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CENTER FOR ADVANCED MATERIALS

Photo: Membrane 3D-printing

Center for Advanced Materials

NEWSLETTER

January 2026
Issue | 9

Inside this issue:

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Center Activities

EVENTS

The International Conference on Advanced and Sustainable Materials (ICASM2025)

Sponsors

QNB SAMSUNG SAMSUNG C&T مجلس قطر للبحوث والتطوير والابتكار QRDI COUNCIL

The International Conference on Advanced and Sustainable Materials (ICASM 2025) marked an important milestone as it was held for the first time from 16 - 18 November 2025, at Qatar University. Over three days, the conference brought together specialists, industry leaders, academics, and stakeholders from around the world, creating a vibrant space for dialogue on sustainability in materials, science, and engineering..

Throughout the event, participants engaged in discussions that went beyond technical advances, focusing on how sustainability can be meaningfully embedded into institutional and industrial practices. Local and international experts in engineering, advanced materials, and sustainability exchanged perspectives on aligning economic, social, and environmental goals, while openly addressing key challenges facing the sector and considering practical and innovative solutions.

The conference also highlighted emerging approaches relevant to the energy, technology, and manufacturing industries, reinforcing the role of advanced and sustainable materials in shaping a more resilient future. These conversations played an important role in strengthening connections between the public and private sectors, and in encouraging collaboration that bridges research and real-world application.

By fostering knowledge exchange and collaboration between academia and industry, ICASM 2025 showcased both recent research developments and practical applications influencing sustainable industries today. Topics discussed during the conference included, but were not limited to, sustainable materials for energy and environmental applications, biomedical materials, and advanced engineering materials, reflecting the broad scope and interdisciplinary nature of this inaugural event.

The event was officially inaugurated by Qatar University Vice President for Research and Graduate Studies, Prof. Aiman Erbad, who highlighted the central role of research in addressing global challenges. He emphasized how partnerships and innovation at Qatar University are translating scientific knowledge into practical solutions related to climate change, renewable energy, and resource sustainability. During his remarks, Prof. Erbad also announced the launch of Qatar University's Research Priorities 2025–2030, structured around five key pillars: Health, Energy, Digital Technology, Resource Sustainability, and Society, and aligned with the Qatar National Vision 2030.

In his welcoming address, the Director of CAM and Conference Chair, Prof. Mohammad R. Irshidat, greeted participants from more than 40 countries and highlighted CAM's pivotal role in advancing research across energy materials, nanotechnology, polymers, corrosion science, and environmental sustainability. He noted the strong engagement from the global materials community, with 691 registrations and 346 submitted abstracts, and a rich technical program featuring 292 poster presentations, 197 student oral presentations, and 197 oral presentation sessions.

ICASM 2025 continued over its duration with keynote lectures, technical sessions, poster presentations, and networking opportunities, fostering innovation and strengthening global partnerships in the field of advanced and sustainable materials.

Keynote Speakers

Prof. Eyad Ahmad Masad

Vice President, Hamad Bin Khalifa University (HBKU), Doha, Qatar

Title: Design of Sustainable Construction Materials Empowered by AI.

Prof. Hyunwoong Park

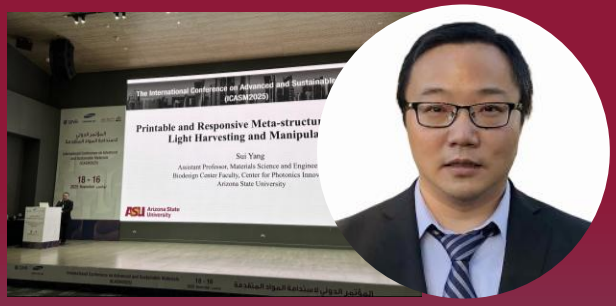
Kyungpook National University (KNU), Korea

Title: Saline Water Electrolysis and Desalination for Production of Green X

Prof. Mahendra K Sunkara

Director, Center for Renewable Energy Research; Professor of Chemical Eng., University of Louisville. USA

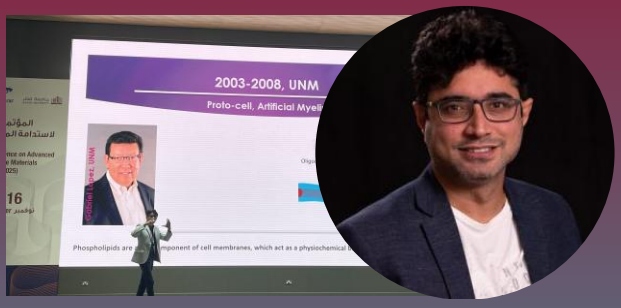
Title: Modular Production of Hydrogen, Green Methanol and Ammonia.



Prof. Sui Yang

Materials Science and Engineering School for Engineering of Matter, Arizona State University. USA

Title: Printable and Responsive Meta-structured Films for Light Harvesting and Manipulation



Prof. Gautam Gupta

Professor of Chemical Engineering, University of Louisville. USA

Title: Engineering with Purpose: Bridging Human Health and Environmental Stability

Prof. Rezan Demir

Professor of Chemical Engineering, Gebze Technical University (GTU). Turkey

Title: Linking Sulfur and Selenium Chemistries in Advanced Lithium Battery Systems

Water Sustainability in Focus: UNESCO Chair Panel on Desalination in the GCC

A major highlight of Day one was the UNESCO Chair Panel on “Desalination in the GCC: Challenges and Opportunities”, moderated by Prof. Syed Javaid Zaidi (UNESCO Chair in Water Technology, Qatar University).

Esteemed panelists including Eng. Abdulrahman Al-Emadi (Qatar Electricity and Water Company (NEBRAS ENERGY), Qatar), Prof. Waleed K. Zubari (Arabian Gulf University, Bahrain), Prof. Abdul Wahab bin Mohammed (University of Sharjah, UAE), and Prof. Ibrahim S. Al-Mutaz (King Saud University, KSA), offered insightful perspectives on regional water security, energy-efficient desalination, and technology transfer strategies across the GCC.

