol was enhanced as the total carbohydrates were consumed. To improve the process, immobilization of C. acetobutylicum in column bioreactor was studied. The results indicate that the maximum production of butanol was 12.47 g/L with batch fermentation, whereas in the continuous fermentation the maximum production of butanol was 18.35 g/L after 96 hr. In conclusion, C. acetobutylicum was able to utilize YIW as a substrate to produce butanol using a simple cheap fermentation medium. The main advantage of research is the production of biofuels in quantities contribute to the production of energy. Also, dropping its dangerous effect on the environment and improving its ecological impact in Russeifa city.

Biography

I have joined the department of biology since2001.obtained my M.Sc. in biology from Faculty of Science, Hashemite University. My general field of interest is the study of industrial microbiology My field of study is industrial microbiology and knowing everything new in this field. I started researching and exploring since I started my master's degree. I aspire to continue my studies and obtain a PhD. I am interested in learning about the types of bacteria that have a lot to do with biological purification and wastewater treatment.

Synthesis of Grafted Polymers from CeO2 NP's

Zaid M. Abbasa, Karl Golianb, Brian C. Benicewiczb
a Department of Chemistry, Wasit University, Hay Al-Rabea, Kut, Wasit, Iraq 52001.
b Department of Chemistry and Biochemistry, University of South Carolina. Columbia, South Carolina 29208, United States.

Abstract

Many scientific groups have developed industrial materials for many reasons by using either carbon black or metal oxides to enhance the organic matrices properties. Combined with organic compounds and mixing agents for achieving the unbelievable range of mechanical, physical, and chemical properties, these fillers required various industry applications. The improvements in organic materials have targeted improving the needed properties such as stiffness, modulus, rupture energy, tear strength, tensile strength, cracking resistance, fatigue resistance, and abrasion resistance. Two major factors that control fillers' improvement to the matrix are the dispersion into the matrix and the interaction between the organic matrix and fillers. In this work, CiO2 nanoparticles were synthesized through a hydrothermal process and then polymer grafted-on to prepare grafted nanoparticles for nanocomposites. The effects of polymer brushes on the nanocomposites' dispersion were studied as a function of particle size, dispersion of nanoparticles, and the grafted brushes' molecular weight. The nanocomposites' dispersion properties were notably enhanced when the graft brushes were attached to the nanoparticles' surface. Scanning Electron Microscopy (SEM), Transmission electron microscopy (TEM), Energy Dispersive X-Ray Analysis (EDAX), Dynamic Light Scattering (DLS), FT-IR, Thermal Gravimetric Analysis (TGA) and were used to analyze the grafted nanoparticles' dispersion states, which confirmed the correlation between grafted chains and improved dispersion states and required properties.

Biography

Zaid Mohammed Abbas originally from a small city in the middle of Iraq. He studied Bachelor and M.S. degree in organic chemistry at AL-Nahrain University, Baghdad, Iraq. Then, between 2009 -2012, he had worked as a Teaching Assistant at the University of Wasit. During this period 2010 -2012, he had worked with Dr. Khalidah S. Merzah group to prepare some nanoparticles. He is a very social

person, and he is trying to work collectively to reach his goal of making science the forefront of all countries' interests through intercultural convergence and the transfer of evolution around the world. He joined Dr. Brian Benicewicz's group in 2014-2018 to obtain PhD and work on research in polymer chemistry, with a focus on RAFT polymerization and polymer nanocomposites. 2019 he came back to work at Wasit University as a university instructor and provide quality consultation for some of the Iraqi private companies for better environment.

Aldol Condensation Reaction of Acetone on MgO Nanoparticles Surface: An In-situ Drift Investigation

Alaa H. Alminshid a, Mohammed N. Abbas, Hayder A. Alalwan , Abbas J. Sultan, Mohammed A. Kadhom
Department of Chemistry - Wasit University, Kut, Wasit, Iraq

Abstract

Acetone adsorption and catalytic interactions with MgO nanoparticle surface was studied using in-situ diffuse reflectance infrared Fourier transform spectroscopy (DRIFTS) at room temperature. Acetone showed adsorption bands at 2965, 1717, 1597, 1422, 1415, 1367, 1238, 1229, and 1204 cm-1. The MgO was found to be a good catalyst for the activation of the aldol condensation reaction of acetone to form di-acetone alcohol (DAA). The OH group role on the MgO surface was found to be a suppression agent to the further dehydration of DAA to mesityl oxide. This is probably because the OH group blocks the active sites on the MgO surfaces that adsorbed the water formed from the dehydration of DAA. This conclusion was confirmed by identifying the basic site concentrations on MgO surface using DRIFTS and TPD studies of CO2 adsorption/desorption on MgO nanoparticles surface. The high-strength basic sites which are required to dehydrate DDA to mesityl oxide was found to represent only 17.5 % of the total basic site concentration, while the low-strength basic sites resulted from hydroxyl surface group represent 22.5 %. On the other hand, the acetone interaction with the MgO surfaces produced several components such as formaldehyde, acetate, ethoxide, as well as other carbonate species such as bicarbonate, bidentate carbonate, and monodentate carbonate. The results of the present investigation supply important essential insights into catalytic reactions resulted from acetone adsorption on MgO nanoparticle surfaces.

Biography

I am a professor of analytical and physical chemistry and the head of chemistry department at the college of science in Wasit University. I have got my M.Sc in 2014 and PhD in 2018 in chemistry from the University of Iowa, USA. My research interests are in nanomaterials, focusing on physical and chemical properties, surface chemistry, spectroscopic studies, adsorption, liquid-solid interface, biological media, and nano-bio interface. I continue doing research in nano field, making collaboration work with other researchers from different fields and institutes inside and outside the country, and make industry connections practicing as a chemist to help them solve the problems

they have in their products. My current projects focus on nanoparticles and iron chelators and investigate if there is plausible link to Alzheimer's disease. The other project focuses on how we treat Covid-19 with nanomaterials using nanocarriers to rupture the outer protein of Coronavirus. Also, I am working on spectroscopic investigation of the adsorption mechanism of fluids such as gases, liquids, and biological media on nanoparticles surface. I have been an effective participant and have been selected as an organizer in many conferences and webinars held by Royal Society of Chemistry RSC and American Chemical Society ACS. So far, I have published my work in highly respected peer-reviewed international scientific journals. My h-index is 6 with total citations of 288.

Phytochemicals analysis of some native plant species of Kurdistan and study of their potential for synthesis of bioactive nanostructures involved chemical transformations.

Rihan S. Abduljabar, S. Mohammad Sajadi
Department of Phytochemistry, Scientific Research Center, Soran University, Kurdistan Region, Iraq

Abstract

Several plant extracts have recently emerged as novel resources for their ability to produce safe and non-toxic nanoparticles. The green approach for the synthesis of metal nanoparticles by using plants extract are very desirable compared to other physical and chemical methods because of their advantages such as the use of non-toxic solvents, simple work-up procedure, very mild reaction conditions, cleaner reaction profiles, elimination of dangerous materials, elimination of high pressure, energy, temperature, cost-effectiveness without using of surfactant, capping, stabilizing agent. The increasing applications of green synthesized nanoparticles using medicinal plant extract in different aspects of human life are visible. For degradation and remove toxicity and carcinogenic characteristics of organic dyes, discovering and developing efficient as simple and cost-effective treatment methods. In this project, the extract of some native medicinal plant species in Kurdistan will synthesize metal nanoparticles (NPs) with a green approach. The plant extract acts as a green, reducing agent and eco-friendly benign support. Fourier-transform infrared spectroscopy, Ultraviolet-visible spectroscopy, Transmission electron microscopy, Field Emission Scanning Electron Microscope, Electron dispersive spectroscopy, and X-ray powder diffraction will be used to characterize synthesized metal nanoparticles. The main point is that the nanoparticles are synthesized by Designing Safer Chemicals and using Safer Solvents and Auxiliaries; therefore, with the adsorption of phytochemicals on nanostructure surface, the presence of no toxic reagents, they can be used in medicinal and pharmaceutical applications. The catalytic activity of the prepared nanoparticles will be applied for eco-friendly chemical transformations and other desired applications.

Biography

I have joined the Phytochemistry department, Scientific Research Center, Soran University last year as a Ph.D. student. Obtained my M.Sc. in Biochemistry from Zakho College of Education, University of Duhok. My general field of interest is the study of Phytochemicals as antioxidants for Food Additive, application of phytochemicals as medicinal and pharmaceutical uses; also, I am interested in the search and research of active biomolecules from plants and their secondary metabolites for the innovation of new drug candidates from natural resources with variable biological activities as, antioxidant. In nanotechnology also, the search for natural sources that could be used in the green synthesis of nanoparticles as reducing, stabilizing, and capping agent biomolecules including Plant Leaves, Stem, Latex, Flower, Seeds) , Microbes (Eukaryotes, Fungi, Yeast, Prokaryotes, Bacteria) and Templates (DNA, Cell Lines, Membranes, Diatoms, virus) is my interesting work as my Ph.D. path work; due to that green synthesized nanoparticles are Eco-friendly and possess No Biological Risk with showing greet compatibility. My previous publication was related to 'Phytochemicals as antioxidants for Food Additive. Having looked through the materials in my university, I am very delight to find the opportunity to learn research of innovative materials at the Fifth Edition of the World Forum for Women in Science without Borders (WISWB). I have decided to apply for this conference because it would enormously enrich my future studies and help me in my future career.

Fluorescence immunoassay based on nitrogen doped carbon dots for the detection of human nuclear matrix protein NMP22 as biomarker for early stage diagnosis of bladder cancer

Hazha Omar Othman, Foad Salehnia, Morteza Hosseini, Rebwar Hassan, Azad Faizullah, Mohammad Reza Ganjali

Chemistry Department, College of Science, Salahaddin University–Erbil, Iraq

Abstract

A selective, fast acting and eco–friendly fluorescence immunoassay technique based on Nitrogen doped carbon dots (NCDs) is proposed for the detection of Nuclear Matrix Protein 22 (NMP22, antigen). Via the hydrothermal method and with the use of citric acid and urea, we synthesized NCDs with high quantum yield. Monoclonal antibodies (mAb, antibody) were labeled with NCDs through the EDCe–NHS amidization technique and, in order to carry out the immunoreaction between the antigen and antibody, the resulting NCDs–mAb conjugates were then incubated with a small amount of NMP22). The established immunocomplex on the carboxylated NCDs led to the quenching of the fluorescence intensity. Under optimal conditions, a linear correlation between the change in fluorescence intensity and NMP22 concentration in the range of 1.3–16.3 ng/mL was observed and a detection limit of 0.047 ng/mL (47 pg/mL) was attained. This detection method was successfully able to determine NMP22 in human urine samples, with recoveries ranging from

96.50% to 103.61%. These results provide ample proof regarding the potential use of NCDs as fluorescence labels in immunoassays.

Biography

I obtained my bachelor's degree in 2009. I was in the three top graduated students. I stared working as chemical assistant in chemistry department in 2009 in chemistry department college of science salahaddin University. I got master in 2015 in Analytical chemistry and started working as assistant lecturer in chemistry department until now. In present I am PhD. Student and I am working in field of nanotechnology, nanobiotechnology, Biosensors, chemosensors, immunosensors, Nanoparticle engineering. Nano materials… etc. I have more than 8 published articles. I have published my work in highly respected peer-reviewed international scientific journals. I joined to research team in University of Tehran. I have interested for research in different field and I have several projects in water treatment, Drug delivery, engineering different nanoparticles.

Biological activity of Nd: YAG laser and Beta, Gamma radiation on Klebsiella pneumoniae resistance Colistin

Nebras Rada Mohammeda, Hanaa Salih Sabaab and Sanaa Rasool Salimc
Physics department – College of Science/ Mustansiriya University/Iraq

Abstract

The goal of this study effect radiation on a number of Staphylococcus aureus bacterial isolates collected from Hilla Teaching Hospital and Imam Ali Hospital in Babil Governorate and Baghdad hospitals different patients randomly from from burns, wounds, urinary tract infections and skin with burn and wounds infections. Identification by VITECK2-GP, S.aureus were implanted on Nutrient broth and Nutrient agar , then placed within test tube containing distilled water 5ml, then exposing to an different radiosources including CS137 and CO60, with activity 1-10 µc with different radiation doses for different peroids 1-2-3 hrs.; implanted on Petridishes plates of Nuterinat agar incubated in the incubator for 24 hrs. at 37 ° C . The results of exposure to beta and gamma rays emitted by CS 137 and CO 60 radiosources with activity 10 µci and 1 µci. for 1hrs.,2hrs. 3hrs, with different doses including Cs (10 µci) Beta 3.160*10-1 (1hrs.), 6.32*10-1 (2hrs.), 9.48*10-1 (3hrs.) 98.3%, 99.5%, 99.5% respectively ; Cs (10 µci) Gamma5.815*10-1 (1hrs.), 11.63*10-1 (2hrs.), 17.445*10-1 (3hrs.) 98.9%, 99.6%, 99.5% respectively; Cs (1 µci) Beta 3.417*10-1 (1hrs.) , 6.835*10-1 (2hrs.), 9.253*10-1 (3hrs.), 99.3%, 99.5%, 99.9% respectively ; Cs (1 µci) Gamma 6.289*10-1 (1hrs.), 12.678*10-1 (2hrs.), 18.867*10-1 (3hrs.) 99.2%, 99.6%, 99.8% respectively; Coblit with Co(1 µci) Beta 1.2*10-1 (1hrs.), 2.4*10-1 (2hrs.), 3.6*10-1 (3hrs.) 99.4%, 99.2%, 99.8%; Co(10 µci) Beta, 1.86*10-1 (1hrs.), 3.7*10-1 (2hrs.), 5.5*10-1 (3hrs.) 99.6%, 99.8%, 99.9% respectively ; Co(10 µci) Gamma, 2.33*10-6 (1hrs.),

4.66*10-6 (2hrs.), 6.99*10-6 (3hrs.), 95.2%, 99.8%, 99.8% respectively. Calculate number of colonies with percentage of killing.

Biography

She joined Physics Department since 2001 with a degree as Physics Associate. Master of Solid-State Physics from the College of Science, Al-Mustansiriya University in 2005 with a PhD in Nuclear Physics / Biophysics from the College of Science, Al-Mustansiriya University in 2018. My general field of interest is the study of physical preventive factors and treatment of different types of radiation) laser, nuclear (for human cancer of various types, cancer biology, and applied microbiology and physical enzymes. I am interested in searching for new candidate drugs from natural resources with variable biological activities such as anti-tumors, and the occurrence of genetic mutations on types of bacteria that cause some diseases. I obtained a patent in the field of treatment for a specific type of bacteria and won many international awards in my publishing of patents in the medical field, including the US GOIDI Award for the year 2021 and the second place in addition to my first win the International Light Fair for Science and Technology Award 2020 and the gold medal and participation in The second international conference at the University of Babylon in 2019 and participation in the Canada Toronto Conference held in Canada in 2019 and obtaining a gold medal. Active participant in several international and local conferences and published more than 20 research papers during recent years, I am currently working on registering with Global Genebank to acquire my multiple genes while my work.

Evaluation of thermal state for some overhead lines in Nasiriya city, Iraq

1Rafid M. Hannun, 2Rabih Lafta Dakhil Hussain, 3Ansam Subhi Jabbar
1,2University of Thi-Qar, 3University of Technology

Abstract

The network operators face a number of challenges, the most important factor of them is demand electrical power growth. To lessen the effect factors on the power flow in conductors must be available lines operate efficiently and within the permitted thermal limits. In this paper, the study explains numerically the effect of some factors associated with properties of the overhead lines (type of conductor material and the size of the conductor) and the weather conditions that are in direct contact with the lines (wind speed and ambient temperature) and the effect of the current capacity on the thermal behavior of the conductors that done by using one of the important CFD (Computational Fluid Dynamics) model (ANSYS code). The study was conducted using three types of conductors and a different cross-section area, conductors are an aluminum conductor (Al), copper conductor (Cu) and reinforced aluminum conductor (ACSR) carried out under the weather conditions of Nasiriyah city in south of Iraq. Before starting the study, the used model was validated by comparison with another model. The results showed good agreement (with a rate of deviation 0.23% in 2D and 0.76% in 3D between the simulation results in present study and the other CFD

numerical model) *. Then, the effect of installing method of the conductors on the thermal behavior was studied by taking into consideration most common installation methods used in distribution networks in Iraq. The numerical simulation results found that climate conditions have a direct effect on determining the thermal state of conductors (when 600A the current pass throughout one of the conductors the ambient temperature range 273-328 K leads to increase the conductor temperature in the range 386- 449 K). In addition, it can be maintained on the conductors and operated in a safe manner or even increase the energy transmitted on the line by observing the weather conditions. Furthermore, the type of conductor material and its size have a noteworthy impact on determining the current capacity of the conductor.

Biography

Prof. Dr. Rafid Maalak Hannun Al-Salih, born 12/25/1970 - Al-Fahood, Thi-Qar, Iraq. He completed his bachelor's degree in mechanical engineering from Baghdad University in 1993 and his master's degree in renewable energies and solar energy engineering from the University of Technology - Baghdad 2005 and PhD in energy and thermal Eng. - Department of Mechanical Engineering - College of Engineering - University of Basra and the bulk of the thesis at Cardiff University - Wales - UK – 2009. I teach at the College of Engineering, Thi-Qar University. He holds 5 patents and 47 scientific papers in scientific journals inside and outside Iraq (including 15 research for the last academic year 2019-2020). He held several positions, including: Head of the Electrical and Electronic Engineering Department, College of Engineering, Thi-Qar University and Deputy Dean of the College of Engineering Thi-Qar University and Director of the Multi-Specialists Consulting Bureau – Thi-Qar University, Member of the Ministerial Committee on Energy Sustainability, Consultant at UNIDO (United Nations Industrial Development Organization) for various projects. A supervisor of 16 postgraduate students inside and outside Iraq. Author of one book, entitled (Basics of Solar Energy). Chairman of the Scientific Promotion Committee at the College of Engineering. Chairman of the Scientific Committee of the Second International Conference in College of Engineering. Job service 27 years. Holder of a professorship within the shortest term on 01/17/2018. Contributed to obtaining 3 MOUs with different international universities. He got many training courses in different topics inside and outside Iraq.

