جامعة قطر
QATAR UNIVERSITY
مركز المواد المتقدمة
CENTER FOR ADVANCED MATERIALS

Center for Advanced Materials
NEWSLETTER

Issue | 8

Inside this issue

Center Activities

Events, Trainings, Workshops, and Seminars.

People

New Appointments, promotions and Visits

Achievements

Awards, Certificates, and Publications

Contact us at

May 2025

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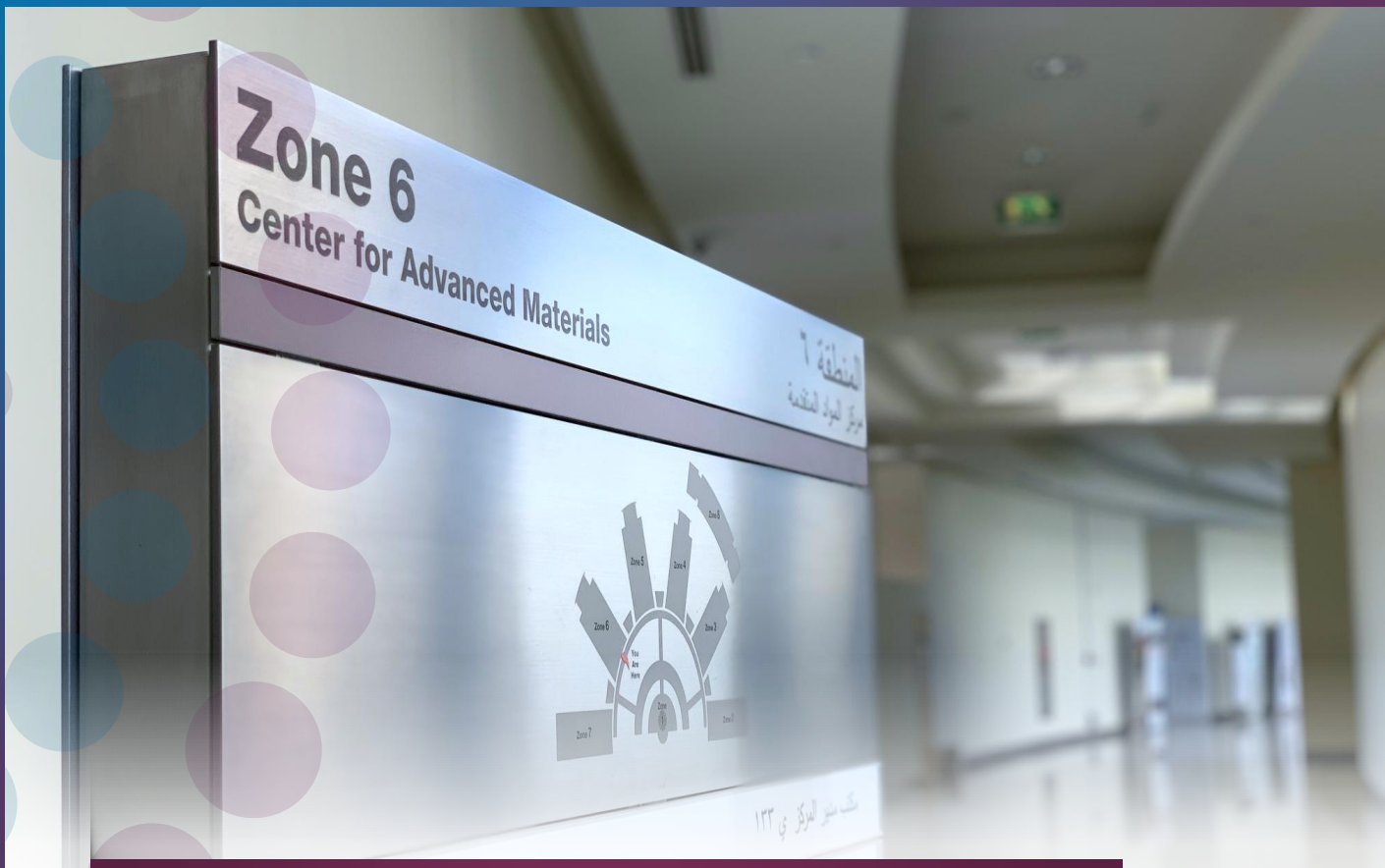
CAM Newsletter and Press Committee

Welcome message



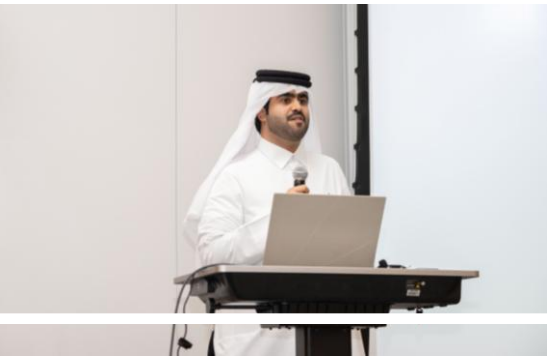
Prof. Mohammad R. Irshidat
Director of Center for Advanced Materials (CAM)

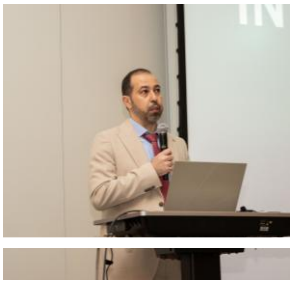
It is my pleasure to welcome you to the latest edition of the Center for Advanced Materials (CAM) newsletter. This issue highlights the Center's key activities, achievements, and collaborations during the Spring Semester of the 2024–2025 academic year. From cutting-edge research initiatives and strategic partnerships to student engagement and outreach efforts, this newsletter offers a glimpse into the dynamic work taking place at CAM. I invite you to explore these updates and celebrate the continued progress of our Center in advancing materials science and supporting Qatar University's mission of excellence in research and innovation.

Center Activities

EVENTS

CAM Hosts Annual Aluminum Symposium 2024: Aluminum for a Greener Tomorrow!