Parallel Sessions Spotlight Interdisciplinary Innovation at ICASM 2025

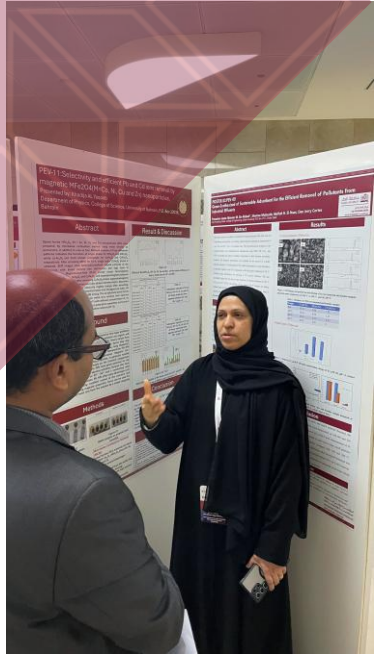
During ICASM 2025, a series of vibrant parallel sessions unfolded across four thematic tracks—Energy, Environment, Biomedical Applications, and Engineering—capturing the truly interdisciplinary spirit of the conference. These sessions brought together more than 40 speakers from over 25 institutions worldwide, showcasing cutting-edge research that spanned from AI-assisted CO_2 reduction, solar-driven thermoelectrics, and high-efficiency fuel cells, to nanobubble-based water treatment, e-waste valorization, and hydrogen propulsion systems, highlighting sustainability across the energy–water nexus.

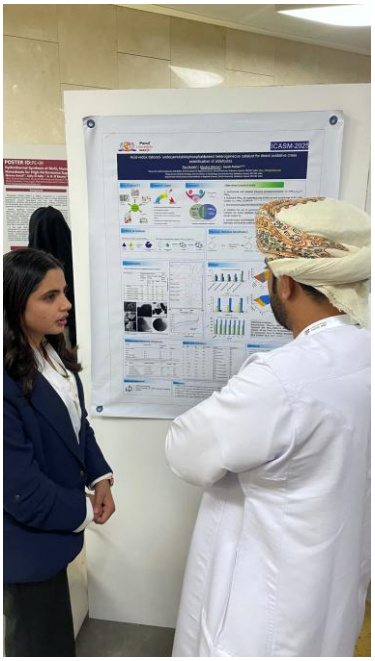
In the biomedicine and healthtech track, presentations explored protein–nanoparticle interactions, biopolymer-based wearables, and PEG-related vaccine safety, underscoring the critical role of materials science in advancing global health.

The engineering and sustainable infrastructure sessions focused on AI-optimized concrete, PLA lattice structures, and 3D-printed functional composites, emphasizing data-driven design for resilient and eco-friendly construction.

Complementing these sessions, Student Oral Competitions provided an engaging platform for outstanding student researchers to present their work before international faculty and evaluators.

Collectively, these parallel sessions embodied the essence of ICASM 2025—bringing innovation, global dialogue, and actionable solutions together under one scientific forum.





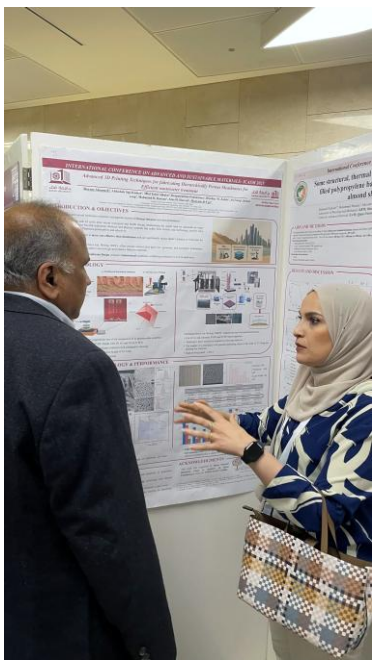
Poster Session: Showcasing Emerging Research and Innovation at ICASM 2025

The afternoon Poster and Logo Competition provided a vibrant platform for students and early-career researchers to present their latest work across the energy, environment, biomedical, and engineering domains.

The evaluation panel brought together distinguished experts:

- Dr. Ayman Bassil (Qatar Research Development and Innovation Council (QRDI), Qatar)
- Dr. Abdulkarem Amhamed (Qatar Environment and Energy Research Institute (QEERI), Qatar)
- Dr. Yongsoo Park (HBKU, Qatar)
- Dr. Ali Alaboudy (QRDI, Qatar)
- Prof. Gautam Gupta and Prof. Mahendra K. Sunkara (University of Louisville, USA)
- Prof. Shahab Khan (Hamad Medical Corporation (HMC), Qatar)
- Prof. Sui Yang (Arizona State University (ASU), USA)
- Prof. Rezan Demir (GTU, Türkiye)
- Prof. Hyunwoong Park (KNU, Republic of Korea)
- Prof. Mohamed Izham (Qatar University)
- Dr. Mohamed Chaari (Ministry of Defense, Qatar)

Their diverse expertise ensured a comprehensive evaluation of innovation, sustainability impact, and scientific excellence.



Celebrating Excellence: ICASM 2025 Awards and Closing Ceremony

The International Conference on Advanced Sustainable Materials (ICASM 2025) concluded with a heartfelt closing ceremony and prize distribution, recognizing the remarkable contributions of presenters, students, and collaborators. Awards were presented across:

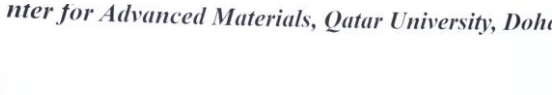
- Best Oral Presentation (Faculty and Students)
- Best Poster Presentation
- Logo Design Competition Winners

Judges commended the scientific depth, interdisciplinary relevance, and presentation quality of the selected awardees. Special thanks were extended to keynote speakers, session chairs, the organizing committee, and sponsors — Qatar National Bank, Samsung C&T, and Qatar Research, Development, and Innovation (QRDI) — as well as all contributors to the resounding success of the conference.

Closing remarks were delivered by:

- Prof. Mohammad Irshidat, Conference Chair and Director, Center for Advanced Materials (CAM)
- Representatives from Samsung C&T and QRDI
- Dr. Kishor Kumar Sadasivuni, CAM, who offered the Vote of Thanks

ICASM 2025 not only celebrated innovation in materials science, but also fostered lasting global partnerships in support of a sustainable future.



