



**ICCEET 2026**  
College of Engineering  
and Architecture



جامعة نizwa  
University of Nizwa

## *Keynote Speech schedule*

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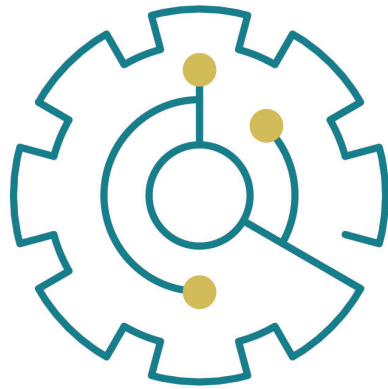
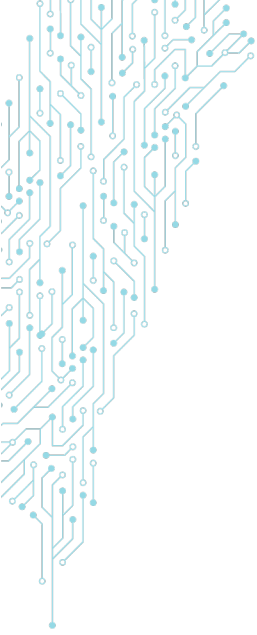
# **The International Conference on Creative Engineering and Emerging Technologies (ICCEET2026)**

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**27–29 April 2026**

Specialized in Human Resource Development .. the Greatest National Asset

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**ICCEET 2026**






## Vision

**To be a premier and innovative college of engineering and architecture highly recognized by the industry, accreditation bodies and international institutions.**

## Mission

**To educate students to be problem solvers with innovative qualities to address current and future challenges, achieve quality applied innovative research and serve the advancement of society and culture of Oman with commitment to sustainable development.**





**Assoc. Prof. Dr. Rashid Said Al Abri**  
**Conference Chair**  
**ICCEET2026**

## Foreword from the Conference Chair

It is my great pleasure to welcome you to the International Conference on Creative Engineering & Emerging Technologies: Exploring Future Edges (ICCEET2026), hosted by the University of Nizwa, Sultanate of Oman, from 27–29 April 2026.

Under the theme “Engineering a Greener World,” ICCEET2026 brings together researchers, practitioners, and innovators from across the globe to address some of the most pressing challenges of our time. The conference serves as a vibrant platform for interdisciplinary dialogue, fostering collaboration and advancing knowledge at the intersection of creative engineering and emerging technologies.

This year, we are proud to present six diverse and forward-looking tracks, spanning Green Hydrogen and Net-Zero Systems; Environmental Innovation in Water, Waste, and Emissions Management; Sustainable Smart Cities and Climate-Flexible Infrastructure; Innovation in Electrical, Electronic, and Computer Engineering; Bio-innovations in Materials and Regenerative Engineering; and Undergraduate Research and Innovation. These tracks reflect our shared commitment to sustainability, technological advancement, and inclusive scientific engagement.

We are delighted by the overwhelming response ICCEET2026 has received, with contributions from researchers affiliated with 33 universities and research institutions across 17 countries. This remarkable diversity underscores the global importance of our theme and highlights the collaborative spirit driving innovation today. On behalf of the organizing committee, I extend my sincere gratitude to all authors, reviewers, keynote speakers, and sponsors whose contributions have made this conference possible. I also warmly welcome all participants and hope that your experience at ICCEET2026 will be intellectually enriching and professionally rewarding.

We wish you a productive conference and an enjoyable stay in Oman.

## Foreword from the Scientific Committee Chair

It is an honor to present the scientific program of the International Conference on Creative Engineering & Emerging Technologies: Exploring Future Edges (ICCEET2026), held at the University of Nizwa, Oman, from 27–29 April 2026.

The scientific committee has worked diligently to ensure a high-quality, rigorous, and impactful technical program aligned with this year's theme, "Engineering a Greener World." The conference has attracted substantial interest from the global research community, resulting in submissions from 33 universities and research institutions representing 17 countries.

All submitted manuscripts underwent a thorough peer-review process using a dedicated conference management system. Each paper was evaluated by expert reviewers for originality, technical quality, relevance, and clarity. Following this rigorous assessment, 155 papers have been accepted for presentation across multiple technical sessions, reflecting both the depth and breadth of current research in creative engineering and emerging technologies.

