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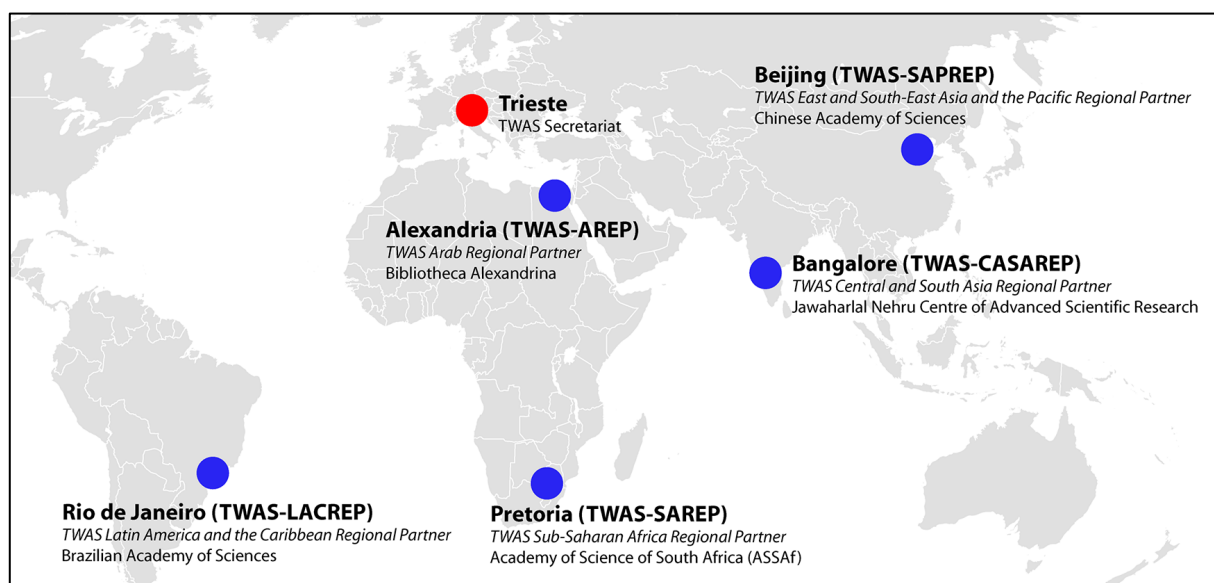
Young Affiliates

2020–2025

TWAS Young Affiliates 2020–2025

Every year since 2007, TWAS five Regional Partners—responsible for Latin America and the Caribbean, East and South-East Asia and the Pacific, the Arab region, Central and South Asia, and Sub-Saharan Africa—elect up to five outstanding young scientists from their region as TWAS Young Affiliates.

These young scientists must be living and working in a developing country, and have an excellent track record of at least 10 international publications. Their affiliation with TWAS lasts six years. Since 2019, TWAS, in cooperation with the Islamic Development Bank, allowed also talented young scientists who are refugees or displaced to be selected as TWAS Young Affiliates.



Arab Region

TWAS Regional Partner for the Arab Region (TWAS-AREP) at the *Bibliotheca Alexandrina* in Alexandria, Egypt

Nada Abduljabbar Abdullah Abdulwali

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Nada Abdulwali is an Assistant Professor of physical chemistry in the Faculty of Education, at Sana'a University, Yemen, since 2016. In 2008, she earned her bachelor's degree in analytical engineering from the Faculty of Sciences, Mohamed V University, in Rabat, Morocco, a master's degree in industrial processes engineering, in 2010, and a PhD in physical chemistry in 2016, from the same university.

Her work focuses on the corrosion inhibition of metals and the environmental impact on the quality of foods such as honey, coffee, and vegetable oils. In 2020 she received a postdoctoral fellowship from the Institute of International Education's Scholar Rescue Fund (IIE-SRF) at the University of Guelph, Canada. There she is conducting research relevant to quantum dots, which have several applications in bioimaging, solar cells and nanomedicine.

Murad Mohammed Abdulmalek Abualrejal

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Murad M.A. Abualrejal is a PhD student with the State Key Laboratory of Electroanalytical Chemistry, Changchun Institute of Applied Chemistry, University of Science and Technology of China (UST-China). He will earn his PhD in July 2021. His thesis is titled "Design an Exquisite Multidimensional Multilayered Upconversion Nanoarchitectonics with Ultrabright Luminescence as Efficient Luminescence Probes for Bioanalytical Applications." Currently, he is a Research Assistant at the State Key Laboratory of Electroanalytical Chemistry, UST-China.

In 2006 he earned a bachelor's degree from Sana'a University, Yemen and in 2017 he obtained a master's degree in applied chemistry, from Jilin University, China, working on a project titled: Synthesis and Luminescent Properties of Rare Earths Doped Silica Luminescent Materials with Special Morphologies. In 2007–2008 he worked as a quality control officer and a chemist for the Yemen-based company Drug Co. for Industrial and Commercial. From 2009–2013, he worked as a chemist and lab engineer for the University of Science and Technology, Yemen. From September 2014 until June 2017, he worked as a research assistant at Jilin University.

Fatma Al Ma'Mari

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Fatma Al Ma'Mari is an Assistant Professor in physics, at Sultan Qaboos University in Muscat, Oman. She earned her PhD from the University of Leeds (UK) in 2016. After her PhD, she joined the Condensed Matter Physics group at the University of Leeds as a visiting researcher within a joint programme with Sultan Qaboos University. Earlier in her career, she undertook her undergraduate studies at Sultan Qaboos University (2007) before taking a master's degree at the University of Loughborough (2010), in Loughborough, UK. Her scientific interests focus on experimental condensed matter research in magnetism and spintronics, and she currently is establishing research collaborations with different institutes in nanotechnology-based spintronics for electronic, power or computing applications.

