



**6th International Conference on Advances
in Mechanical Engineering – 2026 (ICAME-26)
October 31, 2026**

Conference Program

Inaugural Session

Chair: Dr. M. Mahabat Khan

Co-Chair: Dr. M. Irfan

**Registration 08:00 – 09:00
(C-D Block Front)**

**Opening Ceremony.....09:00 – 09:45
(Auditorium A2)**

**Refreshments 09:45 – 10:00
(River Side Cafe)**

**Department of Mechanical Engineering
Capital University of Science and Technology
Islamabad, Pakistan**

Program Summary

Session Title	Session Chairs	Venue
Thermofluids and Energy Systems	Dr. Syed Waqar Ahmed Dr. Naseem Ahmad	Room B2
Advanced Materials and Manufacturing	Dr. Babar Ashfaq Dr. M. Rizwan Siddiqui	Room B3
Robotics, Control and Intelligent Systems	Dr. Manzar Masud Dr. Talha Irfan Khan	Room B4
Computational Methods for Engineering Systems	Dr. Ghulam Asghar Mr. Tauseef Ahmed	Room B5

Technical Session A-1

Thermofluids and Energy Systems

(Venue: B2)

Session Chair: Dr. Syed Waqar Ahmed (SUIT, Peshawar)

Keynote Lecture 10:00 - 10:30

Speaker-1: Dr. Archibong Eso Archibong, Associate Professor, University of Birmingham Dubai

Title: From Research to Curriculum: Designing Authentic Engineering Education for the Energy Transition in Developing Economies

Prof. Archibong is an Associate Professor and Director of Mechanical Engineering Programmes at the University of Birmingham Dubai. He holds a PhD in Energy Engineering and is a Chartered Engineer, Fellow of the Institution of Mechanical Engineers, and Senior Fellow of the Higher Education Academy. With over 50 peer-reviewed publications, his research focuses on multiphase flows, clean-energy systems, carbon capture, green hydrogen, and AI-driven energy modelling. He has contributed to industry projects involving BP, Schlumberger, and TotalEnergies and chairs IMechE Professional Review Committees.

Speaker-2: Dr. Hassan Ali, Associate Professor, University of Birmingham Dubai

Title: Renewable Energy context and growth in developing economies

Dr. Hassan Ali is an Associate Professor and Program Director of Renewable Energy Engineering at the University of Birmingham Dubai. With over 15 years of international experience, his expertise spans renewable energy systems, energy policy, and sustainable development. His research focuses on energy storage, solar-assisted cooling, building energy efficiency, direct air capture, and advanced energy technologies. He has led funded research projects and contributed to industry guidance on embodied carbon assessment for buildings in the UAE and Saudi Arabia.

Paper ID	Time	Title
ICAME-26-629	10:45 – 11:05	Techno-economic and environmental analysis of oil from pyrolysis of plastic waste Jamshaid Iqbal , Atif Javed
ICAME-26-641	11:10 – 11:30	Concentration-Ratio, Annual-Yield, and Cost Trade-Offs of Low-Profile LEMR Compound Parabolic Concentrators for a Monsoon-Affected South Asian Site Farhad Hassan , Rehan Saghir, Abid Hussain
ICAME-26-645	11:35 – 11:55	Performance Analysis of Sandwich Structures with Multi-Segmented Conical Tubes as Energy Absorbers Kamil Ghauri , Asif Israr, Muneeb Ur Rehman, Saad Akram
ICAME-26-655	12:00 – 12:20	Numerical Investigation of the Thermohydraulic Performance of a Shell-and-Tube Heat Exchanger with Rotated Segmental Baffles Hoor Kainat , Naseem Ahmad, Zara Malik, Abdul Qudoos Saleem, Liaquat Hussain
ICAME-26-663	12:25 – 12:45	SolaraXis: An IoT-Enabled Smart Solar Automation System with Real-Time Monitoring and Dual-Axis Tracking Javeria Khalid , Malik Hamza Nawaz, Zia-Ur-Rehman, Sabeen Masood, Aqeeb Hussain