The accepted contributions span six key tracks, addressing critical areas such as sustainable energy systems, environmental innovation, smart infrastructure, advanced engineering technologies, bio-inspired materials, and emerging undergraduate research. Together, these works showcase innovative solutions and forward-thinking approaches essential for building a sustainable and resilient future.

I would like to extend my sincere appreciation to the members of the scientific committee and reviewers for their dedication and professionalism in maintaining the highest academic standards. I also thank all contributing authors for their valuable research and insights.

We trust that the program will stimulate meaningful discussions, foster collaboration, and inspire new ideas among participants.



**Assoc. Prof. Dr. Gasim Hayder**  
**Scientific Committee Chair**  
**ICCEET2026**

## Foreword from the Technical Conference Coordinator



**Associate Prof. Dr. Wameath  
Shawqi Abdul-Majeed**  
**Technical Conference Coordinator**  
**ICCEET2026**

ICCEET 2026 stands as a testament to what can be achieved through collaboration and commitment. It has strengthened our global presence and created new pathways for future growth and cooperation. As the Technical Conference Coordinator of the International Conference on Creative Engineering and Emerging Technologies (ICCEET 2026), it is both a privilege and a pleasure to reflect on this remarkable journey. This conference marks a significant milestone in our university's academic development. Through dedicated effort and strategic collaboration, we successfully transformed our platform from local engagement into a truly international conference, reflecting our strong commitment to global academic excellence. One of the most rewarding outcomes of ICCEET 2026 has been the high level of international collaboration achieved. We were honored to host distinguished keynote speakers and establish meaningful partnerships with institutions from various countries. These collaborations extend beyond the conference itself, opening opportunities for joint research, academic exchange, and future initiatives. The organizing team worked tirelessly with a shared vision and strong sense of teamwork, overcoming obstacles and delivering a high-quality event. This collective effort highlights the dedication and capability of our academic community.

Finally, I extend my sincere appreciation to all contributors, partners, and participants whose support made this conference a success.

Thank you.

**Keynote speech: # 1 (In-Person)**

**Date and Time:**

**Conference DAY 1 - Monday, 27 April 2026, Morning 10:25 am**

**Speech Title:** Engineering a Greener World is not a Technology Problem - It is a Systems

Leadership Challenge

**Keynote Speaker name and affiliation details:**

Dr. Abdullah Sulaiman Al-Abri, VP Sustainability, Sohar Port/Freezone



**Abstract:**

The global transition toward a greener and more sustainable future is often framed as a challenge of technological innovation. While advancements in renewable energy, hydrogen, carbon capture, and digital solutions are progressing rapidly, their large-scale deployment continues to face significant barriers. This keynote argues that the primary constraint is not the availability of technologies, but the ability to integrate them into coherent, scalable, and investable systems.

Drawing on practical experience from the development of large-scale industrial ecosystems, including SOHAR Port and Freezone, this presentation explores how energy, infrastructure, industry, policy, and capital must be aligned to enable meaningful transition. It highlights how clean energy is increasingly becoming a determinant of industrial competitiveness and market access, rather than merely an environmental consideration.

Through selected case examples - such as renewable energy integration for industrial demand, port decarbonization through shore power, and the development of low-carbon maritime and manufacturing ecosystems - the keynote illustrates how systems thinking translates into real-world implementation.

The presentation concludes by outlining the evolving role of engineers and institutions in this new paradigm. It emphasizes the need for interdisciplinary thinking, systems integration

capabilities, and leadership that bridges technology, economics, and governance. Ultimately, engineering a greener world requires not only innovation, but the ability to design, orchestrate, and scale complex systems that deliver sustainable impact.

**Short Biography:**

Dr. Abdullah Sulaiman Al-Abri is the Vice President for Sustainability at SOHAR Port and Freezone, one of the largest industrial and logistics hubs in the Middle East. He leads strategic initiatives across energy transition, industrial decarbonization, infrastructure development, and sustainable growth. With over 20 years of international experience across industry, policy, and research, Dr. Al-Abri has held leadership roles in major organizations including Petroleum Development Oman, Shell, Woodside Energy, and the International Energy Agency (IEA), where he contributed to global energy transition strategies and flagship reports. He has led multi-billion-dollar portfolios spanning oil and gas, renewable energy, hydrogen, carbon capture, and industrial ecosystem development.

Dr. Al-Abri is also an active contributor to academia and research, with work focusing on sustainability, systems thinking, and the intersection of energy, economics, and innovation. He brings a unique perspective that bridges engineering, strategic leadership, and real-world implementation of large-scale transition programs.

