

8th

INTERNATIONAL CONFERENCE ON
MECHANICAL ENGINEERING AND RENEWABLE ENERGY



ICMERE 2025

BOOK OF ABSTRACTS



Organized by

Department of Mechanical Engineering
Chittagong University of Engineering & Technology (CUET)
Chattogram-4349, Bangladesh

8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025)

10–12 December 2025, Chattogram, BANGLADESH

Introduction and Objectives

The 8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025), organized by the Department of Mechanical Engineering of Chittagong University of Engineering & Technology (CUET), was held on 10–12 December 2025 in Chattogram, Bangladesh. The conference aims to bring together distinguished academicians, researchers, scientists, engineers, industry professionals, and students from around the world to exchange knowledge and share recent advances in Mechanical Engineering, Renewable Energy, and related disciplines. Through keynote lectures, invited talks, and technical sessions, ICMERE 2025 provided an international platform for presenting innovative research, discussing emerging technologies, fostering interdisciplinary collaboration, and developing future academic and industrial partnerships. The conference was intended to encourage creative and sustainable engineering solutions that contribute to technological advancement, community development, and the improvement of social and environmental well-being.

Scope

- Aerodynamics, Automobile Engineering, Heat and Mass Transfer, and HVAC
- Fluid Mechanics, Fluid Machinery, CFD, Micro and Nano Fluids Applications
- Mechanics of Machinery, Applied and Computational Mechanics
- Noise, Vibration and Time-dependent Deformation
- Microsystems, Micro-Electromechanical Systems (MEMS), Nanotechnology
- Materials Science and Engineering, Composite Materials and Biomedical Engineering
- Industrial Automation, Mechatronics, Robotics and Industry 4.0
- Manufacturing Systems Design, Production Engineering, and Control Systems
- Production and Operation Management, Project Management, Safety Management
- Renewable Energy, Energy Technology, Green and Clean Energy
- Energy and Sustainability, Hydrogen Energy and Fuel Cell
- Mining, Petroleum and Mineral Processing, Chemical Engineering

Message from the Chairman-Organizing Committee

It is with profound pleasure and sincere appreciation that I extend a warm welcome to all distinguished delegates, scholars, and participants of the 8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025). As the Chairman of the Organizing Committee, it is both an honor and a privilege to address this eminent assembly, which brings together global leaders, visionary researchers, and pioneering professionals who share a unified mission—to advance the frontiers of mechanical engineering and renewable energy.

This conference is far more than a routine academic gathering; it represents a dynamic convergence of brilliant minds, a catalyst for transformative innovation, and a platform for global collaboration. It provides an invaluable opportunity to engage in rigorous dialogue, exchange novel insights, and collectively envision sustainable technological pathways that can address some of the most pressing challenges of our time. Through this shared endeavor, we aim to contribute meaningfully to building a cleaner, smarter, and more resilient future for humanity.

I would like to express my deepest gratitude to the dedicated members of the Organizing Committee, our esteemed sponsors and partners, and the distinguished speakers and presenters whose invaluable contributions and unwavering support have made this conference possible. Their tireless efforts have transformed a vision into reality and created a forum that truly embodies the spirit of academic excellence, innovation, and collaboration.

The research and innovations presented at ICMERE 2025 encompass a wide spectrum of transformative ideas—from cutting-edge advancements in mechanical engineering to pioneering developments in renewable and sustainable energy systems. These contributions are not only shaping the future of technology but also strengthening the foundations of sustainable development and global resilience.

As we convene in this vibrant exchange of ideas, I encourage every participant to engage deeply, collaborate openly, and think boldly. Let us utilize this opportunity to forge lasting professional relationships, inspire creative problem-solving, and collectively accelerate the transition toward a technologically advanced and environmentally responsible world.

I am confident that ICMERE 2025 will serve as a beacon of inspiration and a catalyst for innovation, sparking new perspectives and collaborative ventures that will continue to resonate long after the conference concludes. Together, through shared vision and united effort, we hold the power to engineer a brighter, cleaner, and more sustainable future.

Thank you for your invaluable participation and commitment to this transformative endeavor.

Prof. Dr. Sheikh Muhammad Humayun Kabir

Chairman, Organizing Committee

8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025)

Chittagong University of Engineering & Technology (CUET)

Chattogram, Bangladesh

Message from the Member Secretary-Organizing Committee

It is with great pleasure that we welcome you to the 8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025), convened under the timely and significant theme of Sustainable Development through Engineering and Renewable Energy. We take pride in the Department of Mechanical Engineering at the Chittagong University of Engineering & Technology (CUET), Chattogram, for successfully organizing this prestigious biannual international event since 2011.

ICMERE 2025 serves as a premier global platform, bringing together scientists, researchers, engineers, educators, and industry leaders from around the world to explore cutting-edge developments in Mechanical Engineering and Renewable Energy. The conference offers participants a unique opportunity for professional networking, rigorous discussions, and the exchange of innovative ideas. We anticipate that the outcomes of this gathering will contribute significantly to technological advancement and the dissemination of state-of-the-art scientific knowledge.

This year, we received 327 research paper submissions via the EasyChair online platform. Each submission underwent a thorough double-blind peer-review process, ensuring the high quality of the accepted papers, which will be presented across 25 technical sessions over two days. We sincerely thank all authors for their valuable contributions and active participation. Our deep appreciation also goes to the dedicated reviewers, whose careful evaluations were pivotal in maintaining the standard of the conference proceedings.

We are particularly grateful to the distinguished international experts who have honored us with their presence to deliver Plenary, Keynote, and Invited Speeches. We also acknowledge the unwavering support and collaborative efforts of the Organizing, Advisory, and Technical Committee members. Our heartfelt thanks go to the Honorable Vice Chancellor, Prof. Dr. Mahmud Abdul Matin Bhuiya for his invaluable guidance and steadfast support throughout the planning and execution of this conference. We are equally grateful to all individuals, sponsoring companies, and institutions whose generous support has made this event possible.

CUET, one of the leading engineering universities in Bangladesh, is strategically located along the scenic Karnofuli River, just 25 kilometers from Chattogram city. The surrounding valley, rich in diverse flora and fauna, further enhances the natural beauty and serene environment of the campus.

On behalf of the entire Organizing Committee of ICMERE 2025, I extend our sincere gratitude to all delegates for their participation and contributions. We hope that these three days of engaging technical sessions, stimulating discussions, and innovative idea exchanges will be both enriching and inspiring.

We wish you a highly productive and successful conference.

Prof. Dr. Md. Sanaul Rabbi

Member Secretary, Organizing Committee

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Chittagong University of Engineering & Technology (CUET)

Chattogram, Bangladesh

Message from the Chairman-Technical Committee

On behalf of the Technical Committee of the International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025), it is my great pleasure to welcome you to this prestigious event. It is both an honor and a privilege to serve as the Technical Chair for ICMERE 2025.

This year's conference has brought together a remarkable and diverse group of authors and speakers from universities, government organizations, and industry, all sharing ideas and insights across a wide spectrum of fields including communications, electronics, networking, computer science, mechanical and materials engineering, and other emerging technologies. Together, we aim to address critical technical and industrial challenges that are shaping the future of engineering and technological advancement.

ICMERE 2025 is hosted by the Chittagong University of Engineering & Technology (CUET), Chattogram, Bangladesh. The conference spans three days, from 10–12 December 2025, featuring 25 technical sessions conducted in five parallel tracks, along with six keynote speeches, and one invited talk delivered by leading researchers in their respective fields.

The primary goal of this year's conference is to provide a dynamic platform for researchers, engineers, academics, and industry professionals to present their latest research, exchange innovative ideas, and explore emerging trends across various areas of engineering and technology.

For the 8th edition of ICMERE, we received 327 high-quality research papers. Each submission underwent a rigorous review process managed by the International Program Committee, with every article evaluated by at least two reviewers. The contributions represent a truly international effort, reflecting research from across the globe, and the entire submission and review process was efficiently managed online. We are confident that the presentations and discussions at ICMERE 2025 will lead to meaningful outcomes and foster collaborative opportunities among participants.

It is with great pleasure that I welcome you to an inspiring, educational, and engaging program here in the beautiful city of Chattogram, Bangladesh. We hope that you find the conference both informative and enjoyable, and that it serves as a valuable opportunity to establish lasting international research collaborations while enjoying your stay in Chattogram.

Prof. Dr. Mohammad Mizanur Rahman

Chairman, Technical Committee

8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025)

Chittagong University of Engineering & Technology (CUET)

Chattogram, Bangladesh

Message from the Secretary-Technical Committee

It is my pleasure to warmly welcome each of you to the 8th edition of the International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025). This event represents an exciting opportunity for scientists, academicians, engineers, modern managers, and researchers to engage in knowledge exchange, embrace systematic manuscript management, and participate in a constructive and rigorous blind peer-review process. Since its inception in 2011, ICMERE has grown steadily as a platform for promoting high-quality research.

In line with our commitment to excellence, plagiarism checking has now become mandatory, enabling reviewers to provide constructive feedback and helping authors enhance the quality of their writing. We are continuously transforming our processes to meet the highest international publication standards. The success of ICMERE would not have been possible without the dedication of our reviewers, coordinators, volunteers, and support teams, who have worked tirelessly to ensure the smooth execution of the conference despite practical challenges.

I sincerely thank each participant for attending ICMERE 2025 and contributing your expertise to this vibrant forum. Your knowledge, experience, and engagement enrich the conference and play a vital role in shaping the future of engineering research. I encourage all delegates to actively participate, collaborate, and contribute to the continued growth of ICMERE, ensuring its success in future editions.

Finally, I appeal to the global research community for their ongoing support and cooperation, which will help sustain and expand the impact of ICMERE in the years to come.