Initial Studies Directed toward the Rational Design of Aqueous Graphene Dispersants

Aula A. Alwattar,†,§ Kane W. J. Heard,†,⊥ Cian Bartlam,‡ Christopher D. Williams,‖ Junru Zhang,†
Mark S. Little,† Adam V. S. Parry,† Fiona M. Porter,† Mark A. Vincent,† Ian H. Hillier,† Flor R. Siperstein,‖ Aravind Vijayaraghavan,‡ Stephen G. Yeates,† and Peter Quayle†
†School of Chemistry, The University of Manchester, Oxford Road, Manchester M13 9PL, U.K.
§College of Science, University of Basrah, Garmat Ali, 61004 Basrah, Iraq
‡School of Materials and National Graphene Institute, The University of Manchester, Manchester M13 9PL, U.K.
School of Chemical Engineering and Analytical Science, The University of Manchester, Oxford Road, Manchester M13 9PL, U.K.

Abstract

This study presents preliminary experimental data suggesting that sodium 4-(pyrene-1-yl) butane-1-sulfonate (PBSA), 5, an analogue of sodium pyrene-1-sulfonate (PSA), 1, enhances the stability of aqueous reduced graphene oxide (RGO) graphene dispersions. We find that RGO and exfoliated graphene dispersions prepared in the presence of 5 are approximately double the concentration of those made with commercially available PSA, 1. Quantum mechanical and molecular dynamics simulations provide key insights into the behavior of these molecules on the graphene surface. The seemingly obvious introduction of a polar sulfonate head group linked via an appropriate alkyl spacer to the aromatic core results in both more efficient binding of 5 to the graphene surface and more efficient solvation of the polar head group by bulk solvent (water). Overall, this improves the stabilization of the graphene flakes by disfavoring dissociation of the stabilizer from the graphene surface and inhibiting re-aggregation by electrostatic and steric repulsion. These insights are currently the subject of further investigations in an attempt to develop a rational approach to the design of more effective dispersing agents for rGO and graphene in aqueous solution.

Biography

Dr. Aula does research in organic synthesis, polymer synthesis. The synthesis of non-covalently bound small molecules for the functionalisation of graphene and other 2D materials. Her project is based on the design and synthesis of polycyclic aromatic hydrocarbons (PAHs) to develop a platform of 2D materials and their heterostructures which would allow one to design and fabricate novel functional devices. She had also introduced many new polycyclic heteroarenes. She holds a PhD degree in organic chemistry from the University of Manchester, UK. She is a lecturer in the Chemistry Department, College of Science, University of Basrah. She has many research posts and scientific visits in various international universities in Britain, France and Finland. This year she actively participated in re-designing and organizing the curriculum for virtual laboratories and managing them online at the University of Manchester. She holds a Certificate of Leadership and Management of University Research Groups (ILM) and a Teaching

Fellow from UK Higher Education (FHEA). She has many scientific papers published in Clarivate and Scopus. She supervised many of project students and postgraduate students at the University of Manchester.

AFM in material science

Professor: Manar Abdel-Raouf
Professor of polymer science at the Egyptian Petroleum Research Institute

Abstract

Atomic Force Microscopy (AFM) is a type of scanning probe microscopy (SPM). It is a new and relatively cheap method of imaging objects from the nano- to micron-scale. Surfaces can be scanned in 3D with an AFM, which provides a quick and easy way to measure dimensions, roughness, and many other material characteristics in sciences across the board. The present work involves an introduction on AFM, its components and different modes of action. In addition, the applications of AFM in material sciences starting from petroleum to biological tenders are reviewed. At last, the superiority of AFM over scanning microscopes are mentioned together with the minor disadvantages of this important instrumentation.

Biography

Professor Manar Abdel-Raouf, is a professor of polymer science at EPRI since 2012. She has supervised many M.Sc and Ph.D theses. She has published more than 50 research papers in highly reputed journals. Moreover, she has published four book chapters and she was an editor for a book entitled: Crude oil, composition and characterization by Intech. She is an active member in several national and international societies. She is a reviewer and an editorial board member for many international journals. Currently, she is the PI of an international project entitled (Green chemistry approach for preparation of hydrogels for agriculture in Egyptian deserts).

Porous Organic Materials as Gas Storage Media

Dina Saadi Ahmed
Department of Medical Instrumentation Engineering, Al-Mansour University College, Baghdad 10067, Iraq

Abstract

Climate change is accompanied by noticeable alterations in weather over either long or short time periods. Natural climate equilibrium is constantly stabilized by domestic ecosystems and the overall cycles of carbon, water, and nitrogen. The use of clean energy sources is a feasible solution to overcome environmental problems, such as pollution and greenhouse gas (GHG) emissions, caused by the use of fossil fuel. The use of porous organic materials as energy storage media is a potential solution, as such materials can be used for the capture and storage of clean fuels, such as hydrogen (H2), carbon dioxide (CO2) and methane (CH4). Moreover, porous organic materials

can reduce GHG emissions. Polyphosphates were found to have high gas storage capacity and physicochemical stability, particularly at a high pressure. At 323 K and 50 bars, polymers have remarkable carbon dioxide uptake (up to 82.1 cm3.g–1) and a low hydrogen uptake (up to 7.4 cm3.g–1). The polyphosphates exhibit has a high affinity for CO2 uptake (up to 1.42 mmol/g; 6.00 wt %). Polyphosphate unit was the most effective material towards the CO2 uptake since such geometry leads to a highly distorted network with an extended surface area. The performance and affinity of the tin complexes for carbon dioxide gas uptake were highly efficient compared with the performance and affinity for hydrogen gas uptake under the conditions used. The telmisartane organotin (IV) complexes was the most efficient carbon dioxide storage medium, having a CO2 gas uptake up to 7.1 wt%. The carvedilol metal complexes showed reasonable capacity towards carbon dioxide uptake (up to 18.21 cm3/g) under the same condition. The valsartan metal complexes were more efficient exhibited a remarkable methane uptake capacity of 71.68 cm3/g under optimized conditions.

Biography

Dina S. Ahmed was born in Baghdad, Iraq. She received her PhD degree from Tikrit University in 2018. Her research interests are primarily in the development of novel polymeric materials for greenhouse gases capture and storage Particular current research projects involve synthesis new compounds as photostabilizers. She is currently a Lecturer of Medial Chemistry and Clinical Chemistry-Instrumentations & Technology since 2018, at Al-Mansour University College, Department of Medical Instrumentation Engineering, Baghdad, Iraq.

Novel TiO2/GO/CuFe2O4 nanocomposite: a magnetic, reusable and visible-light-driven photocatalyst for efficient photocatalytic removal of chlorinated pesticides from wastewater

A. M. Ismael,‡a A. N. El-Shazly, ‡*b, S. E. Gaber,a M. M. Rashad,b A. H. Kamelc and S. S. M. Hassanc

Abstract

A TiO2/GO/CuFe2O4 heterostructure photocatalyst is fabricated by a simple and low-cost ball-milling pathway for enhancing the photocatalytic degradation of chlorinated pesticides under UV light irradiation. Based on the advantages of graphene oxide, TiO2, and CuFe2O4, the nanocomposite exhibited visible, and adsorption capacity. Integrated analyses using light absorption, magnetic properties XRD, SEM, TEM, and UV-visible techniques demonstrated that the nanocomposite exhibited a well-defined crystalline phase, sizes of 10–15 nm, and evincing a visible light absorption feature with an optical bandgap energy of 2.4 eV. The photocatalytic degradations of 17 different chlorinated pesticides (persistent organic pollutants) were assayed using the prepared photocatalyst. The photocatalytic activity of the nanocomposite generated

almost 96.5% photocatalytic removal efficiency of typical pesticide DDE from water under UV irradiation. The superior photocatalytic performance was exhibited by the TiO2/GO/CuFeO4 catalyst owing to its high adsorption performance and separation efficiency of photogenerated carriers. The photocatalyst was examined in 5 cycles for treating uncolored pesticides with purposeful separation using an external magnetic field.

Biography

I have joined the department of Chemistry since2003 and obtained my M.Sc. in chemistry from Faculty of Science, Ain Shams University. I have got my PhD in chemistry from faculty of science, Ain Shams University. My general field of interest is the materials science and nanomaterials for energy and environmental applications. I am interested in the search for new materials candidates' solar cells and hydrogen production applications. I have been an effective participant in five long-term projects funded by the STDF. So far, I have published my work in highly respected peer-reviewed international scientific journals and had poster presentation in national and international scientific meetings. My h-index= 8 with a total citation of 173. I have participated as an organizer in national and international workshops and scientific meetings.

The Effect of Different Substrate Inclined Angles on the Characteristics Properties ZnO Nanorods for UV Photodetectors Applications

Dr. Ahmed Fattah Abdulrahman
Department of Physics, Faculty of Science, University of Zakho, Kurdistan Region-Iraq

Abstract

The effect of different substrates inclined angle with the vessel on the characteristic's properties of the ZnO nanorods were explored and reported. The vertically well-aligned ZnO NRs were synthesized on glass substrates by using the CBD method. The morphological, structural, and optical properties of the synthesized ZnO NRs have been investigated using various characterization techniques for different substrates inclined angles. Also, the high-quality UV photodetectors based on ZnO NRs have been fabricated for the optimum substrate inclined angle 70 with vessels with different bias voltage. The results found that the variation in substrate inclined angles have a remarkable effect on the shape, size, length, aligned, structure, lattice parameters, crystalline size, energy band gap (Eg), and optical properties of ZnO NRs. The average sizes and length of grown ZnO NRs were in the range (58-249) nm and (303-2518) nm, respectively. The high aspect ratio, length and growth rate were observed for ZnO NRs grown at 70o substrate incline angle. The preferred orientation of ZnO NRs was along peak (002) hexagonal wurtzite plane and the intensity of diffraction peak (002) of ZnO NRs is increased as the substrate inclined angles are increased. The average crystalline size was in the range (46.7-58.8) nm. The average transmittance of ZnO NRs is decreased in the range (44.5-3.3) % as the substrate angle increased. The optical study shows the synthesized ZnO NRs have the direct Eg in the range (3.16-3.254) eV. The

fabricated UV PDs based ZnO NRs showed high performance and quality. The different bias voltage study shows that the ZnO nanorods UV-PD has higher stability and repeatability at 5V bias voltage. The PDs device exhibited the responsivity value of 3.49903 A/W to 390 nm light wavelength at 5 V, which is higher than those reported for UV PDs based ZnO NRs. At 5 V bias voltages, the fabricated UV PDs showed the faster response and recovery times of 0.3402 S and 0.1639 S, respectively.

Biography

Dr. Ahmed Fattah Abdulrahman: was born in Amedi 1985-Iraq. I received my B.Sc. Degree (Physics) and M.Sc. Degree (Plasma Physics) from University of Duhok-Duhok in 2007 and 2010, respectively. I have got my PhD degree in the field of Nanotechnology & Materials Science by Split Site Program, Nanotechnology Center/Universiti Sains Malaysia-Penang, Malaysia and Physics Department, Faculty of Science, University of Zakho, Kurdistan Region-Iraq in 2018. I have currently teaching in Department pf Physics- Faculty of Science- University of Zakho-Kurdistan Region-Iraq. Also. I am the director of Quality Assurance unit of Faculty of Science-University of Zakho. I have published highly impact scientific articles in both reputed international & local Journals. I participated & presented papers at local and international conferences, and I presented papers and attended at local and international workshops. My current areas of research interest include Nanotechnology, UV Sensor, ZnO Nanorods, low temperature and low-cost synthesis method, Green synthesis of metal oxide nanoparticles, materials science, semiconductors, gas sensor, materials characterization, chemical bath deposition methods.

Educating Children, the Sustainable Development Goals: A Story Series

Zainab Al-Mousawi1 and Huda S.Alhasan*2
1Babil Health Department, Turkish Hospital, Iraq
2Environmental Research and Studies Centre, University of Babylon, Iraq

Abstract

The use of books as a way to encourage children to understand and implement the 17 Sustainable Development Goals (SDGs) has become at the core of the United Nations' 2030 Sustainable Development Agenda. The photo stories are one of the essential tools that attract children, so they have been used in writing stories to explain the Sustainable Development Goals to children. This series contains 6 stories with expressive illustrations, each story consists of 5 to 6 parts. The first story deals with the rights and protection of animals, the second deals with independence in production, the third deals with how to preserve the water environment, the fourth story deals with the goal of hunger, poverty, and environmental pollutants, while the fifth and sixth stories deal with how to preserve the climate environment and recycle waste. The target age group is children between 6-12 years old, it was written in Arabic and took six months to write and it was published in Al-Sadiq Publishing House with a local (Iraqi) and international deposit number. The story group

won the creativity medal within the book aspect at the Third International Scientific Conference on Creativity and Innovation for the period 15-16 July 2020 at the University of Babylon. It was sent to the Ministry of Education with the hope that it would be accredited as part of the health curriculum in Iraqi primary schools. Our responsibility is to teach children how to preserve and improve all components of the environment to live in peace and well-being, otherwise we will be the generation that knows so much and has done little.

Biography

I have got my Ph in (Analytical Chemistry/ Electrochemistry and Renewable Energy from Hull University (UK) in 2018. I am working in the Environmental Research and Studies Centre at the University of Babylon as a lecturer and researcher. I am an associate member of many societies such as ASC, RSC and SCI since 2016 until now. Moreover, I have appointed as an editor at an international journal of multidisciplinary sciences and advanced technology (IJMSAT), I have been a head of the chemicals handling control unit at the Environmental Research and studies centre. I have published many papers and books in highly respected peer-reviewed international scientific journals and publishing house, furthermore, I have participated posters presentation in national and international scientific conferences.

Engineering – Technology - Computer

A re-look at the evolving spatio-temporal weather data using funtional data analysis methods

Sonali Das, Department of Business Management, University of Pretoria, South Africa

Abstract

The effects of evolving climate patterns in South Africa have been recognized as undergoing an irreversible change in certain areas. Indigenous and cultivated vegetation is affected by several weather features such as temperature (maximum and minimum), humidity (maximum and minimum) and rainfall. While singly these weather features may not confirm a significant shift, jointly the patterns may be able to reveal regimes that may have shifted the overall weather pattern. Why this is important to study? -- because by investigating these irreversible spatio-temporal climatic changes in the region are, and by collaborating with ecologists, we can recommend on future agricultural practices to adapt to future weather scenarios. This in turn can help the local community, particularly those depending directly on agriculture to sustain their livelihoods. Functional Data Analysis (FDA) methods are powerful statistical tools that can provide greater insights into the multivariate weather curves, and the effect of interdependence between climate features. Some initial thoughts and challenges from this analysis will be shared.

Biography

Das is an Associate Professor in the Department of Business Management, University of Pretoria (UP). Born in India, she obtained her PhD in Statistics from the University of Connecticut, USA. She moved to South Africa in 2006 and worked at the Council for Scientific and Industrial Research (CSIR) in Pretoria for over 12 years where she gained extensive experience in quantitative research within a trans-disciplinary environment. She has published widely and continues to supervise post-graduate students. Das holds a C-rating (Established Researcher) with the South African National Research Foundation. In 2018 Das chaired the 2nd International Women in Science Without Borders conference in Johannesburg. She is the recipient of the prestigious 6th edition of Science by Women senior research visiting fellowships from Spain. She is an elected member of the International Statistical Institute (ISI), and currently serves on the South African Statistical Association (SASA) Executing Committee.

Aptian reefs prospection using seismic attributes: Evidence from Central Tunisia

Makrem Harzali
Water, Energy and Environment Laboratory, Engineering National School of Sfax (ENIS), University of Sfax, Sfax, Tunisia.

Abstract

The seismic analysis of sedimentary facies in a carbonate platform, including different types of reefs, is based on 2-D seismic and borehole data. Reefs of the Aptian carbonates appear as mounds and chaotic amplitudes that have a high-amplitude continuous reflection at the top. They are, unconformably, covered by Albian marl and claystone deposits characterized by mid- to low-amplitude, parallel and discontinuous to weak reflections. These sediments were restricted to the outer platform margin of Central Tunisia. Sea level changes contemporaneous with inherited fault movement influenced the development, the distribution and the demise of these reefs. Their distribution is controlled by deep-seated fault-related folds and the topography of underlying structures, associated to local domal uplifts. Falls of sea level contributed to subaerial exposure and the creation of a karstified denudation of the carbonate platform. Later, reefs were partly or completely eroded and then entirely covered, during the Albian, by marls and claystones of the Fahdene Formation. this research reveals that reef accumulations have considerable potential for oil and gas discovery, not only onshore, but also offshore in Central Tunisia.

Biography

Dr. Harzali Makrem was awarded PhD in Geology (2017) from a reputable University with distinction (ENIS, Sfax university, Tunisia) and have been placed amongst top students of my class. Makrem academic experiences cover all Geology & Geophysics disciplines. Research interests include geological modelling for both reservoir and source rocks, and regional play concepts analysis by integrating all geological aspects such sequential stratigraphy, source rocks and reservoirs characterization by using borehole logs, cores and seismic data. His experience also includes compiling data to use in the making of maps and charts, creating reports and keeping records of all the information collected. Makrem have acquired excellent computer skills with extensive knowledge of data analysis, digital mapping and global positioning. Therefore, he was also well aware with the use of industry standard seismic and GIS software in better understanding the causes and structural controls of earthquakes in the continental interiors. Makrem publications aimed at using subsurface data (boreholes and seismic data) to address problems in basin analysis and reservoirs. I am particularly interested to decipher the signatures of tectonics, sea level change and sediment supply in stratigraphic successions. Makrem research interests lie, also, at the interface between stress, seismicity, sedimentology, and structures in geological settings of various scales, by analyzing focal mechanism data.