## Keynote speech: # 2 (In-Person)

### Date and Time:

Conference DAY 1 - Monday, 27 April 2026, Afternoon 1:20 pm

**Speech Title:** Bridging the Clean Sector Gap in Oman: Education, Skills, and Workforce Readiness for the Green Economy: Evidence from a Multi-Stakeholder Labour-Market Intelligence Study

### Keynote Speaker name and affiliation details:

Dr. Khalid Al Mughairi, Research & Development Specialist, Oman Energy Association (OPAL)

### Abstract:

Oman's vision for a green economy is taking place at a time when the labour market is under mounting pressure due to population increase and the presence of a strong youth bulge in Oman's population structure. This paper presents a synthesis of the results of the education survey in the OPAL Labor Market Intelligence Analysis (LMIA) study that focuses on the structure of the labour force in Oman and the factors that influence Omanization in the new green industries. The study combines administrative data in Oman with five surveys of different stakeholders: job seekers, the management of the energy sector, the existing labour force in Oman, institutions of higher education in Oman, and training institutions in Oman.

Three challenges arise. Firstly, the level of demand is low, as stakeholders have repeatedly indicated limited operational projects and available jobs as the most important hindrance to green jobs. Secondly, the availability of green jobs is limited in terms of entry routes, as employers mainly have a preference for up-skilling current employees, while graduates have difficulty in overcoming experience hurdles, thereby hindering learning-by-doing capabilities in local settings. Thirdly, skill mismatches are complex, as they range from green skills to core employability skills. Employers mainly require applied skills, such

as project implementation competence, while supply-side actors give more priority to sustainability topics and key skills.

According to the paper, to accelerate Omanisation in the green industries, there must be cooperation in the areas of industry planning and human capital development, including the development of visible project pipelines, enhancing internships and entry schemes for graduates, streamlining the update and accreditation processes in the curriculum, enhancing capability in the faculty and training staff, and rebuilding trust in in-country training programs.

### Short Biography:

Dr. Khalid AL Mughairi is an R&D Specialist at OPAL's Energy and Minerals Sector Skills Unit (EMSSU), where he supports workforce development across Oman's energy and minerals sectors. His work focuses on labour market intelligence, occupational standards, skills development, and industry-aligned workforce planning. He has contributed to initiatives across oil and gas, mining, utilities, and emerging energy sectors, helping strengthen the link between industry needs and national talent development.



**Keynote speech: # 3 (Online)**

**Date and Time:**

**Conference DAY 2 - Tuesday, 28 April 2026, Morning 9:05 am**

**Speech Title:** Microbubble Technology for Sustainable Waste Valorization: A Circular Approach

**Keynote Speaker name and affiliation details:**

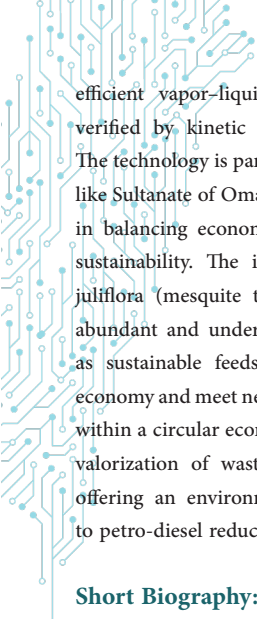
Dr. Fahad Rehman, COMSATS University, Pakistan



**Abstract:**

High speed diesel is amongst the most used fractions of petroleum and hence responsible for the emission of hundreds of thousands tons of CO<sub>2</sub> per year. Biodiesel, though sound environmentally friendly, cannot compete with the current price of petrodiesel. The major technical challenge for biodiesel commercialization is to develop sustainable supply of feedstock and overcome inherent slow kinetics and thermodynamic equilibrium of biodiesel production (esterification) reaction which reduces overall conversion of the process. The major commercially viable feedstock for biodiesel production have free fatty acids content greater than 1%. Such feedstock cannot be converted in biodiesel directly. The FFA content must be reduced below 1% to avoid saponification reaction. This is carried out via acid-catalyzed esterification reaction which is considered as the bottle-neck for biodiesel commercialization. The esterification reaction has a very slow rate and low overall conversion because of the poor miscibility of the reactants, relatively high activation energy and formation of water which initiates a reverse reaction. Microbubble mediated mass transfer technology proposes to feed alcohol in the form of microbubbles, thereby providing local excess and pushing the equilibrium in forward direction as proposed by Le-Chatelier's principle. The reactor temperature is set at the boiling point of alcohol keeping it in vapor phase throughout its residence time in the bubble reactor. The small radii of microbubbles implies