She has achieved an excellent record of publications, which include *Nature Nanotechnology*, *Nature Communications*, *Science Advance* and *Proceedings of the National Academy of Sciences*.

She was awarded the L'Oréal-UNESCO For Women in Science fellowship (2019) for her project to create new magnetic materials to replace rare earth materials as a major component in energy production.

Saja Al Zoubi

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Saja Al Zoubi is a development economist scientist whose research focuses on livelihood and gender, with a focus on refugee's livelihood. Her research has addressed broad issues such as gender policies and rural development, including women's empowerment and its role in rural development.

Since the war broke out in Syria, she committed to researching ways and policies to improve the livelihood and food security of affected households (IDPs and refugees), especially women-headed households and supporting young people to access education, enhance capacity building and find work opportunities. She has conducted field studies to interpret the Syrian war and its socio-economic and demographic impact in the political context.

She is a research fellow with Oxford Department of International Development. Al Zoubi teaches gender and forced migration and Middle East politics at the University of Oxford, Christ Church, UK. She has been working in an academic/research and UN and NGOs overseas foundations for around 15 years. Al Zoubi is the recipient of several awards, from international and regional foundations.

Mohammed Saleh Ali Al-Mahfali

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Mohammed Almahfali from Yemen is currently a Researcher at the Centre for Middle Eastern Studies, Lund University, Sweden. He holds a PhD (2014) in modern Arabic literature, Arabic Language and Literature Department, Faculty of Art, Cairo University (Egypt). From 2017 to 2019 he worked as a researcher at the Centre for Middle Eastern Studies, Lund University, thanks to a fellowship received from the Institute of International Education, Scholar Rescue Fund SRF-IIIE. In 2015 he served as the head of the Arabic Language Department, with the College of Education, Hadhramout University, Socotra Island, and was an Assistant Professor of modern literature and criticism.

Almahfali authored and co-authored four books and more than 10 peer-reviewed scientific papers. His research interests include discourse analysis, capacity-building in higher education, and sustainable post-conflict recovery strategies to address the challenges in Yemen for the coming years. Particularly noteworthy is his dissemination activity: he is a regular contributor to the Arabi Website, where he deals with socio-political themes, human rights issues and war-related problems.

Amer Ahmed Abdullah Al-Qaaod

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Amer Ahmed Al-Qaaod is a collaborative physicist with more than eight years of international experience, who is researching in reactor physics, nuclear systems design, particle transport simulations, application in low energy neutron physics, dosimetry and radiation shielding-detection modelling.

He completed his doctoral and post-doctoral training in nuclear physics in Cairo, Egypt, and then moved to the International Centre for Theoretical Physics in Trieste, Italy, where he started a two-year postdoctoral fellowship in 2018. During his fellowship, he worked as a consultant in shielding design in the Nuclear Science and Instrumentation Laboratory, part of the Physical and Chemical Science Division at the International Atomic Energy Agency, before moving to the German National Metrology Institute (PTB), in September 2020.

He is an expert in Monte Carlo simulation tools for modelling nuclear processes, Python programming language, and has a solid knowledge of radiation measurements equipment. He published more than 10 peer-reviewed publications and one scientific book in particle physics, and delivered oral and poster presentations at several international conferences.

Hassan Ahmad M. Alhazmi

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Hassan Ahmad Alhazmi is an Associate Professor at the College of Pharmacy of Jazan University, in Jazan, Saudi Arabia. In 2015 he obtained a PhD in pharmaceutical chemistry from the Institute of Medicinal and Pharmaceutical Chemistry, Technical University of Braunschweig, Germany, under the supervision of Prof. Hermann's Wätzig and Dr. Sami Eldeeb.

Hassan obtained his Bachelor of Science in pharmacy from King Saud University (KSU), in Riyadh, Saudi Arabia (2005). He joined the Department of Pharmacy, Health Sciences College, in Jazan as a Teaching Assistant, in 2005. He completed his Master of Science in pharmaceutical chemistry at the College of Pharmacy (KSU), in 2011.

Upon his return to the College of Pharmacy at Jazan University he was appointed as the Head of Pharmacognosy Department, in 2016, where he established a research group on analytical chemistry. In 2017 he was appointed the Director of the Substance Abuse and Toxicology Research Centre at Jazan University. His research interests include pharmaceutical analytical chemistry, drug discovery, phytochemical analysis, analytical toxicology, biosensors and protein-ligand interactions.

Ibraheem Abdullah Mohammed Alhijry

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Ibraheem Alhijry graduated in physics at Sana'a University, Yemen, in 2004, and obtained a master's degree in theoretical laser physics from the same university, in 2010. He obtained his PhD in experimental laser physics from Mansoura University, in Mansoura, Egypt, in 2016.

During his PhD, he worked on the enhancement of solid-state dye laser characteristics using metallic nanoparticles at the National Institute for Laser Science, at Cairo University, in Giza, Egypt. Recently, his research has focused on laser-induced breakdown spectroscopy (LIBS), in the Laboratory of Lasers and New Materials, at Cairo University.