Prof. Dr. Prasanjit Das

Secretary – Technical Committee

8th International Conference on Mechanical Engineering and Renewable Energy (ICMERE 2025)

Chittagong University of Engineering & Technology (CUET)

Chattogram, Bangladesh

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Conference Program

DATE: 10/12/2025 (DAY 1)

Time and Events	Venue
Time: 9:00 AM Keynote Session I: Speaker: Prof. Dr. Md. Raisuddin Khan Title: <i>An In-Situ CO₂ Gas Generation System from Dry Ice for Powering Robots in Indoor Firefighting</i> Chair: Prof. Dr. Bodius Salam Co-Chair: Dr. Mostafizur Rahman	Central Auditorium
Time: 9:50 AM Keynote Session II: Speaker: Prof. Dr. Md. Abul Kalam Title: <i>Transforming Energy Systems: Bio Lubricant and Additive Solutions for Cleaner Automotive Applications</i> Chair: Prof. Dr. Md. Mahbubul Alam Co-Chair: Dr. Afnan Hasan	
Time: 10:40 AM Inauguration Ceremony	
Time: 11:30 AM Refreshment	

Technical Session-1A Computational Analysis-I Time: 11:50 AM Venue: A (Post-Graduate Research Laboratory); Room No. 2116	
Chair	Prof. Dr. Md. Shamimur Rahman
Co-Chair	Dr. Mostafizur Rahman
Paper ID	Title and Authors
011	“EVALUATION OF EVACUATION MAPPING IN INDUSTRIAL FIRE SCENARIOS USING CFD TOOLS” <i>Dr. Md. Kharshiduzzaman, Musfiqul Azad, Syed Ishfaqul Hoque Rafsan, Mafrur Faharrim Khan, Redwanur Rashid and Md Foysal Mahmud</i>
023	“A NUMERICAL STUDY ON THE EFFECT OF LIQUID SLOSHING FOR DIFFERENT BAFFLE CONFIGURATIONS IN FUEL TANKERS” <i>Md Ridwanul Hassan Rafi, Md Mahbubul Alam, Md Tanvir Shahariar and Ashaduzzaman Moon</i>
027	“CFD STUDY ON DIVERGENCE ANGLE AND BACK PRESSURE EFFECTS IN CONVERGING - DIVERGING SUPERSONIC NOZZLES” <i>Md. Akiduzzaman, Soumik Mallick, Md Abu Hasan Al Askary and Jamal Uddin Ahamed</i>
030	“NUMERICAL INVESTIGATION OF THERMAL PERFORMANCE IN A DOUBLE PIPE HEAT EXCHANGER USING CFD” <i>Joy Chowdhury, Gopal Sen and Md. Omar Faruk</i>
041	“MESH SIZING FOR LARGE EDDY SIMULATION OF FLOW OVER SURFACES USING INTEGRAL LENGTH SCALE FROM RANS: A STUDY ON COMPUTATIONAL EFFICIENCY AND ACCURACY” <i>Mir Nabil Mahmud, Md Abdul Ahad Abir and Md Jobair Hossain Khan</i>
085	“QUASI-STEADY AERODYNAMIC MODELING AND PERFORMANCE ANALYSIS OF AN ORNITHOPTER” <i>Asma Azam and Sajal Chandra Banik</i>
132	“NUMERICAL INVESTIGATION OF THE EFFECTS OF PRESSURE ANGLE AND FACE WIDTH ON BENDING STRESS OF A SPUR GEAR” <i>Atanu Barua, Md. Bayazid Ahmed and Wazed Ibne Noor</i>
153	“EFFECTS OF HEAT GENERATION AND POROSITY ON UNSTEADY MHD FREE-CONVECTIVE TRANSPORT OF MICROPOLAR BINARY FLUID FLOW PAST IN AN INCLINED POROUS PLATE BY IMPLICIT FINITE DIFFERENCE METHOD” <i>Md. Mosharrof Hossain, Md. Hasibul Haque, Md. Hasanuzzaman and Md. Bappi Mridha</i>
302	“NUMERICAL INVESTIGATION ON THE PERFORMANCE OF SOLAR PHOTOVOLTAIC SHADING ABOVE BUILDING WINDOW” <i>Sheikh Zihad Al-Din and Mohammad Ariful Islam</i>

Technical Session-1B Heat Transfer-I Time: 11:50 AM Venue: B (Solid Mechanics Laboratory); Room No. 2114	
Chair	Prof. Dr. Kazi Afzalur Rahman
Co-Chair	Mr. Tafsirul Hassan
Paper ID	Title and Authors
007	“EFFECT OF CHEMICAL REACTION ON MHD FREE CONVECTION FLOW OF NANOFLUID PAST AN INFINITE VERTICAL POROUS PLATE: UNSTEADY STUDY” <i>Ashish Barmon, Jhuma Ray, Md. Kamrul Hasan and Md Hasanuzzaman</i>
012	“EFFECT OF POROSITY ON AN UNSTEADY MHD FREE CONVECTION OF FLUID FLOW PAST IN AN INCLINED POROUS PLATE” <i>Md Asaduzzaman, Md. Hasanuzzaman and Mahamudul Milon</i>
024	“ENHANCED THERMAL PERFORMANCE OF SHELL-AND-TUBE HEAT EXCHANGERS USING Fe ₃ O ₄ AND Al ₂ O ₃ NANOFLUIDS: A CFD-BASED COMPARATIVE STUDY” <i>Asaduzzaman Sakib, Usama Ibn Aziz, Md. Samin Khan Hridoy, Fahim Tanvir, Mohammad Nahidul Islam and Swagoto Ray</i>
043	“DESIGN AND FABRICATION OF A ONE SHELL PASS AND TWO TUBE PASS HEAT EXCHANGER” <i>Golam Saklayen, Bodius Salam, Md. Fardim Hasan Emon and Md. Mamunur Rahman</i>
047	“PERFORMANCE OF FIN ENHANCED COMPACT HEAT EXCHANGER USING EXPERIMENTAL ANALYSIS” <i>Umme Habiba, Bodius Salam, Swadhin Ghosh and Md. Tuhin Mia</i>
110	“DESIGN OPTIMIZATION OF DOUBLE-GLAZED WINDOW FOR THERMAL AND ACOUSTIC INSULATION” <i>Md Abdul Ahad Abir, Ahmed Zuhayer Chowdhury, Abrar Ahmed Chowdhury and Mir Nabil Mahmud</i>
138	“NUMERICAL INVESTIGATION AND OPTIMIZATION OF HEAT TRANSFER AND EXERGY LOSS IN GEOMETRICALLY MODIFIED TUBE HEAT EXCHANGERS USING NANOFLUIDS” <i>Faisal Iqbal, Prasanjit Das and Hasin Arman</i>
141	“DESIGN AND CONSTRUCTION OF BOILING HEAT TRANSFER APPARATUS” <i>Mohammad Rahat Hosen, Paban Barua Nishan, Pritom Barua Shuvo and Dr. Bodius Salam</i>
178	“NUMERICAL ANALYSIS OF HEAT TRANSFER AND FLOW CHARACTERISTICS OF R1336MZZ(E) WITH AL ₂ O ₃ NANOPARTICLE IN THE U-BEND TUBE EVAPORATOR” <i>Md. Samir Hossen, Dipayan Mondal, Ashfaq Mahmud Khan and Latifur Islam</i>
314	“CO-PYROLYSIS OF POLYPROPYLENE PLASTIC WASTE AND BAMBOO SAWDUST BY INFRARED WAVE” <i>Md. All Imran, M.M.K. Bhuiya, Iffat Azima Jiban, Itquan Hossen, Rupak Saha, Ankur Kumar Khan and Satu Sarkar</i>

Technical Session-1C Renewable Energy-I Time: 11:50 AM Venue: C (Computer Laboratory); Room No. 2246	
Chair	Prof. Dr. Rabiul Islam Sarker
Co-Chair	Dr. E. M. K. Iqbal Ahamed
Paper ID	Title and Authors
015	“COMPARATIVE ASSESSMENT OF BIODIESEL PRODUCTION AND PROPERTIES FROM WASTE COOKING LIQUOR, OLIVE OIL, AND MUSTARD OIL THROUGH TRANSESTERIFICATION PROCESS” <i>Md. Mehedi Hasan, Shahil Jaher Mafin, Rakibul Hasan Fahad, Nasif Bin Nazrul, Md. Masud Rana, Fardin Faruk Khan, Md. Abdullah Al Mamun and Mohammad Nahidul Islam</i>

017	“OPTIMIZING PERFORMANCE OF NOVEL ITO/LBSO/FASnI ₃ /CUO PEROVSKITE SOLAR CELLS: ROLE OF DEFECTS AND INTERFACE ENGINEERING VIA SCAPS-1D” <i>Md. Fardous Hasan Bappy, Abdullah-Al-Mazed Khan, Arnika Tabassum Arni, Md. Saiful Islam Shanto</i>
021	“DESIGN AND DEVELOPMENT OF A LOW COST PHOTOTRANSISTOR BASED PYRANOMETER FOR SOLAR RESOURCE ASSESSMENT” <i>Ishtiaq Mohammad Zia, Md. Siam Hossain, Shanawas Sakrio and Mazharul Islam</i>
026	“ESTIMATION OF OPTIMUM TILT ANGLES FOR SOLAR PANELS ACROSS CHATTOGRAM DIVISION OF BANGLADESH WITH TERRAIN-BASED COMPARISON” <i>Md. Mahdi Islam and Mahadi Hassan Fahim</i>
036	“RECENT TRENDS AND FUTURE PROSPECTS IN VORTEX AND WAKE-INDUCED VIBRATION BASED PIEZOELECTRIC ENERGY HARVESTERS: ADVANCES, CHALLENGES, AND EMERGING SOLUTIONS” <i>Md. Tawhidul Haque, A.M. Fahim Rahman, Md. Naimur Alam Ashik and Mokarrom Ahamed Badhon</i>
037	SYNERGISTIC CO-DIGESTION OF NAPIER GRASS, BANANA PEEL, AND COW DUNG FOR ENHANCED BIOGAS YIELD” <i>Kowrin Kishor Roy, Paban Barua Nishan and Dr. Sajal Chandra Banik</i>
038	“RECENT TRENDS AND FUTURE PROSPECTS IN GALLOPING AND FLUTTER BASED PIEZOELECTRIC ENERGY HARVESTERS: ADVANCES, CHALLENGES, AND EMERGING SOLUTIONS” <i>Md. Jubyer Islam, Abdullah Al Mueed, Merajul Islam Meraj and Mokarrom Ahamed Badhon</i>
040	“DESIGN AND OPTIMIZATION OF LEAD-FREE CHALCOGENIDE PEROVSKITE SOLAR CELLS: 30.64% EFFICIENCY WITH MGHFS ₃ ABSORBER” <i>Omkar Chowdhury and Utsa Bhowmik</i>
042	“LEAD-FREE FLUORIDE PEROVSKITE AGCDF ₃ FOR HIGH-EFFICIENCY SOLAR CELLS: A SIMULATION-GUIDED STUDY” <i>Utsa Bhowmik and Omkar Chowdhury</i>
312	“A PREDICTIVE MODEL OF ENERGY TO BRIDGE THE SOCIAL-TECHNOLOGY GAP IN RANAGMATI” <i>Rishita Chakma, Md. Adnan Faisal Siddique, Troyee Dev, Md. Mynoddin and Dr. Nipu Kumar Das</i>