Employing of Facial Recognition System in Public Surveillance Cameras to Enforce Quarantine and Social Distancing Using Parallel Machine Learning Techniques (A Pilot Project for Al-Zaytoonah University of Jordan)

Sokyna Alqatawneh, Khalid Jaber, Mosa Salah, Dalal Yahia, Abdulrahman Abulahoum
Al-Zaytoonah University of Jordan, Amman, Jordan

Abstract

Like many countries, Jordan goes into lockdown in an attempt to contain the outbreak of coronavirus (Covid-19). A set of precautions such as quarantines, isolations, and social distancing were taken in order to tackle the rapid spread of it. However, the authorities are facing a serious issue with how to enforce quarantine instructions and social distancing among its people. In this project, we aim to utilize the widespread of surveillance cameras that already exist in public places and outside many residential buildings to alert the authorities if any of the citizens violated the quarantine instructions as well as detect the crowds and measure their social distancing using a facial recognition system that works in real-time base. This work aims to construct a powerful parallel machine learning system to enforce the quarantine and social distancing rules using a multicore programming model that implements instant facial data and extracts features for discrimination. On the other hand, the system will overcome the problems of cost, speed and time consuming for higher-level processing and decreases computation time considerably. Moreover, this system will help Al-Zaytoonah University of Jordan to implement the precautionary measures that prevent the spread of infection among students and staff in order to return to work from the campus, which will make it among the pioneer institutions that use an automated "social distancing" system as a part of its risk management plan.

Biography

Dr Sokyna Al-Qatawneh is a computer scientist and a multimedia systems expert at the Faculty of Archetecture and Design; Al-Zaytoonah University of Jordan. Dr. Alqatawneh has obtained her PhD in Computer Vision from Bradford University (UK) in 2010. Dr. Alqatawneh's principal research interests are in the areas of 3D Digital Image Processing, Pattern recognition, Machine Learning, and 3D Modelling. She is a peer reviewer for several related journals and conferences in her field of research. Dr. Al-Qatawneh is a full member of the Organization for Women in Science for the Developing World (OWSD), the vice-chair of the OWSD-Jordan National Chapter, a professional member of the New York Academy of Sciences (NYAS), a mentor at 1000 Girls, 1000 Futures program for girls and women in STEM, a mentor at the United Technologies Aerospace Challenge, and a member of the Women Democracy Network (WDN).

Modeling the monthly pan evaporation rates using artificial intelligence methods: a case study in Iraq

Mustafa Al-Mukhtar, PhD. Associate Professor Civil Engineering Department
University of Technology-Baghdad, Iraq

Abstract

In arid areas, the estimation of evaporation rates plays a considerable role on both water resources management and agricultural activities. Hence, it is of utmost importance to determine the best model to predict these rates. This study investigates the applicability of using quantile regression forest in predicting the pan evaporation. The model was configured using data from three different meteorological stations located in arid to semi-arid climates in Iraq. These stations were in the cities of Baghdad, Basrah, and Mosul, which are located in the middle, south, and north of the country, respectively. The performance of quantile regression forests was compared with three kinds of artificial intelligence methods i.e., random forests, support vector machine, and artificial neural network in addition to the conventional multiple linear regression models. The maximum temperature (°C), minimum temperature (°C), relative humidity (%), and wind speed (m/sec) were used as input parameters to the predictive models. The collected data (from 1990 to 2013) was randomly partitioned into two periods; 75% for calibration and 25% for validation. The fivefold cross validation was used during the calibration stage for better model predictability. The results were evaluated using three performance criteria: determination coefficient (R2), root mean square error (RMSE), and Nash and Sutcliff coefficient efficiency (NSE). Results showed that the quantile regression forests model attained the optimum performance among the evaluated methods. The value of R2, RMSE, and NSE during validation was 0.99, 17.96 mm, and 0.99 at Baghdad; 0.98, 23.36 mm, and 0.98 at Basrah; and 0.99, 14.44 mm, and 0.99 at Mosul, respectively. Therefore, this method is the most appropriate one to use for predicting evaporation rates in arid to semi-arid climates.

Biography

Mustafa Al-Mukhtar is an associated professor in Water Resources Engineering working at the Civil Engineering Department of the University of Technology-Baghdad. His research interests focus mainly on using the artificial intelligence methods in water resources management. He is interested in machine learning, statistical and stochastic modelling and he manipulated with variety of statistical software since 2011. He published several papers in peer reviewed international journals in this field. With respect to his academic experience profile, He started his academic job in 2006 as assistant lecturer at the University of Technology, Baghdad. In 2015, he completed his PhD degree from TU Freiberg in Germany. He taught several subjects related to the water resources and hydrological engineering such as water management, fluid mechanics, hydrology, dams engineering, and statistics. In addition, He was involved in some consultancy projects such as designing wastewater treatment plant, and Environmental Impact

Assessment of several projects. He has supervised on many under and post graduate students. In 2017, he honorably was selected for the Fulbright Visiting Scholar Program.

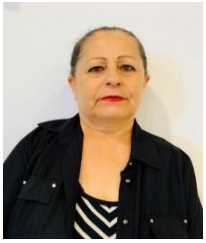
Diagnostic Method with Robust Estimation

Kafi Dano Pati
College of Science, University of Duhok, Duhok, Kurdistan Region, Iraq

Abstract

Statistics practitioners have been depending on the ordinary least squares (OLS) method in the linear regression model for generation because of its ideal characteristics and simplicity of calculation. However, it is possible that the existence of multicollinearity strongly affects the OLS estimators. Multicollinearity is a close linear dependency between two independent variables or even more within the regression model. Even though in the presence of multicollinearity the OLS estimate still remained unbiased, they will be inaccurate prediction about the dependent variable with the inflated standard errors pertinent to the estimated parameter coefficient of the regression model. It is has now become clear that the existence of high leverage points, the outliers in x-direction, are the main factor of collinearity influential observations. In the present paper, some alternatives to regression methods are proposed for the sake of estimating the regression parameter coefficient in the presence of multiple high leverage points that give rise to the multicollinearity problem. This procedure utilized the ordinary least squares estimates of the parameter as the initial followed by an estimate of the ridge regression. We incorporated the Least Trimmed Squares (LTS) robust regression estimate to down weight the effects of multiple high leverage points. This, in turn, leads to the reduction of the effects of multicollinearity. This result seemed to indicate that the RLTS give a considerable improvement over the Ridge Regression.

Biography



I have joined the department of computer sciences since 2008. Obtained my M.Sc. in Statistics from faculty of computer science and mathematics, Mosul University 2008. I have got my PhD in applied statistics from faculty of science UTM Malaysia 2017. My general field of interest is the study of computer science and statistics. I am interested in the search for new papers that used the new methods to apply in my measure epically in the medical fields. I have many papers published during PhD studies and also, I have six papers published when I graduated from PhD in different international and local journals. I have participated as attendance in an international workshop and scientific meetings.

Food – Environment – Water

Towards Sustainable Desalination in the Arab region

Dr. Jauad EL KHARRAZ, Senior Water Expert, Arab WAYS Secretary General, France

Abstract

Desalination is a water supply option that is used widely around the world and involves taking the salt out of water to make it drinkable. Many countries use desalination as a way of creating a more reliable water supply that is not dependent on rain. Desalination offers several advantages over other water supply options because it taps a virtually infinite resource that is more immune to political or social claims than conventional hydraulic works. Desalination provides a climate-independent source of water for critical human needs and economic development (industry and agriculture in particular). It is an effective way to secure water supplies against the effects of climate change, a growing population and drought. In general, desalination is often the last resort to address water supply security and/or quality. This is due to the higher cost of production, compared with traditional water resources, except when the latter is scarce due to drought and/or political situation. Therefore, to ensure water security and face the increasing water scarcity, the Arab region has not many options, and one of the most important options is undoubtedly adopting sustainable desalination technologies. However, the separation of salts from seawater requires large amounts of energy which, when produced from fossil fuels, can increase environmental pollution and exacerbate the earth's climate-related problems. There is, therefore, a need to employ environmentally friendly energy sources such as renewables to desalinate seawater and brackish water. Since the energy requirements in desalination processes play a decisive role, it appears attractive to consider renewable energies (RE), because it offers a sustainable and secure way to desalinate water. There is a great potential to develop solar desalination technologies especially in the Arab region where the solar source is abundant and the installed photovoltaic (PV) costs are declining. However, several issues related to this technology at large scale are yet to be solved out. In the face of growing challenges of climate, population and economic growth the whole portfolio of supply augmentation and demand management options should be assessed for a system. Good, robust collaborative planning between the industry, agriculture, regulators and communities is also required.

Biography

Senior Water-Energy-Climate expert. He has been the R&D Director at the inter-governmental organization Middle East Desalination Research Center, Oman (2015-2020), in charge of research programs and projects on sustainable desalination technologies, renewable energies for desalination, water-energy-food nexus, climate change, science diplomacy, etc. He has been projects manager at the Euro-Mediterranean Information System on know-how in the Water sector (EMWIS), France from 2004 to 2015. Earlier he was research at the Global Change Unit, University of Valencia (Spain). He also worked as senior consultant for Sud-Convergences (France) in the period 2006-2008, and Expert Evaluator of the European

Commission DG Research & Innovation. He got MSc & PhD degrees in Earth Sciences (Physics) from the University of Valencia, Spain. He also got a Diploma in Enterprises Management & Strategy from SKEMA Business School, France. He is member of the Global Change Unit (University of Valencia, Spain). He is Co-founder and Secretary General of Arab World Association of Young Scientists. He organized and launched an important number of scientific events and networks. He chaired the evaluation for national & regional programs, such as the Jordanian-Palestinian MEDRC scholarships and Palestinian-Dutch Academic Cooperation Program on Water and the Euro-Mediterranean regional Program PRIMA. He joined recently the EMME-CCI Task Force on Water Resources and he is member many other international scientific boards such the Omani Energy Majlis and the EU-GCC Clean Energy Technologies Network in Abu-Dhabi. He is alumni of the Global Young Academy (GYA). He was nominated in 2011 by the French Ministry of High Education & Research as representative at the Intergovernmental framework for EU Cooperation in Science & Technology (COST Action TN1301) in Brussels, where he led its Networking Working Group. In 2014 he was nominated new leader for the tomorrow by Crans Montana Forum (Switzerland) and was also co-leader of water panel at the regional Think Tank WANA Forum (WANA Institute currently, Jordan). Dr. Jauad was one of 40 scientists worldwide selected to attend the "World Economic Forum 'Summer Davos' for New Champions" in Tianjin, China in 2012. He joined the Global Shapers Community of the World Economic in 2014 and he became the founding curator (creator) of Nice' hub (France) to push young talents to develop projects for their local community. He has published and contributed to hundreds of conferences in more than 55 countries, journals and reports in the aforementioned fields. He co-authored UNESCO Science Report 2015. He has built a strong record of attaining progressively responsible managerial positions during his 20 years international career (MENA & Europe) in relation with sustainability, land cover dynamics, climate change impact and management of natural resources (water, energy, food, etc.) and agriculture. His work on water issues enabled him to work very closely to the agriculture sector through promoting water use efficiency in agriculture, water productivity (WAPOR), drip irrigation, use of remote sensing and smart technologies. He is familiar with the SDGs in particular 2, 6, 7, and 13. He has built a strong network in the region of water, energy, agriculture and climate stakeholders. In terms of finance, he demonstrated efficiency in diversifying the funding of his organizations through obtaining funds from the European Commission programs (FP7, H2020, ENPI CBC Med, INCO MED, INCO NGOs, SMAP, LIFE, PRIMA, etc.) and also from international donors such as GIZ, USAID, and national ones such as the research council of Oman, and also through CSRs from embassies and private companies (e.g. oil and gas companies, water & energy utilities, etc.). He has been negotiating and interacting with international donors and stakeholders, and he communicates fluently in English, French, Arabic and Spanish. Finally, he has been managing departments and projects/programs technically and financially, launch new initiatives and mobilizing necessary financial, human and technical resources.

Greywater Treatment for Irrigation Purposes Using Pottery Scraps and Aerated Moving Bed Biofilm Reactor

R.S. Al-Wasifya, *, M.N. Alib, S.R. Hamed
National Research Centre – Egypt

Abstract

Decentralized greywater treatment systems can reduce the demand of freshwater and potentially solve freshwater scarcity. Pottery scraps are nondegradable byproducts produced from pottery manufacturing process and cause environmental problems. Greywater from three houses was subjected for treatment using pottery scraps column unit (PSCU) followed by moving bed biofilm reactor (MBBR) then disinfected using hydrogen peroxide with the aim of producing effluent that meets Egyptian reuse guidelines for agriculture. Average values of basic wastewater parameters were calculated for 30-d operation. PSCU showed very good removal efficiencies of 69.6% and 86.3% for total suspended solids (TSS) and turbidity, respectively, and moderate removal efficiencies for total coliform (51.3%) and Escherichia coli (44.0%), while no considerable removal efficiency of organic matters in terms of biological oxygen demand (BOD5) and chemical oxygen demand (COD). Aerated MBBR increased the overall removal efficiencies of turbidity (93.6%), TSS (97.8%), BOD5 (95.1%), and COD (95.0%). Hydrogen peroxide disinfection at dose of 1.5 mL/L/h removed more than 99.0% of total coliform and E. coli and prevented bacterial regrowth in effluent after 2 d of storage. The system effluent meets local guidelines for restricted and unrestricted irrigation. The evaluated system was found simple, easily operated and maintained, and eco-friendly. Keywords: Greywater treatment; Industrial byproducts reuse; MBBR; Pottery scraps; Wastewater reuse.

Biography

Dr. Shimaa Ragab Hamed (1981) is Assistant professor of Microbial Biotechnology at the National Research Centre in Egypt, is specialized in fungal identification, microbial toxin, agriculture microbiology, waste water treatment, microbial enzymes and biological activity of nature products from microbial source. Reviewer in Springer international publishing and science domain international publishing, Editor Board in International Journal of Innovative Studies in Sciences and Engineering Technology and Probe- Agrophysics.

Effect of leaching with magnetized water on three saline soils

Khalida Abdul-Karim Hassan, Farhad Ali Hashim, Sarwar Mohammed Rasheed Ahmed
Department of Soil and water, College of Agriculture, Duhok University, Kurdistan Region, Republic of Iraq

Abstract

A column experiment was conducted to investigate the efficiency of magnetized water on leaching individual ions from saline soils. The study involved three different saline soils ranging between 38.14-85.91 dS m-1 leached with magnetized water (MW) or non-magnetized well water (WW). Treatments in triplicate were arranged and successive effluents were collected and analyzed. Results showed that EC decreased to 2.99 – 3.29 dS m-1 mostly during the first two volumes and was greater under MW treatment. Higher amount of Na+ was leached under the first three volumes, but later the decrease was small. Amount of Na+ leached was higher from S1 followed by S2 then S3. Sodium (Na+) decreased from 718.58, 549.03 and 419.85 mmolc L-1 for S1, S2 and S3, respectively to less than 50 mmolc L-1 at PV5. Calcium (Ca+2) and magnesium (Mg+2) concentrations decreased then followed by increase at the last pore volume. Most of chloride (Cl-) removal from the soil was during PV1, indicating that the source of Cl- was highly soluble salts. Magnetic water treatment proved to be efficient in leaching salts.

Biography

I have joined the department of Soil and Water since 2003. I obtained M.Sc. degree in soil fertility from College of Agriculture, Duhok University. My general field of interest is the study of nutrients content in soil and plant, salt leaching from saline soil using magnetized water, heavy metal assessment in soil and water, I have been a participant in agricultural consultancy bureau, I have published my researches in local and Iraqi scientific journals. I have teaching experience of about ten years for different modules related to soil science i.e., soil fertility and fertilization, plant nutrition, soil, water and plant relationship, soil mineralogy and principles of soil science.

Characterization of airborne particles collected in Duhok city (in Iraq), by using various techniques

Dr. B H Mahdi 1, Dr Kamil M.Yousif 2 and Dr L M Salih Dosky 3
University of Zakho

Abstract

The contamination level of metals in the dust of Duhok (DK) city in Northern Iraq (an urban area) was investigated. Particulate matter (PM) accumulated on Funnel container was examined in order to investigate the air that people are exposed to. The morphology, microstructure, and chemical composition of a variety of particles were studied using Reflected light microscope (RLM), Atomic Absorption spectrometer (AAS), Scanning electron microscopy (SEM) and energy-dispersive X-ray (EDX). The particles exhibited different morphologies and composition, indicating mostly a

soil origin. The concentration of the following heavy metals (Fe), (Mn), (Cu), (Pb), (Zn), (Cd), (Ni) and (Co) are investigated by (AAS). The average values of concentration of most of the heavy metals in summer season were higher than other seasons. Amongst individual particles of tested dust by EDX were Si, Fe, Ca, Al, Mg, Ti, and K. And the predominant elements are Si (16.79 Wt%), Fe (10.68 Wt%), Ca (10.67 Wt%) and Al (5.99 Wt%).