Ammar Mohammed Ahmed Ali

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Ammar Mohammed Ahmed Ali is an Assistant Professor at Hajjah University, in Hajjah, Yemen. He has received a joint post-doctoral fellowship from TWAS and the Islamic Development Bank to study the flora of Bani Qais, in the Hajja Governorate, Yemen and its phytogeographical affinity. In 2019 he earned a PhD in plant biotechnology (plant tissue culture) from the Faculty of Science and Technology of Al Neelain University, in Khartoum, Sudan. From 2015 to 2019 he worked as a researcher and lecturer at the same university. In 2020 he served as the manager of the Plant Tissue Culture Laboratory at the Ministry of Agriculture and Irrigation, in Yemen.

He authored and co-authored more than eight peer-reviewed scientific papers. His research interests include agricultural sciences, plant biotechnology (micro-propagation, callus induction, direct and indirect organogenesis, improvement production of plant secondary metabolites and plant transformation), phytochemistry and the use of wild plants as natural sources for people living in Yemen.

Hasan Aljabbouli

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Hasan Aljabbouli obtained his PhD in data mining and machine learning from Cardiff University, in Cardiff, United Kingdom, and his bachelor's degree in informatics engineering from Homs University, in Syria. He has over 15 years of academic and industrial experience across different universities and companies in different countries, including the United Kingdom, Syria, Turkey and the United States. In addition to his academic experience, he has many publications and two granted patents.

The experience he has gained gave him the opportunity to appreciate how education can improve the welfare of communities and the quality of life of people, and allowed him to comply with different educational initiatives with other academic colleagues from around the world.

Mohammed S.M. Alkhaldi

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Mohammed Alkhaldi trained in Public Health Policy. Over the last 13 years, he served the government as a Health Policy Researcher, engaged in teaching activities and research, and led NGO health projects and programmes. In 2018, he obtained his PhD from the Swiss Tropical and Public Health Institute (TPH), in Switzerland where he succeeded in pursuing a critical system analysis of the Palestinian national Health Research System. He worked with many international institutions, such as the World Health Organization, the Council on Health Research for Development, the Health Systems Global (HSG), McGill University, and Swiss TPH, as a health consultant and scientific collaborator.

His areas of interest are health systems, health policy and systems research, evidence-informed policymaking, knowledge transfer and translation, and health and development programs management. He participated in eminent congresses, authored various publications and acted as a reviewer to international peer-reviewed journals. Mohammed Alkhaldi served as a mentor with the Canadian Society for International Health (CSIH) and STEM Fellowship coaching undergraduate students in various topics of global public health.

Obaida Abdel Kareem Almasri

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Obaida Abdel Kareem Almasri holds a Bachelor of Science, a Master of Science and a PhD in agricultural engineering (2014) from Damascus University, Syria. He has published more than 32 scientific articles in peer-reviewed journals and participated in many international conferences.

Mohamad Shady Ahmad Alrahhal

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Mohamad Shady Ahmad Alrahhal is a specialist in cyber security and artificial intelligence. He developed a security system to protect the execution of tasks remotely against malicious destination machines. His work was published in the *IEEE Access* journal of the Institute of Electrical and Electronics Engineers. In addition, he supervised master's students in the deep learning research field, developing a breast cancer diagnosis and detection system using deep learning and artificial intelligence techniques.

Abdulkarim Dakah

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Abdulkarim Dakah obtained his PhD in Plant Biodiversity (specialist in biotechnology and molecular biology) from the University of Damascus, in Damascus, Syria, in 2016, and a master's degree in plant tissue culture from the same university, in 2012.

His research focuses on the production of natural products and on increasing the concentration of active substances in essential oils and extracts by using biotechnology techniques such as plant tissue culture. He is also researching the bioactive properties of these substances as anticancer, antioxidant, antibacterial agents. He published more than 11 articles, supervised several graduation students' projects, and participated in several conferences.

Hanae El Monfalouti

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Hanae El Monfalouti is currently an Assistant Professor at the Mohammed V University in Rabat, Morocco. In 2013 she obtained a PhD in Phytochemistry, Therapeutic Chemistry and Organic Chemistry, under a joint agreement between the University of Reims Champagne-Ardenne, in France, and the Mohammed V University in Rabat, Morocco.

Her main research interest covers phytochemistry and therapeutic chemistry. She participated in several research projects of enhancement of natural products and sustainable development of argan trees and endemic medicinal plants. She worked with multidisciplinary research teams from Morocco, France, Italy and Germany. She has published several articles in scientific journals and presented her work at conferences in international scientific congresses. She received the Young Researcher Award at the International Argan Congress in Agadir, Morocco (2013).

From 2013–2019, she worked with the Federation of Moroccan Chambers of Commerce, Industry and Services Rabat, where she also served as the Head of the Department of International Relationships (2017–2019). She is a founding member and Secretary-General of the Moroccan Association of Scientists and Young Researchers.

Asem S. Amar Elarabi

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Asem Elarabi obtained his PhD in microelectronics from the Department of Electronic Science and Engineering at the Graduate School of Engineering and Faculty of Engineering of Kyoto University, in Japan, in 2018. From 2007 to 2014 he worked in various engineering positions for several international technology companies, including Schlumberger Ltd., Baker Hughes, Huawei, and as a researcher in the Libyan Centre for Remote Sensing and Space Science, in Tripoli, Libya, where he contributed to the development of the first remote-sensing Libyan satellite project.