the internal pressure would be very high-hence the temperature and the surface energy reducing the activation energy significantly. Microbubbles when burst at the surface remove water produced in the reaction and unreacted alcohol in real-time, shifting the reaction equilibrium forward and reducing the downstream separation cost. The overall economics can also be improved by integrating bi-functional catalysts with microbubble mediated mass transfer technology which can carry out esterification and transesterification simultaneously, reducing chemical waste and simplifying downstream treatment. The experimental studies have demonstrated unprecedented rate of reaction, overall conversion and lower activation energy. A conversion of 89.90% in 30 min was achieved for chicken fat oil using p-Toluene Sulfonic Acid (PTSA) – significantly higher than any previously reported studies for chicken fat oil based biodiesel. In the same study the activation energy was calculated to be 24.9 kJ/mol which is significantly lower as compared with any previous studies. Using Microalgae Oil (MO), a maximum FFA conversion of 99.45% was achieved in 60 min, with a catalyst loading of 3.3 wt% in a 3 L reactor. In a more recent study, using a Waste Cooking Oil (WCO) with bi-functional catalyst, the conversion of triglycerides and FFA in chicken fat oil was achieved to be 75% and 57%, respectively, in 35 minutes. These results suggested a shift from conventional liquid-liquid reaction to a more



efficient vapor-liquid interface reaction and was verified by kinetic investigation.

The technology is particularly beneficial for a country like Sultanate of Oman, which is at a critical juncture in balancing economic growth with environmental sustainability. The invasive plant species *Prosopis juliflora* (mesquite tree) and chicken fat oil, both abundant and underutilized in Oman, can be used as sustainable feedstock assisting Oman's circular economy and meet net-zero emissions targets. Framed within a circular economy, this research advances the valorization of waste into clean-burning biodiesel offering an environmentally responsible alternative to petro-diesel reducing CO<sub>2</sub> emissions significantly.


### **Short Biography:**

Dr. Fahad Rehman is a distinguished academic and researcher in the field of chemical and energy engineering. He holds a PhD in Chemical Engineering and Master's in Energy and Environmental Engineering from The University of Sheffield, UK. He has over twenty years of experience in research, education and administration. He is currently serving as Associate Professor at COMSATS University

Islamabad (CUI), Lahore Campus and leading Microfluidics Research Group at CUI, Lahore.

He has established a strong reputation for his contributions to sustainable energy technologies, particularly in the domain of renewable fuels and process intensification. Dr. Rehman's research focuses on advancing biofuel production through innovative approaches in reaction engineering, catalytic process design, and kinetic modeling. He is especially recognized for his work on microbubble-mediated mass transfer systems, which offer transformative potential for enhancing efficiency in multiphase chemical processes. His expertise extends to hydrogen-integrated fuel systems and emerging pathways for sustainable aviation fuels, addressing critical challenges in decarbonizing the global energy landscape.

Over the course of his career, Dr. Rehman has supervised several postgraduate researchers and has authored and co-authored several high-impact journal publications. His research work, cited over 3700 times, reflects a strong integration of fundamental chemical engineering principles with practical, scalable solutions for industry.



**Keynote speech: # 4 (In-Person)**

**Date and Time:**

**Conference DAY 2 - Tuesday, 28 April 2026, Morning 9:30 am**

**Speech Title:** High-Tech vs. / with Low-Tech

**Keynote Speaker name and affiliation details:**

Prof. Ercan Ađırbař, Urban Planning and Architectural Design (UPAD), German University of Technology in Oman (GUtech)

**Abstract:**

Contemporary architecture and urban planning are increasingly shaped by high-tech solutions such as advanced materials, automation systems, high performance architecture, AI-oriented prompts and data-driven optimization. While effective in improving performance, these approaches can weaken the connection to local context, culture, and climate responsiveness. In contrast, traditional architecture in Oman demonstrates strong low-tech intelligence through passive cooling systems, thick walls, shaded courtyards, and material simplicity, offering long-term environmental and cultural resilience. Contextual and vernacular knowledge advocate the low-tech intelligence, which is grounded in local climate, culture, and material availability, as seen in traditional architecture in regions like Oman, where courtyards, wind catchers, and thick walls evolved from environmental necessity. This talk explores a critical scrutiny to discuss high-tech versus low-tech approaches and strategies. The comparison between High-Tech vs. Low-Tech design and possibility of combination and future challenges, are among the core of the discussion.

