



Science and Engineering Research Board (SERB)  
Department of Science and Technology (DST)  
Govt. of India

## About ICMME-2023

Department of Mechanical Engineering, GLA University, Mathura, U.P. India and Federal University Rio Grandi do Sul, Brazil are Jointly organising the 2<sup>nd</sup> International Conference on aspects of Materials and Mechanical Engineering (ICMME 2023) during October 13 to 14, 2023.

The aim of the present conference is to bring together researchers, academicians, scientists, scholars, and industrial, research organizations around the world to discuss and present papers on recent developments in the broad fields of Materials and Mechanical Engineering

The ICMME 2023 also provides a premier interdisciplinary platform for a great gathering of both industrial and academic professionals from all over the world in the fields of Materials and Mechanical Engineering. It provides a major forum to exchange knowledge on the most recent innovations, trends, and concerns, as well as practical challenges encountered and solutions adopted in the fields of material processing and their characterization, developments of composite materials, thermal augmentation processes, and materials.



## Organizing Chair

**Prof. (Dr.) Piyush Singhal**  
Head, Department of Mechanical Engineering  
GLA University, Mathura, India

**Prof. (Dr.) Leticia Jenisch**  
Head, Deptt. Of Mechanical Engineering  
UFRGS, Brazil



## Conference Chair & Convener

**Prof. Andrés Z. Mendiburu**  
Department of Mechanical Engineering,  
UFRGS, Brazil

**Prof. Sujit Kumar Verma**  
Professor, Department of Mechanical Engineering  
GLA University Mathura, India

**Dr. Pradeep Kumar Singh**  
Assistant Professor, Department of Mechanical Engineering  
GLA University, Mathura, India

## Conference Co-convener

**Dr. Pankaj Kumar Singh**  
Assistant Professor, Department of Mechanical Engineering  
GLA University, Mathura, India

**Mr. Avdhesh Kumar Sharma**  
Assistant Professor, Department of Mechanical Engineering  
GLA University, Mathura, India

**Mr. Prashant Sharma**  
Assistant Professor, Department of Civil Engineering  
GLA University, Mathura, India

**2<sup>nd</sup>**  
**INTERNATIONAL CONFERENCE**  
**On**  
**Aspects of Materials and Mechanical Engineering (ICMME 2023)**  
**13<sup>th</sup> - 14<sup>th</sup> October 2023**  
**Organized by:**  
**Department of Mechanical Engineering**

### Publication Partners:





### Track 3: Developments of composite Materials

- Composite and Polymer Manufacturing
- Composites, Intermetallic
- Fabrication Process of Nano materials and Nano devices
- Nano fluidics
- Functionally Graded Materials
- Future generation materials
- SMART materials
- Super Alloys
- Nano materials

### Track 4: Thermal Augmentation Processes and Materials

- Renewable Energy and thermal applications
- Biofuels production and thermal applications
- Biofuels combustion characterization
- Computational fluid dynamics applied to thermal systems
- Energy Conversion and materials
- Energy Storage and materials
- Smart Grid
- Thermally-Enhanced Processes and Materials
- Thermal storage materials
- E-vehicle technology and applications



## Conference Tracks

### Track 1: Material Processing and their Characterization

- Advanced Joining techniques
- Advanced machining processes
- Advanced metal forming, casting techniques
- High-speed and Hybrid Machining
- Alternate materials processing
- Heat Treatment
- High-Energy Beam Processing
- Laser Based Manufacturing
- Additive manufacturing Process
- Non-destructive Testing
- Powder Metallurgy and Ceramic Forming
- Material Characterization

### Track 2: Soft Computing in Mechanical Processing

- Computational Fluid Dynamics
- FEA/FEM analysis of Materials processing
- Numerical Modelling and Simulation
- Optimization Techniques in Digital Manufacturing
- Advanced Manufacturing Technologies
- Virtual Manufacturing
- Precision engineering and metrology
- CAD/CAM/CAE
- Artificial Intelligence in manufacturing processes
- Green Manufacturing

### Track 5: Strategic Applications Materials

- PV-Cell materials
- Stealth materials
- Nano-micro devices
- Materials for space applications
- Thermodynamics, rotating detonation engines and Propulsion
- Optimization of hybrid energy systems
- Materials parameters in CFD Analysis

## Publication

All the accepted & presented papers will be published in SCOPUS/SCIE indexed conference proceedings /Journals as per the quality norms of the publisher.