After receiving his PhD, he worked as a postdoctoral scholar at the Quantum Dynamics Unit at OIST, where he studied electrons on liquid helium (EoH) as a prospective platform for quantum computers. In 2020 he received a Kakenhi grant for early-career scientists from the Japan Society for the Promotion of Science (JSPS). He authored and co-authored more than 10 peer-reviewed scientific papers. His research interests include superconducting terahertz devices, EoH, and quantum electronics to resolve the challenges facing quantum computing. He is a member of JSPS and the Institute of Electrical and Electronics Engineers.

Mufeda Ahmed Hazea Gazaem

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Mufedah Ahmed Hazaea Gazem is a professor in the Department of Microbiology, Faculty of Science, Taiz University, Yemen since June 2014. She earned her PhD in microbiology (2014) from Goa University, India. Previously, she achieved a Bachelor of Science in biochemistry and microbiology (2000) and a Master of Science in science (2008), both from Taiz University.

Mufdah Gazem is skilled in the analysis of experimental measurements relevant to microbiology, and has good communication skills that she uses in presentations and in talking to the general public. She received a training in the identification of fungi by morphological characterizations, at Assiut University Mycological Centre (December 2012–May 2013), where she learned isolation, culturing, and maintenance of fungal culture and determination of some enzymes such as lipase, cellulase and asparaginase. She also trained in bioremediation of oil contamination by fungi and molecular characterizations, with the National Institute of Oceanography, Goa, India (October 2013–April 2014). There she learned how to isolate DNA samples from fungi using CTAB and other commercial kits, PCR techniques, Gel Electrophoresis (Agarose and PAGE), Lyophiliser, centrifuge.

Kifah Gharzeddin

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Kifah Gharzeddin obtained his PhD in plant breeding from Tishreen University, Lattakia, Syria, in 2017. His primary research interests include studying multiple breeding methodologies applied to Chickpea and Faba bean, molecular genetics, and Biometrics. He has been a faba bean breeder at the General Commission for Scientific Agricultural Research (GCSAR), Damascus, Syria from 2008 to 2017, where he contributed to releasing two varieties of faba bean in 2014. Those varieties are originated from ICARDA and grown widely at the farmers' fields in different provinces in Syria since 2016.

He holds a postdoctoral researcher appointment at the Department of Plant Science of McGill University, Montreal, Canada from 2019–2020. In July 2020, Kifah has granted a Visiting Professor appointment at the Department of Biology of Carleton University, Ontario, Canada, where he is developing his research project on Chickpea molecular breeding in collaboration with local and global organizations to integrate high throughput genotyping outputs to chickpea yield improvement programme, and to identify the chickpea resistance to *Ascochyta* blight disease in Ottawa region.

Bayan Mohamad Mahmoud Khalaf

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Bayan Khalaf earned a PhD degree in physical and analytical chemistry from An-Najah National University, in Nablus, Palestine. She works as an Assistant Professor in Chemistry at the Arab American University, in Jenin, Palestine, and as a coordinator in the External Opportunities Program at Tamkeen Foundation, in Madrid, Spain. She has good experience in voluntary work, such as organization of scientific conferences, free teaching to high school and university students, as well as volunteering in several organizations and initiatives that aim to make each community a better place.

Bayan Khalaf has co-authored several scientific papers and received international fellowships. Her research is mostly concentrated on adsorption related water purification, and her main goal in this life is to be always an effective person in the world, to be able to improve the Palestine situation both from a scientific and economic point of view. She has frequently participated and presented her work in many international scientific conferences in Turkey, Palestine, Jordan and Germany. She has also been invited to several meetings, workshops and scientific conferences.

Abdul Karim Lakmes

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Abdul Karim Lakmes obtained his PhD in field crop breeding from Al-Baath University, in Homs, Syria, in 2016. His research focuses on chickpea development by breeding and genetics. He participated in many types of research related to plant breeding and genetics and published several articles on this topic. In Turkey, he has been working on issues related to food security and higher education. Previously, he was a Lecturer at the Faculty of Agriculture of Al-Baath University, Syria, where he taught the basics of field crops and plant classification.

He holds professional skills in research, teaching, project management, and coaching of agricultural engineers and farmer groups. He has recently collaborated with international researchers from Durham University, Edinburgh University, Sussex University, and Sheffield University in the United Kingdom. He is interested in the concepts of governance, sustainable development and networking and he is currently involved in value chain projects towards long-term planning for food security in Syria.

Hasan Mohammed Hasan Maridi

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Hasan Mohammed Hasan Maridi is a theoretical nuclear physicist, focusing on deepening the understanding of nuclear reaction theories. He is interested in structure, scattering, Coulomb excitation, and the breakup of exotic nuclei, as well as in the energy and mass dependencies of

the microscopic optical and dynamical potentials. He obtained his PhD in theoretical nuclear physics from Cairo University, in Giza City, Egypt, in 2014.

He is an Assistant Professor of theoretical nuclear physics in the Physics Department at Taiz University, in Taiz, Yemen, and was an Assistant Professor in the Department of Alternative Energy Technology, of Philadelphia University, in Amman, Jordan, between 2018 and 2020.

Ashraf Ahmed Hasan Mashrai

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Ashraf Mashrai earned his Master of Science in organic chemistry (2010) and his PhD in synthetic chemistry (2014) from Aligarh Muslim University, Aligarh, India. His thesis dealt with “Synthesis, Characterization and Biological Evaluation of Modified Steroids”. His scientific interests cover medicinal chemistry, organic chemistry, and crystallography.