**Short Biography:**

Ercan Ađırbař born in Sinop Ayancık, Turkey and in 1970 moved to Gelsenkirchen, Germany. He is an

architect and urban planner, and the founder and principal of ErcanAđırbařFriends, Architecture & Urban Planning. He is also the co-author of several books. His international professional experience includes collaborations with renowned offices across the world, and contributing to projects from concept to realization. His award-winning works have been widely published and exhibited, including at the Deutsches Architekturmuseum (DAM) in Frankfurt and the Ulusal Mimarlık Ödülleri in Ankara. Alongside his professional practice, he has an extensive academic career. He has taught and served as a guest critic at numerous institutions, including Hochschule Bochum, RWTH Aachen, PBSA Düsseldorf, and the University of California, Los Angeles (UCLA). Since 2016, he has been teaching at the German University of Technology in Oman (GUtech). Educated in Germany, Italy, and Switzerland, he received his architectural diploma from ETH Zürich. He is a member of both the German and Turkish Chambers of Architects and is a nationally recognized expert in noise and heat protection. Currently, «Prof. Ercan Ađırbař» serves as Dean of the Faculty of Urban Planning and Architectural Design (UPAD) and Director of the Building Technology and Standardisation Center (BTSC) at the German University of Technology in Oman (GUtech).



**Keynote speech: # 5 (In-Person)**

**Date and Time:**

**Conference DAY 2 - Tuesday, 28 April 2026, Morning 10:00 am**

**Speech Title:** Green Production and Sustainable Materials for the Industry 5.0 Horizon

**Keynote Speaker name and affiliation details:**

Professor Ali Reza Kamali, Northeastern University - China



**Abstract:**

As we move toward the Industry 5.0 era, the focus of industrial progress is shifting from pure efficiency to a balance between innovation, sustainability and human-centred design. Achieving this balance requires rethinking how we produce the materials that drive modern technologies. Sustainable and affordable production of advanced materials is no longer optional; it is essential for long-term industrial resilience and environmental responsibility. This talk explores the emerging landscape of green manufacturing, highlighting breakthroughs in the development of high-performance metals, alloys and electrode materials for next-generation metal-ion batteries. Drawing on recent advances from the speaker's laboratory, the talk highlights innovative approaches that integrate scientific excellence with sustainable practices, paving the way toward a cleaner, smarter and more sustainable industrial future.

**Short Biography:**

Ali Kamali is a Distinguished Professor and Director of the Green Energy and Environmental Materials Research Centre (E2MC) at Northeastern University. He also directs the China-UK Joint Research Centre for Advanced Materials and is a Fellow of the Royal

Society of Chemistry, and Fellow of the Institute of Materials, Minerals and Mining.

Professor Kamali is an alumnus of the University of Cambridge, where he supervises PhD and postdoctoral researchers and serves as Supervisor of the EnterpriseTECH programme at Judge Business School.

He is the Founding Director of four materials technology companies, focused on commercialising clean technologies for sustainable advanced materials production and the recycling and upcycling of waste for applications in energy storage and environmental protection.

He has secured over £46 million in research funding, holds more than 50 patents licensed globally, and has published over 200 articles in leading journals. He has delivered over 60 plenary, keynote and invited talks internationally and has received several prestigious awards, including the NSFC Excellent International Scientist Fellowship, the International Khwarizmi Award, the Rose Award of Shenyang, and the Armourers & Brasiers Award.

He currently chairs the AiScholar Academic Committee and serves on several editorial boards and national funding panels, including the EPSRC Peer Review College in the United Kingdom.

**Keynote speech: # 6 (Online)**

**Date and Time:**

**Conference DAY 2 - Tuesday, 28 April 2026, Afternoon 1:20 pm**

**Speech Title:** Environmental Innovation. Advanced water treatment, CO<sub>2</sub> capture, zero-waste engineering, emission control

**Keynote Speaker name and affiliation details:**

Dr. Dmitriy Kuvshinov, University of Hull, UK

**Abstract:**

On June 3rd, 2025, in Muscat, Oman, the Environmental Services Holding Company (be'ah) and OQ Trading signed a strategic cooperation agreement to jointly develop a national biogas initiative. This landmark project aims to convert organic waste into renewable energy in the form of biomethane and industrial-grade bio-carbon dioxide, representing a major step forward in Oman's waste-to-energy transition. With an expected annual output of approximately 20 million cubic meters of biogas, the initiative aligns closely with Oman Vision 2040 and stands as a great example of circular economy implementation in the region.