Biography

Dr. Kamil M.Yousif received the B.Sc.(Hons) Physics, from University of Mosul, Iraq. He received the MSc. (Applied Physics) in 1980 from University of Technology Iraq. After his graduation he has been employed by University of Mosul as an assistant Lecturer in Physics. He received his Ph.D. degree in Renewable energy in 1993 from Brunel University, UK. He has been employed by Brunel University, South Bank University, and ELS (Education Lecturing Services), London, UK [1993- 2004] as Research fellow and Lecturer. Also, he worked as a Lecturer at JBI College, Royal Commission for Jubail & Yanbu, KS Arabia [1999-2001]. Dr. Yousif worked as a Lecturer in Physics at the University of Duhok, Iraq [2004-2009]. And Assistant Prof. in Physics, Zakho University, Zakho. He served as head of Department of Environmental Sciences, Zakho University [2011 –2015]. He is currently the Assistant Prof. in the Department of Environmental Sciences. Dr. Yousif is the reviewer for several distinguished journals in his field of expertise. His contributions can be seen in more than 40 refereed journals and conferences articles. His most important research concern is Renewable energy, Environmental Sciences, Physics, Material Science, Mechanical Engineering and ANN.

Environmentally Friendly Cities with Reducing of Energy Consumption for Residential Buildings Typologies to Suit the Climatic Environment

Professor Dr. Kabila Hmood
Department of Architecture – Al- Zaytoonah University of Jordan

Abstract

Housing sustainability is part of the global sustainability issue, which is meant to conserve energy and be environmentally friendly, taking into account that residential buildings represent the largest ratio of building area in any city in the world. Energy consumption in residential buildings is constantly on the increase throughout the world. In Jordon, in particular, this is further intensified by the rapid urbanization, increasing living standards and climatic conditions. However, in Jordan; depending on its climate zone; the applicability of appropriate aspects helps to control heat losses or heat gains through the building envelope through the wall, roof, floors, and openings, whether outward or inward, and as a result, reduces the energy consumption of the building. The building skin is the interface between interior and exterior; if it is adapted well to the climatic conditions, then this is what we need to make it comfortable inside by less technology and energy. The main aim is How to achieve energy- efficient building envelope for national housing typologies to suit

the climatic environment in Jordan. The performance of building envelope systems to achieve maximum energy efficiency will be addressing using “Design Builder” packages for energy assessors. The developed mitigation scenarios are to be implemented into the building envelope and/or mitigation measures, allowing an objective evaluation and visualization of the mitigation’s effectiveness in performing energy efficiency housing typologies will be established. Moreover, this work will focus on reducing the energy consumption by studying a range of variables. This model will be tested using a computerized system in order to define the most efficient design. To conclude, climate change mitigation actions in Jordan, will contribute to the transition of Jordan to a more sustainable nation and also provide a valuable opportunity to perform energy efficient residential home environment.

Biography

I have joined the department of Architecture since1991, after obtaining my M.Sc. in Architectural Engineering from Faculty of Engineering, University of Baghdad. I have got my PhD since 1996 in Architecture from University of Baghdad. I am Full Professor since 2004. Since 2013 I work in Department of Architecture, Al- Zaytoonah University of Jordan. I have a long and established relevant research experience, that I published many Books and more than 35 Research Papers, published in scientific journals or presented at international scientific conferences. My general field of interest is the study of traditional architecture within sustainability and architectural identity, in addition, I interested in conduct researches in Urban and Architectural Heritage conservation and Islamic Architecture & beauty philosophy, the geometry & Proportion. I was supervisor for many masters and PHD thesis, some focused-on Housing. My experience and background in architectural identity besides all fields mentioned above, will allow me to develop the literature required on the development of housing and energy efficiency.

Non thermal processing of fruit and vegetables for value addition

Dr Shalini Arya.
Institute of Chemical Technology, Mumbai.

Abstract

Despite the abundance of fruits; every year huge post-harvest losses (40-50%) are reported in India. The reason is lack of proper processing facilities. There are quite a large number of indigenous and underutilized fruit crops, which are rich in vitamin C, flavonoids, antioxidants, phytochemicals having cancer, diabetes prevention ability. Global demand for health promoting foods with high nutritional and nutraceutical values is increasing. This trend requires the development of novel minimal processing technologies. Most of conventional food processing technologies are based on contact heating and involve multiple processing steps that introduce fruit to the atmosphere and therefore accelerate oxidation. ‘‘No additives and preservatives ‘‘and ‘‘pure natural’’ food concepts led to the development of novel technologies that are able to keep food safe and fresh

with minimal thermal processing. Several non-thermal processing techniques were recently introduced; HPP, pulsed electric field (PEF), ultrasonic and irradiation are few examples. Initial high investment cost, high energy input are some factors limiting their commercialization particularly in India. Yet promising underexplored novel food processing technology is HC. The significant microbial reductions in very short treatment times due to cavitation, the energy efficiency, cost efficiency, and its great flexibility in industrial scalability are some of the major benefits of this technique. This method is clearly efficient to inactivate microorganisms, but its potential on commercial or indigenous and underutilized juices or mixed fruit juices is still under investigation. This talk will discuss various aspects of this novel technology pertaining to preservation of fruit and vegetables.

Biography

Dr Shalini Arya, is currently an Assistant professor of Food Technology at Institute of Chemical Technology, Mumbai, Member of Executive committee of Global Young Academy, Member of Indian National Young Academy-INSA, recipient of various international awards (CNPQ-TWAS Fellow, Malaspina International scholar, Best presenter awardee, best innovative idea presenter awardee), National awards (AFST Young Scientist award, best thesis awardee) on her credit. She has published more than 75 research papers in journals of high repute and standards. Total Citations- 1312 H Index – 18. Dr Shalini Arya's work focuses on the top SDGs (No poverty, zero hunger and good health) especially in the area of Indian traditional foods, in particular chapatti, phulka, thepla, khakhara, thalipeeth, naan and kulcha. Her work is focused on nutritional improvement and characterisation for these products, all of which would have far reaching significance in improving public health in India and that too based on the resources that are locally available and food staples that are regularly consumed by the locals. Her work on chapatti was recognized during international and national conferences and was awarded with first prize under cereal category. India unfortunately becoming capital country for diabetes and cardiovascular affected population and thus developing cost effective product technologies is very necessary. Dr Shalini and her research group have developed Indian traditional food products having low glycaemic index using low cost and locally available ingredients. In addition to this Dr. Shalini has been helping multinational food industries for developing traditional food product technologies for e.g. chapatti, paratha, bhaji, instant food mixes. She has helped industries for developing low glycaemic index formulation, high soluble fiber paratha premixses, high protein atta premix and other healthy low-cost nutritious premixes. Dr Shalini has handled research projects (approximately Indian rupees 2 crores) in the above research areas. She has guided about 60 M Tech Research projects, 8 PhD projects. Dr Shalini Arya has delivered more than 50 invited lectures on national and international platforms on the technical as well on non-technical subjects. She is also an active science communicator and actively engaged in science outreach activities on national as well as international platforms.

Agriculture Biotechnology and Climate Resilient Healthy Rice in Pakistan

Muhammad Kazim Ali, Saddia Galani, Yawen Zeng and Abid Azhar
Karachi Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi-75270, Pakistan

Abstract

Pakistan is an agrarian country and agriculture contributes 19.5% to Pakistan's GDP, employs 42% in labor force, constitutes 65% in export earnings, and provides livelihoods to 62% of the population of the country. However, food security is still a key challenge due to high population growth, rapid urbanization, low purchasing power, high price fluctuations, erratic food production, and climate change. According to the Food Security Assessment Survey (FSA), 2016, 18% of the population in Pakistan is undernourished. The malnourishment problems are high in rural areas (46%) and in certain regions like FATA (58%), GB (51%) and Baluchistan (52%). In addition, diet-related non-communicable diseases, particularly recent incidence of diabetes is a growing concern. The cost of these deficiencies and chronic diseases in terms of lives and quality of life lost is enormous. Healthier rice varieties have the potential to reach many people because rice is already widely grown and eaten. So, it is imperative to explore and identify climate resilient healthy rice through non-transgenic approach because genetic engineering is not practicing for rice improvement due to national interest. Therefore, Karachi Institute of Biotechnology and Genetic Engineering (KIBGE) is aiming to develop rice varieties through appropriate biofortification pathways and select low GI rice through marker assisted selection (MAS).

Biography

I have joined the Karachi Institute of Biotechnology and Genetic Engineering (KIBGE), University of Karachi, Pakistan as an Assistant Professor since November 2019. I obtained my M.Sc. from Department of Biotechnology University of Karachi. I have got my PhD in Biotechnology from KIBGE University of Karachi in 2015. I did my postdoc from Biotechnology and Genetic resource Institute of Yunnan Academy of Agricultural Sciences (YAAS) Kunming China. My field of interest is agriculture biotechnology particularly genome editing and precision breeding for high yielding and high-quality food. I am interested in the search for new genes, proteins, and regulatory mechanisms for functional food. Because, about 795 million people, including 4.90 million children under the age of five or every ninth person is undernourished worldwide. Most of them live in the developing regions, notably in Africa and Asia. Achieving zero hunger by 2030 will require new and existing applications of science and technology innovations (STI) across the food system, addressing all dimensions of food security. I have been an effective participant in two projects funded by the Higher Education Commission (HEC) Pakistan and National Natural Science Foundation of China. So far, I have published my work in highly respected peer-reviewed international scientific journals and had poster presentation

in national and international scientific meetings. I have participated as an organizer in national and international workshops and scientific meetings.

Acaricidal bioactivities of marine algal extracts Ulva lactuca Linnaeus (Chlorophyta) extracts against two phytophagous pests of main cultivars Eutetranychus orientalis (Klein) and Oligonychus mangiferous, (Acari: Tetranychidae)

Neivin A.H. Soultan1; Hamdy M. El-Sharabasy2; Ahmed Aboughalia3; Maha F.M. Soliman3
1Agriculture Research Center, El-Giza, Egypt.

Abstract

Eutetranychus orientalis (Klein) (Acari: Tetranychidae) and Oligonychus mangiferous are serious harmful pests for important fruit cultivars especially in certain governorates in Egypt and can cause a loss of plant product. The usage of algae extracts for pest control is seen as an alternative to synthetic pesticides. The potential of crude extracts of Ulva lactuca L. were evaluated for toxic and repellent effect against adult females and immature stage of Eutetranychus orientalis (Klein), in the laboratory. The Soxhlet method was used to determine the acaricide effects of this plant extracts. Ethanolic leaf extraction was more effective as toxic and repellent effect against adult females and immature stage of Eutetranychus orientalis (Klein), followed by acetone, petroleum ether and aqueous extraction ($P < 0.05$). The results indicated that adults are more susceptible to the leaf extracts than immature. As a consequence, Ulva lactuca.extracts are thought to be used as an effective alternative and safe method than the other synthetic pesticides which are more languorous to human health and the environment pesticides for mite control.

Biography

Dr. Neivin Abdullah Hamed Hussian Soultan received my Ph.D in Ecological studies (entomology and invertebrates) from Suez Canal University, Isamilia Governorate, Egypt. My main research interest is biology, biodiversity, agriculture studies and sustainable development. Before I achieved my PhD in ecological sciences (2018), I had been received my B.Sc. (highest honors) and M.Sc. degrees from the Suez Canal university in Ismailia, Egypt, in Ecological Studies which proceed in determine the biological diversity of the fauna to contribute on the conservation trend of different animals and insects in Egyptian environment. I work as a researcher in an Egyptian Research center. My researches focus on ecology, impact of climate change on biodiversity of different fauna (faunistic studies), acarology and biocontrol in an agriculture field. I published multidisciplinary research publications, belonging to ecology, biology, acarology and biological control sciences and she was the first author of these publications.

Health Risk Assessment of Some Heavy Metals in Different Legume Seeds Brand Imported to Erbil City.

Dalshad Azeez Darwesh
Salahaddin University, Sciences College, Environmental science and Health Department.

Abstract

This investigation was conducted to assess the health risk of heavy metals Mn, Zn, Ag, Cd, and Pb in various legume seeds that imported to Erbil city. The legume seeds of lentil, bean, and chickpea involved five common brands Aspirash, Altunsa, Zer, Nawras and Tak were collected randomly in the different markets of Erbil city. The experiment designed in completely randomized with three replications. The results of heavy metals levels revealed a significant variation among legume seeds and legumes brand, the levels of Mn, Ag, Cd, and Pb in all legume seeds greater than the WHO recommended levels of contaminants in food products except the Zn concentration. However, the result indicated that the hazard quotient values of Ag in bean, of Cd in bean and chickpea and the HQ of Pb in all legume seeds were greater than 1, while according to the hazard index values the legume were not safe for human consumption.

Biography

I am happy to write some information about my academic life, first I graduated from the Department of Biology, College of Education, University of Salahaddin in 1993-1994, and I have joined the department of Biology as assistant researcher at 1995, and successfully completed and obtained the Master's Degree in Plant Nutrition 1999 in the Department of Biology, College of Science. I have got my PhD in the Department of Soil and Water Agriculture collegein same University. I've been working as an academic in the Department of Sciences and Environmental Health, Science College and studying third and fourth-grade B.Sc in soil science and soil pollution and ecostatistics, My general field of interest is the study of soil pollution, trace elements, plant nutrition, remediation, biostatistics, Environmental indices and plant ecophysiology. Finally, I am supervised more than 15 students in high education and participate in differences local and global conferences as well as published more than 40 researches in the local and international journals. . I am interested in the search for application the indices equations for assessment the environmental and human health.

Iron Oxide Nanoparticle Synthesis Using Trigonella And Tomato Extracts and Their Antibacterial Activity

Duha A. Kadhim , Muslim A. Abid & Wisam J. Aziz
Al-Mustansiriayah university, College of science, department of physics

Abstract

Iron oxide nanoparticles (IONPs) were synthesized by combining the extracts of new plants (trigonella and tomato) with ferric chloride salt (FeCl3) via a simple chemical method at 200°C for 2 hours. The biomolecules in the extracts play an important part in transforming FeCl3 to FeO NPs, which demonstrate antibacterial properties. IONPs were characterized via X-ray diffraction (XRD), field emission scanning electron microscopy (FE-SEM), and Fourier transform infrared spectroscopy (FT-IR). XRD revealed a crystallite size of 17 nm with a body center cubic (BCC) structure (wüstite) phase for FeO NPs made using trigonella extract. FeO NPs synthesized using tomato extract were (41nm), and the diffraction peaks revealed a BCC structure phase with excellent crystal quality. FE-SEM images demonstrated that the average grain size of Fe2O3 without using any plant extract was approximately 31.36 to 125.5 nm, while for the FeO NPs using tomato extract, it was approximately 48.18 to 77.54 nm, and for trigonella extract, 27.91 to 40.94 nm. In the FT-IR spectra of IONPs with and without plant extract, a strong peak appeared at 699 cm−1 for FeO NPs using trigonella extract and 655 cm−1 using tomato extract. Antibacterial activity of IONPs was determined by growth inhibition zones of the gram-negative bacteria Klebsiellapneumonia and gram-positive bacteria Staphylococcus aureus. The growth inhibition zones for FeO NPs using trigonella extract were 42 and 47 mm, respectively. The zones for FeO NPs using tomato extract were smaller (30 mm and 35 mm, respectively). These NPs may be effective in healing infections caused by these bacteria.

Biography

I have got my M.Sc degree in Physics science from al-Mustansiriayah university since 2020. I was awarded the first place in the master's degree with an average of 87.8, and I also got an honors excellent degree with a degree of 94 in my discussion of the master's thesis. I work with the Phi Center for Research and Analysis to assist students in developing research plans to complete their projects in terms of ideas, application of ideas, interpretation of findings, and writing of research. Iam interested in laboratory work in preparing nanomaterials in different ways and with high efficiency, specializes in research related to the topics of sustainable development and green synthesis and is very attached to this discipline. I was honored by the President of Al-Mustansiriayah University with a certificate of appreciation for excellence and the number of researches. I have published. Possessed a profession of publishing research in highly respected international scientific journals (Niger - Clarvet Scopas- Springer). Use a plagiarism program.

Tea Waste in to a Fashion Opportunity, with significant increase in value added exports of Sri Lanka

Prof. Vinitha moolchand thadhani
Assoicate prof. Sri lankan institute of nanotechnology

Abstract

The economic implications of COVID-19 are unprecedented. The Overseas Development Institute (ODI), has identified Sri Lanka, as one of the most vulnerable middle-income countries due to the impacts of COVID-19 as resulting Chinese economic slowdown. Sri Lanka is susceptible to delays in accessing raw materials for manufacturing from China, and as a result Sri Lanka's economy could shrink by as much as 3% this year, as to the latest finding of the World Bank. Sri Lanka has the one of the largest instant tea manufacturing plant in the world which supplies nearly 70% of global instant tea requirements. During the instant tea manufacturing process, nearly 20 MT of tea waste is generated each day. We have been enabled to develop a technology to use this tea waste as natural dye, with required, wash and color fastness properties, it is commercialized under the brand name T-Hues. This has helped the textile industry, the leading export earning industry of the country, which was looking for ecofriendly solutions, as fashion industry accounts for more than 8% of global climate impacts , and there was a big push from global brands to make the apparel supply chain sustainable under the ZDHC initiative. Coloring a garment using a non-toxic, biodegradable and eco-friendly natural dye T-Hues cuts water consumption and dyeing time, and reduce the carbon footprint. T-Hues is commercialized for various reputed international brands, such as Mark and Spencer, Pink, Levis, and brought significant increase in the value-added export earnings of Sri Lanka.