The Center for Advanced Materials successfully hosted the Annual Aluminum Symposium 2024 on Tuesday, November 19, under the theme "Aluminum for a Greener Tomorrow: Overcoming Challenges and Driving Sustainable Solutions." Held in collaboration with Qatalum and Hydro, this flagship event brought together industry leaders, researchers, and sustainability advocates to explore the pivotal role of aluminum in shaping a more sustainable future.

The symposium, held at the College of Engineering Auditorium, featured expert talks, panel discussions, and interactive sessions that highlighted both the challenges and transformative potential of aluminum across sectors. Attendees gained valuable insights into how aluminum technologies can contribute to cleaner production, efficient energy use, and circular economy practices.

EVENTS

CAM Hosts Qatari-Korean Seminar on Climate Change and Carbon Reduction

The Center for Advanced Materials hosted the Qatari-Korean Seminar on Climate Change Counteraction and Carbon Reduction, marking a milestone in bilateral efforts to address climate challenges.

The event gathered experts, academics, and representatives from Qatari and Korean institutions. Prof. Ahmad Al-Own, Dean of Graduate Studies at QU, emphasized the importance of joint initiatives to meet sustainable development goals. Korea's Ambassador to Qatar, Yun Hyunsoo, highlighted the strength of Qatari-Korean cooperation, particularly in CO_2 monitoring and reduction technologies like MRV systems.

The seminar featured sessions covering collaborative strategies, environmental governance, and the role of the private sector. Dr. Yousef Al-Horr (GCC) and Prof. Dong Suk Han (QU) underlined the need for innovative, joint approaches. Sheikha Amna Al-Thani (Strategy Hub) and Kyoung Jang (KOTRA) explored policy frameworks and industry roles in climate solutions.

A final session focused on nature-based solutions, MRV technology, and Qatar's National Renewable Energy Strategy. Prof. Mohammad Irshidat, CAM Director, concluded by reaffirming CAM's commitment to continued collaboration in renewable energy and sustainability. KOTRA-Qatar Director Hyuna Kim praised the discussions and stressed the event's role in fostering future cooperation.

The seminar was co-organized by QU, the Korean Embassy in Qatar, KOTRA, Strategy Hub, the Global Carbon Council, and Kahramaa.

EVENTS

Materials Science and Engineering Symposium 2025

Center for Advanced Materials at Qatar University, in collaboration with Hamad Bin Khalifa University and Texas A&M University Qatar, organized Annual Materials Science and Engineering symposium which held at the Marriott Marquis City Center Doha on Monday, June 14, 2025. The symposium, held under the theme " Advancing Resilient and Sustainable Materials through Technological Innovation", highlighted materials technologies that contribute to diversification, including Qatar's third national development plan.

The symposium brought together experts from academia and industry, along with students and researchers, to foster collaboration and interdisciplinary research. Opening remarks were delivered by Prof. Iyad Masad (HBKU) and Prof. Ayman Arbad (QU), both highlighting the critical role of science, innovation, and academic-industrial partnerships in shaping a sustainable future.

Keynote speaker Dr. Petra Laura, President of the Swiss National Science and Technology Laboratories, addressed emissions from concrete and asphalt. Other sessions featured student and researcher presentations on sustainable materials and a talk by Dr. Ali Al-Shami on innovation in materials science. A panel discussion, moderated by Dr. Mamoon Al-Rewashedeh, explored challenges in sustainability.The event concluded with closing remarks from Prof. Mohammed Irshidat, Director of CAM, and the presentation of awards for best student and graduate research presentations.

EVENTS

Qatar Symposium on Desalination & Water Treatment (QSDW 2025)

Date: January 30, 2025
Venue: Research Complex (H10), Qatar University

The UNESCO Chair in Desalination and Water Treatment, hosted at the Center for Advanced Materials, organized the Qatar Symposium on Desalination and Water Treatment (QSDW 2025). Themed “Recent Advances and Innovations in Desalination and Water Treatment Technologies,” the symposium brought together leading national and international experts, researchers, and industry stakeholders to exchange knowledge and address pressing challenges in sustainable water management.

Opening remarks were delivered by Prof. Aiman Erbad (QU), Dr. Mohammed Irshidat (CAM), and Dr. Salah Khaled (UNESCO), who highlighted achievements in desalination, brine management, and regional collaboration. Prof. Syed Javaid Zaidi, the UNESCO Chairholder, delivered the keynote address, outlining key research initiatives training programs. The symposium featured technical talks on innovative solutions in membrane technology, wastewater treatment, and water reuse. Presenters included experts from ExxonMobil, ACCIONA, QEERI, the University of North Dakota, the University of Doha for Science and Technology, and Ashghal. In closing, Prof. Zaidi emphasized the importance of cross-sector collaboration to advance water sustainability. The event concluded with a networking lunch, encouraging dialogue and partnerships. QSDW 2025 reaffirmed Qatar University’s leadership in applied water research and the UNESCO Chair’s commitment to Qatar National Vision 2030. Through sustainable innovation, such as turning date palm waste into nanomaterials and strong academic-industry partnerships, the Chair continues to drive progress toward long-term water security in the region.

Quality Of The Environment, Food, And Health Forum: Leaving The World Better Than We Found It.

The Quality of the Environment, Food, and Health Forum was held on February 17, 2025, at The Torch Ballroom in Doha. The event was organized by Dr. Noora Al-Qahtani and her research team at the Center for Advanced Materials (CAM) at Qatar University, in collaboration with Qatar Scientific Company (QSC) and sponsored by Waters Corporation. The forum provided a pioneering platform for discussing the global threat of PFAS (Per- and Polyfluoroalkyl Substances), a class of persistent pollutants known to contaminate air, water, and food systems.