The keynote will explore both existing and emerging opportunities in the biogas sector, focusing on technologies for upgrading raw biogas to high-purity biomethane and achieving substantial bio-carbon dioxide footprint reduction through advanced chemical engineering approaches.

Special emphasis will be given on the production of bio-hydrogen from biogas, as well as innovative methods for synthesising high-quality nanostructured carbon materials in parallel with biogas processing.

This keynote will illustrate the progressing landscape of biogas utilisation—positioning it as a significant contributor to sustainable energy systems, low-carbon technologies, and the development of a

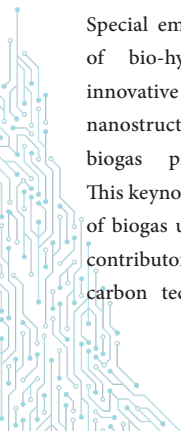
green industrial future.

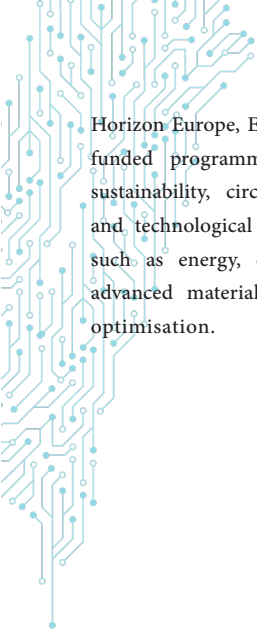
**Short Biography:**

Dr Dmitriy Kuvshinov is a Lecturer in Chemical Engineering at the University of Hull, specialising in nanotechnology, advanced carbon materials, gas utilisation processes, and biogas to hydrogen and biomethane conversion technologies. His research career spans over two decades and includes significant contributions to micro and nanobubble systems, micro plasma reactors, Lab on a Chip technologies, and catalytic processes for sustainable energy applications.

Before joining Hull in 2014, Dr Kuvshinov held research fellowships and associate positions at the University of Sheffield and Queen's University Belfast, where he developed innovative approaches to chemical process intensification, ionic liquids analysis, plasma enhanced reactions, and catalytic reactor design. He has supervised multiple PhD projects as both first and second supervisor and currently leads research on biogas conversion pathways and nanocarbon synthesis.


Dr Kuvshinov has been Principal Investigator and Co-Investigator on several national and international research projects totalling approximately £10 million in funding over the last decade, including





Horizon Europe, ERDF, NERC, and Industry funded programmes. His work integrates sustainability, circular economy principles, and technological innovation across sectors such as energy, environmental protection, advanced materials, and industrial process optimisation.

He has authored 94 peer reviewed publications, contributed to patents in nanocarbon materials and industrial gas utilisation technologies, and is an active member of multiple professional networks, including BioVale, CBMNet, CO<sub>2</sub>Chem, and the National Energy Research Network.



**Keynote speech: # 7 (In-Person)**

**Date and Time:**

**Conference DAY 3 - Wednesday, 29 April 2026, Morning 9:10 am**

**Speech Title:** Revisiting Biophilia: The Best Practice of Architectural Experiments

**Keynote Speaker name and affiliation details:**

Herr. Markus Heinsdorff, Green Designer & Independent Senior Architect, Germany

**Abstract:**

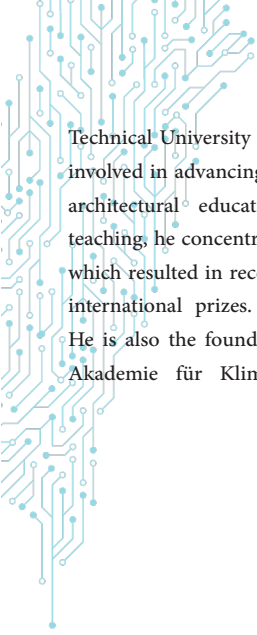
Biophilic design has become an important design approach in architecture to re-connect humanity with the natural systems in the face of the rising levels of urbanization, changes in climate and ecological degradation. This study is a strict examination of Markus Heinsdorff's architectural experiments from a biophilic standpoint which brings his work to the borders of environmental art, sustainable construction and sensory-focused spatial experience. The study utilizes a conceptual framework which is based on established biophilic theory to evaluate specific projects in terms of materiality, human-nature interaction, climatic responsiveness and social-educational value. The analysis categorizes Heinsdorff's installations on themes and highlights the strengths of his installations in terms of innovative materials, consciousness of the environment and sensory engagement that leads to a heightened realism. It also focused in bringing out the durability, scalability and effectiveness for long term environmental effects. The paper ends by reconstructing important lessons from these experimental research studies into relevant lessons for arid, hot lands, especially Oman. It underscores the need for a combination of art exploration and sustainable biophilic architectural strategies that are climate-responsive and contextually grounded.