Note: 15 mins presentation followed by 5 mins Q & A session

Prayer & Lunch Break (River Side Cafe) 13:00 - 14:30

Technical Session A-2

Thermofluids and Energy Systems

(Venue: B2)

Session Chair: [Dr. Naseem Ahmad \(IST, Islamabad\)](#)

Paper ID	Time	Title
ICAME-26-664	14:30 – 14:50	From Galerkin Projection to Operator Inference: Intrusive and Non-Intrusive Reduced-Order Models of a Turbulent Separation Bubble Learned from Open Time-Resolved PIV Data Taimoor Amin , Muhammad Yamin Younis, Emad Ud Din
ICAME-26-667	14:55 – 15:15	Design and CFD Analysis of an Entrainment-Based Air Amplifier Ammad Ejaz , Muneeb Ur Rehman, Naseer Ahmad
ICAME-26-668	15:20 – 15:40	Investigation of adsorption kinetics of water-selective metal-organic frameworks using effective uptake slopes for improved cycle time Muhammad Anique Azam, Mubashir Ali Siddiqui, Wahaj Abdullah Amir, Muhammad Huzaifa Siddiqui , Syed Azan Alam, Fahad Shakeel, Ghufraan Ghani
ICAME-26-673	15:45 – 16:05	Humpback Whale-Inspired Tubercles for Enhanced Thrust in Marine Propellers: An Experimental Investigation Isaam Bin Ahsan, Aileen Saeed, Saad Irfan, Faheem Ur Rehman, Syed Waqar Hasan
ICAME-26-684	16:10 – 16:30	Multiphase Flow Simulation of a Hydro cyclone: Evolution of the Air Core Muhammad Naveed , Jung-Ming Wu

Note: 15 mins presentation followed by 5 mins Q & A session

Closing Ceremony 16:30 - 17:00
(Auditorium A2)

Networking and Refreshments..... 17:00 - 17:30
(River Side Cafe)

Technical Session B-1

Advanced Materials and Manufacturing

(Venue: B3)

Session Chair: [Dr. Babar Ashfaq \(SUIT, Peshawar\)](#)

Keynote Lecture 10:00 - 10:30

Speaker: Dr. Aqib Mashood Khan, Nanjing University of Aeronautics and Astronautics (NUAA) China

Title: Next Generation Lubri-Cooling Strategies for Low Carbon and Sustainable Machining

Dr. Aqib Mashood Khan is an Associate Professor in the Department of Mechanical Manufacture and Automation at the Nanjing University of Aeronautics and Astronautics (NUAA), China. He earned his Ph.D. in Mechanical Engineering from NUAA, where his research focused on smart and sustainable manufacturing. Dr. Khan's research spans sustainable manufacturing, additive and subtractive manufacturing, metal additive manufacturing, life-cycle assessment, energy-efficient machining, advanced material processing, and AI-driven manufacturing optimization. He has published over 100 research articles in leading international journals and has received more than 6,600 citations, with an h-index of 46, placing him among the World's Top 2% Scientists (Elsevier–Stanford University, 2022–2025).

Paper ID	Time	Title
ICAME-26-623	10:45 – 11:05	Experimental Investigation of the Effect of FDM Process Parameters on the Elongation at Failure of 3D-Printed PolyMide CoPA Nylon Living Hinges Under Tensile Loading Shafiq Ur Rehman, Abdullah Hashim Zahid, Hasan Latif, Zubair Hassan
ICAME-26-625	11:10 – 11:30	An Experimental Study to Investigate Influence of Laser Welding on Joint Integrity of Thin sheets of SS 304 Muhammad Muawiyah Munawara, Atif Shazad, Danish Shahid , Muhammad Laique, Muhammad Tajammil, Lubna Sharif, Mohsin Sattar
ICAME-26-627	11:35 – 11:55	Heat Treatment Response of Steel Austenitized Under Different Quenching Conditions Ali Azhar, Abdur Razzaq Ahmed Siddiqui, Babar Hussain , Saad Khan, M. Irfan Khan, M. Taufeeq Buriro
ICAME-26-628	12:00 – 12:20	Mechanical and Microstructural Behavior of Laser-Welded AA2024-T6 Thin-Sheet Joints Atif Shazad, Abdul Rehman Khan, Muhammad Waseem, Talha Javaid, Muhammad Liaque, Muhammad Shahareeb , Muhammad Adil Qadeer
ICAME-26-635	12:25 – 12:45	Design and Simulation of Enhanced DC Magnetron Sputtering for Improved Thin-Film Deposition Hafiz Muhammad Tahir Nisar , Muhammad Farasat Abbas