From 2017 to 2018 he was a Research Visitor in the Department of Cell Biology, Harvard Medical School, Harvard University, USA. Then he worked as a Research Visitor in the Genetics Department at Harvard (2018–2019). Currently, he is a Postdoctoral Associate in the Department of Chemistry and Chemical Biology, School of Arts and Sciences, Rutgers University. Mashrai was a member of the International Cooperation and Cultural Relations Department at Ibb University, Yemen. He served as a Chairperson of Pharmacy Department, at the National University Ibb, (2014–2015) and at the University of Science and Technology Ibb (2015–2017), both in Yemen. He was also a member of the Academic Affairs at the University of Science and Technology Ibb. He has authored/co-authored more than 25 scientific papers in peer-reviewed journals of international repute.

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Amamer M. O. Muftah earned a Master of Science (2009) and a PhD (2017) in Chemical Science and Food Technology, both from the University Kebangsaan Malaysia (UKM), in Bangi, Malaysia. Currently, he is an Assistant Professor at Bani Waleed University, in Bani Waleed, Libya, where he also serves as Dean of Faculty of Science. He has co-authored more than 30 publications in scientific journals and two book chapters.

His scientific interests cover the development of key preparation and characterization techniques of polymers. His background includes multiple chemical disciplines such as physical chemistry, industrial chemistry, biochemistry, and organic chemistry. He attended many conferences and workshops throughout his career gaining knowledge and a wider understanding of the professional context, and a richer professional network. His research

interests include synthesis of polyesters and polyamides from vegetable oils, especially palm kernel oil; preparation of rigid, semi-flexible, flexible foams, elastomeric materials, adhesive, coating, sealants polyurethanes. He is also interested in renewable resource-based materials, natural fibre composites, biodegradable and biobased polymer.

Ammar Saleh Abdullah Omar

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Ammar Saleh Abdullah Omar is an Assistant Professor at the Faculty of Medicine and Health Science, Thamar University, Dhamar City, Yemen. He earned an Master of Science (2008) and a PhD (2019) in molecular histopathology, both from the University of Al- Neelain, Sudan. Ammar S.A. Omar has considerable experience as a lecturer: from 2009–2012 he lectured at Arwa Queen University, in the Faculty of Medicine and Health Science, and at Al-Yemenia University, in the Faculty of Health Science. At the same time, and until 2014 he lectured—among others—at Al-Hekmai University, Al-Saeeda University and Thamar University. From 2011 until 2014 he was the head of the medical laboratory department, Al-Nasser University.

He has participated in several conferences and workshops in molecular biology, stem cells and regenerative medicine and breast cancer management. He co-authored several scientific papers, including one on the detection of 57 novel mutations in breast cancer-causing genes.

Central and South Asia

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Syed Sikander Azam

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Azam is an associate Professor at Quaid-i-Azam University in Islamabad, Pakistan. He has 11 years of teaching in postgraduate and undergraduate courses and research experience. He earned his PhD in computational chemistry from the University of Innsbruck, Austria (2009). He gained research experience at the Centre for Chemistry and Biomedicine Austria, in Innsbruck, and was a visiting Professor and a researcher at Chulalongkorn University, Bangkok, Thailand, and at the University of Maryland in Baltimore, US.

His research interests focus on the druggable genome, understanding protein dynamics and antimicrobial resistance. He established a computational biology lab, a high-performance graphics processing unit technology, and a wet lab validation and database development. He published 100 research articles in the abovementioned areas. Other fields of interest are the development of axial frequency distribution and the chemical energy-wise decomposition in collaboration with Bristol University, UK. He is a reviewer in the French National Research Agency, a member of the Pakistan Academy of Sciences and serves on the editorial board of the *Journal of Molecular Graphics and Modeling*.

Neena Gupta

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Neena Gupta is an Associate Professor in the Statistics and Mathematics Unit of the Indian Statistical Institute (ISI), in Kolkata. She obtained her PhD in mathematics from ISI under the supervision of Professor Amartya K. Dutta, and did her postdoctoral research at the Tata Institute of Fundamental Research, in Mumbai, India. She obtained a Bachelor of Science in mathematics from Bethune College, Kolkata and a master of Mathematics from ISI. She is a fellow of the Indian Academy of Sciences and a Shanti Swarup Bhatnagar Awardee.

She solved the long-standing 'Zariski Cancellation Problem' in positive characteristics, in all dimensions. She created a new theory on a certain family of affine threefolds which connects central problems and results on affine spaces and sheds new light on the Russell-Koras threefold and Asanuma threefold. With S.M. Bhatwadekar and S.A. Lokhande, she solved a conjecture of M. Miyanishi on the ring of invariants of G_a -actions on affine spaces and investigated K-theoretic properties of such rings. She also works on affine fibration problems, affine forms,

finite generation of algebras, G_a -actions and non-cancellative spaces and characterisation problems.

Taufiqul Islam

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Taufiqul Islam graduated in medicine from Mymensingh Medical College Hospital, University of Dhaka (2008). He earned a master in public health (2016) from the American International University-Bangladesh and a Diploma in vaccinology from the Institute Pasteur, Paris, France. In 2020, he entered a PhD program at Griffith University, South East Queensland, Australia.

His research interests include vaccine studies on Japan encephalitis, flu, and oral poliovirus vaccine. He was involved in Oral Cholera Vaccines (OCV) studies in urban settings.