**Short Biography:**

Markus Heinsdorff is a German green designer, independent senior architect, biophilic monumental creator, and internationally recognized installation artist. His work operates at the intersection of architecture, art, and environmental design, with a strong emphasis on biophilia, sustainability, material efficiency, and context-driven construction. He is known for green design, innovative spatial installations and lightweight architectural structures using natural, locally sourced, and recyclable materials such as bamboo and textiles. His projects respond sensitively to environmental and cultural contexts, reflecting a design philosophy rooted in ecological responsibility. His international practice includes large-scale pavilions and mobile architectural installations presented across Europe and Asia, contributing to cross-cultural dialogue through sustainable design. His work has been recognized with multiple awards for innovation in architecture, design, and environmental engagement.


Alongside his professional practice, Heinsdorff has an established academic profile, including successful teaching and research contributions at TUM -



Technical University of Munich, where he has been involved in advancing sustainable and experimental architectural education. After retirement from teaching, he concentrated on biophilic design more, which resulted in receiving a bunch of national and international prizes.

He is also the founder of the Kunst + Architektur Akademie für Klima, Umwelt, Soziales, based

in Burghausen, an interdisciplinary platform dedicated to exploring the relationships between art, architecture, climate, environment, and social responsibility. Through his work, Markus Heinsdorff continues to shape contemporary discourse on sustainable and experimental architecture. He is known for his unique international accent in biophilic design and energy efficient construction.



**Keynote speech: # 8 (In-Person)**

**Date and Time:**

**Conference DAY 3 - Wednesday, 29 April 2026, Morning 9:45 am**

**Speech Title:** Internet of Things (IoT) Technologies: Challenges and Opportunities

**Keynote Speaker name and affiliation details:**

Professor Abdullah I. Al-Hasanat, Al-Hussein Bin Talal

University, Jordan

**Abstract:**

The Internet of Things (IoT) is driving a new era of intelligent connectivity, enabling massive data exchange between devices, sensors, and systems. Its applications span critical domains such as smart infrastructure, healthcare, manufacturing, and energy management. Despite this progress, realizing the full potential of IoT remains technically demanding.

Key challenges include achieving interoperability across heterogeneous platforms, ensuring robust security and privacy, managing large-scale data analytics, and optimizing power consumption for edge and sensor nodes. Emerging enablers—such as 5G connectivity, edge and fog computing, and AI-driven automation—are reshaping IoT architectures and offering pathways toward more resilient and adaptive systems.

This talk will examine the latest developments in IoT technologies, highlight ongoing research challenges, and discuss opportunities for advancing scalable, secure, and energy-efficient IoT solutions

**Short Biography:**

Abdullah I. Al-Hasanat was born in Jordan in 1981. He received his B.Sc. degree in Computer Engineering from the University of Aden, Yemen, in 2004, his M.Sc. degree in Computer Engineering

from Jordan University of Science and Technology (JUST), Jordan, in 2007, and his Ph.D. degree in Wireless Networks from the University of Newcastle, United Kingdom, in 2012. Currently, Prof. Al-Hasanat is a Professor of Wireless Networks and the Dean of the College of Engineering at Al-Hussein Bin Talal University (AHU), Jordan. He is a Senior Member of the IEEE and serves as the IEEE Counsellor at AHU. Prof. Al-Hasanat has authored more than 50 research papers published in high-impact scientific journals and international conferences. His research interests include security and energy efficiency in IOT networks, routing and localization in ad hoc networks, mobile ad hoc networks (MANETs) and vehicular ad hoc networks (VANETs). Additionally, his interests extend to free-space optics (FSO), delay-tolerant networks (DTNs) and signal and image processing.