Under the theme “Leaving the World Better Than We Found It,” the forum featured keynote speeches, research presentations, and panel discussions that explored the environmental and health impacts of PFAS, challenges faced by industries such as oil & gas and food production, and innovative technologies for PFAS detection and remediation. Notable speakers from Waters Corporation, Qatar Scientific Company, and National Public Health shared insights into PFAS-related research and policy advancements. Presenters such as Dr. Claudia Rathmann, Mr. PMN Rajesh, and Fazle Rakib showcased advanced research on contamination analysis. Panel discussions, led by experts in the field, delved into policy developments and interdisciplinary solutions for PFAS mitigation.

The forum concluded with a vision to continue this dialogue through an annual event, promoting sustainable policies, innovative research, and environmental responsibility in Qatar and beyond. It successfully initiated a national conversation on PFAS and reinforced Qatar University’s role as a leader in research-driven public engagement for a healthier, more sustainable future.

Training Workshop

QEWC and Kahramaa

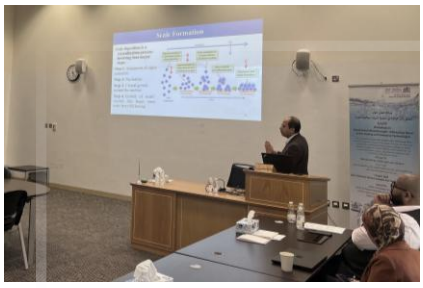
Water Technology Unit (WTU) organizes a workshop on Desalination Breakthroughs: Addressing Membrane Fouling and Emerging Technologies

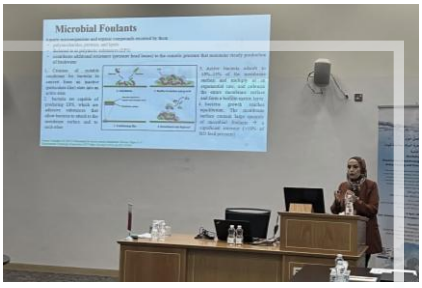
Water Technology Unit (WTU) at CAM-QU is proud to announce the successful completion of our training workshop for 25 local engineers and experts from Kahramaa (Qatar General Electricity & Water Corporation) and QEWC (Qatar Electricity & Water Company), held at Qatar University on April 16, 2025.

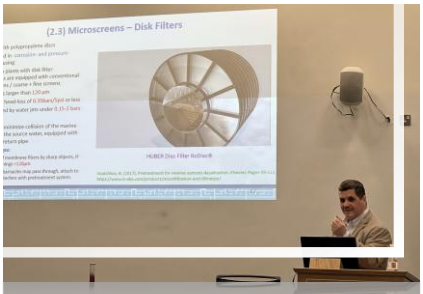
The full-day session titled "Desalination Breakthroughs: Addressing Membrane Fouling and Emerging Technologies" offered deep insights into:

- Membrane degradation and fouling analysis – Dr. Maryam Al-Ejji
- Advanced membrane materials – Dr. Reema Al-Asfar
- Pretreatment techniques for fouling prevention – Dr. Mohammad Hassan
- Membrane cleaning strategies – Dr. Khalid Bani Melhem
- Energy-efficient desalination systems – Prof. Syed Javaid Zaidi
- Future trends: resource recovery & hydrogen economy – Prof. Dong Suk Han

Participants engaged in interactive discussions, explored emerging technologies, and received certificates of completion, recognizing their commitment to sustainable water solutions.







CAM's NDT Workshop Trains Graduate Engineers in Industry-Standard Techniques

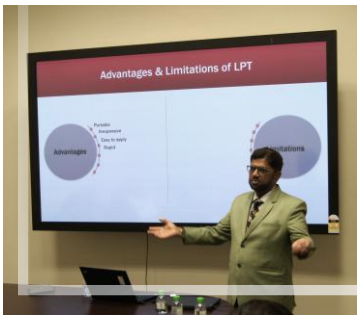
The Nondestructive Testing (NDT) Unit at the Center for Advanced Materials (CAM) recently conducted a specialized workshop for Ph.D. and master's students from the Department of Mechanical and Industrial Engineering at Qatar University, as part of the Advanced Corrosion Engineering course (MECH593) on April 17. Led by Dr. Umar Amjad and Dr. Mohammed Maqbool, the workshop provided an in-depth exploration of the principles, applications, and limitations of conventional NDT methods commonly used in industry for corrosion assessment. Participants engaged in both theoretical discussions and practical demonstrations of four key NDT techniques: Liquid Penetrant Testing, which detects surface-breaking defects in a variety of materials; Magnetic Particle Testing, ideal for revealing surface and near-surface discontinuities in ferromagnetic materials; Ultrasonic Testing, which employs high-frequency sound waves to identify both surface and subsurface flaws; and Radiographic Film Interpretation, which utilizes X-rays or gamma rays to visualize internal defects within components. These hands-on sessions enabled students to understand not only the operational aspects of each method but also their respective advantages and constraints, equipping them with essential skills for the reliable detection and evaluation of corrosion in industrial settings.

SEMINARS

1 3 November 2024

Title: Nondestructive Testing (NDT) Evaluation and Methods - An Overview

Speaker: Dr. Umar Amjad & Dr. Mohammed Maqbool, CAM



2 25 November 2024

Title 1: The Energy-Water Nexus: Meeting Challenges through Membranes Innovations

Speaker 1: Dr. Ali Alshami Fulbright Fellow, University of North Dakota, USA

Title 2: Innovations in Remote Sensing Technologies for Detecting Nanoparticles in the Atmosphere

Speaker 2: Dr. Muhammad Imran Shahzad, Department of Meteorology, COMSATS University, Islamabad

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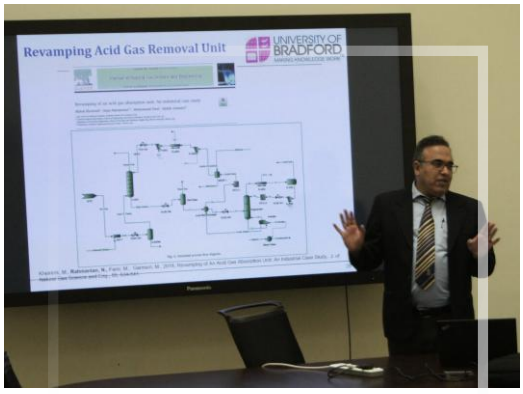
9 December 2024