Publishers are as follows:

#Journal of Engineering Research (SCIE)(Elsevier)

#Advances in Materials and Processing Technologies (ESCI) (Taylor & Francis)

\*\*Chemical Engineering Communications(SCIE) (Taylor & Francis)

Materials Today: Proceedings

\* Communication In Process

## Paper Submission

The full-length paper is submitted through the following link:

<https://forms.gle/HFcEz8Vb6HVTXA7MA>

## Important Dates

**Conference date:** 13<sup>th</sup> – 14<sup>th</sup> October, 2023

**Submission of full paper starts:** 25<sup>th</sup> December, 2022

**Submission of full paper ends:** 25<sup>th</sup> August, 2023

**Early bird registration starts:** 10<sup>th</sup> April, 2023

**Early bird registration ends:** 30<sup>th</sup> August, 2023

**Late Registration Ends:** 10<sup>th</sup> September, 2023



## Registration Fee

The author agrees that if the paper is accepted, at least one author will register for conference to present the paper.

Registration link:

<https://forms.gle/yJA2PztfM23jmuvV7>

The registration fee is given below for your reference:

## Conference Proceeding Publication & Registration Fee

Category	Submission Upto 20 <sup>th</sup> August 2023	Submission Upto 30 <sup>th</sup> August 2023
International Participants	USD 125	USD 150
Academicians, Corporate Participants (in INR)	Rs 6000	Rs. 6500
Research Scholar, Students (UG, PG) (in INR)	Rs 5000	Rs 5500

#Article Publishing charges will be updated after preliminary review process of conference for limited number of papers for journals (SCI / ESCI).

### Payment Details:

**Mode:** Online Payment

**Beneficiary Name:** "GLAU CONFERENCE AND WORKSHOP ACCOUNT"

**Current A/c No.:** 199901000018885

**IFSC Code:** IOBA0001999

**Branch Name:** GLA Engg. College, Ajhai Branch

## Committee

### Chief Patron

**Shri. Narayan Das Agrawal**

Hon'ble Chancellor GLA University, Mathura, India

**Prof. Durg Singh Chauhan**

Hon'ble Pro Chancellor GLA University, Mathura, India

**Prof. Phalguni Gupta**

Vice-Chancellor GLA University, Mathura, India

### Co-Patron

**Prof. Anoop Kumar Gupta**

Pro-Vice-Chancellor, GLA University, Mathura, India

**Prof. Kamal Sharma**

Dean Research & Development, GLA University, Mathura

**Prof. Ashish Sharma**

Dean Academic Affairs, GLA University, Mathura, India

## Prof. Dilip Sharma

Dean International Relations & Academic Collaborations, GLA University, Mathura, India

## Facilitator

**Mr. Ashok Kumar Singh**

Registrar, GLA University, Mathura, India

## Treasurer

**Dr. Manoj Kumar Agrawal**

Associate Professor, Department of Mechanical Engineering, GLA University, Mathura

## Publication Chairs

**Prof. Kamal Sharma**

Department of Mechanical Engineering, GLA University Mathura

**Mr. Ravindra Pratap Singh**

Department of Mechanical Engineering, GLA University Mathura

**Prof. Bhupendra Singh Chauhan**

Department of Mechanical Engineering, GLA University Mathura

**Dr. Aayush Gupta**

Department of Mechanical Engineering, GLA University Mathura

## Advisory Committee

- Prof. Ahmet Selim Dalkilic, Yildiz Technical University, Turkey.
- Prof. Atul Sharma, Deptt. of ME, IIT Bombay
- Dr. Akhilendra Singh, Department of Mechanical Engineering, IIT, Patna
- Dr. Murshid Imam, Department of Mechanical Engineering, IIT Patna
- Dr. Naveen Kumar Sharma, Deptt. of ME, I.K. Gujral Punjab Technical University, Jalandhar
- Dr. Yogesh Kumar, Department of Mechanical Engineering, NIT Patna
- Prof. Anjana Munshi, Director, Research and Development Cell, Central University of Punjab
- Er. Krishna Mohan Singh (IES), Chief Executive Engineer, DLW Varanasi.
- Er. Rakesh Kumar (IES), Executive Engineer, Geological Survey of India