Islam contributed to setting the Cholera Vaccine Investment Strategy to enhance the cholera control program in Bangladesh. He is actively involved in the safety evaluation of OCV in pregnant women. He has expanded his scientific interests, which include vaccine delivery and surveillance in the complex humanitarian crisis in Bangladesh. His work aims at controlling endemic cholera in Bangladesh, to help achieve the 'Ending Cholera: A Global Roadmap to 2030' target. His scientific interest also covers the evaluation of vaccine co-administration. Islam has contributed to 30 research articles, which have been published in peer-reviewed journals.

Fatemeh Mohammadipanah

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Mohammadipanah is an Associate Professor of microbiology at the University of Tehran in Tehran, Iran. She holds a Bachelor of Science, a Master of Science and a PhD in microbiology, which she completed in 2011 working on the discovery of bioactive molecules from Actinobacteria, under a sandwich PhD program between the University of Tehran and the University of Göttingen, Germany.

In 2012, she was a lecturer and researcher at the University of Tehran. She established the University of Tehran Microorganisms Collection and served as its curator until 2015. She was an advisor of the international affairs at the College of Science, University of Tehran, from 2015–2019.

Her research focuses on the isolation of less studied bacteria, the description of new species, and the investigation of their potential as producers of bioactive compounds. She is interested in the isolation of less characterized bacteria with a large genome (Myxobacteria, Actinobacteria, Cyanobacteria) from untapped ecosystems. Other research lines include

machine learning in microbiology, improvement of disinfectants and antiseptics, marine biotechnology and pharmaceutical applications of bacterial products.

Mohammad Reza Salimpour

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Mohammad Reza Salimpour graduated from the University of Tehran in the field of mechanical engineering (2007). Then, he joined the Department of Mechanical Engineering at Isfahan University of Technology, Iran, as an Assistant Professor. Due to his exceptional teaching and research activities, he was promoted to full professorship (2016). In 2017, he was selected as the Distinguished Young Engineering Scientist of Iran by the Iranian Academy of Sciences. In the same year, he joined the University of California, Riverside as a Visiting Scholar. In 2018, he was selected as a member of Global Young Academy.

He has published more than 100 papers in accredited international journals, receiving more than 2000 citations. He also served as the reviewer of several scientific journals. His research mainly focuses on the design, performance improvement and optimization of conventional and renewable energy systems, a field where he aims to improve their efficiency and reduce their cost and environmental side effects. The application scope of his research is renewable energies, desalination systems, power plants, thermal management of electronics, refrigeration, and air-conditioning systems.

Ram Devi Tachamo

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Ram Devi Tachamo Shah is a Lecturer and Program Coordinator in the Department of Life Sciences, School of Science, Kathmandu University, Nepal. At the same university, she teaches soil sciences and general biology. She holds a Bachelor of Science and a Master of Science degree in environmental science earned from Tribhuvan University, in Kathmandu, Nepal and UNESCO-International Institute for Hydraulics and Environmental Engineering, The Netherlands, respectively. She earned a PhD degree in natural science from Goethe University, in Frankfurt am Main, Germany.

Her research interests are biomonitoring, water resources assessment, environmental flows, and habitat distribution modelling. Her recent studies aimed at developing an innovative method for determining the environmental flows for safeguarding the riparian ecosystems and their ecological integrity. She has more than 15 years of research experience.

In recognition of her contributions to science and technology, Tachamo Shah received the Science and Technology Youth Award (2016) from the Government of Nepal. The same year, she was also honoured with the Nepal Vidhya Bhushan “Ka” award by the president of Nepal.

East and Southeast Asia and the Pacific

TWAS Regional Partner for East and Southeast Asia and the Pacific (TWAS-SAPREP) at the Chinese Academy of Sciences in Beijing, China

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Rinlee Butch Cervera is a Professor and Head of the Energy Storage and Conversion Materials Research Laboratory at the Department of Mining, Metallurgical and Materials Engineering, College of Engineering, University of the Philippines Diliman (UPD). He is the current Director of the Energy Engineering Graduate Program (UPD) and the current Editor-in-Chief of the *Philippine Engineering Journal*.

He received his Bachelor of Science, Master of Science and PhD all in materials engineering from UPD, Universiti Sains Malaysia, and the University of Tokyo, Japan, respectively.

His research interests are in energy-related materials and devices such as lithium-based batteries, fuel cells and electrolysis cells, waste-to-energy, and renewable energy applications.

In recognition of his achievements, he received several awards such as the 2018 Outstanding Young Scientist from the National Academy of Science and Technology, Philippines; University of the Philippines Scientist I for the period 2019–2021; and the 2021 Outstanding Engineering Professor from the College of Engineering, UPD.

Sasitorn Srisawadi

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Sasitorn Srisawadi is a senior researcher at the National Metal and Materials Technology Centre (MTEC), one of the research centres of the National Science and Technology Development Agency, Thailand. She earned a Bachelor of Science in industrial engineering from Chulalongkorn University, Thailand. She won a scholarship from the Thai Government to further her education and received her Master of Science and PhD from the North Carolina State University, US, working on additive manufacturing and rapid tooling.

In 2011, she joined MTEC where she works at additive manufacturing, or three-dimensional (3D) printing, production process optimization, and composite material fabrication. Her excellent track records include several high profile peer-reviewed publications and patent

applications in the areas of her expertise, which encompass the new process of 3D printing for natural rubber and metal matrix composites.

In recognition of her contribution in promoting the role of young scientists, she was appointed as a co-Chair of the Thai Young Scientists Academy (2019–2021) and was selected as a Young Leader Fellow at the Annual Meeting, Science and Technology in Society forum (2019).