Title: Potential development of research portfolios between Qatar University and Bradford University

Speaker: Dr. Nejat Rahmanian, Associate Professor in Chemical and Petroleum Engineering, Bradford University



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10 December 2024

Title: Micro Pollution Control Using Advanced Electro-Oxidation Processes

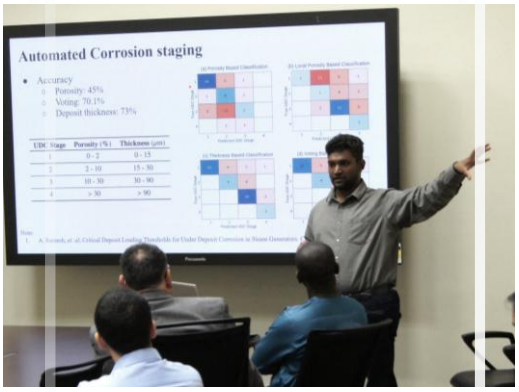
Speaker: Prof. Mohamed Gamal El-Din, Director of Water Research Centre (WRC), University of Alberta, Canada

5

12 January 2025

Title: AI-Driven Diagnostics and Smart Corrosion Inhibitors

Speaker: Dr. Ashwin Rajkumar, Indian Institute of Science, Bangalore



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24 February 2025

Title: Ultrafast Dynamics of Complex Systems in Biology and Materials

Speaker: Prof. Dongping Zhong, Chair Professor of Chemistry, Shanghai Jiao Tong University, China

PARTICIPATIONS

Conferences, Workshops, and Forums.

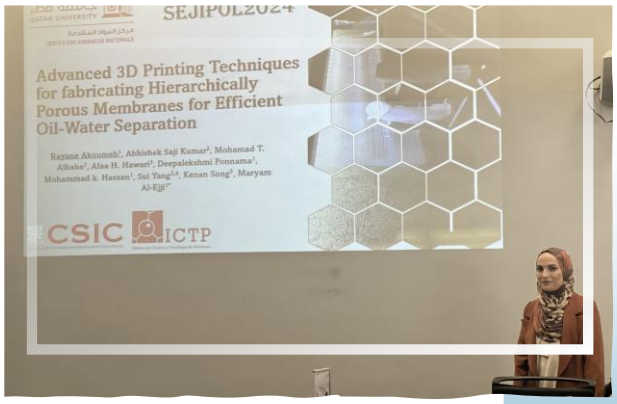
CAM Researchers Showcase Membrane Innovation at QRDI Seminar

Professors from the Center for Advanced Materials (CAM) participated in the Emerging Membrane Technologies Research Outcome Seminar, organized by the Qatar Research, Development and Innovation (QRDI) Council on November 6, 2024, in Doha. As part of the event, CAM faculty presented key outcomes from Qatar National Research Fund (QNRF)–supported projects.

Dr. Mohamed Hassan shared advancements in block copolymer membranes for oil/water ultrafiltration, focusing on scalable fabrication techniques. Prof. Dong Suk Han highlighted an off-grid electrochemical approach for converting industrial wastewater, brine, and CO_2 into valuable chemicals. The seminar brought together researchers and experts to explore cutting-edge trends in membrane technology and their application to real-world challenges in water, energy, and environmental systems.

Dr. Rayane Akoumeh Showcases Innovative 3D-Printed Membranes at SEJIPOL2024 in Madrid

29th October 2024 : Dr. Rayane Akoumeh presented our work at 8th YOUNG POLYMER SCIENTISTS SEMINAR, SEJIPOL2024, in Madrid, Spain. The presentation was entitled: “Advanced 3D Printing Techniques for fabricating Hierarchically Porous Membranes for Efficient Oil-Water Separation”



Dr. Mohammad Hassan Co-Chairs Sustainable Composites Session at AIChE 2024

Dr. Mohammad Hassan, co-chaired the "Sustainable Composites" session at the 2024 AIChE Annual Meeting, held from October 27–31 in San Diego, California. The session focused on advancements in sustainable composite materials, emphasizing their applications in energy, environmental, and biomedical fields. Dr. Hassan's leadership in this session underscores CAM's commitment to pioneering research in sustainable materials science.

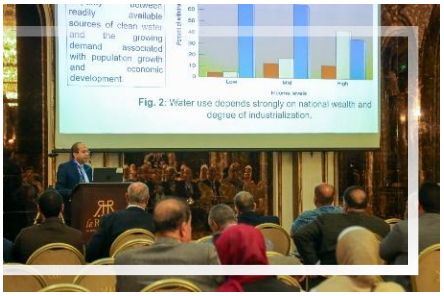
Dr. Khadija Mourad Mentors Qatar University Students in Data Analysis Workshop

The Scientific Research Club at Qatar University organized a "Training Program on Data Collection and Analysis" on April 28th, 2025. The event was held under the sponsorship of the Ministry of Youth and Sports, with the attendance of Engineer Yasser Al-Jamal, Undersecretary of the Ministry of Youth and Sports, and Dr. Omar Al-Ansari, President of Qatar University, along with several vice presidents of the university and distinguished guests from other institutions.

The workshop was presented by Ms. Hend Al-Sulaiti from the Social and Economic Survey Research Institute (SESRI). The event was organized by members of the Scientific Research Club under the supervision of the club's academic advisor, Dr. Khadija Mourad.