Qatari-Korean Technology Dialogue for sustainable energy and water solutions

The “Sustainable Solutions for Energy and Water” workshop brought together academia, industry, and government stakeholders to discuss digital desalination, brine resource recovery, and renewable energy strategies. Participants included representatives from Qatar General Electricity and Water Corporation (KAHRAMAA), Qatar Electricity and Water Company (NEBRAS ENERGY), Qatar Shell Research and Technology Centre (QSRTC), ConocoPhillips GWSC, POSCO E&C, SK Ecoplant, Acciona Agua, ABSFIL, and CJK, alongside faculty members from Qatar University (QU) and Kookmin University.

The workshop opened with remarks by H.E. Hyunsoo Yun, Ambassador of the Republic of Korea to Qatar, who highlighted the growing Qatar–Korea partnership and the importance of innovation in addressing climate change and resource scarcity. Dr. Mohammed Al-Safran, Associate Vice President for Research and Graduate Studies at QU, emphasized the role of collaborative research in advancing Qatar National Vision 2030, particularly in water and energy security.

Prof. Dong Suk Han (QU) presented WaTER as an integrated approach to desalination, energy efficiency, and resource recovery, while Prof. Sangho Lee (Kookmin University) introduced the KEITI-funded PROMISE Project, aimed at ultra-low-energy desalination and brine valorization through collaboration with QU’s Center for Advanced Materials (CAM). Technical sessions focused on Water–Energy–Recovery (WaTER) technologies and the PROMISE Project.

Industry perspectives from regional and international partners addressed renewable energy integration and sustainable industrial applications. Mr. Hyuna Kim, Director General of KOTRA–Doha, reaffirmed support for green partnerships between Qatar and Korea.In closing, Prof. Mohammad R. Irshidat, Director of CAM, underscored the role of advanced materials and digital engineering in decarbonization. The workshop concluded with networking activities, reinforcing shared commitments to sustainability and the UN Sustainable Development Goals.

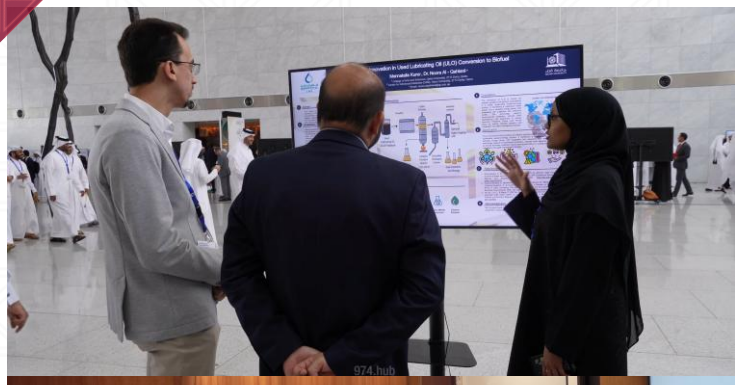
Annual Aluminium Symposium 2025 Innovation for a Sustainable Aluminium Future

The Annual Aluminium Symposium 2025, themed "Innovation for a Sustainable Aluminium Future," was held on 22 October 2025 at Qatar University (QU), jointly organized by the Center for Advanced Materials (CAM), the College of Engineering, Qatalum, and Hydro. The one-day symposium provided a focused platform for dialogue and knowledge exchange on sustainability, innovation, and collaboration within the aluminium industry.

The event featured expert presentations and interactive discussions centered on the role of aluminium in building a more sustainable future, highlighting industry–academia collaboration and emerging innovations. The symposium also included the announcement of Student Competition winners, reinforcing its commitment to engaging and empowering the next generation of engineers and researchers.

EVENTS

19th Qatar Energy LNG Engineering Conference



Qatar University (QU) made a strong contribution to the 19th QatarEnergy LNG Engineering Conference 2025, reflecting its commitment to research, innovation, and sustainability in line with Qatar National Vision 2030.The QU pavilion, led by Dr. Noora Al-Qahtani, attracted significant interest from visitors and industry leaders. It showcased faculty- and student-led projects highlighting advances in sustainable energy solutions, digital transformation, and infrastructure monitoring, including innovations in energy harvesting, materials testing, and digital sensing.

The exhibits also addressed industrial sustainability and safety, featuring developments in emission reduction, vibration control, heat-stress monitoring, and thermal management.

Projects focusing on smart robotic technologies demonstrated how automation, artificial intelligence, and robotics can enhance inspection processes, maintenance efficiency, and energy performance, reflecting strong collaboration between faculty members and students.

In addition, QU students contributed to the conference's technical program through two oral presentations and three poster presentations covering innovation, sustainability, digitalization, and operational excellence.

Through its active participation, QU reaffirmed its leadership in research and innovation, highlighting its role in advancing sustainable solutions and preparing future engineers and researchers to support Qatar's energy sector.

CAM's NDT Unit Highlights Ultrasonic Testing Innovations for Sustainable Construction at QatarEnergy LNG Engineering Conference 2025

The NDT Unit at CAM presented its latest prototype at Qatar University's booth at the Energy LNG Engineering Conference. Titled "Ultrasonic Nondestructive Testing for Sustainable Construction Materials: From Recycled Fiber-Reinforced and 3D-Printed Mortars to Steel Plates and Pipes."

The Qatar University booth drew substantial interest from conference attendees. The NDT team demonstrated the working principles of the project and explained how it uses advanced ultrasonic techniques to enhance and monitor sustainable construction materials. The research explores three main areas. The first focuses on recycled steel fiber-reinforced mortar. The second develops a sustainable 3D-printable mortar made with fly ash, silica fume, and polypropylene fibers. The third investigates conventional steel structural elements.

The project combines these materials with cutting-edge ultrasonic methods. The team applies linear ultrasonic pulse velocity measurements, nonlinear ultrasonic analysis using higher harmonic measurements, and hybrid ultrasonic metrics. This multi-parameter approach allows the team to monitor each material's internal condition with precision. It captures strength development and microcrack formation in the concrete mixes. It also detects emerging flaws or degradation in steel components.