**Keynote speech: : # 9 (In-Person)**

**Date and Time:**

**Conference DAY 3 - Wednesday, 29 April 2026, Afternoon 1:20 pm**

**Speech Title:** Decarbonisation levers in upstream oil and gas operation

**Keynote Speaker name and affiliation details:**

**Dr. Adil Al Busaidi**  
Principal Sustainability & New Technology Specialist  
Daleel Petroleum, Oman



**Abstract:**

Oil and gas sector is responsible for 26% of Oman's Greenhouse Gases emissions; considering the year 2021 baseline. Decarbonisation of oil and gas operations is happening through four different levers, namely the energy efficiency, the flare management, the electrification and renewable integration. Daleel Petroleum has used those four levers to a varying extent but has been leading Oman's oil and gas sector in terms of flare management. The presentation will address the activities and the used technologies that are used in practice to decarbonize the upstream oil and gas business using Daleel Petroleum as a case study.

**Short Biography:**

Dr. Adil Al Busaidi has over 20 years of experience in various fields of energy industry including Sustainability, New technologies, Asset management, Strategic Planning, Power Generation Planning, Electrical Network Planning, Design, Tendering, Testing, Commissioning, Operation and Maintenance, Regulation, Organising and Change Management. Adil has contributed to many successful projects throughout his career. To name few, the Open Cycle Gas Turbine conversion to Closed Cycle Gas Turbine feasibility studies in PDO, Oman Grid first Master Plan in OETC, Asset Management implementation in OETC, 400kV

North-South interconnection feasibility study in OETC, Harweel 50MW wind farm grid integration study, Ibri 500MW solar PV grid integration study, Oman-Iran submarine cable interconnection feasibility study and Daleel Power System new maintenance strategy. He is currently leading the Sustainability initiative with Daleel Petroleum. Adil has played a role in various national initiatives and workshops like the 2018 Energy Labs, the Carbon Management Lab in 2022 and the Oil and Gas net zero workshops in 2023. Throughout his career, Adil has worked for various organisations including PDO, VEC, OETC and Daleel Petroleum. During his career, Adil has assumed various managerial roles namely the Head of Power System Development at PDO, the Senior Manager for Asset Management and Planning at OETC and the Power Infrastructure Team Leader at Daleel Petroleum. Adil has been active in research and technical papers publishing and has been an author and co-author of many conference and journal papers.

Adil holds a PhD in Electrical Engineering from Teesside University (UK), MSc in Electrical Power Engineering from the University of Manchester (UK) and BEng in Electrical Engineering from Teesside University (UK), MBA from Nizwa University (Oman) and recently has completed an MSc in Energy and Environmental Technology and Economics at City University of London.

**Keynote speech: : #10 (Online)**

**Date and Time:**

**Conference DAY 3 - Wednesday, 29 April 2026, Afternoon 1:55 pm**

**Speech Title:** Rethinking and Re-engineering the Supply Chain for the Future

**Keynote Speaker name and affiliation details:**

Dr. Linda Whicker, University of Hull, UK



**Abstract:**

This keynote will examine the evolving demands on global supply chains and their impact on systems design, resilience and sustainability. It will consider the multifaceted disruptions—ranging from climate change and geopolitical instability to digital transformation—that necessitate a fundamental re-engineering of supply chain architectures. Consequently, the integration of Scope 3 emissions accounting, ESG frameworks, and double materiality into supply chain design will drive change, while the deployment of Industry 4.0 technologies will enhance transparency, agility and responsiveness. This will lead to accelerated transitioning from linear, centralised supply models to circular, regionally adaptive supply networks, that facilitate near-shoring rather than offshoring and build in resilience through productive risk management policies.

Undergraduate Exams Officer. She works through business and knowledge engagement in consultancy and research with leading local businesses such as Birds Eye Ltd. and Wren Kitchens. Previously she worked at University of Nottingham Business School, leading courses in supply chain management and quality management. For more than five years, she was seconded to the University of Nottingham Malaysia Campus where she led courses in operations management, manufacturing strategy and supply chain management at undergraduate, postgraduate and executive level.

**Short Biography:**

Linda Whicker is Deputy MBA Director and Programme Director for the following programmes: Exec MBA part-time and Global MBA full-time. Linda currently teaches at undergraduate, postgraduate and executive level in logistics, supply chain and operations management. She also has co-developed the supply chain leadership professional degree programme. She has previously had schools outreach responsibility for the Management Systems & Logistics Subject Group and been HUBS