Dr. Khalid Bani Melhem Presents Research on Grey Water Treatment at 10th Jordanian International Conference on Chemical Engineering

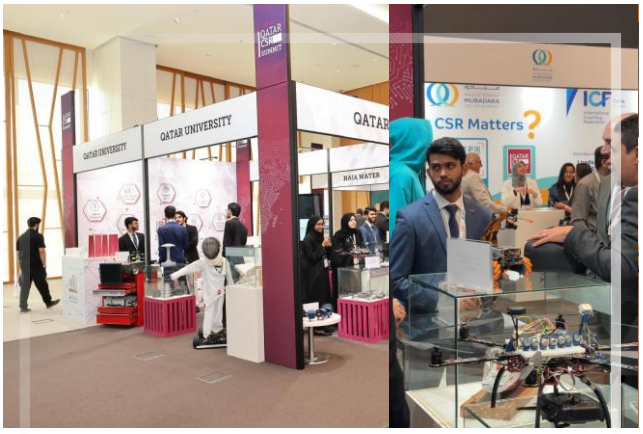
Dr. Khalid Bani Melhem participated in the 10th Jordanian International Conference on Chemical Jordan, from October 21 to 24, 2024. The conference discussed many research papers in the field of chemical engineering. He presented one paper entitled: Studying the kinetic behavior of high-loaded grey water (HLGW) treatment by batch electrocoagulation.



Dr. Noora Al-Qahtani Leads Student Research Excellence Across Global Platforms

Under the leadership of Dr. Noora Al-Qahtani, a vibrant team of student researchers at Qatar University continues to push boundaries in scientific research, innovation, and interdisciplinary collaboration. From environmental science and engineering to health and sustainability, the team's work is redefining student engagement in applied research. Over the past months, they have actively contributed to several prestigious conferences and forums, solidifying their role in advancing Qatar's Vision 2030.

At the Qatar CSR Summit 2025, Dr. Noora's students led Qatar University's booth, which showcased over 40 interdisciplinary student projects addressing societal challenges. Their display attracted high-profile visitors and emphasized student-driven innovation aligned with the UN SDGs.



In AI & Medicine 2025, the team presented pioneering research on AI applications in environmental health, particularly in detecting micro-nanoplastics. Their project highlighted the intersection of data science, pollution, and public health—garnering attention from international experts.

At the 3rd International Conference on Energy and Indoor Environment, two impactful studies were presented: one on microplastics in food-grade salt and another on converting waste into eco-bricks. These contributions underscored the group's focus on environmental sustainability in hot climate contexts.

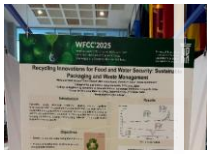
Dr. Noora's team participated in the 11th International Conference on Applied Science, Engineering, and Technology (ICAET 2025), where six diverse projects tackled topics from CO_2 electroreduction and hydrogen production to marine protection and thermally degraded plastics. Their work demonstrated Qatar's growing presence in global sustainability research, with all studies accepted for publication in MDPI journals.

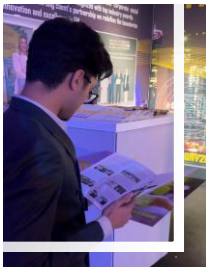
At Web Summit Qatar 2025, Dr. Noora's team engaged with global tech and sustainability leaders, attending key sessions on AI, energy, healthcare, and education. These interactions are expected to shape future research collaborations and innovation strategies.

During Qatar University's Alumni Reunion 2025, the team presented seven cutting-edge projects and five prototypes addressing challenges in sports, agriculture, AI, and biomedical science—further reinforcing the university's commitment to real-world impact and cross-sector collaboration.

At the 7th Youth Research Forum, the team showcased five projects, including a spotlight on the environmental risks of disposable paper cups. Four of these projects were previously published through the Summer Research Internship Program (SRIP 2024), highlighting student engagement in applied scientific inquiry.

Participation in WFCC 2025 further demonstrated the group's research strength, with seven projects focusing on climate resilience, food and water security, and environmental health. One presentation was accepted for publication in a Springer book—another testament to their scholarly contribution.





Lastly, Dr. Noora's presence at the Qatar Investment and Innovation Conference 2025 reflected the increasing integration of academic research in national economic strategies. Her role in discussions around sustainability and digital transformation underscored the importance of academia-industry collaboration in shaping Qatar's innovation landscape.

Participation of CAM Researchers at ACS-RSC MEA Conference 2025 with Award-Winning Posters and Judging Roles

Researchers from the CAM made significant contributions to the inaugural ACS Qatar Chapter and Royal Society of Chemistry (RSC) Regional Middle East and Africa (MEA) Conference, held from November 3–5, 2024, in Doha. Themed “Synergy for Sustainability: Advancing a Greener Future through Chemistry and Engineering,” the conference brought together over 300 global experts to discuss sustainable innovations in chemistry and engineering .

CAM faculty (Prof. Dong Suk Han and Dr. Mohammad Hassan) actively participated as members of the judging committee, evaluating a diverse range of poster presentations that highlighted cutting-edge research in sustainability. Their expertise ensured a rigorous assessment of the innovative work presented by participants from various institutions. In addition to their roles as judges, CAM researchers showcased their own research through poster presentations. Their contributions were recognized for excellence, with several CAM posters receiving awards in the conference's poster competition.

The conference featured keynote sessions and panel discussions on topics such as nanomaterials, catalysis, advanced materials for water treatment, and sustainable manufacturing. The event provided a platform for interdisciplinary collaboration, aligning with Qatar's strategic vision for research and innovation.

PEOPLE Promotions & New Appointments

Prof. Dong Suk Han

Research Professor / Center for Advanced Materials, Qatar University

Congratulations on the promotion to Full Research Professor on effective November 2024.

We are pleased to announce the promotion of Dr. Dong Suk Han to Full Research Professor at Qatar University's Center for Advanced Materials (CAM). Dr. Han also holds joint appointments in the Department of Chemical Engineering and the Department of Physics and Materials Science and is the distinguished holder of the Qatar Shell Professorship.

Dr. Han earned his Ph.D. in 2009 from the Zachry Department of Civil and Environmental Engineering at Texas A&M University, College Station, USA, and brings over 25 years of expertise in environmental and chemical engineering. His research focuses on water environment and energy, with key contributions in nanomaterials, desalination, adsorption/membrane separation, (photo)electrochemistry, water-energy nexus, and resource recovery.