Biography

Vinitha M. Thadhani received her Bachelor's degree in Chemistry, from the University of Sri Jayawardenepura, Master of Philosophy in Biochemistry, and Doctor of Philosophy, in Organic Chemistry from the University of Peradeniya, Sri Lanka in 2007. Since 2007 she has held Senior managerial position including 7 years as Senior Lecturer, at Institute of Chemistry, Ceylon and University of Sri Jayawardenepura, and 6 years as Senior Research Scientist at Sri Lankan Institute of Nanotechnology (SLINTEC), and Currently she serves as Associate Prof. at SLINTEC ACADEMY and as a consultant to several industries of Sri Lanka. She also is adjunct faculty member at H.E.J Research Institute Pakistan. She is recipient of several national and international awards, and published 20 multidisciplinary research publications, over 45 research communications, and author of several book chapters. She also is inventor of 3 national and international patents, which have also been commercialized and brought significant increase in the value-added export earnings of Sri Lanka. She has secured nearly 50 Mn of Research, Industrial and Travel Grants from Local and International organizations. She has organized several international conferences. In 2017, she was felicitated by State Government of

USA, in recognition of outstanding and invaluable service to the community. She is the founding member of Global Young Academy (2010), and founding president of Sri Lankan Academy of Young Scientist (2012).

Purslane (Portulaca oleracea L): A Prospective Source for Nutritional Security in Developing Countries

Rajani Srivastava
Environmental & Sustainable Development Department, Rajiv Gandhi South Campus
Banaras Hindu University, Varanasi, India

Abstract

Sustainable food production through integrating knowledge of indigenous and local communities has significance for meeting the UN-SDGs (Sustainable Development Goals). The majority of the food supply comes from cereal crops, which are exceptionally delicate to changing weather and climate conditions. Therefore, climate-resilient underutilized local crops may be a good option to be considered as potential crops for dietary diversification. The Portulaca oleracea L. commonly called Purslane species, having remarkable nutritional, medicinal, and pharmacological and phytoremediation properties shows significance. It is highly nutritious and has all essential minerals, vitamins, and proteins. About 93% of water, 3% of carbohydrates, and 2% of protein are present in raw Purslane. It contains the highest content of vitamin among green leafy vegetables. There are four different types of omega-3 fatty acids found in Purslane. This is required for typical wellbeing, improvement and anticipation of various cardiovascular illnesses, and upkeep of a sound resistant framework. Purslane (Portulaca oleracea L.) species is highly nutritious and can be easily grown with high production efficiency in tropical, subtropical and underdeveloped districts of the world. The species can be easily cultivated and act as an ideal substitute for resource-poor farmers in the developing region. It uncovered immense nourishing potential and has shown the potential utilization of this herb for the future under changing climate conditions.

Biography

I have joined the Banaras Hindu University since 2008 as Assistant professor in Environmental Sciences (Environmental Technology) in department of Environment and Sustainable Development, IESD. I have got my PhD in Botany (Specialization: Ecology) from faculty of science, BHU. My research interest includes weed ecology; sustainable agriculture; soil organic matter management and restoration of soil fertility. I have published > 40 scholarly publications in international peer reviewed journals and attended >55 National and International seminars/conferences/workshops. I have also published two edited books as main editor. I have also participated as an organizer in many national and international workshops and scientific meetings. I am also on the board of several prestigious journals namely Journal of Plant Nutrition & Soil Science (Elsevier); Weed Biology and Management (Wiley) and Ecological Indicators

(Elsevier) etc. I am the recipient of best poster presentation award of Young Scientist category at International symposium held in NEHU Shillong (2004) and recipient of best Paper Award on Ecology, by Indian Botanical Society (Meerut, 2000) and SEDER (2018). I got Research Associate-ship under Ministry of Environment, Forest and Climate change in 2003 on soil organic matter management for sustainable agroecosystems by regulating decomposition and nutrient release of added leaves of tree species. Presently, I am the member of OWSD and IUCN (CEM: commission on ecosystem Management). My h-index= 7, i10-index= 4 with a total citation of 136.

The Level of Economics Participation of Rural Women in Duhok Governorate, Kurdistan Region of Iraq.

Hashim Saeed Murad1, Abid Ali Hasan Al-Doski2 and Aamel F. Khalil Al-Abbassi3
1,2Dept. of Agricultural Extension and Rural Development, College of Agricultural Engineering Sciences, University of Duhok, Kurdistan Region- Iraq
3Dept. of Agricultural Extension, College of Agriculture & Forestry, University of Mosel.

Abstract

Women play a vital role in economic activities. They compromise about 50% of the global total labor that engaged in agriculture and food production enterprises. This study is designed to determine the economic participation by rural women in Duhok governorate in Kurdistan Region of Iraq. The number of the respondents of this study was (474) were selected by area random sampling. SPSS software was used to analyze the data collected, statistics such as frequency, percentage, mean, standard deviation, correlation, and regression was used. The results shows that the perception level of respondents in economic participation is high. The results also show there is a significant relationship between some social, demographic variables and 'economic participation level such as (age, number of study years, satisfaction with services in the villages, urban openness) and non-significant with (living conditions of the family, father's occupation or guardian, current job, ability to solve problems). It is recommended that the extension agencies should have a re-orientation of their Programs and activities, where women will be treated equally with their male counterparts. This will ensure more rural and agricultural development in the targeted area.

Biography

I have joined the department of Agricultural Extension and Rural Development since 2014.obtained my M.Sc. in Agricultural Extension from College of Agriculture & Forestry, Mosel University. I have got my PhD in Rural Development College of Agricultural Engineering Sciences. University of Duhok. My general field of interest is agricultural extension and rural development as well as rural women and studying the factors affecting women's social, economic, agricultural and political participation, as well as women's empowerment. In addition, I have research related to rural development and women's rights. I have participated in many international

conferences within a specialist in rural development. I have documented many violations against women by society and tried to defend them in official forums by advocating and pushing in this field. I evaluated many papers in many journals as well as discussing and evaluating theses and dissertation. I held many courses and workshops, a dialogue facilitator, a facilitator and a trainer of trainers for many agricultural and development fields and a consultant for international organizations. I have published many research papers in many fields in local and international magazines. I participated in conducting seminars on different topics for different sectors of society, including government employees, youth, students, and refugees in the displacement camps. I conducted several surveys to study to identify problems and needs in many areas. I been and still member of scientific committee in agricultural Extension and rural development as well as been member of many scientific committees. Member of quality assurance committee in our department and representative of my department in college quality assurance unite. Member of high education examination committee in College of Agricultural Engineering Science for many years.

Phenotypic and genotypic study on multi-drug resistance ESBL-producing E. coli isolated from a dairy farm

Delveen R. Ibrahim1, Jon L. Hobman2 and Christine E.R. Dodd2
1 University of Duhok/ Kurdistan Region of Iraq; 2 University of Nottingham/ UK

Abstract

Antimicrobial resistance is a crucial problem that is now of great concern in public health, especially resistance to cephalosporins, which is increasing. The main aim of this study was to determine the prevalence and range of multidrug resistance (MDR) and extended spectrum β-lactamase (ESBL) or ampicillin C (AmpC) β-lactamase producing Escherichia coli within a commercial dairy farm, to understand the diversity of resistance to β-lactam antibiotics, and to determine if co-carriage of other antimicrobial resistance (AMR) was associated with ESBL/AmpC producers. In this study, E. coli strains were isolated from a single dairy farm (East Midlands, England, United Kingdom) using TBX agar and more targeted isolation using antibiotic supplemented media in 2012 and 2014. Confirmed E. coli (126 isolates) were genotyped using ERIC-PCR. Antimicrobial sensitivity tests were performed using a disk diffusion test for all the strains against 17 antimicrobials representing seven different antimicrobial groups. Antimicrobial resistance profiling showed 92% of isolates showed resistance to at least 1 antimicrobial, of which 27.8% of the isolates were isolated without antibiotic selection, and 57.9% of the isolates were multidrug resistant to between 3 and 15 antimicrobials. blaCTX-M, blaTEM and blaOXA genes were detected by PCR among the cephalosporin resistant strains. No plasmid ampC genes were detected. Four strains were fully sequenced and the genetic/genomic environment surrounding β-lactamase genes and analysis of some other AMR genes showed these genes are associated with transposable elements, such as ISEcp1, ISCR2, Tn2, Tn10 or within a class I integron carried by a Tn-21 like transposon. The association of AMR genes with these transposable elements might

make the dissemination rate of these genes greater. The spread of such highly resistant strains to the environment and possibly to humans could present a real threat to human health especially if they are pathogenic.

Biography

I'm a lecturer and researcher at the University of Duhok, College of Science, Biology department since 2006. In 2003, I gained BSc in Biology and in 2006 MSc in Microbiology at the University of Mosul/Iraq. In 2017, I gained my PhD degree in Microbiology and Microbial genetics at the Nottingham University/UK. My MSc thesis was focusing on the isolation and diagnosis of bacteria that cause bacteremia and their sensitivity to antimicrobials in leukemic patients. During my PhD I started to do research on multi-drug resistance and ESBL producing E. coli. The research started with phenotypic investigation on the selected isolates then moved to the molecular characterization of different resistance genes. The research ended by whole genome sequencing for some selected strains and the genetic/genomic environment surrounding β-lactamase genes and analysis of some other AMR genes showed these genes are associated with transposable genetics elements. I'm interested on doing research on the possibility of the transfer of antimicrobial resistance genes from environment to human.

Radionuclide concentrations analysis of Duhok air atmosphere by gamma spectrometry

Revink A. Ramadhana and Khairi M-S Abdullab
Department of Physics, College of Science, University of Duhok, Kurdistan Region, Iraq
Department of Water Resources, College of Engineering, University of Duhok, Kurdistan Region, Iraq

Abstract

Atmospheric air is directly related to human health and irreplaceable to human life and thus an influential parameter of environmental science. Radioactive materials in the air may result in exposure of man every day of our lives by inhalation or ingestion of particulate matter suspended or deposited on vegetation or products derived from animals, which has been ubiquitous on earth since its creation. The main goal of this study is to measure the radioactivity concentration of the natural and artificial radionuclides of the Duhok air. Twenty samples of air filters were collected from different locations of Duhok City and its surroundings by low volume air samplers pump in the dry and wet seasons. Air filter samples were prepared and analyzed by a well-type thallium-activated sodium iodide NaI(TI) detector. The average activity concentrations of 214Pb, 214Bi, 212Pb, 228Ac, 40K and 137Cs are 4.98±1.20, 4.54±1.27, 9.76±1.17, 10.72±2.35, 211.91±62.19 and 1.78±0.61 mBq/m3 respectively of the dry seasons. Whereas, in the wet seasons are 3.89±1.23, 4.21±1.43, 5.05±1.08, ND, 147.49±46.38 and 1.78±0.69 mBq/m3 respectively. The activity concentrations results confirmed seasonal variations for all study locations. Activities of all

radionuclides, except an anthropogenic radionuclide 137Cs which remains about the same in both seasons, record higher values in dry season. Moreover, all activities are less than the acceptable lower level. It is clear that the prominent radioelements that affected by atmospheric condition is 40K even though it is less than the reported lower level of the EPA.

Biography

I have joined the physics department in the year 2000 and then I have got my M.Sc in 2010 and my Ph.D. in 2020 in nuclear physics from the college of science at the University of Duhok. My general area of interest is the study of environmental radiation, pollution, detectors, and radiation protection. I have participated in the site phase of module 12 "Personal Dosimetry" of the EUTEMPE-RX Project: European Training and Education of Medical Physicists in Radiology from April 14 to April 22, 2016, in Braunschweig, Germany. I participated in the course at the institute of medical physics University of Applied Sciences, Giessen, Germany. as a partner of the DAAD Project "Bioniq - Biomedical Engineering in Northern Iraq" in the period 25th of April to the 15th of October, 2016. So far, I have published my work in highly respected peer-reviewed international scientific journals and had a poster and presentation in national and international scientific meetings.

Abundance, characteristics and variation of microplastics in different commercial freshwater fish species from Bangladesh

Fahmida parvin, Shumya Jannat, Shafi M Tareq
Department of Environmental Sciences, Jahangirnagar University, Savar, Dhaka-1342, Bangladesh

Abstract

Microplastics are anthropogenic pollutants that accumulate in marine and freshwater ecosystems globally, both in engineered particles in consumer products and degradation products from larger plastic products. The occurrence of microplastic in the freshwater of Bangladesh is not properly addressed, and in contrast to other countries, little is known about the occurrence of microplastic in freshwater fishes of Bangladesh. Hence, this study endeavors to assess the abundance, characteristics, and variation of microplastics in different commercial freshwater fish species from Bangladesh, as this country generates a considerable amount of plastic waste annually and a major portion of its remains uncollected. A total of 48 fishes from 18 taxa spanning different feeding zone were collected to observe the difference in microplastics ingestion among various feeding zone. Microplastics were found in the gastrointestinal tracts of 73.3% of all examined fish samples which is relatively higher than previously reported studies in other regions of the world. The abundance of microplastics was found highest in Mystus vittatus among all of the fish species. Microscopic analyses revealed that microplastics were dominated by fiber in shape and transparent in color. Microplastics removed from gastrointestinal tracts of fish were identified by Fourier

Transform Infrared (FTIR) spectroscopy and a variety of polymer types (EVA, PP and PE, HDPE) were identified. Our results show that demersal fishes ingested a higher amount of microplastics than benthopelagic and pelagic fishes, indicating the ingestion of plastics in fish may relate to the feeding habitat. Our results may help to aware people which freshwater fishes are contaminated with microplastics to human consumption.

Biography

I have completed B.Sc. (hons) and M.Sc. from Department of Environmental Sciences, Jahangirnagar University, Bangladesh. I have been awarded the PhD degree from the Graduate School of Environmental Sciences, Hokkaido University, Japan in 2019. With an educational background of the PhD in earth system science (organic geochemistry) and an MS in Environmental Sciences, I am a committed professional in environmental research and teaching. So far, I have published significant papers on synthesis of biodegradable packaging material, water treatment and monitoring, as well as atmospheric aerosols in tropical and tundra areas. To date, I have been published more than 17 papers in national/international journals with total citation of 242 and 10h-index and contributed several chapters in books published by international publisher, mostly Elsevier and Springer. I presented my research in several international conferences in Japan and Austria. Currently I am working as associate professor at the department of Environmental Sciences, Jahangirnagar University.

Purifyin gair through renewable energy

Anwar miqda dmomani
Renewable energy, health and human resources

Abstract

Renewable energy has not only been limited to energy production today but has also become involved in many uses. However, it has never been used in air purification to provide long-term treatment for chronic respiratory diseases such as asthma and skin diseases. Despite the prevalence of chronic respiratory diseases and skin allergies caused by increased environmental pollution and global warming, however, due to the high costs of long-term treatment many infections and sometimes mortality have spread. So, I worked on a solution that lies in using some recycled materials, such as some Difficult to decompose plastic products and also some metal materials and wires that can be extracted from damaged electrical appliances. to use solar energy to purify the air. by building a carefully thought-out structure with a simple and elaborate design to get the most out of solar radiation. This contributes to the preservation of many lives, especially in people who cannot afford treatment. This technology has many uses and is all easy to apply and anyone of any age can make it by themselves once they know its simple principle. It also makes the world fairer because we provide health innovations that reach out to all and provide a better life for all.

Biography

Researcher and innovator, she worked on many researches and innovations and participated in some of them in international competitions where she was awarded first place by the Organization peace first for the project to purify air through renewable energy, especially solar energy. I hav e also participated in many international and local conferences as speakers, most notably phi virtual conference for scientific research and innovation, as well as the .Conference on Physics Without Borders and the Conference on Fun Physics I have many testimonials. an dl a mgoo dfor many languages of software and graphic design. I seek to spread the idea that science is fun and that will make us the first in many life and industrial fields because .science is the foundation of everything All the researches and projects i have submitted and worked on are now of my own creativity and design as I seek to find all new and also to seek the discovery of the unknown.

Health Conditions of the Internal Displaced People in Sharia and Khanki Collective Towns, Duhok Governorate/ KRG

Suad Yousif Alkass
University of Duhok, College of Pharmacy

Abstract

Background and Objective Global figures of internal displaced people (IDPs) numbers are enormous as a result of wars and violence due to the religious and ethnic conflicts. The Duhok Governorate located at the western side of the Kurdistan Region of Iraq, bordering with Turkey and Syria. It also borders Mosul city of Iraq. This geographic position has placed the Duhok Governorate as the principal shelter for Syrian refugees fleeing from the conflict in the northern areas of Syria in 2012, as well as for families displaced after the fall of Mosul in June 2014. This study aims at shedding lights on the health of the IDPs living in both Sharia and Khanki, collective towns located around Duhok city. Materials and methods: It is worth to mention that 80 fasting subjects of different ages (18 males and 62 females) from Sharia collective town and 77 (8 males and 69 females) from Khanki collective town participated in this study. A descriptive statistical measurement, frequency and percentage were used to see the general pattern of fasting blood sugar and blood pressure of the participants. Blood glucose was measured using the glucometer and blood pressure was measured by using the standard sphygmomanometer. Results: This study found that 26 out of 80 (32.5%) at Sharia and 10 out of 77 (12.9%) at Khanki collective town of the participants were hypertensive. Besides, this study showed that 7 out of 80 (8.7%) in Sharia and 11 out 77 (14.2%) of the participants in Khanki collective town were prediabetics. Moreover, it was shown that 10 out of 80 (12.5%) in Sharia and 6 out of 77 (7.7%) of the participants in Khanki collective town were diabetic. Unfortunately, all of the above-mentioned patients discovered at that moment that they had high blood sugar and high blood pressure. Before that, they had absolutely

no idea about their condition. In conclusion, this study has proved that the high percentage of the internal displaced people in a sample taken from Sharia and Khanki collective towns were diagnosed as either prediabetic, diabetic or hypertensive and they had no idea about that up to that moment. The findings of this study revealed that there is a necessity to provide the IDPs with their rights and essential needs of health care.

Biography

I am currently working as the head of Medicinal Chemistry Department, College of Pharmacy, University of Duhok, Duhok/Kurdistan region of Iraq. I have got my MSc and PhD in biochemistry from College of Science, Mosul/Iraq. Over the past three and half decades, I had taught a student from different Colleges among them, college of Medicine, Pharmacy, Dentistry and Health Science. Moreover, I had poster presentation in an international scientific meeting and had published 20 articles on different aspects including: enzymes, analysis methods, nutrition, oxidative stress and plant extracts. besides, I am delighted working with the communities. I was visited many areas which involved camps of IDPs around Duhok City for pharmaceutical assistance, aids and diseases monitoring.