High-profile dignitaries visited the Qatar University booth and engaged with the research team throughout the conference.

PARTICIPATIONS

Conferences, Workshops, and Forums

Dr. Mohamed Hassan Highlights CAM Research at MECC's Chemical Safety Symposium

Dr. Mohamed Hassan, Research Associate Professor at CAM, was honored to be invited to speak at the Chemical Safety Symposium organized by the Ministry of Environment and Climate Change (MECC), Qatar, under the theme "Green Chemistry and Environmental Sustainability."

His speech focused on CAM's latest research titled "Biodegradable Polymers and Advanced Nano-structured Membranes for Sustainable Environments." Dr. Hassan also participated in a panel discussion on "Environmental Sustainability and Innovation" alongside leading experts, including Dr. Mohammad Saif Al-Kuwari, a pioneer in environmental sustainability in Qatar, Dr. Khalid Saoud from Virginia Commonwealth University at Qatar, and Dr. Nada Al-Olaqi from QRDI.

CAM Participates in MWC Doha 2025

The Center for Advanced Materials (CAM) at Qatar University participated in MWC Doha 2025 with a dedicated booth, showcasing its latest research and innovation activities. The event provided a valuable platform for CAM researchers to engage with industry leaders, innovators, and policymakers, highlighting the role of advanced materials in supporting digital transformation and emerging technologies. CAM's participation underscored Qatar University's commitment to research excellence, innovation, and collaboration at a global technology forum.

Prof. Han attended 2025 Global Prize for Water Innovation (GPIW) event as a Judge Committee member

Prof. Dong Suk Han, Research Professor at CAM, participated as a jury member in the Global Prize for Innovation in Water (GPIW) 2025, contributing to the evaluation process of 777 international applications.

Following an initial screening conducted by the Saudi Water Authority, the jury committees—including Prof. Han—carried out an in-depth technical and impact-based assessment to identify a shortlist of outstanding innovations. The final award winners were announced during the Innovation Driven Water Sustainability (IDWS) Event, held on 8 - 10 December 2025, in Jeddah, Kingdom of Saudi Arabia.

Dr. Mohammed K. Hassan Leads Sessions at AIChE 2025 Annual Meeting in Boston

Dr. Mohamed Hassan, Research Associate Professor at CAM, participated in the Annual Meeting of the American Institute of Chemical Engineers (AIChE) 2025, held in Boston, USA. During the conference, he delivered an invited talk and contributed to chairing and co-chairing several technical sessions under the Materials Engineering and Science and Separation Divisions. These sessions included Multi-Functional Composites, Desalination and Ion Transport in Membranes, and the Poster Session.

Dr. Hassan highlighted the strong and growing participation from Qatar University and the region at the AIChE Annual Meeting, particularly the active engagement of students, reflecting the region's expanding presence in the global chemical engineering community.

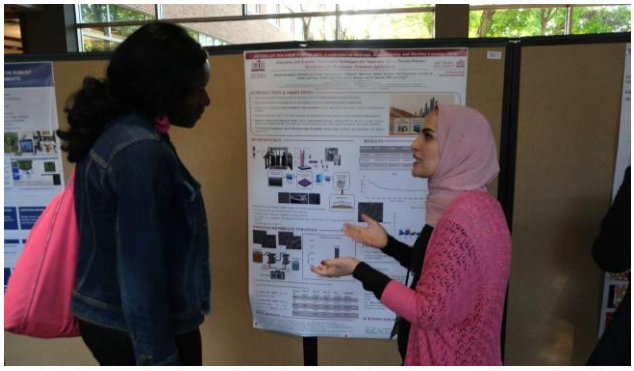
On the sidelines of the conference, Dr. Hassan also initiated a new research collaboration with Prof. Ju Li and Dr. Ali Abdelhafiz at the Massachusetts Institute of Technology (MIT). The collaboration focuses on AI-guided design and scale-up fabrication of polymeric materials for produced water treatment and valorization, aiming to advance innovative and sustainable separation technologies.

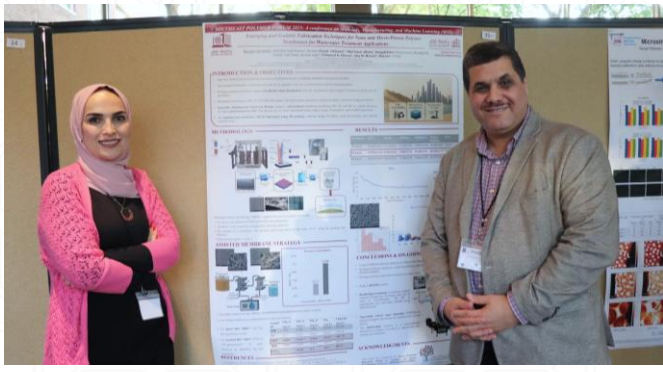
Dr. Noora Al-Qahtani participates in the International Society of Biomechanics in Sports (ISBS) Conference 2025

Dr. Noora Al-Qahtani's research team participated in an international conference, showcasing their work on advancing biomechanics in sports. The conference theme, "Innovation, Technology and Tradition," closely aligned with the team's vision of integrating scientific advancement, technological innovation, and cultural heritage to shape the future of sports science.

CAM Researcher Participates in Southeast Polymer Forum 2025

Dr.Rayane Akoumeh, Senior Research Assistant at CAM, participated in the Southeast Polymer Forum 2025, held from 18 - 20 May 2025, at Georgia University, USA. The conference, titled "Materials, Manufacturing and Machine Learning (M3X)," brought together leading researchers, industry experts, and academics to explore emerging advances at the intersection of polymer science, advanced manufacturing, and data-driven technologies.