Dr. Han serves as Editor for Desalination and Water Treatment (Elsevier), Editorial Board Member of Desalination (Elsevier), and Associate Editor of Frontiers in Chemistry. His research has been supported by various prestigious entities, including the National Research Foundation of Korea (NRF), US Department of Energy (US DOE), US Geological Survey (USGS), Qatar Research Development and Innovation Council (QRDI), Qatar Fertilizer Company (QAFCO), Qatar Shell GTL, Korea Agency for Infrastructure Technology Advancement (KAIA), Korea Water Cluster (KWC), and the Ministries of Environment in both Qatar (MECC) and Korea (MOE).

New Appointment

Dr. Abdul Shakoor: Appointed as Qatalum/Hydro Faculty Chair

Dr. Abdul Shakoor is appointed as the Qatalum/Hydro Faculty Chair on Aluminum at Qatar University for the period Fall 2024–Spring 2027. Our enthusiastic congratulations to him for this esteemed appointment. This prestigious role, jointly established by Qatalum/Hydro in collaboration with Qatar University, aims to Strengthen the link and industry and foster

impactful research and education in the aluminum sector. The primary purpose of this appointment is to promote close collaboration across academic and industrial platforms, focusing on fundamental and applied research related to aluminum and its alloys. Dr. Shakoor's main responsibilities include providing training and research related to aluminum production and applications, technical consultation, and organizing educational workshops. He will also facilitate strengthening collaboration between the College of Engineering (CENG) and the Arts and Sciences (CAS) by submitting joint proposals for relevant research, arranging training, and student competitions. Moreover, he will be the focal person in arranging summer internship programs for students on aluminum production and associated environmental challenges. He is also expected to support the national Qatarization strategy by promoting research and career opportunities among Qatari nationals at the university. This faculty chair serves as a strategic initiative to enhance technical expertise, stimulate innovation, and contribute to the sustainable growth of Qatar's aluminum industry through academic excellence and industry engagement.

CAM Female Researchers Shine at International Day of Women and Girls in Science 2025

Female researchers from the CAM proudly participated in the 7th International Day of Women and Girls in Science, held under the theme "Imagine a World with More Women in Science." The event, organized by Qatar University in collaboration with Sasol Middle East and India, the UNESCO Office in Doha, and the Qatar National Commission for Education, Science, and Culture, celebrated the vital role of women in advancing scientific research and innovation.

Representing CAM's commitment to empowering women in STEM, participating researchers engaged with peers, mentors, and aspiring young scientists. Their presence reflected the center's strong dedication to fostering inclusive excellence and supporting the next generation of female leaders in science.

VISITS

Distinguished Guests Visit CAM Booth at QU Annual Research Forum 2025.

CAM was honored to welcome Her Excellency Lolwah bint Rashid bin Mohammed Al-Khater, Minister of Education and Higher Education, and His Excellency Dr. Omar Al-Ansari, President of Qatar University, to its exhibition stand during the QU Annual Research Forum and Exhibition 2025, held on February 19–20 at the College of Education Auditorium.

The visit highlighted CAM's ongoing contributions to cutting-edge research aligned with national priorities. The forum served as a vibrant platform for showcasing impactful research and innovation from across the university and its partners, reinforcing QU's role in advancing sustainable development in line with Qatar National Vision 2030.

Ashghal's Quality and Safety Department Visits CAM

CAM was pleased to host representatives from the Quality and Safety Department at Ashghal for a collaborative visit. The meeting focused on exploring opportunities for future research partnerships, with an emphasis on innovation, safety, and sustainability.

Achievements

Awards & Certificates

Awarded Grants

Qatar University Internal Grants

Grant type	LPI	Title
National Capacity Building Program (NCBP)	Dr. Reema Al-Asfar	Enhancement of performance of polysulfone membrane in produced water treatment through the incorporation of cellulose nanofibers
International Research Collaboration Co-Fund (IRCC)	Dr. Khalid Bani Melhem	Performance of a solar-powered electro-membrane bioreactor (EMBR) for agricultural wastewater treatment in hydroponic farms.
Collaborative Grant (CG)	Dr. Anton Popelka	Bioinspired freshwater harvesting microstructures based on 3D printing and plasma technology.
Student Grant	Dr. Khalid Bani Melhem	From Waste to Clean Water: Recycling Scrap Metals and Medical Waste for Environmental Solutions.
Student Grant	Dr. Noora Al-Qahtani	Turning Food Waste into Fuel: A Sustainable Approach for Energy Production (Waste-to-Wealth).
Student Grant	Dr. Noora Al-Qahtani	Assessment of Contaminant Release from Polyethylene Laminated Paper Cups into Hot Beverages.

External Grants

Gant Type	LPI	Title
Academic Research Grant (ARG) 2nd cycle	Dr. Abdul Shakoor	INNER COAT: Enhancing Corrosion Performance through Advancement of Ni-P-X Nanocomposite Coatings Using Inner Jet Electrodeposition Technique and AI-Based Performance Evaluation.
Qatar Shell Professorship Project	Prof. Dong Suk Han	Technology evaluation of ceramic ultrafiltration (cUF) membranes and their applicability for replacing/retrofitting conventional polymeric ultrafiltration (pUF) systems.
Undergraduate Research Experience Program (UREP)	Dr. Khouloud Jlassi	Potential use of the green synthesis nanoparticles from Moringa oleifera leaves in seed priming and antimicrobial activities