Technical Session-1D	
Material Science/Engineering-I	
Time: 11:50 AM	
Venue: D (ME Seminar Room); Room No. 2249	
Chair	Prof. Dr. Md. Ashraf Ali
Co-Chair	Dr. Md. Aminul Islam
Paper ID	Title and Authors
049	“ANALYSIS OF HIGH THERMOELECTRIC PERFORMANCE OF SRTiO ₃ USING FIGURE OF MERIT” <i>Abdur Razzak Khan, Vinukumar Luckose, Firoz Kobir, Noor Farhana Halil Binti Abdul Razak and Md. Matiur Rahman</i>
062	“BIOGENIC SYNTHESIS OF Al-Mn DOPED ZnO NANOPARTICLES: MORPHOLOGY, STRUCTURE & PHOTOCATALYTIC ACTIVITY” <i>Safat Anam, Israt Jahan Shammi and Md. Masumul Haque</i>
063	“A COMPARATIVE ANALYSIS AMONG Balsa, PINE, AND GAMARI AS A POTENTIAL PIEZOELECTRIC MATERIAL” <i>Abu Bakkar, Sajal Chandra Banik and Chinmoy Deb Nath</i>
111	“FABRICATION OF SILICON-BASED COMPOSITE COATING FOR ENERGY STORAGE AND SEMICONDUCTOR APPLICATIONS” <i>Md. Helal Hossain, Prof. Dr. Mohammad Asaduzzaman Chowdhury, Prof. Dr. Iqbal Mahmud and Prof. Dr. Arefin Kowser</i>
164	“SPRAY-PYROLYZED SAMARIUM-DOPED COPPER OXIDE THIN FILMS FOR OPTOELECTRONIC APPLICATION” <i>Md. Maruf Hasan, Meher Nigar, M. Al Amin and M. Humayan Kabir</i>
167	“MECHANICAL RESPONSE OF BUCKLED GERMANENE: INFLUENCE OF TEMPERATURE, STRAIN RATE AND POINT DEFECTS” <i>Md. Riad Mostafa Mahfuz and Arman Hossain</i>

173	“FOOD WASTE TO BIOPLASTIC: A SUSTAINABLE MATERIALS APPROACH” <i>Md. Abtahi Islam Fahim and Md. Rafsan Yeasir</i>
211	“INVESTIGATING THE EFFECT OF CRYSTALLINITY ON PVDF-PMMA POLYMER BLEND AND ANALYZING ITS DIELECTRIC AND PIEZOELECTRIC PERFORMANCE” <i>Pabitro Prosad Mondal, Abdullah Bin Asif, Rounak Jarin Turna, Adiba Tarannum and Md. Emdadul Hoque</i>
221	“THE FIRST-PRINCIPLES STUDY OF THE STRUCTURAL, OPTOELECTRONIC, AND PHOTOCATALYTIC PROPERTIES OF LEAD-FREE HALIDE PEROVSKITE RBGECL ₃ FOR CO ₂ PHOTO-DEGRADATION APPLICATION” <i>Ahmadullah Hridoy, S. Mahmud Nabil, Abdullah-Al-Mazed Khan, Jonayedul Alam and Jannatul Ferdous Mim</i>

Technical Session-1E Fluid Mechanics/CFD-1 Time: 11:50 AM Venue : E (Mechanics Laboratory) ; Room No. 2301	
Chair	Prof. Dr. Prasanjit Das
Co-Chair	Mr. Radheshyam Nath Jisu
Paper ID	Title and Authors
39	A COMPARATIVE ANALYSIS OF STENT PERFORMANCE IN ANEURYSM: IMPACT OF NEWTONIAN AND NON-NEWTONIAN FLOW DYNAMICS Omi Dutta and Prasanjit Das
48	DESIGN AND FABRICATION OF A TWO-STAGE IMPULSE STEAM TURBINE Md Momin Hossain, Bodius Salam and Bishal Chakma
65	COMPUTATIONAL ANALYSIS OF AERODYNAMIC PERFORMANCE IN CONVENTIONAL AND BIO-INSPIRED TUBERCLED AIRCRAFT WINGS Mehrab Hossen, Sifat Perves and Farhan Sadik Rafi
79	CFD ANALYSIS OF EVACUATED TUBE COLLECTOR (ETC) TYPE SOLAR WATER HEATER Monira Khatun, Md Sadman Rahmathullah Chowdhury Shafik, Bodius Salam and Sayed Masrur Ahmmad
94	NUMERICAL INVESTIGATION OF AIRFOIL PERFORMANCE WITH TUBERCLES AND GURNEY FLAPS USING MESH-INDEPENDENT CFD SIMULATIONS Numan Zaman Dipu, Mokarrom Ahamed Badhon, Nusrat Nawar Ahsan, Mst. Nusrat Akther and Zannatul Mim
96	ALBATROSS AND PEREGRINE FALCON FLIGHT INSPIRED BIOMIMETIC WING DESIGN: A COMPARISON WITH NACA 23015 Anish Deb Turjo, Chandrima Deb and Mamjad Yousuf
107	TIME-DEPENDENT MHD NATURAL CONVECTION FLOW OF NANOFLUID PAST POROUS SHEETS WITH DISSIPATION EFFECTS Md. Hasan, Md Haque, Ashish Barmon, Md. Hasanuzzaman and Md Azad
114	COMPARATIVE NUMERICAL STUDY OF PCM AND AIR-BASED COOLING FOR LI-ION BATTERY THERMAL MANAGEMENT: A CFD APPROACH Nafiz Imtiaz Rafi and Md. Rabbi
119	COMPARATIVE NUMERICAL STUDY OF PCM AND AIR-BASED COOLING FOR LI-ION BATTERY THERMAL MANAGEMENT: A CFD APPROACH Nafiz Imtiaz Rafi and Md. Rabbi

Time: 1:20 PM Lunch and Prayer Break	Room No. 2316
Time: 2:20 PM Keynote Session III: Speaker: Prof. Dr. Akiyo Miyara Title: <i>Research and Development of Air-Conditioning Technologies to Adapt Next-Generation Refrigerants in Japan</i> Chair: Prof. Dr. Md. Ariful Islam Co-Chair: Prof. Dr. Dipayan Mondal	ME Seminar Room

Technical Session-2A Artificial Intelligence-I Time: 3.10 PM Venue: A (Post-Graduate Research Laboratory); Room No. 2116	
Chair	Prof. Dr. Md. Foisal Hossain
Co-Chair	Dr. Md. Elias Uddin
Paper ID	Title and Authors
057	“OPERATIONAL THRESHOLD-EMBEDDED MACHINE LEARNING MODELS FOR ACCURATE HYDRAULIC FRACTURING MONITORING” <i>Fardin Ahmed and Md. Nahul Rahman</i>
115	“PREDICTING SHIP ADDED MASS COEFFICIENT WITH MACHINE LEARNING: ACCURACY, SAFETY, AND COST SAVINGS” <i>Md. Ahasanul Kabir, Al-Amin Hossain Seam and Dr. Zobair Ibn Awal</i>
118	“VIBRATION FREQUENCY PREDICTION IN MARINE VESSELS: A SYNTHETIC DATA APPROACH WITH APPLICATIONS TO NOISE AND STRUCTURAL INTEGRITY” <i>Al-Amin Hossain Seam, Md. Ahasanul Kabir and Dr. Zobair Ibn Awal</i>
120	“DEFECT DETECTION ON METAL SURFACE USING DEEP LEARNING ALGORITHMS BASED ON CONVOLUTIONAL NEURAL NETWORK” <i>Protttoy Dev, Aninda Chowdhury and Md Abdul Ahad Abir</i>
127	“EVALUATING PRODUCTION DECISION AREAS THROUGH LSS AND TQM: A DUAL HESITANT FUZZY MCDM APPROACH” <i>Shakil Ahmed Khan, Md. Ashaduzzaman and Md. Rasel Sarkar</i>
131	“INTEGRATION OF RADIOMICS AND DEEP LEARNING FOR ADVANCED MRI-BASED BRAIN TUMOR CHARACTERIZATION” <i>Tonmoy Kanti Shaha, Sampad Ghosh, Shamsul Enam Faruquei and Md Jafrul Hasan</i>
144	“DEVELOPMENT OF A FUZZY RISK MODEL FOR CRITICALITY ANALYSIS OF A 25 MW DUAL-FUEL POWER PLANT IN BANGLADESH” <i>Eshita Das, Mohammad Mizanur Rahman and Sangita Das</i>
181	“AN INTERPRETABLE DUAL-MODEL AI FRAMEWORK FOR QUALITY ASSURANCE IN ADDITIVE MANUFACTURING” <i>Aniruddha Sarkar and Sajal Chandra Banik</i>
189	“INVERSE ESTIMATION OF DEFECT DISTRIBUTION IN CERAMICS USING PARTICLE SWARM OPTIMIZATION” <i>Mehedi Hassan Maruf, Mostafizur Rahman and Priyam Chakraborty</i>
198	“REVOLUTIONIZING MEDICAL WASTE PROCESSING WITH CONVOLUTIONAL NEURAL NETWORKS AND AUTOMATED SORTING SYSTEMS” <i>Anik Biswas and Bijoy Saha</i>

Technical Session-2B Process/Manufacturing Engineering Time: 3.10 PM Venue: B (Solid Mechanics Laboratory); Room No. 2114	
Chair	Prof. Dr. A S M Sayem
Co-Chair	Dr. Md. Shakhawat Hossain
Paper ID	Title and Authors
045	“Synthesis and Characterization of Enhanced Binary Carbonate Molten Salts Using Hybrid Nanoparticles (Al ₂ O ₃ –ZnO)” <i>Shoumik Joy, A.S.M. Sayem and Md. Yasir Bhuiyan</i>
072	“SUSTAINABLE EOR THROUGH ION-ENGINEERED PRODUCED WATER: A SMART WATER FEASIBILITY STUDY” <i>Tashdeed Rifa Raisa, Nowrin Afrin and Afsana Khanom Monika</i>
089	“OPTIMIZING PRODUCTION EFFICIENCY: TACKLING BOTTLENECKS AND IMPROVING LINE BALANCING” <i>Most. Mobassara Jannat, Ashraf Islam Ashfaq, Md. Mahfuz Rahman and Md Saifullah Chowdhury Tamim</i>

108	“Mapping the Future of Human Digital Twin Adoption in Job-Shop Industries: A Strategic Prioritization Framework ” <i>Samiran Sardar, Nasif Morshed and Shezan Ahmed</i>
142	“Energy, Exergy, Economic & Environmental Analysis of a Thermoelectric Cooler Integrated Hybrid Solar Desalination System ” <i>Ahanaf Zaman Zarif, Robel Ahmed, Nafisa Tabassum, Eachar Arafat Durjoy and Md. Rabiul Islam Sarker</i>
172	“IDENTIFYING AND ANALYZING BARRIERS TO SUSTAINABLE HEALTHCARE WASTE MANAGEMENT IN BANGLADESH: A COMBINED BWM–DEMATEL APPROACH” <i>Md. Ariful Haque, Mahadi Al Amry, Abid Jahan Mithan, Masrur Mezbah and Md Asif Iqbal</i>
208	“Catalytic Pyrolysis of Medical Waste Using Blast Furnace Slag as a Catalyst” <i>Md Sohag Torofder, Dr. Mohammad Sultan Mahmud and Sultan Shaharea</i>
213	“REDUCING WARRANTY CLAIMS AND DEFECTS IN A MOTORBIKE INDUSTRY OF BANGLADESH USING LEAN SIX SIGMA ” <i>Md. Mobassher Al Hasan, Nayan Nath and Md Mahfuzur Rahman</i>
238	“MOS ₂ ELECTROCATALYSTS FOR HYDROGEN EVOLUTION REACTION: PROGRESS, CHALLENGES, AND PERSPECTIVES ” <i>Md. Abtahi Islam Fahim, Md. Saiful Islam Shanto, Md. Rasel Islam and Md. Sihabul Islam Arpon</i>
287	“DESIGN OF A 52-SEATED BUS SHOWER TESTER: PRESSURE DISTRIBUTION ANALYSIS ” <i>M. Mustakim Mahmud and Mohammad Mizanur Rahman</i>