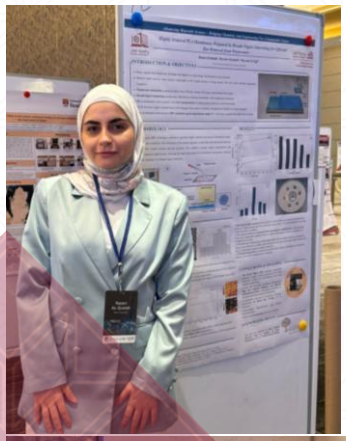


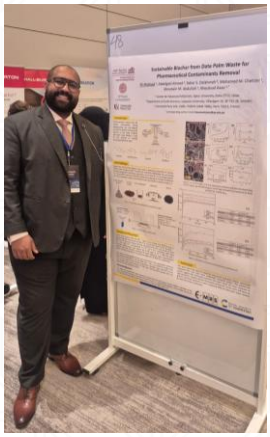
Dr. Khalid Bani Melhem Presents Water Sustainability Research Internationally

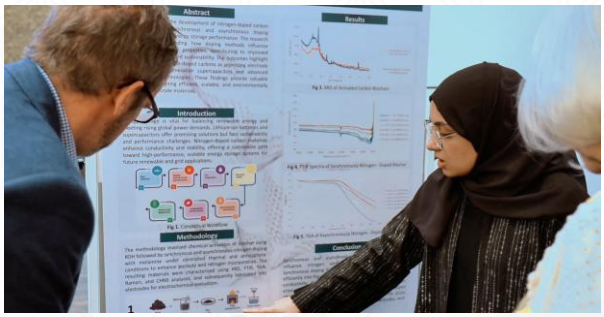
Dr. Khalid Bani Melhem, Research Associate Professor at CAM, participated in two international forums addressing water sustainability. He presented "Electrocoagulation for Hydroponic Wastewater Treatment: Performance Assessment and Nutrient Recovery Potential" at the Second European Congress on Recycling and Waste Management in Vienna, Austria (6 - 7 November). Later, he presented "The Qatari Experience in Water Resources Management" at the Arab Forum on Water and Agriculture in Amman, Jordan (24 - 25 November), highlighting Qatar's approaches to sustainable water management.

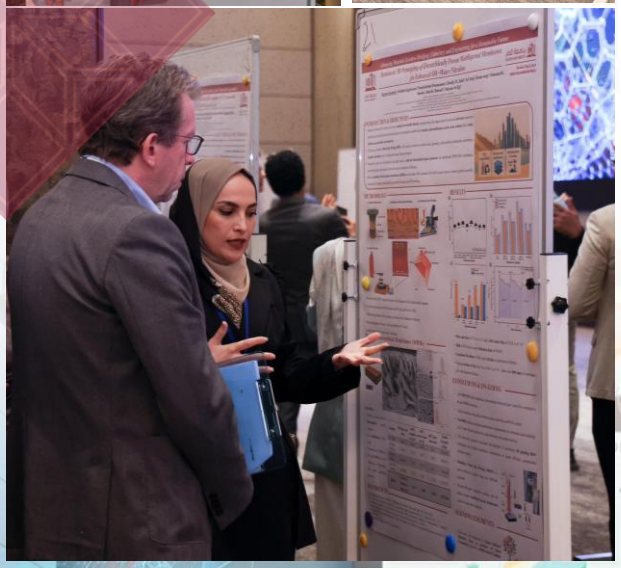
CAM PARTICIPATION in the American Chemical Society (ACS) Qatar Chapter and the Royal Society of Chemistry (RSC) Regional MEA Conference

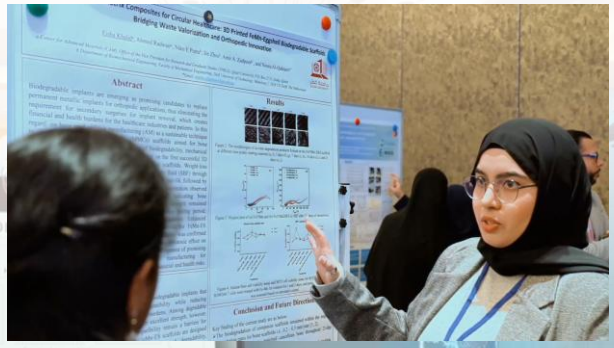
Multiple research teams from CAM participated in the international three-day conference *Advancing Materials Science: Bridging Chemistry and Engineering for a Sustainable Future*. This pioneering event was jointly hosted by the Royal Society of Chemistry (RSC) and the European Materials Research Society (E-MRS), in collaboration with Texas A&M University at Qatar (TAMUQ) and Hamad Bin Khalifa University (HBKU). The conference brought together global experts and emerging researchers to catalyze scientific discoveries, foster industry collaborations, and advance sustainability-driven materials research.

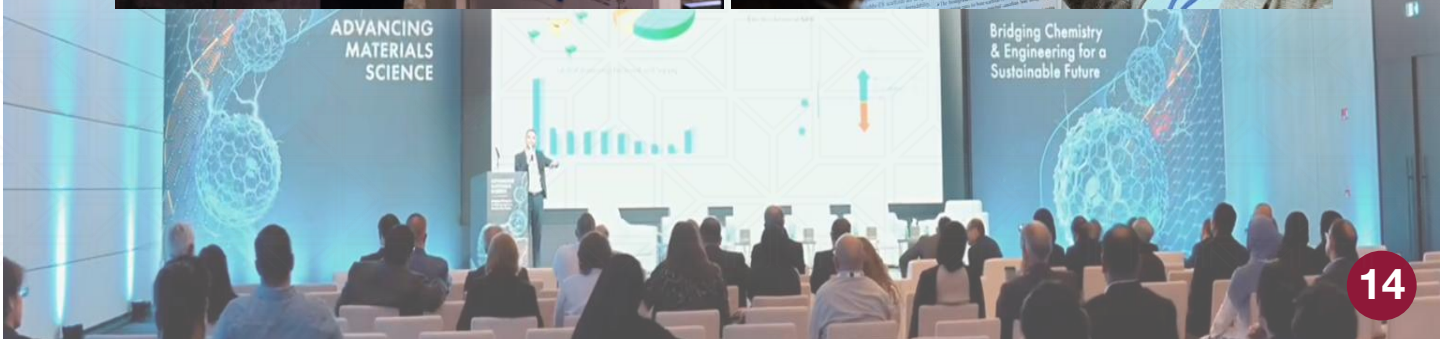












Prof. Dong Suk Han Moderates Panel on Advanced Technologies and Climate Action at QNDCC

The Center for Advanced Materials (CAM) at Qatar University proudly participated in the panel "Applying Advanced Technologies to Climate Change – The Road to QNDCC 2026", held on 8 October 2025 at QNCC. Prof. Dong Suk Han, Research Professor at CAM, expertly moderated Day 2 – Panel 4, guiding discussions that brought together leaders from the Global Carbon Council (GCC) and Republic of Korea to strengthen diplomatic ties and foster collaborative technology partnerships for climate action.