Note: 15 mins presentation followed by 5 mins Q & A session

Prayer & Lunch Break (River Side Cafe) 13:00 - 14:30

Technical Session B-2

Advanced Materials and Manufacturing

(Venue: B3)

Session Chair: [Dr. M. Rizwan Siddiqui \(CUST, Islamabad\)](#)

Paper ID	Time	Title
ICAME-26-637	14:30 – 14:50	Implicit Modeling and Tensile Stress Analysis of 3D-Printed PLA Components with Surface and Strut-Based Infills Ammad Ejaz , Amberose Gill, Naseer Ahmed
ICAME-26-644	14:55 – 15:15	Effect of Raster Orientation on Charpy Impact Performance of FDM-Printed Polycarbonate Specimens with Square Mechanical Interlocking Geometry Asma Ameen , Umema Wahab, Wadia Mazhar, Shafi Ullah, Asad Hussain, Muhammad Waseem, Zeeshan Wazir, Babar Ashfaq
ICAME-26-654	15:20 – 15:40	Cooling and Lubrication Strategies for Ti-5553 alloy: A Critical Review of Machinability, Surface Integrity and Sustainability Arhaam Mubarak , Ghulam Asghar
ICAME-26-670	15:45 – 16:05	Effect of Printing Parameters on the Impact Strength of Carbon Fiber-Reinforced Polylactic Acid Composites Fabricated Via 3D Printing Malik Shaheryar, Muhammad Ali Nasir, Muhammad Azeem , Manzar Masud, Haider Ali
ICAME-26-674	16:10 – 16:30	Finite Element Comparison of Filleted and Sharp Corners in a Planar Cellular Structure Mohammad Fazail Bangash, Bilal Hussain, Aftab Ahmad, Babar Ashfaq, Syed Waqar Ahmed , Shahib Moeed

Note: 15 mins presentation followed by 5 mins Q & A session

Closing Ceremony 16:30 - 17:00
(Auditorium A2)

Networking and Refreshments..... 17:00 - 17:30
(River Side Cafe)

Technical Session C-1

Robotics, Control and Intelligent Systems

(Venue: B4)

Session Chair: [Dr. Manzar Masud \(CUST, Islamabad\)](#)

Keynote Lecture 10:00 - 10:30

Speaker: Dr. Azfar Khalid, Senior Lecturer, Nottingham Trent University (NTU), UK

Title: From digital shadows to digital twins: Industrial Use cases and the future of digitalisation

Prof. Dr. Azfar Khalid is a Senior Lecturer in Robotics and Digital Twins in the Department of Engineering, School of Science & Technology, at Nottingham Trent University (NTU), UK, where he has been serving since 2020. He received his BS in Mechanical Engineering from the GIK Institute of Engineering Sciences and Technology, Pakistan, and completed his PhD in Precision Engineering at the University of Manchester, UK, in 2009. Prior to joining NTU, he held academic and research positions at the Capital University of Science and Technology (CUST), Pakistan, the University of Bremen (BIBA), Germany, the National University of Sciences and Technology (NUST), Pakistan, and the University of Manchester, UK. His research focuses on digital twins, cyber-physical production systems, human–robot collaboration, robotics, Industry 4.0/5.0, smart manufacturing, precision engineering, and AI-enabled industrial automation.