Technical Session-2C Interdisciplinary Research-I Time: 3.10 PM Venue: C (Computer Laboratory); Room No. 2246	
Chair	Prof. Dr. Muhammad Mostafa Kamal Bhuiya
Co-Chair	Dr. Arup Kumer Roy
Paper ID	Title and Authors
008	“CHALLENGES AND STRATEGIES TO IMPLEMENT SMART MANUFACTURING FACTORY IN BANGALDESH” <i>Md. Mohibul Islam, Md. Mushiur Rahman and Aizizul Haque Raza</i>
078	“Integrating Beeswax in Multi-PCM Thermal Storage: A Sustainable Approach” <i>Md. Sohag Hossain and A. N. M. Mizanur Rahman</i>
099	“ASSESSING THE CORE PERFORMANCE OF A NuScale-LIKE SMR THROUGH OpenMC MONTE CARLO Method” <i>Md Shahed Rahman and Abdus Sattar Mollah</i>
100	“Investigation of Tensile and Impact Properties of 3D-Printed Parts with Varying Nozzle Diameters and Infill Densities” <i>Md. Shahporan Rimon and Dr. Sajal Chandra Banik</i>
105	“STUDY OF NUCLEAR THERMAL PROPULSION FOR INTERPLANETARY MISSIONS: CASE STUDY OF MARS” <i>Niloy Bhowmick and Md. Tanvir Ahammed Shifat</i>
117	“OPTIMIZING PERISHABLE SUPPLY CHAINS UNDER STOCHASTIC DEMAND: DYNAMIC PRICING VERSUS FIXED DISCOUNT STRATEGIES” <i>Shihab Uddin, Golam Sadek, Sanjeeb Roy, Mehedi Hasan, Abdul Rakib and Md. Ashiqur Rahman Hridoy</i>
122	“STATURE ESTIMATION FROM LOWER LIMB ANTHROPOMETRIC MEASUREMENTS IN BANGLADESHI FEMALES” <i>Md. Asadujjaman, Rahnuma Islam, Mst. Anwara Khatun, Shamsunnahar Khanam, Dewan Hafiz Nabil and A.S.M. Shahriar Hossain Alvee</i>

182	“ERGONOMIC DESIGN OF OFFICE FURNITURE BASED ON ANTHROPOMETRIC MEASUREMENT: A CASE STUDY ON KUET” <i>Md. Abu Bakkar Sikder, S. Razaul Karim Raju, Md. Golam Kibria and Rishikesh Chowdhury</i>
249	“DEVELOPING OPERATIONAL SHADOW PRICE OF WATER USED IN A THERMAL POWER PLANT IN BANGLADESH” <i>Surovi Aktar Nupur and Dr. Abu Sadat Muhammad Sayem</i>
297	“Optimizing Eco-Friendly Tin Perovskite Solar Cells via Novel Transport Layer configuration using SCAPS-1D Simulation” <i>Muhaiminul Islam</i>

Technical Session-2D Material Science/Engineering-II Time: 3.10 PM Venue: D (ME Seminar Room); Room No. 2249	
Chair	Prof. Dr. Md. Arafat Rahman
Co-Chair	Mr. Mohammed Nezam Uddin Chy
Paper ID	Title and Authors
93	“Ni-DOPED ZnO NANOPARTICLES VIA CO-PRECIPITATION: A MULTIFUNCTIONAL MATERIAL FOR BACTERIAL INHIBITION AND DYE DEGRADATION” <i>Md. Farhan Muskan, Md. Etyak Ahammod Sonny, Hridoy Roy, Ridwan Uddin, Md. Lael Hasan and Md. Estabrak Ahammod Sakib</i>
113	“MECHANICAL AND MICROSTRUCTURAL ANALYSIS OF NICKEL FOAM VIA POWDER METALLURGY” <i>Md. Tuhin Mia, Prasanjit Das and Umme Habiba</i>
136	“EFFECT OF Co-DOPING ON THE PHOTOCATALYTIC AND ANTI-BACTERIAL PROPERTIES OF Ag-TiO ₂ NANOPARTICLES” <i>Md. Ahsan Tamjid Talha, Taufique Sami, Abdullah-Al-Mazed Khan, Md. Farhan Jakib and Ishtiaq Mahmud</i>
143	“INFLUENCE OF MICROSTRUCTURE AND PETROPHYSICAL PROPERTIES ON THE UNIAXIAL COMPRESSIVE STRENGTH OF KAPTAL SANDSTONE” <i>Nazmun Naher Rita and Dr. Md. Abu Mowazzem Hossain</i>
145	“IMPROVED ANTIBACTERIAL ACTIVITY OF TiO ₂ NANOPARTICLES BY N, Cu, AND Ag DOPING” <i>M. Mahfuza Khatun, Hasnat Jahan Sumona, Abdullah Al Mahmood and M. Bodiul Islam</i>
149	“EFFECT OF COBALT-DOPED AND COBALT-YTTRIUM Co-DOPED TiO ₂ PARTICLES USING LAGENARIA SICERARIA (MOLINA) PEEL EXTRACT VIA GREEN ROUTE FOR ENHANCED PHOTOCATALYTIC AND ANTIBACTERIAL PERFORMANCE” <i>Abdullah Al Mazed Khan, Dr. Md Nurul Islam, Md. Rasel Islam, Md. Farhan Jakib and Md. Al-Riad Tonmoy</i>
151	“AMINO FUNCTIONALIZATION OF BORON NITRIDE: STRUCTURAL, SURFACE, AND COLLOIDAL CHARACTERIZATION” <i>Sifat Kawsar, Abrar Rafid Siddique, Sayem Kawsar, Md. Sunjedul Islam, Shahla Rahman and Dr. Iftheke Ahmed Khan</i>
156	“COMPARATIVE STUDY OF CRUSHING LOADS OF POROUS ALUMINIUM- AND COPPER-OXIDES SYNTHESIZED VIA SPACE HOLDING SINTERING” <i>Mohammad Faisal, Mohammad Anwer Jahed, Dr. Md. Arafat Rahman, Shaswato Barua and Konok Chandra Bhowmik</i>
158	“EXPERIMENTAL INVESTIGATION ON PHYSICAL PROPERTIES OF LOCAL FURNACE BRICKS” <i>Md. Riadul Alam Hriday, Konok Chandra Bhowmik, Dr. Md. Arafat Rahman and Shaswato Barua</i>

Technical Session-2E Composite Materials-I Time: 3.10 PM Venue : E (Mechanics Laboratory) ; Room No. 2301	
Chair	Prof. Dr. Md. Abdul Hasib
Co-Chair	Dr. Sazzad Ahmed
Paper ID	Title and Authors
4	The Effect and Influences of Al ₂ O ₃ Nanoparticles on Tensile Properties of JUCO Fibre-Reinforced Composite in Different Media: An Experimental and FEM Evaluation Kaniy Fatema Pritha, Md Foisal Hossain, Muhammed Sohel Rana and Md Shafiul Ferdous
14	Influence Of Chemical Treatments of JUCO Fiber-Reinforced Composites in Acidic Environments (Ph 3) For Marine and Corrosive Environment Applications Anoy Chakraborty, Md Foisal Hossain, Muhammed Sohel Rana and Md Shafiul Ferdous
16	Effects Of Adding Natural Fillers on Textile Waste and Glass Fiber Reinforced Hybrid Composite Materials Md Mustakim Ahmmad Hemel, M.M.K. Bhuiya, Nafsheen Reza Reedeka, Nabila Chowdhury and Md. Mainul Islam
18	Effect Of Fiber Orientation on the Impact Behavior of Glass Fiber and Polypropylene Net Bag-Based Epoxy Composite Sumaiya Jahan, Prof.Md. Rafiquzzaman and Md.Taiful Islam Chowdhury
32	Fabrication And Characterisation of Untreated Wastepaper and Banana Fiber Reinforced Hybrid Composite Nafsheen Reza Reedeka, Kazi Afzalur Rahman and Md Mustakim Ahmmad Hemel
35	Effect Of Fiber Orientation on the Impact Behavior of Glass Fiber and Polypropylene Net Bag-Based Epoxy Composite Pallab Biswas, Paban Barua Nishan and Kowrin Kishor Roy
58	Nanocellulose Extraction from Water Hyacinth for Eco-Friendly Packaging Solution Abdullah Adnan Abir, Redoatul Sultana Rethe, Mst. Salma Anuara and Dr. Shahajada Mahmudul Hasan
67	Fabrication & Performance Analysis of Automobile Brake Pad Using Recycled & Eco-Friendly Materials Md. Ashraful Islam, Dr. Md. Mizanur Rahman and Abu Bakkar
91	Sustainable Synthesis and Property Evaluation of Ceramic Floor Tiles Incorporating Waste Bone Ash. Abdullah Al Mahmood, Md. Minhajul Islam and Md. Bodiul Islam

Time: 4:40 PM Refreshment and Prayer Break	Room No. 2316
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Time: 5:00 PM Keynote Session IV: Speaker: Prof. Dr. Tawhidul Islam Khan Title: <i>Integrating Acoustic Emission with Artificial Intelligence for Advanced Biomedical and Industrial Applications</i> Chair: Prof. Dr. Sajal Chandra Banik Co-Chair: Dr. Sumit Majumder	ME Seminar Room
Time: 5:40 PM Tea and Prayer Break	Room No. 2316
Technical Session-3A Artificial Intelligence-II Time: 6.00 PM Venue: A (Post-Graduate Research Laboratory); Room No. 2116	
Chair	Prof. Dr. Mohammad Ahsan Ullah
Co-Chair	Dr. Md. Saiful Islam
Paper ID	Title and Authors
230	"MACHINE LEARNING-DRIVEN WIND RESOURCE ASSESSMENT IN COX'S BAZAR, BANGLADESH"