Latin America and the Caribbean

TWAS Regional Partner for Latin America and the Caribbean (TWAS-LACREP) at the Brazilian Academy of Sciences in Rio de Janeiro, Brazil

Marlene Susana Arrechea Alvarado

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Susana Arrechea works at New Sun Road, a Californian start-up incubated at the University of California at Berkeley (UCB), where she develops solar electrification and connectivity projects for rural Guatemala. She is the Project Director of the Digital Community Centres Stellar Ixq-Saq'è, funded by the US Agency for International Development-Microsoft. She holds a Bachelor of Science in chemical engineering earned at the University of San Carlos of Guatemala (USAC).

She received a scholarship from Fundación Carolina, which allowed her to earn a Master of Science and a PhD degree in Nanoscience and Nanotechnology from the Universidad de Castilla-La Mancha, in Spain. She described more than 14 new organic molecules derived from porphyrins with applications in solar devices.

In 2015, she was a Visiting Researcher at UCB, under the Fulbright NEXUS Program aimed at generating renewable energy. From 2016–2020, she was a Research Professor at USAC. In 2017, she won the Galardón de Guatemaltecos Ilustres award and received the TWAS Fellowships for Research and Advanced Training. In 2020, she won the OWSD-Elsevier Foundation Awards for Early-Career Women Scientists in the Developing World.

Carolina Palma Naveira Cotta

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Carolina Palma Naveira Cotta has been an Associate Professor of mechanical engineering and head of the Laboratory of Nano and Microfluidics and Microsystems, at Poli & COPPE-Federal University of Rio de Janeiro (UFRJ), Brazil, since 2011. At UFRJ, she earned a Bachelor of Science (2004), Master of Science (2006) and DSc (2009) in mechanical engineering, and she currently teaches heat transfer, mathematical methods, and transport phenomena at the nano and micro-scales.

Her research interests also cover heat transfer enhancement, inverse problems, hybrid methods, water desalination, and sustainable energies. She has experience in research with the industrial sector, including sponsored projects with major companies such as Petrobras, General Electric, INB, and GALP.

In 2014, she became an Affiliated Member of the Brazilian Academy of Sciences, for the term 2015–2019. In 2016, she was elected member of the Scientific Council of the International

Centre for Heat and Mass Transfer. She received competitive research productivity grants from the Brazilian National Council for Scientific and Technological Development and the Research Support Foundation of the State of Rio de Janeiro.

Roberto Rodríguez-Labrada

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Roberto Rodriguez-Labrada is the Deputy Director of the Cuban Neurosciences Centre, in Havana, Cuba. He earned a PhD in health sciences (2013) from the University of Medical Sciences of Havana.

He was the Deputy Director of research at the Centre for the Research and Rehabilitation of the Hereditary Ataxias, in Holguín, Cuba (2006–2019) where he ran projects on the epidemiological, clinical and neurophysiological characterization of Spinocerebellar ataxia type 2, improving the disease staging, the description of biomarkers, therapeutic targets, and treatment strategies.

He won international awards from the International Parkinson and Movement Disorder Society (2017), the International Brain Research Organization (2007, 2011) and the International Federation of Clinical Neurophysiology (2008), as well as prizes from the Cuban Academy of Sciences (2014, 2019) and the Cuban Ministry of Public Health (2014–2019).

In 2019, he received the Carlos J. Finlay Order, the highest Cuban recognition awarded to researchers. In 2012, he became a Young Affiliate of the Cuban Academy of Sciences and, in 2019, a member of the Steering Committee of the Pan American Hereditary Ataxia Network.

Leslie Karina Tejada Perez

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Leslie Karina Tejada Perez earned her PhD in food engineering (2013) from the University of Lund, in Sweden. She also earned a degree in chemistry (2007) from the Universidad Mayor de San Andrés (UMSA), in La Paz, Bolivia.

During the doctoral studies, she investigated the chemical composition, the antioxidant activity of Andean grains (quinoa and cañihua) and the polyphenolic content in isolated items and processed food (lunches).

She is a member of the spin-off company Swebol Biotech, dedicated to formulating functional foods based on Bolivian crops. At UMSA she coordinates the Innovation Management project, aimed at building up innovative programme management to support science, technology, and innovation based on the quadruple helix model (university, government, industry, and society).

The project is receiving five-year support from the Swedish International Development Cooperation Agency.

With the Math-AmSud network, she also coordinated a project aimed to establish a collaborative network among Argentina, Bolivia, Brazil, Chile and France. The research topic of the proposal is Chemical Graph Theory, an important and modern area of discrete mathematics and chemical science.

Marvin Alejandro Torrez Gutierrez

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Marvin A. Tórrez is a Research Professor at the Central American University in Managua, Nicaragua. He holds a master in pedagogy applied to climate change, with postgraduate's studies in landscape ecology, statistical analysis and ecotourism.

His research addressed bird populations in fragmented landscapes, bioindicators of forest loss and degradation, agroforestry, endangered species and ecotourism in a wide range of ecosystems. In the last five years he has promoted citizen science, as a way to reach more people who are interested in biodiversity and environmental education. He has more than 30 publications in academic journals, magazines, book chapters, technical manuals, and periodical magazines or newspapers.

In addition, he volunteers with youth organizations to promote science among future generations. In the last 15 years he has received awards such as the Wings Across the Americas Conservation Awards (2010), and the Partners in Flight Leadership for the Western Hemisphere 2019 Award.