Paper ID	Time	Title
ICAME-26-626	10:45 – 11:05	Design and Development of Eight-Legged Spider Robot Using Theo Jensen Mechanism Hamza Saeed, Wajahat Mahmood , Waheed ur Rehman, Arqum Razzaq, Riffat Ghazala
ICAME-26-636	11:05 – 11:25	Investigation of Additively Manufactured Drone Arms Under Tensile and Torsional Loading Abdullah Hashim Zahid, Shafiq Ur Rehman, Hasan Latif, Ahsan Sana, Ammad Ejaz, Syed Muhammad Yousaf
ICAME-26-648	11:25 – 11:45	Sensitivity of L4-L5 Intervertebral Rotation to Cancellous Bone Material Modelling: A Finite Element Study Haider Ali, Zartasha Mustansar, Hammad Arshad , Muhammad Hamza Arshad Khan, Uzair Shah Nawaz Quraishi
ICAME-26-675	11:45 – 12:05	Experimental Vibration Characterization and Ride Comfort Assessment of Three Suspension Systems Using FFT and PSD Analysis Ayaz Mahmood Khan , Yasir Hamid, M. Shahid Khalil, Ali Asghar Khan, Muhammad Ibrahim Asim, Zafir Salah-Ud-Din, Moiz Ahmad, Abdul Rafay
ICAME-26-676	12:05 – 12:25	Deep Learning Assisted Topology Optimization of a Synchronous Reluctance Rotor Mohammad Fazail Bangash, Kashan Zafar, Marig Shabbir Ansari , Intesar Alam, Arsalan Arif
ICAME-26-677	12:25 – 12:45	Sensitivity of L4–L5 Segment Mechanics to Degeneration-Inspired Intervertebral Disc Material Changes Haider Ali, Zartasha Mustansar, Muhammad Hamza Arshad Khan

Note: 15 mins presentation followed by 5 mins Q & A session

Prayer & Lunch Break (River Side Cafe) 13:00 - 14:30

Technical Session C-2

Robotics, Control and Intelligent Systems

(Venue: B4)

Session Chair: Dr. Talha Irfan Khan (NUST, Islamabad)

Paper ID	Time	Title
ICAME-26-680	14:30 – 14:50	Integrating Interpretive Structural Modelling and Structural Equation Modelling: A Methodological Review Usman Aftab , Farrokh Jaleel, Mughees Aslam, Javed Ahmed Khan Tipu, Muhammad Haroon, Muhammad Usman Ali
ICAME-26-682	14:55 – 15:15	Circular Economy Implementation Prospects in Indigenous Tyre Sector with Special Focus on Sustainability and Extended Producer Responsibility Asim Qayyum , Shummaila Rasheed, M. Mahabat Khan
ICAME-26-683	15:20 – 15:40	Comparative Assessment of Hyperparameter-Optimized Tree-Based Machine Learning Models with SHAP-Based Interpretation for Concrete Compressive Strength Prediction Malik Shahsawar , Muhammad Saad, Manzar Masud
ICAME-26-685	15:45 – 16:05	Adaptive Fixed-Time Disturbance-Rejection Sliding Mode Control for Robust Wind Turbine Speed Tracking Haris Sheh Zad, Abasin Ulasyar, Adil Zohaib , Muhammad Irfan
ICAME-26-686	16:10 – 16:30	Boundary-Constrained Adaptive Control for Fault-Tolerant Trajectory Tracking of Articulated Robots Haris Sheh Zad, Abasin Ulasyar, Adil Zohaib

Note: 15 mins presentation followed by 5 mins Q & A session

Closing Ceremony 16:30 - 17:00
(Auditorium A2)

Networking and Refreshments..... 17:00 - 17:30
(River Side Cafe)

Technical Session D-1

Computational Methods for Engineering Systems

(Venue: B5)

Session Chair: [Dr. Ghulam Asghar \(CUST, Islamabad\)](#)

Keynote Lecture 10:00 - 10:30

Speaker: Dr. Anastasios N. Georgoulas, Associate Professor, Liverpool John Moores University, UK

Title: Current State and Advancements in Heat Pipe Devices for Smart Thermal Management of Space and Ground Applications