	<i>Sowrav Ghosh and Md. Ashikul Islam Soron</i>
239	“Explainable AI-Based Geophysical Logging Parameters Selection for Enhancing Rock Brittleness Prediction” <i>Mohammad Islam Miah, Md Maruf Alam and Travis Wiens</i>
270	“FFF Process Parameter Optimization in Fiber-Reinforced TPU Composites by Comparative XAI Analysis of Machine Learning Models” <i>Musfique Mahmud Foysal, Md. Abdul Hasib, Al Muttaki Billah, Abdullah Al-Faruk and Arup Kumar Debnath</i>
279	“AI-Driven Optimization of Hybrid Renewable Energy Systems for Smart and Sustainable Cities” <i>Khadiza Tul Nur Aiman, Mahmudur Rahman Mitul and Md. Mortuza Ahmmed</i>
281	“MONTE CARLO BENCHMARKING OF A NuScale-LIKE SMR CORE: OpenMC VALIDATION AGAINST Serpent 2.2.0” <i>Md Shahed Rahman and Abdus Sattar Mollah</i>
283	“A COMPARATIVE MACHINE LEARNING APPROACH FOR ENERGY CONSUMPTION PREDICTION IN HYBRID VEHICLES” <i>Bishawajit Chakraborty, Arpita Paul, Bhubon Thiotonius Costa and Md. Shajratul Alam Towhid</i>
285	“Multi-Paradigm Predictive Modeling of Surface Roughness in Thermally Enhanced Friction Drilling of A356 Aluminum Alloy Using RSM–ML Integration” <i>Fahimul Haque, Miftaur Rahman Zisan and Mahamudul Hassan Siddique</i>
290	“INTEGRATING MACHINE LEARNING AND SUSTAINABILITY METRICS FOR OPTIMAL BIODIESEL FEEDSTOCK SELECTION IN BANGLADESH” <i>Sowrav Ghosh and Md. Ashikul Islam Soron</i>
291	“AI-Based Environmental Noise Mapping and Prediction Around Industrial Zones” <i>Shovon Mahamud Bhuiyan and Md. Mortuza Ahmmed</i>

Technical Session-3B	
Heat Transfer-II	
Time: 6.00 PM	
Venue: B (Solid Mechanics Laboratory); Room No. 2114	
Chair	Prof. Dr. Jamal Uddin Ahamed
Co-Chair	Mr. Md. Aminul Islam
Paper ID	Title and Authors
192	“NUMERICAL INVESTIGATION AND ANALYSIS ON THERMAL-HYDRAULIC CHARACTERISTICS OF AN ELLIPTICAL EMBOSSEMENT PLATE HEAT EXCHANGER” <i>Md. Nahid Uddin Antor, Mohammed Istiak Ahamed, Ajgor Hossen, Syed Mohammad Faiaz Ul Alam, Elham Yunus and Mohammad Hasanur Rahman</i>
201	“EXPERIMENTAL INVESTIGATION OF FALSE CEILING HEIGHT ON THE THERMAL COMFORT OF BUILDING” <i>Md. Mahmodul Alam, Md Akib Ul Islam, Tahmid Talukder, Md. Meraz Hasan and Md. Hasan Ali</i>
217	“APPLICATION OF DISPLACEMENT FUNCTION FORMULATION IN THERMO-MECHANICAL ANALYSIS WITH MIXED BOUNDARY CONDITIONS” <i>Puspita Tasnim, Mohammad Tanveer Ahmed Rafi, Navid Newaz and S.M. Taufiq Imrose</i>
231	“Shell and Tube Heat Exchanger Performance: Geometry Modifications and Hybrid Nanofluid Potential” <i>Abul Hasan and Md. Saidul Islam Safat</i>
254	“IMPACT OF INSULATIONS ON THERMAL COMFORT INSIDE A MILITARY TENT” <i>Mohammad Tarequl Islam, Md Insiat Islam Rabby, Md. Shofiul Alam Shanto, Md. Sifat Khan, Md. Abdullah Al Kawser and Sadik Simanto</i>
263	“Analysis of Drag Reduction and Thermal Performance of Xanthan Gum-Water Mixtures in a Shell and Tube Heat Exchanger” <i>Meraz Ahammed, Dr.Md.Mahbubul Alam and Md. Abu Bakkar Sikder</i>

266	“EXPERIMENTAL STUDY ON THERMAL PERFORMANCE OF A HEAT PIPE USING DIFFERENT REFRIGERANT AS A WORKING FLUID ” <i>Mohammad Ayub Adar, Jamal Uddin Ahamed, Rupak Saha, Sadia Nourin Mim and Ismail Hossain</i>
289	“EXPERIMENTAL STUDY OF A SOLAR POWERED VEHICLE INTEGRATING A PELTIER-BASED COOLING MODULE ” <i>Jubaer Hossain Sazin, Fardin Alif and Dipayan Mondal</i>

Technical Session-3C Fluid Mechanics/CFD-II Time: 6.00 PM Venue: C (Computer Laboratory); Room No. 2246	
Chair	Prof. Dr. Md. Mamunur Roshid
Co-Chair	Mr. Mohammed Nezam Uddin Chy
Paper ID	Title and Authors
139	“EFFECTIVENESS OF DRAG REDUCTION DEVICE ON SIMPLIFIED VEHICLE MODEL: A CFD STUDY” <i>Md. Bulbul Ahmed Rubel, Prasanjit Das and Itquan Hossen</i>
174	“STUDY ON EFFECT OF DIMPLE ON AERODYNAMIC CHARACTERISTICS OF NACA 0012 AIRFOIL” <i>B M Saif, Sudipto Das and Gazi Faisal</i>
185	“NUMERICAL INVESTIGATION OF BLOOD FLOW IN ARTERIES WITH DIFFERENT STENOSIS GEOMETRIES” <i>Swadhin Ghosh, Md. Mamunur Roshid, Umme Habiba and Dipannita Das Arpa</i>
191	“Fluid–Structure Interaction and Heat-Transfer Enhancement in a Shear-Driven Non Newtonian Cavity Flow” <i>Namir Shahed Chowdhury, Abdullah Arshad, Zarin Subah and Jamal Uddin Ahamed</i>
204	“FROM SIMULATION TO FABRICATION: TAILORING A MULTILAYER MICROFLUIDIC DEVICE FOR CONTROLLED DRUG DELIVERY (CDD)” <i>Shakhawat Hossain, Mohammad Jashim Uddin, Md. Waliuzzaman Talha, Md. Tanbir Hasan, and Arafat Sarka</i>
205	“PASSIVE FLOW CONTROL OVER NACA 23018 USING SEMI-CIRCULAR DIMPLES ACROSS DIFFERENT REYNOLDS NUMBERS” <i>Navid Newaz, Mohammad Tanveer Ahmed Rafi, Puspita Tasnim and S. M. Taufiq Imrose</i>
210	“A MODULAR FRAMEWORK FOR LOW-FIDELITY AERO-STRUCTURAL WING TWIST OPTIMIZATION OF SMALL UAV WINGS: AERO FALCON” <i>Md. Shah Ishrak</i>

Technical Session-3D Material Science/Engineering-III Time: 6.00 PM Venue: D (ME Seminar Room); Room No. 2249	
Chair	Prof. Dr. Md. Bodiul Islam
Co-Chair	Dr. Md. Mukter Hossain
Paper ID	Title and Authors
169	“MICROSTRUCTURAL AND DIELECTRIC PROPERTIES OF Eu AND Ta Co-DOPED CALCIUM COPPER TITANATE” <i>Md. Khairul Islam, Jawad Bin Jashim, Rafiul Islam and Suravi Islam</i>
186	“UTILIZATION OF EFFLUENT TREATMENT PLANT (ETP) SLUDGE IN THE DEVELOPMENT OF CERAMIC TILES” <i>Md. Rajdul Islam and Md. Rahat Al Hassan</i>
202	“EFFECTS OF AGEING TREATMENT ON THE MICROSTRUCTURAL & MECHANICAL PROPERTIES OF Al-5% Si-1.5% Sn-15% Zn ALLOY” <i>Md. Shaheen Meya, Golam Mostafa Nipu, Sobuj Kumar and Md Mehidi Hasan</i>

215	“A STUDY OF ALUMINUM BASED HIGH ENTROPY ALLOYS IN LIGHTWEIGHT APPLICATIONS AT THE ELEVATED TEMPERATURES: A REVIEW” <i>Asif Hossen, Md. Nazrul Islam, S. M. Nasim Rokon, Abdullah-Al-Mazed Khan and Md. Fardous Hasan Bappy</i>
232	“WASTE TO ENERGY THROUGH THERMOELECTRIC GENERATOR FROM RECYCLED MELAMINE” <i>Md. Aminul Islam, Md. Al-Riad Tonmoy, Afm. Farid Uddin and Sayed Muhit Al Rafi</i>
237	“A REVIEW ON MXENE SYNTHESIS: CONVENTIONAL AND EMERGING APPROACHES” <i>Tahmid Ul Abrar, Radia Zaman, Priyam Chakraborty and Ahad Bin Azad</i>
243	“PERFORMANCE EVALUATION OF CAPACITIVE DEIONIZATION CELLS WITH DIFFERENT ELECTRODE MATERIALS AND WATER SOURCES” <i>Azizul Hakim Fahim, Arpita Paul and Abdul Mojib Parvej</i>
252	“ANALYSIS OF THE EFFECT FOR NICKEL DOPING ON BISMUTH ZIRCONATE NANOPARTICLES: APPROACH FOR PHOTOCATALYTIC ACTIVITIES” <i>Abdullah Wasif Rafin, Md. Tanzim Shahriar Mridul and Dr. Mohammad Shahed Hasan Khan Tushar</i>
293	“NiO AND Co-DOPED NiO MULTIFUNCTIONAL NANOMATERIALS: BIOGENIC FABRICATION FOR ENHANCED PHOTOCATALYTIC ACTIVITY” <i>Shah Sadia Rahman Joya, Md. Estabrak Ahammod Sakib, Md. Lael Hasan, Hridoy Roy and Md. Farhan Muskan</i>

Technical Session-3E Composite Materials-II Time: 6.00 PM Venue : E (Mechanics Laboratory) ; Room No. 2301	
Chair	Prof. Dr. Md. Arifuzzaman
Co-Chair	Dr. Afnan Hasan
Paper ID	Title and Authors
104	High-Performance Aluminium Hybrid Composites Reinforced with Zn, Sn, And Ti for Lightweight Automotive and Advanced Structural Applications <i>Md. Shahriar Islam, Paban Barua Nishan and Pritom Barua Shuvo</i>
125	Property Evaluation and Structural Optimization of Nymphaea Nouchali-Inspired Metamaterials <i>Sanjiddul Islam, Nafiz Ahmed and Tanjim Samad Swapnil</i>
140	Mechanical, Chemical, And Environmental Analysis of Epoxy-Based Bio-Composites Using Snail Shell, Eggshell, And Rice Husk for Brake Pad Applications. <i>S. M. Rafid, Md. Minhaj Abedin Sonet, Sohrab Hossain Prince, Pulak Ranjan Das, Md. Rakibul Islam Bilash and Md. Jahidul Haque</i>
150	Cellulose-Based Biodegradable Plastics Derived from Water Hyacinth (Eichhornia Crassipes): Extraction, Fabrication, And Property Evaluation <i>Runa Afroz Rintu, Md. Hasibul Hasan Himel, Shibly Sadik Biva and Mohammad Nurur Rahman</i>
159	Mitigating Urban Traffic Noise Through the Application of Biodegradable Composite Materials <i>Kazi Warisa Tabassum, Tamim Hasan Apurbo, Nazmus Sakib Sami, Jannatul Ferdous and Md. Mortuza Ahmmmed</i>
161	Investigation Of the Mechanical Properties of Polyurethane Foam Core Sandwiched Hybrid Composites <i>Md. Golam Sarware and Fatema Tuz Zahra</i>
162	Investigation Of Mechanical and Physical Characteristics of Coconut Petiole Fiber/Epoxy Biocomposites <i>Kamrul Hasan Bappy, Md. Sanaul Rabbi and Bishal Chakma</i>
166	Effect Of Fishbone Ash on The Physical and Mechanical Properties of Artificial Teeth <i>Md. Abdul Ahad, Quazi Nazmul Arefin Sium, Sadia Samanta and Md. Shamimur Rahman</i>
194	Effectiveness Of Egg Shell Powder on Enhancing the Mechanical Properties of Jute Fiber Mat-Reinforced Epoxy Composite <i>Sopnil Ahmed, Md Arifuzzaman, Srijib Mukherjee, Nasif Shahriar and Md Shariful Islam</i>
Time: 7:30 PM Dinner	
Room No. 2316	