The session highlighted sustainable collaborations between the Gulf region and Korea, exploring innovative solutions in advanced materials and their pivotal role in climate resilience. Distinguished speakers included H.E. Hyunsoo Yun, Ambassador of the Republic of Korea; Dr. Sue Kyoung (Jessie) Lee, Associate Director for Nature-based Solutions Global Carbon Council (GCC); Mr. Chris Choi, Vice President and Country Manager of Samsung C&T Corporation; and Mr. Ryan Paik, CEO of HaejooX.

The event was hosted by the Earthna Center for a Sustainable Future and the Abdullah Bin Hamad Al-Attiyah International Foundation, with support from the GCC, reflecting a shared commitment to advancing climate action through science, diplomacy, and technology.

مؤسسة قطر
Qatar Foundation

نجوم العلوم

Prof. Peter Kasak

MATERIAL CHEMISTRY

We are proud to highlight the participation of Prof. Peter Kasak from the Center for Advanced Materials at Qatar University as a mentor on the Stars of Science TV show. Stars of Science is Qatar Foundation's flagship edutainment program that empowers Arab innovators to transform groundbreaking ideas into real-world solutions through expert guidance and hands-on support. As part of the show's distinguished support team of specialists, Prof. Kasak lent his expertise in civil engineering and advanced materials to guide and inspire emerging innovators throughout their journey in the program. His mentorship contributed to nurturing the next generation of problem-solvers and advancing the region's culture of innovation.

Prof. Han participates as an Invited Speaker at the UAE-Korea Science and Engineering Forum 2025

Prof. Dong Suk Han, Research Professor at CAM, participated as an invited speaker at the UAE–Korea Science and Engineering Forum 2025, organized by the Korean Scientists and Engineers Association in the UAE (KSEAU) in Abu Dhabi. He contributed to the Environment, Water, and Energy session, sharing perspectives on Sustainable Water Management and clean energy, and engaging in discussions to strengthen Korea–UAE research collaboration.

TASHKILAT Fashion Show

Dr. Noora Al-Qahtani, Research Assistant Professor at CAM, participated in the TASHKILAT Fashion Show at the Museum of Islamic Art, Doha, presenting five advanced student-developed prototypes that fuse technology and design.

The exhibition introduced interactive systems capable of identifying fabric types through robotic sensing, precision-engineered tools for automated stamping and artistic pattern creation, laser-guided motif printing, and conceptual robotic companions designed to move alongside models on the runway, adding dynamic, performance-based elements to fashion presentations. Together, these prototypes illustrate how engineering, creativity, and aesthetics can merge into next-generation fashion experiences.

The showcase formed part of the 10th Qatar-UK Festival 2025 (2–12 December), organised by the British Council in partnership with the British Embassy and Qatar Museums, highlighting fashion, design, innovation, sustainability, and entrepreneurship while fostering cultural exchange between Qatar and the United Kingdom.

SEMINARS

Dr. Dinesh Shetty

Department of Chemistry
Khalifa University, UAE

Title:

Tunable Frameworks: Fit-to-purpose Materials For Energy, Sustainability, and Healthcare.

Prof. Mohamed Gamal El-Din

Director of Water Research Centre
University of Alberta, Canada

Title:

Wastewater Treatment Practices and Future Implications for Microplastics and Micropollutants.

Prof. Peng Wang

Chair Professor and Founding Director of the Institute of Carbon Neutrality and Green Development, Sun Yat-sen University (SYSU), China.

Title:

Renewable Energy Driven Decentralized Water-Energy-Food Production in Arid Regions.

Achievements

Awards & Certificates

Awarded Grants

Qatar University Internal Grants

Grant type	LPI	Title
Collaborative Grant (CG)	Prof. Mariam Al-Maadeed	Advanced Membranes for Enhanced Photothermal Solar Evaporation Applications towards Water Production and High Purity Mineral Recovery.
Collaborative Grant (CG)	Prof. Mohammad Irshidat	Smart Energy Storage: Waste-Derived Structural Supercapacitors for Sustainable Infrastructure in Qatar.
Governmental and Industrial Collaboration (GIC)	Dr. Noora Al-Qahtani	Investigating, Remediating, and Monitoring PFAS in Qatar's Water and Food Systems

External Grants

Grant type	LPI	Title
Qatar Shell Professorship	Prof. Dong Suk Han	Technology Evaluation of Ceramic Ultrafiltration (cUF) Membranes and Their Applicability of Replacing / Retrofitting (for existing brownfield applications) Conventional Polymeric Ultrafiltration (pUF) Systems
Korea Environment Industry and Technology Institute (KEITI) under Ministry of Climate, Energy and Environment	Prof. Dong Suk Han	Development of Digital-Based Low-Energy Design and Operation Technology for Desalination Plants.