Dr Anastasios N. Georgoulas is a Reader (Associate Professor) in Marine and Offshore Engineering at Liverpool John Moores University (LJMU), UK, which he joined in April 2025. He holds a B.Eng. in Civil Engineering (2002) and an M.Sc. in Structural Engineering (2003) from Heriot-Watt University, Scotland, followed by an M.Sc. in Hydraulic Engineering (2006) and a Ph.D. in Civil Engineering with Distinction (2010) from Democritus University of Thrace, Greece, with his doctoral work focused on Computational Fluid Dynamics (CFD) modelling of multiphase flows. Prior to joining LJMU, Dr Georgoulas held academic positions at the University of Brighton (Senior Lecturer 2015–2017, Principal Lecturer 2017–2025), was a Marie Curie Fellow at the University of Bergamo, Italy, with an industrial secondment at Caterpillar Inc., UK, and held research and teaching posts at Democritus University of Thrace and the International Hellenic University, Greece.

Paper ID	Time	Title
ICAME-26-642	10:45 – 11:05	Vibration-Based Oil Flow-Rate Estimation in a Carbon-Steel Pipe Using Frequency-Band Analysis Khalid Alnabhani , Musaab Zarog, Bhoomi Shah, Hadj Bourdoucen
ICAME-26-653	11:10 – 11:30	Enhancing Geometric Accuracy in Aluminum Alloy by Ultrasonic-Assisted Incremental Sheet Forming Quang-Thanh Nguyen , Ngoc-Tuan La, Ky-Thanh Ho
ICAME-26-656	11:35 – 11:55	Comparative Renewable Energy Deployment Dynamics in the United Kingdom and Selected MENA Economies: A Multi-Source Analysis of Solar PV and Wind Adya Sujeet , Hassan Ali, Archibong Archibong-Eso
ICAME-26-657	12:00 – 12:20	A Multi-Agent Advantage Actor–Critic (MA2C) Method for Integrated Production–Logistics Scheduling in Hybrid Flow Shops with AGVs Han Yang , Yarong Chen, Jabir Mumtaz
ICAME-26-658	12:25 – 12:45	A D3QN-Based Dynamic Component Assignment Method for Surface Mount Production Lines under Machine Degradation Haosen Zhang , Yarong Chen, Jabir Mumtaz

Note: 15 mins presentation followed by 5 mins Q & A session

Prayer & Lunch Break (River Side Cafe) 13:00 - 14:30

Technical Session D-2

Computational Methods for Engineering Systems

(Venue: B5)

Session Chair: [Mr. Tauseef Ahmed \(CUST, Islamabad\)](#)

Paper ID	Time	Title
ICAME-26-659	14:30 – 14:50	Baseline- and Recovery-Aware Reactive Scheduling for Resource-Constrained Projects under Temporary Resource Capacity Disruptions Lixuan Pan , Yarong Chen, Mudassar Rauf
ICAME-26-662	14:55 – 15:15	Numerical Investigation of Virtual Wettability Effects on Bubble Dynamics and Heat Transfer in Micro-Pin-Fin Evaporators Fakhar Ul Hasnain , Bhaskar Chakraborty, Syed Mohammed Tabish Haider, Eddie Blanco-Davis, Guangming Zhang, Anastasios Georgoulas, Manolia Andredaki
ICAME-26-679	15:20 – 15:40	Coupled Bubble Evolution and Transient Wall Thermal Response during Nucleate Pool Boiling from a Hemispherical Cavity Jawed Ahmed Jamali , Ying He, Yaning Liu
ICAME-26-647	15:45 – 16:05	Preliminary Feasibility Assessment of a Modular Platform Using Recovered Motorcycle Powertrains for Early Intervention in Hard-to-Reach Areas Luis Alejandro Arias Barragán , Diego Fernando Meléndez, Victor Hugo Tristanco, Ronald Rodriguez, Ana Maria Parra

Note: 15 mins presentation followed by 5 mins Q & A session

Closing Ceremony 16:30 - 17:00
(Auditorium A2)

Networking and Refreshments..... 17:00 - 17:30
(River Side Cafe)