Publications

High Impact Representative Publications

Corresponding author	Title	Journal	Impact factor	Student involvement
Dr. Khalid Bani Melhem	Optimizing membrane bioreactor performance in wastewater treatment using machine learning and meta-heuristic techniques.	Results in Engineering, 25 (2025) 104626.	6.0	
Dr. Abdul Shakoor	Improvement in inhibition performance of anti-corrosion coatings using polyolefin matrix embedded with modified TiO_2 nanoparticles.	Progress in Organic Coatings 195(2024) 108659	6.5	
Prof. Dong Suk Han	Evaluating the economic and environmental viability of small modular reactor (SMR)-powered desalination technologies against renewable energy systems.	Desalination (2025) 118624	8.4	
Prof. Peter Kasak	High-density atomic level defect engineering of two-dimensional Fe-based metal-organic frameworks boosts oxygen and hydrogen evolution reactions.	Advanced Science (2024) 11, 2405936	14.3	
Dr. Khouloud Jlassi	Effect of metal loading and Ce addition on biochar-supported Co catalysts for CO_2 methanation.	Biochar, DOI : 10.1007/s42773-025-00459-x	13.1	
Prof. Igor Krupa	A novel design for battery cooling based on highly thermally conductive phase change composites encapsulated by 3D printed polyethylene/boron nitride layer.	Journal of Energy Storage 112(2025), 115490.	8.9	Safna Nishad
Dr. Abdul Shakoor	Enhancing lithium-ion battery anode performance via heterogeneous nucleation of silver within Ti_3C_2-MXene frameworks.	Journal of Alloys and Compounds 1008(2024), 176521	5.8	Zawar Alam Qureshic
Dr. Mohamed Abbas	Nanoparticles in cancer theragnostic and drug delivery: A comprehensive review.	Life sciences (2024), 122899	5.2	Alshayma Al-Thani Asma Jan
Prof. Igor Krupa	Utilization of polyethylene waste for designing foamy oil sorbents.	Emergent Materials (2025), 1-13	4.8	Sarah Hailan
Dr. Anton Popelka	Fabrication of Bioinspired 3D-Printed Microtextures for Efficient Water Harvesting Using Plasma Treatment.	Journal of Environmental Chemical Engineering, 13 (2025), 115713	7.5	Aseela Fathima Preetan Ghosh Eman Hussen Nidaa Abdelrahman Reem Ahmed Sara Awad

Featured Publication in Environmental Research

Impact factor 2023: 7.7

Read more: https://doi.org/10.1016/j.envres.2023.118022

Research Highlight

A significant research milestone was achieved through the publication titled "Removal of Heavy Metals from Wastewater by Aerogel Derived from Date Palm Waste" in the high-impact journal Environmental Research (Elsevier, IF 7.7). The work represents a multidisciplinary collaboration between Qatar University's Center for Advanced Materials, Environmental Science Center, and international partners at IPREM-CNRS, France.

The research presents an innovative aerogel made from date palm waste, reinforced with MXene nanosheets and sodium alginate, for efficient removal of toxic heavy metals from industrial and saline wastewater. This sustainable bio-composite demonstrated impressive adsorption of arsenic, cadmium, nickel, and zinc, even under seawater conditions, and retained performance over multiple regeneration cycles.

This research not only advances the scientific understanding of biomass-based adsorbents but also proposes a scalable solution for waste-to-resource valorization in alignment with Qatar National Vision 2030 and regional sustainability mandates. By transforming agricultural waste into functional nanomaterials for water purification, the study reinforces the strategic goals of the UNESCO Chair on Desalination and Water Treatment and contributes toward global efforts in sustainable wastewater remediation.

Awards & Certificates Awards

Awardee Name: Haseeb Tariq

Venue: International Conference on Water and Food Security in the Face of Climate Change (WFCC 2025).

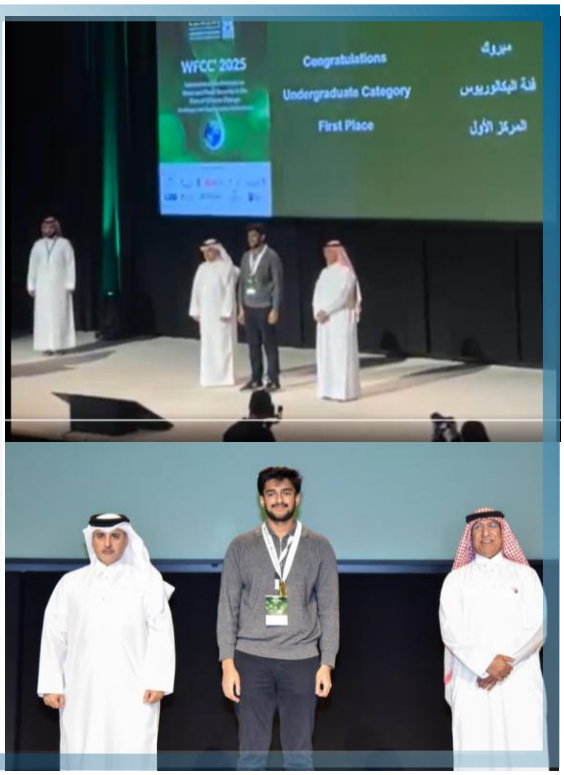
Award: Won First Place

Supervisor: Prof. Dong Suk Han

Title: Fabrication of 2D-Printed Thin Film Composite Forward Osmosis (FO) Membrane for Applications in Sustainable Agricultural Irrigation

Haseeb was awarded First Place at the National Youth Symposium & Arab Youth Competition, standing out among over 106 participants from Saudi Arabia, Palestine, Oman, Algeria, Lebanon, Qatar, Egypt, and the UAE, who presented innovative solutions addressing climate change impacts, food security, and water resource management.

This prestigious award was presented by the Minister of Environment and Climate Change, H.E. Dr. Abdullah bin Abdulaziz bin Turki Al Subaie, marking significant progress towards achieving the UN Sustainable Development Goals and enhancing climate resilience.