Qatar Research Development and Innovation Council (QRDI) Grants

Grant type	LPI	Title
Climate change Grant	Prof. Mohammad Irshidat	Toward Climate Change-Resilient Buildings in Qatar: Evaluating the Structural Integrity and Durability of 3D-printed Housing in Harsh Environments.
Climate change Grant	Dr. Ahmed Bahgat Radwan	Optimizing Green Nanomaterials Chemical Chemical-enhanced Carbon Storage in Geological Reservoirs
QRDI Fellowship for Displaced Arab Researchers (DAR)	Dr. Noora Al-Qahtani	Viscosity Reduction Of Heavy Crude Oil By Biofuels Using Jatropha Oil And Food Waste To Improve Flow Assurance Characteristics

Awards and Certificates

Awards

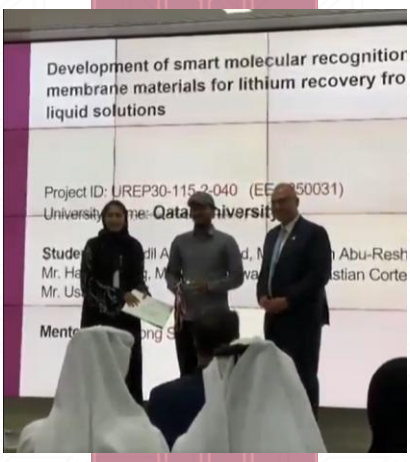
Dr. Rayane Akoumeh from Dr. Maryam Al-Ejji's team participated in the Advancing Materials Science Conference: Bridging Chemistry and Engineering for a Sustainable Future, where she received the first-place poster award from the Journal of Materials Chemistry A and Journal of Materials Chemistry C.

Ph.D. candidate **Muhammad Shaheryar Khan**, supervised by Dr. Abdul Shakoor, participated in the QU Creativity and Innovation Competition held on 6 May 2025, where he won first place.
Title: *"Experimental Realization of Directional Optical Cloaking with Flexible Meta-surface."*

Nithusha Kallingal, supervised by Dr. Anton Popelka, participated in the International Conference on Advanced and Sustainable Materials (ICASM 2025), where she won second prize in the poster competition under the Environment theme.
Title: "Plasma-Patterned Polymeric Surfaces for Efficient Water Vapor Harvesting Inspired by the Namib Desert Beetle."

Ph.D. candidate **Marwa Saadeh** supervised by Prof. Mohammad Irshidat, participated in the International Conference on Advanced and Sustainable Materials (ICASM 2025) where she won third prize in the PhD student oral presentation competition under the Engineering theme.
Title: "Mechanical Performance Investigation of Concrete-Filled Recycled Polyethylene Tubes in Marine Environment."

Prof. Dong Suk Han received **2025 *Desalination* Top Reviewer Award,** recognizing his outstanding contribution to peer review. *Desalination* is a leading, top-tier journal in water treatment and Desalination research (impact factor: 9.8). Prof. Han also serves as an Editorial Board Member of the journal.



The CAM team, mentored by Prof. Dong Suk Han (primary mentor) with support from Dr. Sifani Zavahir, participated in UREP 2025, where the team won second place for their project titled "Lithium Recovery Using a Smart Membrane." The award recognized the outstanding contributions of student researchers Adil Abdulhameed, Haseeb Tariq, and team members, with project support from QRDI.

21st edition of Project Qatar and the Smart Manufacturing Exhibition

Project Qatar 2025, the region's leading international construction and building materials exhibition, provided a key platform to showcase innovations shaping Qatar's sustainable future.

Under the leadership of Dr. Noora, five students representing high school, undergraduate, and master's levels presented their research projects during the NextGen Innovators: Technologies Shaping the Future session before a distinguished panel of judges from leading industrial companies. The projects addressed vital themes including sustainability, clean energy, environmental protection, technological innovation, and smart infrastructure, offering creative, research-driven solutions aligned with Qatar National Vision 2030.

Two students from Dr. Noora's team received top honors:

Second Place: EcoBlock: Building Tomorrow with Waste by Mennatalla Kuna (Chemistry and Earth Sciences), a project that transforms plastic waste and foundry sand into sustainable construction bricks.

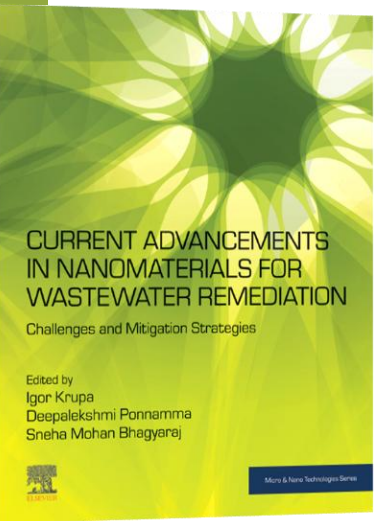
Third Place: Craxis by Abdul Naser Rabie (Computer Science and Engineering), developed in collaboration with Prof. Uvais Qidwai. The project features an autonomous AI-powered robot designed to scan bridges, detect cracks, and predict maintenance needs.

PUBLICATIONS

High Impact Representative Publications

(Since May 2025)

Corresponding author	Title	Journal	Impact factor
Dr. Mariam Al-Ejji	Enhancing Piezoelectric Performance of PVDF/PEG Blends with ZnO and $BaTiO_3$ Nanofillers for Nanogenerator and UV Sensing	Materials Today Communications (2025): 113756.	4.5
Dr. Mohamed Abbas	Advances in Ceramic Membrane Technology: Versatility of Fabrication Techniques, Industrial Applications, and Challenges	Inorganic Chemistry Communications (2025): 114685.	5.4
Prof. Igor Krupa	Wearable Thermoelectric Heatsinks Designed by 3D-Printed Polyethylene-Based Composites	Applied Thermal Engineering (2025): 129378	6.9
Prof. Peter Kasak	Copper(I) Oxide Nanocubes Loaded with a Low-Content Binary PtIr Alloy Enable Enhanced Methanol/Ethanol Oxidation	International Journal of Hydrogen Energy 113 (2025): 441-450	8.3
Dr. Anton Popelka	Biomimetic and Engineered Surfaces for Atmospheric Water Harvesting: Principles, Fabrication, and Applications	Journal of Environmental Chemical Engineering (2025): 117514	7.5
Dr. Khouloud Jlassi	Effect of Metal Loading and Ce Addition on Biochar-Supported Co Catalysts for CO_2 Methanation	Biochar 7, no. 1 (2025): 73	13.5
Prof. Mohammad Irshidat	Transforming Recycled Construction Waste Fines into Carbon Sink Material via Accelerated Mechanochemical Carbonation: A Novel Approach to CO_2 Sequestration	Journal of Building Engineering (2025): 114630.	7.4
Prof. Dong Suk Han	Application of Bipolar Membrane (BPM)-Based Technology to Green Energy and Environmental Sustainability	Desalination (2025): 119101	9.8
Dr. Khalid Bani-Melhem	Optimization of Aluminum Electrocoagulation Parameters for Nutrient Removal from Hydroponic Wastewater Using Response Surface Methodology	Water 17, no. 23 (2025): 3346	3.0
Dr. Noora Al-Qahtani	Natural Product Extract Fractions as Potential Arthritis Treatments: A Detailed Analysis Using In Silico, In Vivo, and In Vitro Methods	International Immunopharmacology 144 (2025): 113595.	4.7