Sub-Saharan Africa

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Fekadu Gurmu Balcha

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Fekadu Gurmu Balcha is a Senior Researcher at the Ethiopian Agricultural Research Council Secretariat in Addis Ababa, Ethiopia. In 2016 he obtained his PhD in plant breeding from the University of KwaZulu-Natal, in Durban, South Africa. Through the first controlled crossing experiments in Ethiopia, he developed two vitamin A-rich orange-fleshed sweet potato (*Ipomoea batatas*) varieties exhibiting farmers' desired traits (high dry matter content and high yield). The varieties were released in November 2019 and received good acceptance by farmers, seed producers and consumers. They are currently grown by the majority of the sweet potato producing farmers.

In 2017, he received awards and letters of recognition from the Ethiopian former Prime Minister, His Excellency Mr. Hailemariam Desalegn, and from the former President of the South Regional State in Ethiopia, His Excellency Mr. Dessie Dalke, in recognition of his contribution to food and nutrition security through the development of bio-fortified sweet potato varieties, seed production and technology dissemination to end-users. In 2020, he was awarded as an outstanding researcher by the Southern Agricultural Research Institute.

Kangbéni Dimobe

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Dimobe is an Assistant Professor at the Institute of Environmental Science and Rural Development, University of Dédougou, in Dédougou, Burkina Faso. Since January 2019, he has been working as a Lecturer and Researcher at the University of Dédougou. In 2020, he received the African-German Network of Excellence in Science grant for junior researchers.

Dimobe earned a Master of Science in botany (2007), and in applied plant biology (2010), both from the University of Lomé, Togo, and a PhD in botany and plant ecology (2017) from the University Ouaga I Professor Joseph KI-ZERBO, in Burkina Faso, and Rostock, in Germany.

From 2017–2020 Dimobe worked with the West African Science Service Centre on Climate Change and Adapted Land Use as a Research Scientist and member of the Earth Observation Applications Unit. His research interests include climate change, natural resources management, biogeography, conservation, and biomass modelling.

He is involved in capacity building, especially in the use of open access earth observation data and software for addressing environmental change problems. In 2015, he spent six months at the University of Rostock, Germany, as a Visiting Scholar.

Priscilla Kolibea Mante

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Priscilla Kolibea Mante is a Senior Lecturer in the Department of Pharmacology at Kwame Nkrumah University of Science and Technology in Kumasi, Ghana. She obtained her PhD in pharmacology from the same university in 2013. She was a Visiting Scholar in the Department of Pharmacology, University of Michigan Medical School, US, under the University of Michigan African Presidential Scholars programme through which she underwent her postdoctoral training until 2018.

Her research focuses on the development of better therapeutic options for resistant epilepsy. She is currently working on developing a portable device that reduces the costs of diagnosing mental conditions while improving the therapy.

Mante received the International Rising Talents Award in 2019, in the frame of the L'Oréal Foundation-UNESCO programme. She is a beneficiary of the 2019 Organization for Women in Science for the Developing World Early Career Fellowship. She is also a Fellow of the Africa Science Leadership Programme and a Young Affiliate of the African Academy of Sciences.

Mante is also a registered pharmacist with a specialization in neuropharmacology.

Phyllis Wambui Muturi

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Phyllis W. Muturi is a Lecturer and Researcher at the University of Embu, in Embu, Kenya, where she teaches agricultural sciences. She earned her Bachelor of Science in agriculture and Master of Science in crop protection, both from the University of Nairobi, in Nairobi, Kenya, and her PhD in plant breeding and biotechnology from Makerere University, in Kampala, Uganda. Her interests include crop protection and improvement.

She has more than six years of teaching and research experience. She is the Students' Academic Advisor for plant breeding, biotechnology and crop protection programmes. She is a member of the Biotechnology Technical Committee (2020–2022), a member of the Kenya Bureau of Standards (2019–2021), and the Kenya National Qualifications Authority (2019–2021). In 2021, she was awarded the Organization for Women in Science for the Developing World Early

Career Fellowship. In 2019, she received a visiting scholarship from the Swedish University of Agricultural Sciences (Uppsala) and in 2018 she was awarded the Africa Biosciences Challenge Fund Research Fellowships at Biosciences eastern and central Africa-International Livestock Research Institute, in Nairobi, Kenya.

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Tonjock Rosemary Kinge is an Associate Professor at the Department of Biological Sciences, Faculty of Science, University of Bamenda, in Bamenda, Cameroon, where she teaches mycology, plant pathology and botany. She earned an Master of Science in botany and a PhD in botany (mycology) from the University of Buea, in Buea, Cameroon. Her scientific interests include: microbiome analysis, fungi diversity, mushroom domestication and conservation, plant pathogenic fungi assessment and control, ethnomycological studies and multidisciplinary research.

Tonjock is a member of the Cameroon Academy of Young Scientists. In 2019, she was named Fellow of the Africa Science Leadership Programme at the University of Pretoria, South Africa. In 2020, she became an affiliate of the African Academy of Sciences, headquartered in Nairobi, Kenya. She won a TWAS-Chinese Academy of Sciences postgraduate fellowship (2008–2009), China; a postdoctoral fellowship at the University of Free State, South Africa (2016–2017); and a Fulbright scholarship at the University of Florida (2017–2018), in Gainesville, Florida. Currently, she is an Alexander von Humboldt Fellow at the University of Bayreuth, Germany.