Social Related Fields

Women in Clean-Tech Energy & Environmental Sustainability

Heba Al-Farra
WEE- Women in Energy & Environment at Middle East & North Africa

Abstract

Empowering women is empowering humanity. Gender equality and women's empowerment is central to UNIDO's work as it is not only a matter of human rights, but also a precondition for sustainable development and economic growth, which are drivers of poverty reduction and social integration. When women and men are more equal, economies grow faster, more people are lifted out of poverty and the overall well-being of societies is enhanced." LI Yong, UNIDO Director General's statement on International Women's Day, 2015. Clean tech & sustainability will play an increasingly important role in both developing and developed countries in the future. The different implications of the wider use of renewable energy sources for women and men have hardly been examined, even though women's roles and interests in energy use and production have been well-documented. Experience in other sectors, and anecdotal evidence from the energy sector, suggest that women indeed have an important role to play in sustainable energy development It addresses four questions: Why do women need clean energy & environmental sustainability? Are women really interested in renewable energy technologies (RETs) & implementing sustainability? Will women automatically benefit from RETs & sustainable development? Why is a gender perspective relevant in the energy & sustainability sectors?

Biography

The Young Champion of the Earth for West Asia 2018 – UN Environment global competition & prize. Founder & CEO of "WEE" Women in Energy & Environment at Middle East & North Africa. Hera Ambassador: The light of Women ttps://www.heracity.org/. - LEED GA, Leadership in Energy & Environment Design, Green Associate from USGBC – US Green Building Council. COM, Certified Organizational Manger from Florida State University, March 2017. Certified Energy Auditor on November 27-30, 2016 at Amman- Jordan from the association of Energy Engineers. Florida Accreditation- CSM – Certified Supervisory Manager. Bachelor degree in Environmental Engineering from Islamic University- Palestine (January 2012). Professional Certificates such as Geographic Information Systems (GIS) and other technical programs during year 2011. High School Certificate, Science Branch; Palestine (July2006).

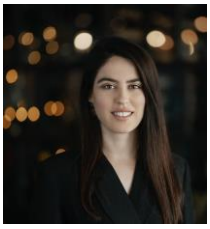
Adopting Green Building Principles to Create Livable, Inclusive, And Resilient Cities

Dr. Basima Abdulrahman

Abstract

Urban cities and communities play vital role in global consumption, production and pollution as the majority of the global population lives in urban areas. As per the UNEP, buildings use about 40% of global energy, 25% of global water, 40% of global resources, and they emit approximately 1/3 of GHG emissions. Years of research and hands-on experience have resulted in the development of dozens of green building assessment tools, which help rate the environmental performance of a building and track its operational behavior. These tools are utilized by green building specialists to help government, businesses, and individuals obtain green strategies and solutions in building design and construction for better indoor air quality, lower energy and water costs, improved environmental performance, and ultimately enhanced asset value. The aim is to make sure that current development should not harm the interests of future generations through the integration of the triple bottom line concept, people, planet and profit.

Biography



Basima is an accredited green building professional with over twelve years of diverse experience focused on sustainable development. Her core expertise is in green building assessment tools and amplified strategies that lead to enhanced building performance. She is the Founder and Chief Executive Officer of the first company established to introduce the concept of green design and construction to Iraq called KESK. Her aim is to make sure that current development should not harm the interests of future generations through the integration of the triple bottom line concept; people, planet and profit. Her vision is to make Iraqi cities more sustainable, inclusive and economically productive through making buildings and infrastructures healthy, environmentally responsible, and resource efficient. Basima is a World Economic Forum Foundation Board Member and Cultural Leader; TEDx speaker; and Climate Trailblazer. She was selected to co-chair the 2019 WEF Annual Meeting in Davos alongside the CEO of Microsoft and the President of the World Bank. Featured on TIME's magazine, Inhabitat, Forbes, WEF Agenda, Real Leaders magazine, and other platforms for leading the green building work in Iraq. Basima holds a Bachelor's Degree in Civil Engineering and a Master's Degree in Structural Engineering.

Chances and challenges of the Sustainable Development Goals in Education

Melina Tinnacher1, Heike Wendt1 & Nora Luschin-Ebengreuth2
Institute for Education Research and Teacher Education, Faculty of Environmental, Regional and Educational Sciences, University of Graz, Austria
Institute in Early Childhood and Primary Teacher Education, University of Teacher Education Styria, Austria

Abstract

In 2015 the Sustainable Development Goals, as the core of the Agenda 2030, were signed by all member states of the United Nations. The global goals include the aim to reduce poverty and inequalities, improve global education and health, and at the same time protect our global resources and ecosystem to fight climate change (United Nations, 2019). In a recent study (2020) we have analyzed three important dimensions of the SDGs such as inclusion, diversity and contents of environment, health and peace in an urban school context in the second biggest city in Austria, Graz. On the basis of a qualitative content analysis (Mayring, 2003) using MaxQDA, school's online representations were investigated to what extent schools in Graz give public account on activities and provisions related to three chosen dimensions. Schools and societies are able to take actions towards sustainability and create more sustainable provisions without needing many extra resources. A school as an example can therefore be seen as a regular institution, and in regard to Rolff (2016) functioning on different levels like organization, structure, personnel and teaching. Topics as Inclusion, Equity and Environmental Education as inherent in the SDGs have the global approach and ability for changing the world for the better. Teaching children global values in school in terms of respect for all beings and our eco system will create new generations more understanding and caring as agents of change (White, 2020). The aim of my contribution is to give a deeper insight into indicators of SDG related contents on different school development fields and also to underline our findings with national policies and practical examples of schools and their networks in Graz to motivate and encourage people in science and in the field to collectively work towards a fairer and more sustainable world.

Biography

I joined in 2020 the unit of "Empirical Educational Research", at the Institute for Educational Research and Teacher Education at the University of Graz, Austria as a Prae Doc. My first career was as a teacher in special education, which I completed in 2013. Afterwards I did a Bachelor in Pedagogy and a Master in Inclusive Education (2018). In my free time I study Global Studies, which includes contents of sustainability, social equity and climate change. The intention of my academic work is to help disadvantaged people and the environment. Therefore, I want to raise awareness and counteract discrimination, injustice and climate change. As I am in the first year of my PhD, I am involved in other projects about distance learning, digitalization and inclusion (In-DIG developments) and another international one about professional development of teacher educators.

Development of a Sustainable Transport System for a Developing City

Niranga Amarasingha
Faculty of Engineering, Sri Lanka Institute of Information Technology

Abstract

The expectation of any sustainable transport system is safe and sustainable mobility and accessibility to all people. This becomes a complex task when the needs and demands of people are different in developing countries like Sri Lanka. Urban traffic congestion is one of the major problems in most developing counties. Integrated traffic management is a system where centrally-controlled traffic signals and sensors regulate the flow of traffic through the city in response to demand. The objectives of this study are to develop an integrated traffic management system and identify effective countermeasures by simulation. The concept of big data in traffic prediction context means that a large quantity of traffic data is collected over a long period of time to train a traffic models to predict the future and current traffic information. Information is also collected in real time with the use of sensors, cameras, and smart devices. The collected information in the system itself using sensors, devices or other systems, are sent to an analytics system to understand current traffic movements and what is likely to happen next. Based on these information, proper traffic management system is suggested. Micro simulation is conducted using different scenarios and guidelines which are purposed by traffic prediction models for live control mechanisms. If the existing infrastructure design does not meet the requirements of the most critical elements in mixed traffic, all modes of transport operate in sub-optimal conditions. Based on the outcome of the micro-simulations, the best strategies for traffic management suitable for Sri Lankan conditions are identified.

Biography

Niranga Amarasingha is an Associate Professor in the Sri Lanka Institute of Information Technology. She completed her Ph.D. at the Kansas State University and worked there before joining Sri Lanka Institute of Information Technology in 2013. Her research focuses on traffic safety and human factors, traffic engineering, modeling of transportation systems, railroad engineering, and multi-criteria decision making. She has been involved in many research studies leading a multidisciplinary research team and has published extensively in these areas.

Curricula and Teaching of Design Topics in Universities

Fuad Khoshnaw. PhD, CEng., FHEA. De Montfort University – United Kingdom

Abstract

Studying design topics of different specialties and topics in universities is an inspiring, scientific and rigorous subject. Mainly depends on imagination and considering the possibility of making the product. In some universities, no changes have been noticed in the curricula of this subject in a way to consider the desires and norms of the new generations of students and the necessities of the local

market. The curriculum and teaching method have remained focused on using a specific textbook from one chapter to another and taking into account the complex mathematical equations that are necessary for the students to remember in the exams. However, researchers have agreed that the most effective way to deliver this topic is by letting the student conducts preliminary research on what the market needs, designs a few sketches for the product based on the specifications set by the customers, considering other procedures to figure out the best design, feasibility of manufacturing and the cost-effectivity. Focusing on introducing such a topic in the secondary schools, year 10 for example, then teaching the topic with more details in universities will help them to build their concepts on what the market needs, what type of design the customer need, and how to deal with the customer and engaging in a work team. This presentation will give guidelines, step by step teaching steps, of design engineering topic for first-year students in the universities, and showing the advantages, in a way that the graduate becomes creative, confidently perform tasks, understanding the required skills to design and manufacture high-quality prototypes and products for a wide range of users, ability to critique, evaluate and test their ideas, products, and the work of others.

Biography

work at De Montfort University in the United Kingdom since 2018 as a Senior Lecturer in the School of Engineering and Sustainable Development. My research focuses on design engineering, manufacturing methods, structural integrity and materials selection. From 2010 to 2016, I worked as a Professor of Materials and Manufacturing as well as the Dean of Faculty of Engineering at Koya University, Kurdistan, Iraq. Before that, from 1996 to 2004, he worked as Lecturer/Associate Professor at Salahaddin University, Hawler, Iraq. I have published more 50 papers in different international journals and conferences in the fields of corrosion, welding, biomaterials and fracture mechanics.

Passion, Experience and Continued work at the forefront by overcoming Dark Age occupation [educational crisis]

Dr. Nohad A Alomari's
Knowledge University

Abstract

The speech will involve:
Overcoming dark age occupation educational crisis: Historical challenges in modern history (2014-2019). The reality of dislocation and action taken at dislocation period of time (university of Mosul). Umbrella of Science (various ethnical groups BUT One- Science Language) internally displaced students (IDSs) of every ethnic and religious community in Iraq. How we generate hope and urgency in building academic communities at challenge period of time that empower displaced students (whether undergraduate or postgraduate) to continue their learning with hope and

ambitiousness in reestablished university in spite destroying the Iraqi Unicorn but didn't destroy the unicorn inside our hearts.

Biography

I am Assist. Prof. Nohad A. AlOmari/Knowledge university / College of Pharmacy / Erbil /KGR/ IRAQ. I'm working in the field of pharmaceutical sciences and the education sector for about three decades with a proven record, a professional history, curriculum vitae full of accomplishments, patents, and national and international scientific awards. Strong and clear vision to find realistic solutions to various challenges in the field of my passion for the field of pharmaceutical education and my love to raise the level of my students in the primary and higher studies. My tenure as Deputy Dean of the College of Pharmacy at the University of Mosul at the alternate dislocated location for the years (2014-2017), Duhok and the Kirkuk Governorate was a turning point in my academic career, being a period full of challenges and difficulties that made my accumulated experiences an example of a professional academia that encounters academic and leadership work as the Dean of the College of Pharmacy / University of Al-Kitab/Kirkuk ,recently assigned at Knowledge university / College of Pharmacy / Erbil /KRG , with all seriousness and confidence, is a great example of spreading the experiences gained by planting the generation of education power and empowering women, and then put pharmacy at the forefront of my interests and to create a high-quality model with institutional accreditation for the quality of pharmaceutical education in the world.

Multidisciplinary Research

Lung cells transcriptional landscape from COVID-19 patient and a systems biology approach stratified distinct model of lung injury in SARS-CoV-2 infection through impaired pulmonary surfactant metabolism which can be mitigated by possible surfactant therapy

Professor Dr. Abul Bashar Mir Md Khademul Islam.
University of Dhaka

Abstract

Owing to lack of detail molecular mechanisms, respiratory complications with no therapeutic interventions is still a major problem in COVID-19. Comparison of gene-expression pattern from COVID-19 affected lung biopsy tissues and typical SARS-CoV-2 infected cell-lines mapped in lung-related process networks, and a systems biology approach to stratify the deregulated processes/pathways involved in the symptomatic impairments observed in COVID-19 suggest that virus can down-modulate lung functionality related pivotal processes like: responses to hypoxia, lung development, respiratory processes, cholesterol biosynthesis and surfactant metabolism. Impeded surfactant proteins and their regulators SPD, SPC, TTF1 etc. through viral NSP5 and NSP12; dampened thrombosis regulators PLAT, EGR1 by viral ORF8 and NSP12; Mitochondrial dysfunction due to aberration of NDUFA10, NDUFAF5, SAMM50 etc. by NSP12; aberration of HIF-1 signaling by SARS-CoV-2 leading to acute lung injury in COVID-19. Drug enrichment with these process-related deregulated genes advocates probable therapies like: lung surfactants replacement, respiratory stimulants, sargramostim, oseltamivir etc. Our study put forward a distinct mechanism of probable virus induced lung damage apart from cytokine storm, and significance of alternate therapy for it.

Biography

Dr. Islam is a Professor of Genetic Engineering and Biotechnology, University of Dhaka, Bangladesh. He completed Bachelor and Master degree in Microbiology from the University of Dhaka, with first class first position. For this achievement he was awarded with Gold medal, Provost Award etc. Also, during bachelor study he achieved prestigious Sumitomo Corporation (Japan) fellowship from the Biological Sciences faculty. He received Honors award for his excellent performance in second master degree in Japan. To do Ph.D., he was awarded Spanish Govt. fellowship (Modalitat B). To do part of PhD research in the University of Illinois at Chicago, USA, he received AGAUR Modalitat-A fellowship from Spanish (Catalan) Government. For his outstanding performance, he achieved Ph.D. with highest Distinction (Cum Laude). For his translational research from bench to industry in the field of cancer biology and epigenetic drug target during his PhD, he was awarded with Knowledge and Technology Transfer award from social council of Spanish (Catalunya) Govt. and Universitat Pompeu Fabra. For his overall outstanding contribution to the biological sciences, he was awarded as the Young Scientist prize from The World Academy of Sciences (TWAS) and Bangladesh

Academy of Sciences (BAS) in 2013 and also Samson H Memorial award in 2017. Dr. Islam is doing research in the field of Medical Biotechnology using the state-of-the-art technologies of genomics, proteomics and bioinformatics. He has vast experience in NGS and other high-throughput technologies. His main interest is epigenetic/genetic mechanisms of cancers & arthritis, emerging infectious disease drug discovery and vaccine design. He has published over 78 research articles in international journals. He is Associate Fellow of BAS; EC member of National Young Academy of Bangladesh; Young Affiliate of TWAS. Dr. Islam is serving as member of several scientific community, also editorial board member of international journals and actively engage science communications and spreading science to the society. He has received several national and international research grants and supervising graduate and postgraduate students' research. Furthermore, he is working towards the generation of Bioinformatic work-force in Bangladesh.

Barriers to disclose of domestic violence in health services: A qualitative interview-based study

Dr. Amira Shaheen – Palestine
An-Najah National University

Abstract

"Barriers to disclose of domestic violence in health services: A qualitative interview-based study" Amira Shaheen, PhD(1), Abdulsalam AlKaiyat, PhD(1), Suzy Ashkar, MPH(1), Loraine Bacchus, PhD(2), Manuela Colombini, PhD(2), Gene Feder, MD (3), Maggie Evans, PhD(3) (1) Public Health Division, An-Najah National University, Nablus, oPt (2) Gender Violence & Health Centre, London School of Hygiene and Tropical Medicine, London, UK (3) Centre for Academic Primary Care, Bristol Medical School, Bristol, UK

Background: Domestic violence (DV) is a global public health concern affecting 1 in 3 women. A 2012 survey by the Palestinian Centre Bureau of Statistic (PCBS), found that 30% of ever married Palestinian women had experienced some form of violence. The current study is aimed at interviewing Palestinian women survivors of DV about their attitude towards and experiences of disclosing DV in a health setting.

Methods: This qualitative study explores the integration of an intervention for violence against women in primary health care centres in the occupied Palestinian territory oPt/West Bank. Since it was difficult to recruit women through health centres, participants were recruited from a nongovernmental organization that provides legal and social support services, free of charge, to survivors of domestic violence.

Results: Most of the interviewed women were unemployed and financially dependent on either their family or perpetrator mainly the separated. Women survived varied types of violence, ranging from physical, economic, verbal, sexual, and – predominantly – psychological. The visiting of health services was coincidence with other health issues rather than violence. Multiple barriers to

disclosure were identified: individual, services and societal. marriage, acted as a barrier to disclosing domestic violence.

Discussion: Survivors who managed to visit health care facilities are faced by individual, services, and societal barriers that limited their chance to disclose. Health care providers must be aware of these barriers to understand the action or inaction and provide compassion and culturally sensitive management, in order to deliver beneficial support to female victims.