CAM Researcher Edits New Book on Nanomaterials for Water Treatment

CAM proudly celebrates the publication of a new book edited by Dr. Igor Krupa, titled Current Advancements in Nanomaterials for Wastewater Remediation: Challenges and Mitigation Strategies. The book highlights the latest progress in nanotechnology-assisted approaches for removing contaminants from wastewater.It covers water quality standards, major pollution sources, and the application of advanced nanomaterials in physical, chemical, and membrane-based treatment technologies. Featuring both recent innovations and real-world case studies, the book serves as a valuable resource for researchers and industry professionals working toward sustainable water treatment solutions.

People

Promotion

Dr. Abdul Shakoor

Research Associate Professor / Center for Advanced Materials, Qatar University

Congratulations on the promotion to Research Associate Professor on effective February 2025. We are pleased to announce the promotion of Dr. Abdul Shakoor to Research Associate Professor at Qatar University's Center for Advanced Materials (CAM). Dr. Shakoor also holds joint appointment in the Department of Mechanical and Industrial Engineering, Qatar University . He holds a Ph.D. degree in Materials Engineering from GIKI, Pakistan.

His area of research focuses on the synthesis and characterization of advanced materials for diversified applications. He is conducting active research in different areas, such as developing novel cathode materials for sodium/lithium rechargeable batteries, nanocomposite coatings for corrosion protection in the oil and gas industry, and aluminum metal matrix nanocomposites for automobile/aerospace applications. He has spent almost ten years in the industry and gained overwhelming experience in his profession, man-management, and project execution. He has been awarded several academic and professional awards because of his outstanding academic, industrial, and research achievements. He has extensive experience in developing and implementing research projects in the areas of materials science and engineering. He has, so far, published 237 SCI indexed Journal articles, 207 presentations in local and international conferences, 05 patents, 09 book chapters. As per google scholar, his current h-index is 54, and i-10- index is 165 with 9619 citations. He has supervised 43 international/national research funding grants to collaborate with local and international industries.

CAM laboratories visit (13 November 2025)

A team from the University of Doha for Science and Technology (UDST), led by Dr. Ehab Saleh, Assistant Professor in Smart Manufacturing at UDST, visited the CAM laboratories as part of the Biomedical Engineering Research Network Group initiative. The purpose of the visit was to strengthen collaboration between QU and UDST departments engaged in biomedical engineering research using additive processing and to promote future joint activities.

CAM Hosts GOIC Delegation to Advance Industry–Academia Collaboration

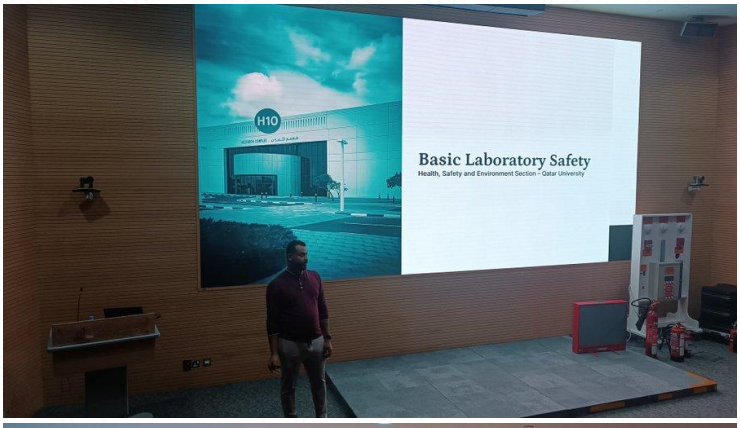
CAM welcomed representatives from the Gulf Organization for Industrial Consulting (GOIC) for a visit focused on strengthening collaboration between industry and academia. The meeting provided a valuable platform to discuss potential opportunities for joint research initiatives, knowledge exchange, and applied innovation aligned with regional industrial needs.

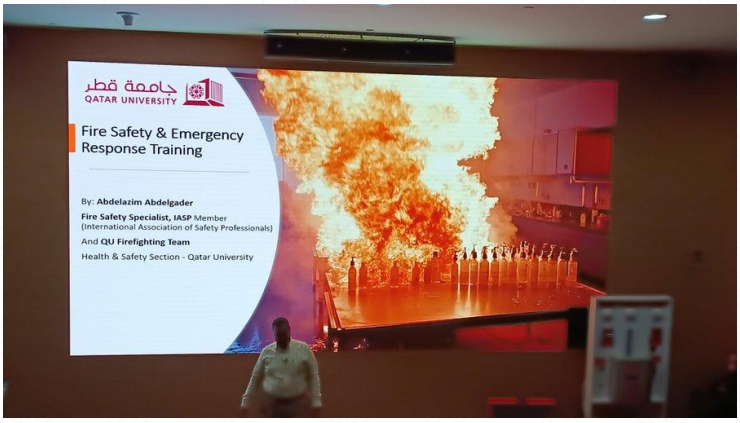
TRAINING

HSE Training Sessions Enhance Safety Preparedness at CAM Laboratories

The Health, Safety, and Environment (HSE) Section at Qatar University conducted a series of specialized training sessions in the Center for Advanced Materials (CAM) laboratories to strengthen safety awareness and emergency preparedness. The program included fire safety and emergency response training, as well as comprehensive laboratory safety training focused on best practices and standard operating procedures.

In addition, a mock chemical spill drill was carried out at the CAM laboratory, providing hands-on experience in spill containment and cleanup. The exercise demonstrated proper response techniques and reinforced the importance of executing cleanup procedures in accordance with established safety protocols, ensuring a safe and compliant laboratory environment.





Published by:
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