Awardee Name: Dr. Sehrish Habib

Earned two prestigious recognitions:

- Graduate Research Award
- Best Dissertation Award

Venue: Qatar University Annual Research Forum & Exhibition (QUARFE) 2025

Supervisor: Dr. Abdul Shakoor

Awardee Name: Tasneem Elmakki

Received the:

- Best Thesis Award

Venue: Qatar University Annual Research Forum & Exhibition (QUARFE) 2025

Supervisor: Prof. Dong Suk Han

Awardee Name: Dr. Safna Nishad

Award won: Best Research Poster Award - Energy and Environment Track – Faculty and postdocs

Venue: Qatar University Annual Research Forum & Exhibition (QUARFE) 2025

Team: Dr. Safna Nishad, Dr. R. A. Shakoor, Prof. Igor Krupa.

Title: Sustainable Battery Thermal Management with High-Performance Phase Change Materials

Awardee Name: Dr. Khadija Zadeh

Award won: Poster awarded Second place in the special track: The National Committee for the Prohibition

Venue: Qatar University Annual Research Forum & Exhibition (QUARFE) 2025

Team: Dr. Khadija Zadeh, Dr. Maryam Al-Ejji, Dr. Deepalekshimi Ponnamma, Dr. D. A. Abdulmalik, Prof. Mohammad Irshidat.

Title: From Waste to Innovative Gamma Radiation Protection Shielding

Awardee Name: Muhammad Khan

Award won: Poster awarded third place in the special track: The National Committee for the Prohibition.

Venue: Qatar University Annual Research Forum & Exhibition (QUARFE) 2025

Team: Dr. Muhammad Khan, Dr. R. A. Shakoor, Dr. Salwan Al-Ani.

Title: Development of Wearable and Bullet Proof Polymeric Composites

Awardees' Names: Mr. Nihal Ashik, Mr. Jai Ramesh, and Mr. Hanish Abdulla.

Award won: First Prize at the QRDI Council Rising Innovator Award 2025

Supervisor: Dr. Kishor Kumar Sadasivuni

The team has been selected to present at the prestigious ITEX competition in Malaysia.

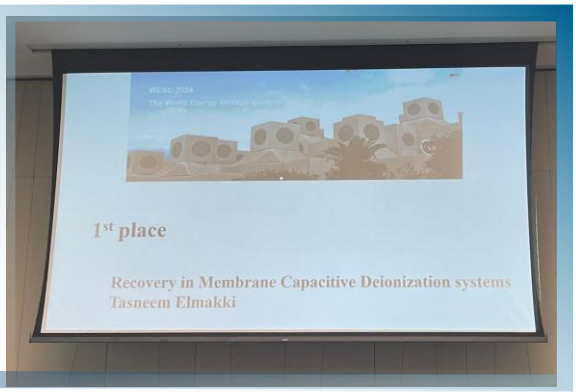
Awardee Name: Tasneem Elmakki

Award: won 1st place for the Best Poster Presentation Award

Venue: The World Energy Storage Conference joint session with the 6th International Gas Conference (WESC-2024 & IGC2024) —organized by Qatar University's Gas Processing Center and College of Engineering

Supervisor: Prof. Dong Suk Han

Title: High-Performance LMO/LAO Electrode for Efficient Lithium Recovery in Membrane Capacitive Deionization Systems



Awardee Name: Buzaina Moosa

Award: Secured 4th position in the poster Awards (Researchers and Post-docs Category)

Venue: ACS Qatar Chapter & RSC Regional MENA Conference

Supervisor: Dr. Abdul Shakoor

Title: Nitrogen-doped Nasicon Cathode Material for high performance Sodium ion batteries

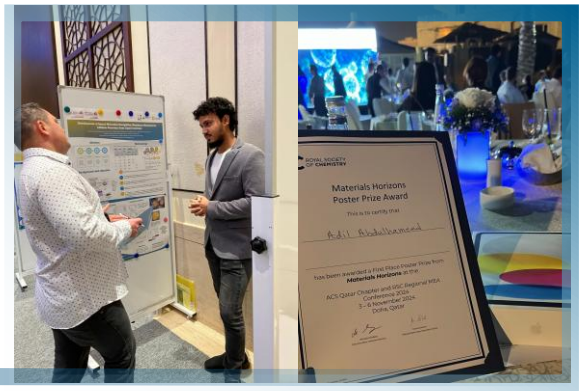
Awardee Name: Adil Abdulhameed

Award won: The First-Place in the poster Awards (Undergraduate Category)

Venue: ACS Qatar Chapter & RSC Regional MENA Conference

Supervisor: Prof. Dong Suk Han

Title: Development of Smart Molecular Recognition Membrane Materials for Lithium Recovery from Liquid Solutions



Awardee Name: Ahsan Ishtiaq Qureshi

Award: Secured 4th position in the poster Awards (Undergraduate Category)

Venue: ACS Qatar Chapter & RSC Regional MENA Conference

Supervisor: Dr. Abdul Shakoor

Title: Microwave-Assisted $NaFe_{0.5}Mn_{0.5}O_2$ as a promising cathode material for the high-performance of Sodium-ion batteries.

Thesis Defense

We are thrilled to extend our warmest congratulations to Ms. Samra Sajjad and Mr. Shoaib Ahmad, graduate researchers at CAM, for their outstanding achievement in passing their oral defense exams. Ms. Samra completed her Master's in Environmental Engineering under the supervision of Prof. Ramazan Kahraman and Dr. Abdul Shakoor, while Mr. Shoaib successfully defended his Master's thesis in Materials Science and Technology under the guidance of Dr. Abdul Shakoor.

Safety first!

CAM Hosts Laboratory Safety Training in Collaboration with QU Health and Safety Section

The CAM conducted a comprehensive Laboratory Safety Training session on the 8th of December 2024 at the Research Complex Auditorium. The training was organized in collaboration with Qatar University's Health and Safety Section and was attended by researchers, staff, and students affiliated with CAM.

This initiative reflects CAM's ongoing commitment to fostering a culture of safety and compliance in all research environments, ensuring that all personnel are well-equipped with the knowledge and practices necessary to maintain a safe working atmosphere.

Published by:
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Dr. Patrik Sobolciak
Dr. Mohamed Abbas
Dr. Kishor Kumar
Dr. Anton Popelka
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Designed by:
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