11 December 2025 : DAY 2 : Detailed Program Schedule

Time: 9:00 AM Keynote Session V: Speaker: Prof. Dr. Souman Rudra Title: <i>Hybrid Hydrodynamic Cavitation (HC)–Hydrothermal Separation (HTS) Processing: A Next-Generation Pathway for Biomass Valorization and Bio-Product Recovery</i> Chair: Prof. Dr. Md. Mosharraf Hossain Co-Chair: Prof. Dr. Nipu Kumar Das	ME Seminar Room
Time: 9:50 AM Invited Session: Speaker: Dr. Tore Sandness Vehus Title: <i>Indoor Air Quality Status and Mitigation Strategies with use of Photocatalysis</i> Chair: Prof. Dr. Quazi Delwar Hossain Co-Chair: Prof. Dr. Mehdi Hasan Chowdhury	ME Seminar Room
Time: 10:40 PM Refreshment	Room No. 2316

Technical Session-4A Petroleum/Mining Engineering Time: 11.00 AM Venue: A (Post-Graduate Research Laboratory); Room No. 2116	
Chair	Prof. Dr. Md. Saiful Alam
Co-Chair	Mr. Md. Mizanur Rahman
Paper ID	Title and Authors
031	“Process Design of Condensate Fractionation Unit (CFU) using HYSYS with Yield and Specifications of Petroleum Products Produced from Natural Gas Condensate ” <i>Md. Ryshur Rahman Turin and Jamal Uddin Ahamed</i>
051	“AN OVERVIEW OF SHALE GAS POTENTIALITY IN BENGAL BASINS” <i>Mohaiminul Islam, Raina Afrida and Md. Nasirul Islam</i>
069	“INVESTIGATION ON THE EFFECT OF BIODEGRADABLE BASELLA ALBA L. ON LUBRICITY OF WATER-BASED DRILLING MUDS ” <i>Khanum Popi and Md Saiful Alam</i>
082	“TECHNO-ECONOMIC ANALYSIS OF GREEN HYDROGEN PRODUCTION USING GEOTHERMAL ENERGY FROM BARAPUKURIA COAL MINE, BANGLADESH ” <i>K M Jahin, Noushad Zaman Efa and Afsana Khanom Monika</i>
090	“REPURPOSING ABANDONED HYDROCARBON WELLS FOR GEOTHERMAL POWER IN NORTHERN BANGLADESH: A FEASIBILITY STUDY TOWARD AFFORDABLE AND SUSTAINABLE ENERGY ” <i>Nowrin Afrin, Afsana Khanom Monika and Tashdeed Rifa Raisa</i>
116	“Ishikawa Diagram Analysis of Ship Accidents in Bangladesh: Advancing Sustainable Safety Management in Petroleum and Energy Transportation ” <i>Professor Dr. Zobair Ibn Awal, Arpon Chakraborty and Tanjila Akter</i>
218	“Experimental Evaluation of Hydrochloric Acid Treatment on Sandstone Reservoir Properties ” <i>Shah Poran Ebrahim, Istiaque Muhammad Khan, Mohammad Zahidul Islam, Ir Dr Muhammad Aslam bin Md Yusof and Md. Fahim Habib</i>
308	“PREDICTION OF POROSITY AND PERMEABILITY USING WELL LOG AND CORE DATA: A DATA-DRIVEN APPROACH ” <i>Md Alamin Islam, Bintun Zaman and Shahria Nayem Ahmed</i>

Technical Session-4B Artificial Intelligence-III Time: 11.00 AM Venue: B (Solid Mechanics Laboratory); Room No. 2114, Time: 05:40 AM	
Chair	Prof. Dr. Mohammad Moshikul Hoque
Co-Chair	Prof. Dr. Mahfuzul Hoque Chowdhury
Paper ID	Title and Authors
005	“Interpretable Modeling of Flank Wear in Drilling Using Symbolic Regression and Ensemble Machine Learning Techniques” <i>Fahimul Haque, Mahamudul Hassan Siddique and Miftaur Rahman Zisan</i>
008	“CHALLENGES AND STRATEGIES TO IMPLEMENT SMART MANUFACTURING FACTORY IN BANGALDESH” <i>Md. Mohibul Islam, Md. Mushiur Rahman and Aizizul Haque Raza</i>
029	“EXPLORING THE BARRIERS TO ARTIFICIAL INTELLIGENCE INTEGRATION IN GREEN SUPPLY CHAIN USING INTERPRETIVE STRUCTURAL MODELING APPROACH” <i>Jannatul Ferdous Disha, Kazi Md. Tanvir Anzum, Md. Mahfuzur Rahman Masum, Md Faiaz Zaman Dehan and Istiak Mahmud</i>
044	“OPTIMIZING MULTI-DEPOT VEHICLE ROUTING: AN ABC-GA HYBRID ALGORITHM” <i>Md. Ashiqur Rahman Hridoy, Rafiatun Ferdous Khan Lubaba, Sanjeeb Roy and Deepta Dhar</i>
059	“GESTURE BASED ROVER FOR RAPID DISASTER RESPONSE” <i>Md. Nafis Mahmud, Arnob Roy, Samiul Kabir Rohan and Zibon Nesa Zim</i>
060	“HYBRID GWO-XGBOOST FRAMEWORK FOR BLAST-INDUCED GROUND VIBRATION PREDICTION: INTEGRATION OF GENETIC ALGORITHM-OPTIMIZED SCALED DISTANCE” <i>Arnob Deb, Tahmid Zaman Raad, Pusmita Roy and Md Tauhidur Rahma</i>
071	“Benchmarking Response Surface Methodology With Machine Learning on Prediction of Nugget Diameter under Resistance Spot Welding” <i>Miftaur Rahman Zisan and Anik Debnath</i>
083	“AUTOMATIC REAL TIME VEHICLE (ANY TYPE OF) NUMBER PLATE RECOGNITION” <i>Md. Maruf Prodhan, Md. Elias Hossen, Jannatul Tasnim, Shuvendhu Malakar and Dr. Md. Rokunuzzama</i>

Technical Session-4C Renewable Energy-II Time: 11.00 AM Venue: C (Computer Laboratory); Room No. 2246	
Chair	Prof. Dr. Shahed Hasan Khan Tushar
Co-Chair	Mr. Md. Adnan Faisal Siddique
Paper ID	Title and Authors
076	“CONVERTING WASTE HEAT INTO USABLE ELECTRICAL ENERGY USING THERMOELECTRIC GENERATOR” <i>Sadia Islam, Sajal Chandra Banik, Minhaz Uddin Midul and Marwa Asgar Tanha</i>
080	“CO-PYROLYSIS OF RICE HUSK AND LOW-DENSITY POLYETHYLENE (LDPE)” <i>Md Sadman Rahmathullah Chowdhury Shafik, Monira Khatun and Bodius Salam</i>
170	“Bioethanol (biofuel) Production from Tea Waste: A Comparative Study Using Cellulase enzyme, Baker’s Yeast, and Wild Saccharomyces Cerevisiae Cultivated from Rice bran in the context of Bangladesh” <i>Ashikur Rahman Khan Asik, Zannatul Nayem Showmik, Mohammad Nurur Rahman, Mohammad Moffajjel Hossain, Md. Masumul Haque, Md. Faruk Hasan, Aktarun Nahar and Runa Afroz Rintu</i>
190	“STUDY ON GEOTHERMAL ENERGY RESOURCES, TECHNOLOGIES AND FUTURE DIRECTIONS IN BANGLADESH”

	<i>Sowrav Ghosh, Niloy Bhowmick and Arpita Roy</i>
197	“Prosumer Oriented Energy Sharing Model for Grid Integrated Electric Rickshaw Charging Garages” <i>Md. Towhidul Islam, Shafayat Jamil, Sajal Kumar Ghosh, Anika Tabassum and Bishwajit Banik Pathik</i>
219	“A COMPREHENSIVE OVERVIEW OF GENERATING HYDROGEN USING PEROVSKITE MATERIALS” <i>Md. Rayhanul Islam Lamun, Md. Shakib Al Hasan Simul and Ahmadullah Hridoy</i>
226	“Catalytic Systems for E-Fuel Synthesis: A Comprehensive Review Across Thermochemical and Electrochemical Pathways” <i>Mehedi Hassan Maruf, Priyam Chakraborty, Azaharul Islam, Pranta Das and Rajorshi Dutta</i>
228	“ANALYSING BIOGAS COMPOSITION: THE EFFECT OF SOLID CONTENT” <i>Golam Rabbi and Bodius Salam</i>
257	“RENEWABLE ENERGY TRANSITION IN BANGLADESH: CURRENT STATUS, CHALLENGES, AND PATHWAYS TOWARD VISION 2041” <i>Mst. Farzana Khatun, Kaniz Aysha Lakha, Md Ilias Rahman, Robel Ahmed and Ajay Krishno Sarkar</i>
313	“PRODUCTION AND CHARACTERIZATION OF THIRD-GENERATION BIODIESEL FROM MICROALGAE OIL” <i>Rupak Saha, Muhammad Mostafa Kamal Bhuiya, Md Aminul Islam and Itquan Hossen</i>