Biography

Dr. Amira Shaheen is working on enhancing the response of health care system to gender based violence (GBV). Her work has the potential to increase identifications of women exposed to violence, that would positively influence their situation, mainly health. Dr. Shaheen was born in East Jerusalem, Palestine. She started her professional activities in public health on 2009, as a research assistant at the London School of Hygiene and Tropical Medicine (LSHTM), after obtaining a PhD in epidemiology and population health from there. Since her return to Palestine on 2011, Dr. Shaheen is working at An-Najah National University as an Assistant Prof. of epidemiology and population health. Where she taught courses for graduate and undergraduate health students. Dr. Shaheen, as well, is chairing the OWSD-Palestine National Chapter. Dr. Shaheen research interests related to population health, particularly; women health, child health, injuries, violence, environmental health, and mental health. Her research has appeared in many leading international journals. Amira is an active member of several scientific communities including; child healthcare information for all (CHIFA), and international epidemiological association (IEA). Most recently, Amira, with other collaborators from the Bristol University, LSHTM, Brazi, Nepal, and Sri Lanka, was awarded an NIHR grant to enhance identification and referral of GBV cases in reproductive health setting for margenized Palestinian population. On 2019, Dr. Shaheen was awarded the OWSD-ELSEIVER Award for early career women in Science in Developing Countries.

Immunohistochemical expression of CD133 as cancer stem cells marker in a sample of Iraqi patients with colorectal carcinoma

Zahraa K. Zedan, Adyan K. Mohammed, Waleed H. Youif, Majed H. Dahri
College of Biotechnology, Department of molecular and medical biotechnology, Al-Nahrain University, Baghdad, Iraq.

Abstract

Colorectal cancer is one of the most common cancers worldwide with high mortality. Distant metastasis and relapse are major causes of patient death. Cancer stem cells (CSCs) play a critical role in the metastasis and relapse of colorectal cancer. CSCs are a subpopulation of cancer cells with unique properties of self-renewal, infinite division and multi-directional differentiation potential. Colorectal CSCs are defined with a group of cell surface markers, such as CD44, CD133,

CD24, EpCAM, LGR5 and ALDH. They are highly tumorigenic, chemo-resistant and radioresistant and thus are critical in the metastasis and recurrence of colorectal cancer and disease-free survival.60 Iraqi male patients were included in the following study, all constructed into three groups group I: includes 20 newly diagnosed patients with coloreactal carcinoma, groupII:20 relapsed patients who are subjected to chemotherapy and heal but the tumor relapsed on them and group III: include 20 patients who characterized by their resistance to the chemotherapy treatment. All the clinicopathological parameters had been studied and their results showed an increase in the tumor grade in II as compared to the other groups with a variation of age between groups. The expression of CD133 showing a high expression in group II and III as compared to group I with the noticed of that some IHC slides were free from ordinary colorectal cancer cells but positive to CD133 which indicating the presence of the cancer stem cells similar results showed in the resistance group the possible explanation of the results is the highest expression of CD133 indicates the high No. of cancer stem cells which has a major role in the tumor relapsing and resistance to chemotherapy. From these results CD133 cloud be used as a biomarker for cancer stem cells permitting of detecting of these cells and helping in the process of targeting therapy for this type of cells within the tumor mass preventing tumor relapsing and resistance to chemotherapy.

Biography

I have joined the department of Biotechnology since 2001.obtained my M.Sc. in Biotechnology from Faculty of Science, Al-Nahrain University. I have got my PhD in Biotechnology from faculty of science, Al-Nahrain University. My general field of interest is the study of Stem cells technology and Cellular immunology, animal cell culture, Cancer Biology and Tissue engineering. I am interested in the search of using stem cells in the field of regenerative medicine. antimicrobial, that could be used in the treatment of diseases like: Al-zaheimer, Diabetes and Skin Hyperpigmentation. I have been an effective participant in three long-term projects funded by the Ministry of Higher Education and scientific research. I have published my work in highly respected peer-reviewed international scientific journals and had poster presentation in national and international scientific meetings. My h-index= 5 with a total citation of 44. I have participated as an organizer in national and international workshops and scientific meetings. And I worked as assistant professor at college of Biotechnology, University of Al-Nahrain.

Homoclinic points and homoclinic orbits for the quadratic family of real functions with two parameters

Kara N. Abdul-Karim, Salma M. Farris
University of Mosul

Abstract

In recent years, a great deal of interest in connecting orbits (homoclinic or heteroclinic orbits) in dynamical systems. The notion of a homoclinic point was first introduced by ponicar´ (1890), in the study of a three-body problem. The concept of homoclinic orbits and heteroclinic connections plays a central role, in the studying the chaotic sets. In particular, it can be used for proof of the existence of chaos. Let P is fixed point and $f'(p) > 1$for a map $f: I \to I$on a compact interval $I \subseteq R$. A point q is called homoclinic pint to P if $q \in w^u_{ioc}(p)$ and there exists n > 0 such that $f^n(q) = p$. In this work, we study homoclinic points, homoclinic orbits for two-parameters family of real functions$H = \{h_{a,b} = ax^2 + b, a \in R/\{0\}, b \in R\}$. In Section 2, we study the fixed points of the family H, and the nature of these fixed point for various values a and b. In Section 3, we study the local unstable sets of the repelling fixed point p_1 for the functions $h_{a,b} \in H$. We proved that $w^u_{ioc}(p_1) = (\frac{1}{2a}, \infty)$. And in Section 4, we study the unstable sets of the repelling fixed point p_1 for the functions $h_{a,b} \in H$, we proved that $w^u(p_1) = (1la - p_1, \infty)$. Finally, in Section 5, we study the homoclinic points and homoclinic orbits of the functions $h_{a,b} \in H$ for the repelling fixed point p_1 . We show that $h_{a,b} \in H$ has a homoclinic point and orbit whenever $b \leq -2/a$, and has no homoclinic point and orbit wh$ever\ b > -2/a$. In this last section, we give the (tree) of the homoclinic points, and at the end of section we calculate the homoclinic points and orbits for our functions with certain values for a and b.

Biography

Dr. Salma Muslih Faris Teaching in: Department of Mathematics /College of Computer Science and Mathematics/University of Mosul. PHD in mathematics/ The Area: Dynamical Systems/ College of Science/ University of A MSC in mathematics/The area: Functional analysis and Algebra/ College of Science/ University of Baghdad with supervisor, Adil G. Naoum PHD in mathematics/ The Area: Dynamical Systems/ College of Science/ University of Baghdad with supervisor, Adil G. Naoum.

Geography of Arab innovations and international economic relations

Najeeba Muhammad Mutahar, Mohammed Ali Ahmed Humran
Sana'a University, The Union of Arab Academics (TUOAA)

Abstract

The geography of innovations is one of the branches of modern geographic sciences as it is concerned with studying the description, analysis and distribution of factors, processes and innovative activities simultaneously with the organizations that organize these activities, which enhances the contribution to improving and strengthening international economic relations. The problem in intellectual production is the form of stagnation and regression In the Arab world, which has negatively affected Arab and international economic relations. The study concluded that the geography of innovations and the Union of Arab Academics have a great role in intellectual production and international economic relations through the description, clarification, analysis and distribution of phenomena of the earth's surface shapes and centers of intellectual production and the extent of their contribution to strengthening Arab and international relations and intra-trade, where there is a great variation in the distribution of these Institutions and a decline in the level of intra-Arab trade and being limited to energy resources, gas and oil. The UAE is one of the first Arab countries to register a patent for invention and the number of scientific and research institutions. Qatar also came first in the quality of education. The form of the Union of Arab academics one Arab scientific institutions to achieve a number of great contributions to the development of innovations and the strengthening of international economic relations from 2018 to 2020. The study also recommended according to the outcomes of the ICBT2020 Business and Technology Conference, which was held in Turkey from 14-15 November 2020 AD, with the researcher's participation in the interest in embodying the topics of writing articles in university education and majors.

Biography

I'm Najeeba Muhammad Mutahar Nationality, Yemeni - Associate Professor, Specialization: Educational Administration Title of Master's Degree: A proposed plan to establish intermediate community colleges in the Republic of Yemen, 1990 AD, Yarmouk University, Jordan, PhD Thesis: Building a proposed model for the development of the University of Aden in 1997, Al-Mustansiriya University – Iraq, employment qualifications:

1. Vice President of Sana'a University for Graduate Studies 2018 and Member of Union of Arab Academics.
2. Head of the Scientific Journal of the College of Soil: College of Soil - University of Taiz from 2008 to 2013
3. Deputy Dean of the College of Education for Community Service Affairs: College of Education (Soil), Taiz University, 2006-2008
4. Director of the Center for Continuing Education: Taiz University, 2002-2005

5. Assistant Professor of Educational Administration: College of Education - Taiz University, 1997 to present.
6. Director of the Intermediate Institutes Department: Sana'a - Ministry of Higher Education 1991-1993.

Scientific activities: supervision and discussion of many master's and doctoral theses

A lot of scientific research is published in scientific journals and attending internal and external scientific conferences

Literature

1. Educational administration and educational supervision
2. Educational and school administration in light of contemporary administrative thought
3. Educational assets and contemporary educational systems.

Scientific research and methods of using electronic pages

Professor Dr. / Mona Kamel Tourky- Visiting professor of public international law- U.A.E - Deputy Director of the Journal of International Law and Business, Hassan I University, The Union of Arab Academics (TUOAA)

Abstract

The study aimed to identify ways of using scientific research and employing it in the use of electronic pages in order to achieve the scientific benefit of researchers in all fields of legal, scientific, informational, health, social, or productive research, etc., in order to achieve the objectives of the study, we will try to clarify how researchers at different levels can The scientific use of electronic pages and linking them to scientific research, and developing the skills of using the Internet to serve scientific research through the ability to access the various electronic sources of information available on the electronic pages, the study relied on the survey approach that is appropriate to the nature of this study that is concerned with investigating opinions and knowledge of trends and represents the original community of these Study faculty members, lecturers, teaching assistants, and graduate students in the universities of the United Arab Emirates. The analytical method of questionnaires was used to collect and analyze the study data in the special statistical package (SPSS), and the results showed that scientific research methods in using electronic pages achieve the scientific benefit of researchers in all fields. The study recommended that researchers should direct to methods of using electronic pages to achieve research benefit in all fields.

Biography

I obtained the degree of Prof. Dr. by the decision of the University Council, a doctorate and a master’s degree in public international law from Mansoura University, as well as a postgraduate diploma in scientific research curricula and a general diploma in education from Mansoura University, and many honorary and professional diplomas by studying remotely during my stay in the United Arab Emirates since July 1997 to date. Interested in the field of scientific research and

published 46 books, published (157) arbitration papers, and many articles in law, business, and community awareness of issues of addiction, abuse, child abduction, human trafficking and others, my book on remote communication technology won in criminal investigation procedures and remote litigation in the Guinness Book of Sharjah Exhibition International Book 2019, she participated in many international conferences and symposia in law, business, economics, international relations, and many scientific and legal missions within the UAE and abroad. Assigned to work as Deputy Director of the Journal of Law and International Business of the Research Laboratory of Business Law, Faculty of Legal, Economic and Social Sciences, Hassan I University - and an arbitration member for academic research in several peer-reviewed scientific journals. A member of the Union of Arab Academics - a member of the International Universities Union - a member of the Arab Academy for Training and Consulting - a member of the Emirates Association of Lawyers and Jurists - a legal advisor in the Academy of Development Experts - a member of the International Commission for Human Development Scholars - I have supervised the committees for discussion of masters and doctoral theses in a number of universities and scientific academies And legal, I work as a lecturer in teaching law at the country's private universities. She submitted a study proposal on adding artificial intelligence technology to the electronic bracelet of inmates under probation, and a proposal for a social work charter, on the ethics of commitment to the social work of professions, and obtained intellectual property in both of them. She participated as an organizer in national and international conferences, workshops and scientific meetings.

PROGRAM OF ONLINE

WORLD FORUM FOR WOMEN IN SCIENCE (WFWIS)

Organized by

University of Duhok and Women in science without borders initiative (WISWB)

DUHOK-IRAQ

Please Note that All Forum Sessions are based on Baghdad Local Time (+3 GMT)

WFWIS Day One

8th March 2021, Monday

Opening Ceremony (09:50 – 11:00)	
Prof. Dr Mosleh Duhoky	**President of University of Duhok**
Dr Lokman H. Hadi	**Vice President of University of Duhok for Scientific Affairs**
Dr Mizgeen Mohammed Hasan	**Dean of College of Humanities - University of Duhok**
Prof. Dr Amal Amin	**Founding Chair of women in science without borders (WISWB) and WFWIS**
Opening Lecture	
Dr. Nesreen Barwari – Iraq University of Duhok, College of Spatial Planning **Gender Sensitive Planning in Post Conflict**	

Plenary Session 1 (P1) Science for Humanity 8th March 2021 (11:00 – 13:00)	
Moderators **Prof. Amal Amin** **Dr Suhad Yasin**	**Prof. Daya Reddy – South Africa** President of the International Science Council (ISC) **The Role of Science in Constructing Pathways to a Sustainable and Resilient Future**
	Prof. Maria Augusta Arruda – UK Research Development Manager - UKRI Lead – University of Nottingham **Science for the Many, not the Few: Science Diplomacy in the Core of a Humanitarian (R) Evolution**
	Prof. Mitsunobu R Kano – Japan Science Advisor for Minister of International Affairs **Scientific Thinking: A Sophisticated Method to Overcome Issues**
	Dr Mari-Vaughn Johnson – USA Federal Director of the United States Geological Survey's Pacific Islands Climate Adaptation Science Center **Science-Based Decision Making in Managing Climate Change Adaptation**
	Prof. Shoji Komai – Japan International Professional University of Technology (IPUT) **Science can Bridge the Gap**

Parallel Technical Session (T1) Health, Biology-Medicine-Pharmacy 8th March 2021 (13:00 – 15:00)	
Moderators **Prof. Quarraisha A. Karim** **Prof. Haval Y. Yacoob**	**Prof. Quarraisha Abdool Karim – South Africa** Associate Scientific Director of CAPRISA **Lessons from HIV for SARS – CoV – 2**
	Dr Martin Dominik – UK Reader in Physics & Astronomy at the University of St Andrews in Scotland **Is Biology Universal, and what does it Mean to be Human?**
	Prof. Hassan Azzazy – Egypt American University in Cairo **AL-MOF Optical Chemosensors for Instant Detection and Trapping of Mercury Ions in Water**
	Dr Chern Ein Oon – Malaysia Universiti Sains Malaysia **Molecular Targeted Therapy: Honing in on Cancer with Precision**
	Dr Rituparna De – India ICMR-NICED **Metagenomic Analysis of the Gut Resistome of Diarrheal Patients in Kolkata Reveals Diarrheal Gut as A Reservoir of Antimicrobial Resistance**

Parallel Technical Session (T2) Materials – Engineering 8th March 2021 (13:00 – 15:00)	
Moderators **Prof. Esther T. Akinlabi** **Dr Jalal M. Salih**	**Prof. Moataz Attallah – UK** Chair of Advanced Materials Processing – University of Birmingham **From 3D Printing to 4D Printing: to Design, to 3D Print, & to Move "Synopsis"**
	Prof. Esther T. Akinlabi – Nigeria The Director of the Pan African University for Life and Earth Sciences Institute **Sustainable Mother Earth: Play your Part!**
	Prof. Nguyễn Thị Kim Thanh – UK University College London **Plasmonic and Magnetic Nanoparticles for Biomedical Application**
	Dr Ahmed A. Moneim – Egypt Helwan University **Green Synthetized Lycopene-Coated Selenium Nanoparticles Rescue Renal and Damage in Glycerol-Induced Acute Kidney Injury in Rats**
	Dr Taha Al-Rashid – Iraq Technology University **Preparation and Characterization of Colloidal Au-ZnO Nanocomposite via Laser Ablation in Deionized Water and Study their Antioxidant Activity**

Plenary Session 2 (P2) **Science for Humanity** **Gender Dimension of Refugee and Displaced Scientists** **Provided by: GenderInSITE, UNESCO – TWAS, IAP and ISC** **8th March 2021 (15:00 – 16:15)**	
Moderators **Prof. Roseanne Diab** **Dr Peter McGrath**	**Prof. Roseanne Diab – South Africa / Italy** Director of the global initiative, GenderInSITE
	Dr Peter McGrath – Italy Coordinator, IAP
	Ms Sena Galazzi – Italy Associate Program Officer, UNESCO – TWAS
	Dr Saja Taha Al Zoubi – Syria / UK Visiting Scholar, University of Glasgow
	Dr Ghanya Al-Naqeb – Yemen / Italy Researcher, University of Trento

Parallel Technical Session (T3) Health, Biology-Medicine-Pharmacy 8th March 2021 (16:15 – 18:15)	
Moderators **Prof. Shamsun Nahar Khan** **Dr Mahde S. Assafi**	**Prof. Shamsun Nahar Khan – Bangladesh** East West University **Three-dimensional Quantitative Structure – Activity Relationship (3D-QSAR) Studies on New Class of Alpha-Glucosidase Inhibitors**
	Prof. Shymaa Enany – Egypt Suez Canal University **Bacterial Taxa Migrating from the Mediterranean Sea into the Red Sea Revealed a Higher Prevalence of Anti - Lessepsian Migrations**
	Dr Ramia Al-Bakain – Jordan The University of Jordan **Comprehensive Chromatographic Profiling of Cannabis From 23 USA States Marketed for Medical Purposes**
	Dr Yara Aly Kammoun – Egypt Damanhour University, Faculty of Dentistry **Digital Implant Dentistry in the Computer Age**
	Dr Daniele S Persike de Oliveira – Iraq University of Duhok **Phenylketonuria in Iraq – How to Identify and Treat?**