Technical Session-4D	
Material Science/ Engineering-IV & Interdisciplinary Research-II	
Time: 11.00 AM	
Venue: D (ME Seminar Room); Room No. 2249	
Chair	Prof. Dr. Mohammad Mizanur Rahman
Co-Chair	Prof. Dr. Sampad Ghosh
Paper ID	Title and Authors
056	“INFLUENCE OF GRAPHENE OXIDE LOADING ON THE FUNCTIONAL PERFORMANCE OF GELATIN-BASED HYDROGELS FOR CHROMIUM ADSORPTION” <i>Md. Suzaul Karim, Md. Abdur Rouf, Md. Tarekul Islam and Md. Elias Uddin</i>
061	“TECHNO-ECONOMIC ANALYSIS OF BATTERY STORAGE FOR OFF-GRID SOLAR APPLICATIONS IN RURAL BANGLADESH” <i>Safwan Mahmud Anik, Tamim Hasan Apurbo, Mahdi Hassan Noor Asif and Md. Mortuza Ahmmed</i>
155	“SYNTHESIS AND ELECTROCHEMICAL PROPERTIES OF ACIDIC STEEL SLAG AS ANODE MATERIAL OF LITHIUM-ION BATTERIES” <i>Md Shamsul Islam, Md. Arafat Rahman, Konok Chandra Bhowmik, Rudra Barua, Shaswato Barua, Tauhidul Hossain and Syed Muhammad Sayem Hasan</i>
157	“FACILE FABRICATION OF SILICON-MANGANESE COMPOSITE ANODE FROM STEEL SLAG AND ELECTROCHEMICAL INVESTIGATION FOR Li-ION BATTERIES” <i>Prithwi Saha, Dr. Md. Arafat Rahman, Konok Chandra Bhowmik, Shaswato Barua, Rudra Barua, Syed Muhammad Sayem Hasan and Tauhidul Hossain</i>
224	“EFFECT OF STRONTIUM DOPANT ON DIELECTRIC PROPERTIES OF BaTiO ₃ ” <i>Md Asif Shahriar Ayon, Md Mahfuzul Haque Muttalim, Md. Mostafizur Rahman Suruj and Md Miftaur Rahman</i>
225	“ANALYSIS ON THE EFFECT OF CENTRAL GAP SIZE OF ANNULAR NUCLEAR ACCIDENT-TOLERANT FUEL (ATF) RODS ON TEMPERATURE PROFILE, FISSILE CONTENT, AND SAFETY MARGINS” <i>Mhamudul Hasan Sami, Nazifa Tasnim, Sadia Noushin Promi, Rubayet Hasan Anik and Abdus Subhan Mohammad Shadullah</i>
234	“TOWARDS NEXT-GENERATION LITHIUM-ION BATTERIES: THE PROMISE OF MXENE MATERIALS” <i>Kazi Mamunur Rahman Rifat, Tamjid Hasan Anonno, Md. Mahmudul Hasan and Md. Farhan Jakib</i>
272	“FORECASTING END OF LIFE PHOTOVOLTAIC WASTE IN BANGLADESH: CHALLENGES AND POLICY PATHWAYS” <i>Md. Rejuan Ahmed, Md. Mahir Amer Mishul, Md. Al Jobayar Rahaman and Mohammad Rofiqul Islam</i>
294	“SYNTHESIS & CHARACTERIZATION OF THERMOELECTRIC COPPER SELENIDE NANOPARTICLES FOR ENERGY STORAGE APPLICATIONS”

	<i>Abdullah Al Mubin, Abdullah Wasif Rafin and Rejuan Ahmed Tamim</i>
311	“ENHANCING THE MACHINABILITY OF MILD STEEL VIA CUTTING PARAMETER OPTIMIZATION: A COMPARATIVE STUDY OF NSGA-II AND MOPSO” <i>Emonur Rahman Fahim, Hasibul Islam Ashik, Safayet Bin Siddik Shakhar, Md. Limonur Rahman Lingkon and R. Rafiul Haque Ayon</i>

Technical Session-4E Composite Materials-III Time: 11.00 AM Venue : E (Mechanics Laboratory) ; Room No. 2301	
Chair	Prof. Dr. Md. Abu Mowazzem Hossain
Co-Chair	Prof. Dr. Muhammad Asad Rahman
Paper ID	Title and Authors
195	Improving The Mechanical Properties of Jute Fiber Mat Reinforced Epoxy Composites Using Coir Micro-Fillers <i>Nasif Shahriar, Md Arifuzzaman, Sopnil Ahmed, Srijib Mukherjee and Md Shariful Islam</i>
200	Effectiveness Of Groundnut Shell Powder on Improving the Mechanical Properties of Jute Fiber Mat-Reinforced Epoxy Composites <i>Srijib Mukherjee, Md Arifuzzaman, Nasif Shahriar, Sopnil Ahmed and Md Shariful Islam</i>
216	A Detailed Analysis of the Self-Healing Ceramic Matrix Composite for Aerospace Applications <i>Kazi Tauhid Mokbul Hussain, Mohammad Tanveer Ahmed Rafi, Mahedi Al Mahin and Ricky Barua</i>
233	Investigation Of Ionizing Radiation Shielding and Mechanical Properties of Tin-Based Metal Alloys <i>Abdullah Al Mamun and Md. Sanaul Rabbi</i>
235	Experimental Analysis of Microstructure and Mechanical Properties of Aluminum Metal Matrix Composite Reinforced with Different Materials <i>S.M Kamrul Hossen, Paban Barua Nishan, Pritom Barua Shuvo and Dr. Jamal Uddin Ahamed</i>
236	Effect Of Egg Shell as Filler on Coir/E-Glass Fiber Reinforced Epoxy Composites <i>Dip Nandy, Md. Sanaul Rabbi, Md. Mainul Islam and Md. Shifat Hasan</i>
269	Synthesis And Characterization of Lead Zirconate Titanate Nanoparticles Reinforced PVDF Polymer Matrices Nanocomposites for Energy Storage Applications <i>Md. Rejuan Ahmed, Asif Hossain and Abdullah Wasif Rafin</i>
271	Finite-Element Analysis of a Full-Scale SKR-788 Silicone Bungee Cord: Static Safety and Random Vibration Response <i>Sourov Shil, Al Muttaki Billah, Md. Abdul Hasib, Md Rashedul Alam, Abdullah Al-Faruk and Md. Ashraful Islam</i>
273	Graphene Nano Powder Embedded Glass Fiber Composites for Enhanced Multifunctional Performance <i>Abrar Shahria, Habib Al Muntasir Tibro, Md Hasib Ibn Basher, Uzzal Roy, Sakif Al Safi and Al Zabir Asadullah</i>
315	Real Time Hydroponics Monitoring and Controlling System <i>Md. Ahesan Kabir, Kazi Afzalur Rahman and Minhajul Islam Mahadi</i>

Time: 12:30 PM Activities by Various Student Chapters	ME Department
Time: 1:30 PM Lunch and Prayer Break	Room No. 2316
Time: 2:20 PM Keynote Session VI: Speaker: Prof. Dr. Prashanta Dutta Title: <i>Application of Artificial Intelligence in Drug Design</i> Chair: Prof. Dr. Md. Emdadul Hoque Co-Chair: Prof. Dr. Prasanjit Das	ME Seminar Room
Technical Session-5A Environmental/Chemical Engineering Time: 3.10 PM	

Venue: A (Post-Graduate Research Laboratory); Room No. 2116	
Chair	Prof. Dr. Sudip Kumar Pal
Co-Chair	Prof. Dr. Md. Shajib Ullah
Paper ID	Title and Authors
019	“Removal of Pb ²⁺ from Aqueous Solution Using Recycled Textile Waste as an Adsorbent” <i>Nabila Chowdhury, Md Mustakim Ahmmad Hemel and M S Rabbi</i>
081	“PERFORMANCE REVIEW AND COMPARATIVE ANALYSIS OF CYLINDRICAL, HEMISPHERICAL AND CONVENTIONAL SOLAR STILLs FOR SMALL-SCALE FRESHWATER PRODUCTION” <i>Jannatul Tasnim, Shuvendhu Malakar, Sakib Hossain, Kristy Progya Biswas and Md. Abir Hasan</i>
126	“EGGSHELL DERIVED HYDROXYAPATITE NANOPARTICLE FOR CHROMIUM REMOVAL FROM TANNERY WASTEWATER” <i>Md. Kazim Ahmed Zim, Abid Hassan, Md Enamul Hasan Zahin and Md. Mukimujjaman Miem</i>
135	“ENVIRONMENTAL SUSTAINABILITY OF WASTE-DERIVED ADSORBENT: INSIGHTS FROM LIFE CYCLE ASSESSMENT” <i>Md. Sidratul Montaha Hossain, Abdullah Al Mahmood and M. Bodiul Islam</i>
152	“TECHNOECONOMIC ASSESSMENT OF MICROBIAL FUEL CELL (MFC) FOR WASTEWATER TREATMENT: BANGLADESH PERSPECTIVE” <i>Md. Sazid Khan, Anik Hasan Badhon, Md. Hasibul Hasan Himel and Mim Mashrur Ahmed</i>
168	“SUSTAINABLE PRODUCTION OF ACTIVATED CARBON FROM SUGARCANE BAGASSE FOR WASTEWATER TREATMENT AND RESOURCE MANAGEMENT” <i>Suprova Haque, Istiak Ahmed and Tasdid Bin Kabir</i>
220	“A COMPARATIVE STUDY ON THE EFFICACY OF MODIFIED EGG SHELL FOR REMOVING HEAVY METALS AND DYE FROM WATER” <i>Safat Anam, Niloy Banik, Kamran Siddique, Mohammad Nurur Rahman and Md. Masumul Haque</i>
229	“A REVIEW ON SUSTAINABLE WAYS TO MAKE HYDROXYAPATITE FOR WASTEWATER PURIFICATION” <i>Md. Imrul Kayes, Md. Saiful Islam Shanto, Abdullah-Al-Mazed Khan, Md. Fardous Hasan Bappy and Habibur Rahman</i>
316	“Enhancement of Diesel Engine Performance and Emission Properties through a Hybrid Metallic Nanoparticles Using Diesel Pyrolytic Plastic Oil Blends” <i>Md. Alamgir Hossain, Md. Hedayetullah Fahim, Niloy Sarker, S.M. Mushfiqur Rahman and Md. Emdadul Hoque</i>

Technical Session-5B	
Computational Analysis-II	
Time: 3.10 PM	
Venue: B (Solid Mechanics Laboratory); Room No. 2114	
Chair	Prof. Dr. Md. Golam Hafez
Co-Chair	Ms. Nurun Nahar
Paper ID	Title and Authors
129	“BROWNIAN MOTION AND THERMOPHORESIS EFFECTS ON BOUNDARY LAYER NANOFLUID FLOW OVER AN INCLINED POROUS SURFACE WITH MASS FLUX CONDITION” <i>Joy Dev, Mohammad Ali, Umme Hani and Muhammad Shahnewaz Bhuyan</i>
154	“NUMERICAL INVESTIGATION ON THE TUBERCLE EFFECT FOR NACA X410 AIRFOIL SERIES USING ANSYS FLUENT” <i>Md. Jubayer Hasan Jim, Zannatul Mim and Nusrat Nawar Ahsan</i>
171	“NUMERICAL ANALYSIS OF PHOTOVOLTAIC SOLAR PANELS INTEGRATED WITH VARIOUS PIN-FIN STRUCTURES” <i>Md. Mehedi Hasan Kazi, Asiful Haque, Shahriar Ahmed Ruman, Dr. Md. Arafat Rahman, Konok Chandra Bhowmik and Shaswato Barua</i>
206	“Numerical Investigation of Free Convective Heat Transfer from Hexagonal Enclosure with Rectangular Rib” <i>Md. Atikur Rahman Saykat, Mohammad Sultan Mahmud, Md. Shahriar Parvez, K.M. Toukid Tahmid and Sumon Roy</i>

223	“CFD-DERIVED PARASITE-DRAG LAW OF AN OCTOCOPTER AIRFRAME WITH ENDURANCE IMPLICATIONS ” <i>Kazi Tauhid Mokbul Hussain, Mobin Kabir, Irfan Talukder and Farhan Rahman Atul</i>
240	“Impacts of Hemodynamic Parameter on Two Different Sac Size Aneurysm Model at End Systolic and End Diastolic Velocity and Its Variation with Time-Averaged Velocity ” <i>Parvez Mahmud Rafi, Md Ajwad Mohimin, Sultan Hussain Labib and Md. Mamunur Roshid</i>
246	“A COMPUTATIONAL ANALYSIS OF THE AERODYNAMIC EFFECTS OF VORTEX GENERATORS ON A NACA 2412 AIRFOIL” <i>Nazeef Nibras Ameen and Sk. Sariful Islam</i>
250	“STABILITY MODELING OF CuO–ZnO–MWCNT/DW TRI-HYBRID NANOFLUID USING RESPONSE SURFACE METHODOLOGY ” <i>Md. Mursalin Nabil, Mahmud Khan Tamim, Orko Basak, Md. Khairul Momin Nihal, Shah Maksul Minar and Md. Ramim-Ul Hasan</i>
253	“Bio-Inspired Wing Morphologies for Underwater Gliders: Reducing Wake Instabilities and Resonance Risk ” <i>Gazi Arman Hossain, Md. Absar Jahan, Nayem Zaman Saimoon, Md. Fhamid Hasan and Mahadi Hasan Masud</i>

Technical Session-5C Interdisciplinary Research-III Time: 3.10 PM Venue: C (Computer Laboratory); Room No. 2246	
Chair	Prof. Dr. Md. Rokunuzzaman
Co-Chair	Mr. Radheshyam Nath Jisu
Paper ID	Title and Authors
102	“DEVELOPMENT AND EXPERIMENTAL ASSESSMENT OF A CONTROLLED CORROSION TESTING APPARATUS FOR MILD STEEL AND ABS STEEL” <i>Md. Ali Imran, Dr. Md. Arefin Kowser, Md. Fazle Rabbi, Asaduzzaman Mojumder, Md. Aubdullah Al Masud and Md. Talal Beg</i>
179	“Mathematical investigation of Hydrogen Fuel Cell Based Electric Drivetrain and Vehicle Modelling for the Development of Hydrogen Electric Vehicle” <i>Md. Rokunuzzaman, Md. Tariqul Islam and Md. Rasel Ahmed</i>
188	“EXTRACTION AND COMPARATIVE CHARACTERIZATION OF STARCH FROM SEED KERNELS OF TWO MANGO VARIETIES IN RAJSHAHI” <i>Bahktiar Ahmed Sajib, Ajmain Hasnat Alvi, Md. Mostafa Kamal and Pabitra Prosad Mondal</i>
199	“INVESTIGATION ON THE BENDING CHARACTERISTICS OF VARIABLE THICKNESS NEGATIVE STIFFNESS HONEYCOMB CORE” <i>Bickrom Saha, Md Arifuzzaman, Devashis Bagchi, Md Roknuzzaman and Md Shariful Islam</i>
282	“Comparison of Chromium and Zinc biosorption utilizing Leaves of Psidium guajava” <i>Md. Osman Gani Abu Sayem, Md. Aminul Islam and Samima Afren Bhuian Sumi</i>
292	“TRIBOELECTRIC NANO-GENERATOR TO PRODUCE DC CURRENT FOR SMART TEXTILES” <i>Hasib Ahmed, Sheikh Tamjidur Rahman and Suprova Haque</i>
300	“CFD analysis, fabrication and performance test of straight blade vertical axis wind turbine” <i>Soumik Mallick, Md. Akiduzzaman, Ankur Kumar Khan, Md Abu Hasan Al Askary and Abu Shadat Muhammad Sayem</i>
304	“UPGRADING OF WASTE COOKING OIL VIA TRANSESTERIFICATION AND CATALYTIC HYDROTREATMENT” <i>Irshad Jahan Tasin, Morsheda Begum, Dr. Muhammad Abdus Salam and Dr. Mohammad Rakib Uddin</i>
307	“Effect on Microstructural, Mechanical, Thermal, and Chemical Properties by Addition of Water Treatment Plant (WTP) Sludge in Ceramics Body Formulation” <i>Debashish Halder</i>

309	“Design and Experimental Validation of a Piezoelectric Impact-Based Energy Harvester for Low-Frequency Oceanic Waves” <i>Ishaque Mozumder and Sajal Chandra Banik</i>
317	“MANAGING EXPIRING MEDICINES IN PHARMACEUTICAL WAREHOUSES” <i>Punno Chandra Saha, Riton Joy Kumar Rajbongshi, Jannatul Ferdous Mim, Md. Limonur Rahman Lingkon and Md. Mosharraf Hossain</i>

Technical Session-5D Robotics/Mechatronics Time: 3.10 PM Venue: D (ME Seminar Room); Room No. 2249	
Chair	Prof. Dr. Md. Iqbal Mahmud
Co-Chair	Dr. Md. Hodayun Kabir
Paper ID	Title and Authors
103	“INTELLIGENT PIRATE THREAT ASSESSMENT AND MANEUVER CONTROL FOR UNARMED MERCHANT SHIPS” <i>Md. Sabbir Ahmed and Dr. Zobair Ibn Awal</i>
109	“WATER CONTAMINATION SENSOR WITH NANOSTRUCTURED SnO ₂ GAS SENSOR AND SELECTIVE EVAPORATION INSIDE A CAPILLARY TUBE WITH MICROHEATER” <i>Mohammad Fazlul Haque and Daejong Yang</i>
165	“EXPERIMENTAL ASSESSMENT OF A PV/T-ASSISTED THERMOELECTRIC HYBRID SOLAR DESALINATION SYSTEM” <i>Robel Ahmed, Mohammad Raihan, Md. Kobir Hossain Mrida, Md. Ashiqur Rahman Ashik, Kaniz Aysha Lakha and Md. Rabiul Islam Sarker</i>
180	“MECHANICAL CAD DESIGN AND DEVELOPMENT OF A ROBOTIC ARM FOR FARM PRODUCE CLASSIFICATION USING COMPUTER VISION” <i>Helal Uddin, Md Sohag Ahasan, Touhidur Rahman Sajib, Md. Rasel Ahmed and Md Rabiul Islam Sarker</i>
183	“PREVENTION OF ROAD ACCIDENT BY IMPLEMENTING THE DRIVER DROWSINESS DETECTION AND DRIVER ALERT SYSTEM” <i>Md. Abu Bakkar Sikder, S. Razaul Karim Raju and Rishikesh Chowdhury</i>
184	“DUAL AXIS SOLAR TRACKING WITH IoT-BASED LOAD MONITORING SYSTEM” <i>Md. Abu Bakkar Sikder, S. Razaul Karim Raju, Joy Barua Barua and Meraz Ahammed</i>
209	“ANALYZING ALGORITHMS FOR OPTIMAL POINT-TO-POINT TRAJECTORY GENERATION OF A 3-DOF MANIPULATOR” <i>Md Shirajul Islam, Dr. Asief Javed and Dr. Md. Helal An-Nahiyen</i>
258	“DESIGN AND DEVELOPMENT OF AN IOT-BASED UNMANNED ELECTRIC CAR WITH AUTONOMOUS OPERATION CAPABILITIES” <i>Mhia Md Zaglul Shahadat, Md Takiuddin Ahmed and Md Majedul Haque</i>
264	“A LOW-COST PNEUMATIC TRAINING PLATFORM WITH SOFTWARE INTERFACE FOR HANDS-ON TECHNICAL LEARNING” <i>Md. Waliuzzaman Talha, Md. Abdullah Al Hasan Rafi, Shyan Muhtasin Sazed, M M Dian, Md. Tanbir Hasan and Shakhawat Hossain</i>
299	“EXPERIMENTAL STUDY ON THE DEVELOPMENT AND PERFORMANCE TEST OF AN ELECTRO-MECHANICAL PLANT IRRIGATION SYSTEM” <i>Md. Ali Imran Khan, Rifat Ul Alam and K.M Mahedi Hassan Fahim</i>
310	“QUADRUPED ROBOT MODELING BY MIRRORING BIPEDAL ROBOT FOR TROT GAIT SIMULATION” <i>Abdulwadud Alatisse, Md Raisuddin Khan and Amir Shafie</i>

Technical Session-5E Composite Materials-IV & Air Conditioning Time: 3.10 PM Venue : E (Mechanics Laboratory); Room No. 2301	
Chair	Prof. Dr. Mohammad Sultan Mahmud

Co-Chair	Mr. Tafsirul Hassan
Paper ID	Title and Authors
274	Improving The Mechanical Properties of Jute Fiber-Mat Reinforced Epoxy Composite Incorporating Water Hyacinth Ash <i>Arda Arefin Nir, Md Arifuzzaman, Sopnil Ahmed, Jahid Hasan and Md Shariful Islam</i>
276	Enhancing Fire Resistance of Bio-Composite (Wood Based) For Interior Applications: A Review and Future Directions <i>Shuvendhu Malakar, Jannatul Tasnim, Md Sakib Hossain, Maria Mostari and Laylatul Sultana Troye</i>
288	Enhancing Mechanical Behaviour of Juco Fabric-Reinforced Epoxy Composites with CNT and TiO ₂ Nanofillers: Fea and Experimental Approach <i>Md. Noman Ali, Md Foisal Hossain, Muhammed Sohel Rana and Md Shafiul Ferdous</i>
298	Investigation On Physical and Mechanical Properties of Water Hyacinth Petiole Mat-Reinforced Epoxy-Based Composites <i>Tufayel Ahmed, Md. Saif Hasan and Md. Arafat Rahman</i>
301	A Review of Vacuum Bagged Natural Fiber Reinforced Polymer Composites <i>Gogan Dhar and Md. Sanaul Rabbi</i>
163	Experimental And Numerical Investigation of Clay-Based Porous Materials for Evaporative Cooling Applications <i>Md. Abdul Monem, Dr. Mohammad Shahed H K Tushar, Md. Maruf Tahmid, Md. Rashedur Rahman Rana and Md. Almostasim Mahmud</i>
245	Synergistic Green Technologies for Sustainable Indoor Air Quality Management <i>Md. Louckman Hossain, Md. Masumul Haque, Md. Sumon Munshi and Md. Mehedi Hasan</i>
256	Design And Efficiency Analysis of a Dual-Purpose Refrigeration System for Domestic Water Heating <i>Emjad Mahmud Emon, Mohammed Saifuddin Munna, Nazia Sultana Plabon, Akramul Haque and Mubarrat E Ishmum</i>
303	Energy And Exergy Analysis of Recuperative Organic Rankine Cycle for Six Low-Gwp Refrigerants <i>Mostafizur Rahaman, Khaza Shahriar and Mohammad Ariful Islam</i>

Time: 04:40 PM Refreshment and Prayer Break	Room No. 2316
Time: 5:30 PM Industry-Academia Talk	Academic Council Room
Time: 6:00 PM Prize Giving Ceremony & Closing Ceremony	Academic Council Room
Time: 7:00 PM Conference Dinner	TSC Cafeteria

12 December 2025: DAY 3

CONFERENCE TOUR