Parallel Technical Session (T4) Materials – Engineering 8th March 2021 (16:15 – 18:15)	
Moderators **Prof. Marcia Barbosa** **Dr Nashwan Sh. Mahmood**	**Prof. Marcia Barbosa – Brazil** Director of the Brazilian Academy of Sciences **The Fruitful Weirdness of Water**
	Prof. Ramesh T Subramaniam – Malaysia University of Malaya **Ameliorating Redox Couple-based Dye-Sensitized Solar Cells Using Two Different Iodide Salts and Ultrasonication CuO Nanofiller**
	Prof. Andrea Simone Stucchi de Camargo – Brazil Scientific Director of the Brazilian Materials Research Society **From Lighting Devices to Photodynamic Therapy: Contributions from LEMAF for the Development of Photonic and Bio-Photonic Materials**
	Prof. Amal Kasry – Egypt The British University in Egypt (BUE) **Structure Manipulation for the Development of Highly Sensitive Nano-Biosensing Techniques**
	Prof. Inas Battisha – Egypt National Research Center **Phosphate and Phospho- Silicate Based Planar Wave Guide and Optical Amplifier Applications**

Parallel Technical Session (T5) Health, Biology-Medicine-Pharmacy 8th March 2021 (18:15 – 20:15)	
Moderators **Prof. Gregory Weiss** **Prof. Nafissa Ismail**	**Prof. Gregory A. Weiss – USA** Professor of Molecular Biology and Biochemistry, U.C. Irvine **Predicting COVID19 Severity with a Specific Nucleocapsid Antibody Plus Disease Risk Factor Score**
	Prof Muhammad Hamid Zaman – USA Professor of Biomedical Engineering at Boston University **A Systems Level Approach to Understand, and Improve, Access to Quality Health Services for Forcibly Displaced Communities**
	Prof. Nafissa Ismail – Canada School of Psychology at the University of Ottawa **How Does Exposure to Probiotics Block Stress-Induced Depression-Like and Anxiety-Like Behaviors in Male and Female Mice?**
	Prof Fadwa Alhalaiqa – Jordan Philadelphia University **IoT-Based Real-Time Monitoring System for Epidemic Diseases Patients; Design and Evaluation**
	Prof. Dr. Franco M. Cabrerizo – Argentina National University of San Martín (UNSAM) **A Personal Perspective on Applied and Experimental**

	Science in Argentina: Challenges Faced and the Role of Young Scientists

Parallel Technical Session (T6) **Materials – Engineering** **8th March 2021 (18:15 – 20:15)**	
Moderators **Dr Marvadeen A. Singh-Wilmot** **Dr Suhad Yasin**	**Prof. Gomaa A. M. Ali – Egypt** Faculty of Science, Al-Azhar University, Assiut **Low-Cost and High-Performance Asymmetric Supercapacitor**
	Dr Marvadeen A. Singh-Wilmot – Jamaica The University of the West Indies **Exploring the Synthesis and Potential Applications of Lanthanide (III) Coordination Polymers and Metal Organic Frameworks**
	Dr Kabira Ezzaeri – Morocco Ibn Zohr University **Photovoltaic Energy for Canadian Greenhouse**
	Ms Ibtehaj T. Subhey – Iraq University of Duhok **Green Chemistry Reactions in Duhok City: Part III. Optimization of Rose Bengal Dye Concentration as Oxygen Quencher in The Photosynthesis of Benzopinacol**

WFWIS Day Two

9th March 2021, Tuesday

Please Note that All Forum Sessions are based on Baghdad Local Time (+3 GMT)

Parallel Technical Session (T7) **Engineering – Technology – Computer** **9th March 2021 (10:00 – 12:00)**	
Moderators **Prof. Sonali Das** **Dr Omar M. Salih**	**Prof. Sonali Das – South Africa** University of Pretoria **A Re-Look at The Evolving Spatio - Temporal Weather Data Using Functional Data Analysis Methods**
	Dr Makrem Harzali – Tunisia National School of Engineers of Sfax **Aptian Reefs Prospection Using Seismic Attributes: Evidence from Central Tunisia**
	Dr Sokyna M Alqatawneh – Jordan Al-Zaytoonah University of Jordan **Employing of Facial Recognition System in Public Surveillance Cameras to Enforce Quarantine and Social Distancing Using Parallel Machine Learning Techniques**
	Prof. Mustafa Al-Mukhtar – Iraq University of Technology **Modeling the Monthly Pan Evaporation Rates Using Artificial Intelligence Methods: A Case Study in Iraq**
	Dr Kafi D Pati – Iraq University of Duhok

	Using Robust Ridge Regression Diagnostic Method to Handle Multicollinearity Caused High Leverage Points

Parallel Technical Session 8 (T8) **Environment – Water** **9th March 2021 (10:00 – 12:00)**	
Moderators **Dr Jauad El Kharraz** **Dr Nashwan S. Abdullah**	**Dr Jauad El Kharraz – France** Senior Water Expert, Arab WAYS **Towards Sustainable Desalination in the Arab Region**
	Dr Shimaa R. Hamed – Egypt National Research Centre **Greywater Treatment for Irrigation Purposes Using Pottery Scraps and Aerated Moving Bed Biofilm Reactor**
	Dr Sarwar Mohammed Rasheed – Iraq University of Duhok **Effect of Leaching with Magnetized Water on Three Saline Soils**
	Dr Kamil M Yousif – Iraq University of Zakho **Characterization of Airborne Particles Collected in Duhok City-Iraq, By Using Various Techniques**
	Dr Kabila Faris Hmood – Jordan AlZaytoonah University of Jordan

	Environmentally Friendly Cities with Reducing of Energy Consumption for Residential Buildings Typologies to Suit the Climatic Environment

Plenary Session 3 (P3) **Science Diplomacy for Early Career Researchers** **9th March 2021 (12:00 – 14:00)**	
Moderators **Dr. Almas Taj Awan** **Dr Monir Uddin Ahmed**	**Prof. Pierre-Bruno Ruffini – France** University Le Havre-Normandie **Introduction to Science Diplomacy**
	Mr Pedro Ivo Ferraz da Silva – Brazil Head of Science, Technology and Innovation, Embassy of Brazil in Berlin **Scope and Importance of Science and Innovation Diplomacy for Developing Economies**
	Mr Muhammad Adeel – Pakistan Career Diplomat, Ministry of Foreign Affairs **Careers in Science Diplomacy for Early Career Researchers**
	Dr. Almas Taj Awan – Brazil Co-founder and Scientific Researcher Zikalab Diagnostics **Effective Communication for Science Diplomacy**
	Dr Monir Uddin Ahmed – Bangladesh Assistant Professor at Qassim University in Saudi Arabia

	S &T Cooperation Agreement as a Science Diplomacy tool for Scientific Advancement of a Country

Parallel Technical Session 9 (T9) **Food – Environment – Water** **9th March 2021 (14:00 – 16:00)**	
Moderators **Dr Shalini Arya** **Dr Hashim S. Murad**	**Dr Shalini Arya – India** Institute of Chemical Technology, Mumbai **Non-Thermal Processing of Fruit and Vegetables for Value Addition**
	Dr Muhammad K Ali – Pakistan KIBGE university of Karachi **Agriculture Biotechnology and Climate Resilient Healthy Rice in Pakistan**
	Dr Neivin Soultan – Egypt Agricultural Research Center, Suez Canal University **Acaricidal Bioactivities of Marine Algal Extracts Ulva Lactuca Linnaeus (Chlorophyta) Extracts Against Two Phytophagous Pests of Main Cultivars Eutetranychus Orien-Talis (Klein) And Oligonychus Mangiferous, (Acari: Tetranychidae)**
	Dr Dalshad Azeez Darwesh – Iraq Salahaddin University **Health Risk Assessment of Some Heavy Metals in Different Legume Seeds Brand Imported to Erbil City**
	Dr Duha A. Kadhim – Iraq Mustansiriyah University **Iron Oxide Nanoparticles Synthesis Using Trigonella And Tomato Extracts and Their Antibacterial Activity**

Parallel Technical Session 10 (T10) Materials – Engineering 9th March 2021 (14:00 – 16:00)	
Moderators **Dr Huda S. Alhasan** **Dr Berivan H. Mahdi**	**Dr Yuli Yetri – Indonesia** Politeknik Negeri Padang **Preparation of Activated Carbon from Cacao Pods for Supercapacitor Electrodes Application**
	Dr Parween H Saleem – Iraq University of Duhok **A Kinetic Study of Removing Methylene Blue from Aqueous Solutions by Modified Electrospun Polyethelene Terephthalate Nanofibres**
	Dr Othman Ali Alsharafat – Jordan Hashemite University **Butanol Production by Clostridium Acetobutylicum Grown on Yeast Industry Water (YIW)**
	Dr Zaid M Abbas – Iraq University of Wasit **Synthesis of Grafted Polymers from CeO2 NP's**
	Dr Alaa Alminshid – Iraq University of Wasit **Aldol Condensation Reaction of Acetone on MgO Nanoparticles Surface: An In-situ Drift Investigation**

Plenary Session 4 (P4) Science for Humanity 9th March 2021 (16:00 – 18:00)	
Moderators **Dr Anindita Bhadra** **Prof. Amal Amin**	**Mr Peter Trotter – USA/Iraq** Head of Office, UNHCR Sub-Office, Duhok, KRI/Iraq **The Criticality of Education in Displacement as both an individual Protection and a Community Support Intervention**
	Ms Salwa Moussa – Iraq Communications specialist, The United Nations Population Fund (UNFPA) **Transforming the Girls' Lives Through Science**
	Prof. Rana Dajani – Jordan Hashemite University, Jordan, and President of SASTA **Terror and Hope: The Science of Resilience**
	Prof. Anindita Bhadra – India GYA cochair, IISER Kolkata **Just Another Young Girl with Dreams to be Different**
	Prof. Eqbal M. A. Dauqan – Norway University of Oslo **Experience with Life and Working in a New Social, Cultural and Academic Environment**

Parallel Technical Session 11 (T11) Social Related Fields 9th March 2021 (18:00 – 20:00)	
Moderators **Dr Heba M AlFarra** **Dr Basima Abdulrahman**	**Dr Heba M AlFarra – Kuwait** Women in Energy and Environment at MENA Region **Women in Clean-Tech Energy & Environmental Sustainability**
	Ms Basima Abdulrahman – Iraq Founder & CEO of KESK **Adopting Green Building Principles to Create Livable, Inclusive, and Resilient Cities**
	Dr Melina Tinnacher – Austria Karl Franzens Universität **Chances and challenges of the Sustainable Development Goals in Education**
	Dr Niranga Amarasingha – Sri Lanka Sri Lanka Institute of Information Technology **Development of a Sustainable Transport System for a Developing City**
	Dr Fuad Khoshnaw – UK De Montfort University **Curricula and Teaching of Design Topics in Universities**
	Dr Nohad A AlOmari's – Iraq Knowledge University **Passion, Experience and Continued Work at the Forefront by Overcoming Dark Age Occupation [Educational Crisis]**

Parallel Technical Session 12 (T12) Multidisciplinary Research 9th March 2021 (18:00 – 20:00)	
Moderators **Dr Huda S. Alhasan** **Dr Jalal M. Salih**	**Dr Abul Bmmk Islam – Bangladesh** University of Dhaka **Lung Cells Transcriptional Landscape from COVID-19 Patient**
	Dr. Amira Shaheen – Palestine An-Najah National University **Barriers to disclose of domestic violence in health services: A qualitative interview-based study**
	Dr Zahraa Kamel Zedan – Iraq University of Al-Nahrain **Immunohistochemical Expression of CD133 as Cancer Stem Cells Marker in a Sample of Iraqi Patients with Colorectal Carcinoma**
	Dr Salma M Faris – Iraq University of Mosul **Homoclinic Points and Homoclinic Orbits for the Quadratic Family of Real Functions with Two Parameters**
	Prof. Mona K. Tourky – Yemen The Union of Arabian Academics **Scientific Research and Methods of Using Electronic Pages**
	Dr Nagebah Humran – Yemen The Union of Arabian Academics **Geography of Arab Innovations and International Economic Relations**

WFWIS Day Three

10th March 2021, Wednesday

Please Note that All Forum Sessions are based on Baghdad Local Time (+3 GMT)

Parallel Technical Session 13 (T13) **Materials – Engineering** **(10:00 – 12:00)**	
Moderators **Dr Omar M. Salih** **Dr Sedki O. Yousif**	**Dr Rihan Saadi Abduljabar – Iraq** University of Soran **Phytochemicals Analysis of Some Native Plant Species of Kurdistan and Study of their Potential for Synthesis of Bioactive Nanostructures Involved Chemical Transformations**
	Dr Hazha Omar Othman – Iraq Salahaddin University **Fluorescence Immunoassay based on Nitrogen Doped Carbon Dots for the Detection of Human Nuclear Matrix Protein NMP22 as Biomarker for Early-Stage Diagnosis of Bladder Cancer**
	Dr Hanaa Salih Sabaa – Iraq Al- Mustansiriya University **Biological Activity of Nd: YAG laser and Beta, Gamma radiation on Klebsiella pneumoniae resistance Colistin**
	Dr Rafid Maallak Hannun – Iraq University of Thi-Qar **Evaluation of Thermal State for some Overhead Lines in Nasiriya City, Iraq**
	Dr Aula A Alwattar – Iraq University of Basrah **Initial Studies directed towards the Rational Design of Aqueous Graphene Dispersants**

Parallel Technical Session 14 (T14) Food – Environment – Water 10th March 2021 (10:00 – 12:00)	
Moderators **Prof. Vinitha Moolchand Thadhani** **Mr Qays L. Khder**	**Prof. Vinitha Moolchand Thadhani – Sri Lanka** Sri-Lankan Institute of Nanotechnology **Sri-Lanks Tea Waste in to a Fashion Opportunity, with Significant Increase in Value Added Exports of Sri Lanka**
	Dr Rajani Srivastava – India Banaras Hindu University **Purslane (Portulaca oleracea L): A Prospective Source for Nutritional Security in Developing Countries**
	Dr Hashim Saeed Murad – Iraq University of Duhok **The Level of Economics Participation of Rural Women in Duhok Governorate, Kurdistan Region of Iraq**
	Dr Delveen R Ibrahim – Iraq University of Duhok **Phenotypic and Genotypic Study on Multi-Drug Resistance ESBL-Producing E. Coli Isolated from a Dairy Farm**

Plenary Session (P5) Science communication 10th March 2021 (12:00 – 14:00)	
Moderators **Dr David Payne** **Prof. Amal Amin**	**Mrs Nerina Finetto – Sweden** The founder and director of Traces & Dreams **The power of narrative. Policies, Politics and Pandemics**
	Dr David Payne – UK Managing Editor, Careers and Supplements, Nature **How to Talk about Your Working Life and Research to the Media**
	Mrs Rasha Faek – Syria Editor-Al Fanar Media **How Journalists can Improve the Portrayal of Refugees**
	Mrs Bothina Osama – Egypt The Regional Coordinator of SciDev.Net-the Middle East & North Africa **Communicating Science: Important Skills for Researchers**
	Mr Mohamed Elsonbaty Ramadan Co-founder Arab Forum of Science Media and Communication, Egypt/Belgium **Effective and Successful Science Communication: Top Tips and Best Practices**

Parallel Technical Session 15 (T15) Materials – Engineering 10th March 2021 (14:00 – 16:00)	
Moderators **Prof. Manar Abdel-Raouf** **Dr Saed Kh. Alo**	**Prof. Manar Abdel-Raouf – Egypt** Egyptian Petroleum Research Institute **AFM in Material Science**
	Dr Dina S. Ahmed – Iraq Al-Mansour University College **Porous Organic Materials as Gas Storage Media**
	Dr Ayat Shazly – Egypt CMRDI **Novel TiO2/GO/CuFe2O4 Nanocomposite: A Magnetic, Reusable and Visible-Light Driven Photocatalyst for Efficient Photocatalytic Degradation of Pesticides**
	Dr Ahmed Fattah Abdulrahman – Iraq University of Zakho **The Effect of different Substrate Inclined Angles on the Characteristics Properties ZnO Nanorods for UV Photodetectors Applications**
	Dr Huda Sami Alhasan – Iraq Babylon University **Educating Children, the Sustainable Development Goals: A Story Series**

Parallel Technical Session 16 (T16) Environment – Food – Water 10th March 2021 (14:00 – 16:00)	
Moderators **Dr Suad Yousif Alkass** **Dr Zeiad A. Yousef**	**Dr Revink Ali Ramadhan – Iraq** University of Duhok **Radionuclide Concentrations Analysis of Duhok Air Atmosphere by Gamma Spectrometry**
	Dr Parvin Fahmida – Bangladesh Jahangirnagar University **Abundance, Characteristics and Variation of Microplastics in Different Commercial Freshwater Fish Species from Bangladesh**
	Dr Anwar Miqdad – Jordan Sauori, Jordan **Purifying Air Through Renewable Energy**
	Dr Suad Yousif Alkass – Iraq University of Duhok **The Health Status of the Internal Displaced Persons Residents in Sharia and Khanki Villages Duhok Governorate/ KRG**

Plenary Closing (P6) Science for Humanity 10th March 2021 (16:00 – 18:00)	
Moderators **Prof. Amal Amin** **Dr Ahmad Al-Khalil**	**Dr Heike Wendt – Austria** Deputy Head of the Institute for Education Research and Teacher Education, University of Graz **Barriers to Access in Higher Education for Displaced Minorities: The Case of Female Yazidi Students in Iraq**
	Mr Kareem Hassan – Egypt/Jordan Executive Director of ESCWA Technology Centre for Development **Driving Innovation and Entrepreneurship in the Arab Region**
	Ms Suzan Aref – Iraq President of Women Empowerment Organization **Civil Society Role in Achieving the Women Peace Security Agenda, Challenges and Opportunities**
	Dr. Moneef R. Zou'bi – Jordan Co-Founding Director, World Sustainability Forum (WSF) **Issues pertaining to Women and Science, and Some Championnes of Science in some Developing Countries and the World**
	Ms Shimaa ElBanna – Egypt **Head of Science Programs, British Council** **Women in STEM – Case Study**