- Prof. B.S.S Daniel, Department of Metallurgical & Materials Engineering, IIT Roorkee.
- Prof. (Dra) Blanco Machin, Einara, Mechanical Engineering Department, University of Concepción, Chile
- Prof. Carlos M. Romero Luna, Production Engineering Department, São Paulo State University, Brazil
- Prof. Abd Elnaby Kabeel, Mechanical Power Engineering Department, Tanta University, Egypt
- Prof. Kamal K.Kar, IIT Kanpur
- Prof. K.L Yadav, Deptt. of Physics, IIT Roorkee
- Dr. Pramod Kumar Joshi, Member Executive council, PAN IIT India.
- Prof. Zafar Said, Department of Sustainable Renewable Energy Engineering, University of Sharjah, UAE
- Prof. Adarsh Kr. Pandey, Associate Dean Research, Sunway University Malaysia.
- Dr. Justo José Roberts, Electrical Engineering Department, National University of Mar del Plata, Argentina
- Prof. Dibakar Rakshit, Deptt. of Energy Science & Engineering, IIT Delhi.
- Prof. Anirban Bhattacharya, Deptt. of Mechanical Engineering, IIT Bhubaneswar.
- Dr. Daniel Travieso Pedrosa, Mechanical Engineering Department, University of Bío-Bío, Chile.
- Prof. Arun Kr Tiwari, Deptt. of Mechanical Engineering, IET Lucknow.
- Prof. Hemant Kr. Gupta, Deptt. of Mechanical Engineering, SRICT Ankleshwar.
- Dra. Gretta Larisa Arce Ferrufino, Chemical and Energy Department, São Paulo State University, Brazil
- Prof. Saurav Datta, Deptt. of ME, NIT Rourkela.
- Dr. Shrutidhara Sarma, Deptt. of ME, IIT Jodhpur
- Dr. Udayraj, Deptt. of ME, IIT Bhilai
- Prof. Rohit, Bhakar, Deptt. of Electrical Engineering, MNIT Jaipur.
- Prof. Amit Kumar, Deptt. of ME, LPU Punjab
- Dr. Kapil Pareek, Centre for Energy & Environment, MNIT Jaipur.
- Prof. Sandip Kr. Singh, Deptt. of ME, Purvanchal University, Jaunpur
- Dr Sunanda Sinha, Centre for Energy & Environment, MNIT Jaipur
- Dr Rajbahadur Singh, Department of Materials Engineering, NIT, Hamirpur
- Dr Kumar Abhishek, IIT RAM Ahmedabad.
- Prof. Selvaraj A/L Selvaraj, University of Malaya, Malaysia
- Prof. Yogendra Kumar Mishra, University of Southern Denmark
- Prof. Mamun Habib, School of Business & Entrepreneurship, Independent University, Bangladesh
- Dr. Serves Kumar Agnihotri, LNM Institute of Information Technology, Jaipur
- Dr Pushpendra Singh Chauhan, Centre for Advanced Studies, AKTU Lucknow

## Institutional Advisory Committee

- Prof. Sudhir Kumar Goyal, Deptt. of Civil Engineering, GLA University
- Prof. B R K Gupta, Emeritus Professor, Deptt. of Physics, GLA University
- Prof. Anuj Vijay Deptt. of Physics, GLA University
- Prof. Raj Pal Singh, Deptt. of Physics, GLA University
- Dr. Smita Tung, Deptt. of Civil Engineering, GLA University
- Prof. Prabal Pratap Singh, Deptt. of Chemistry, GLA University
- Prof. Panchanan Pramanik, Distinguished Professor, GLA University
- Prof. Surender Singh Siwatch, Department of Agriculture GLA University
- Prof. Shoor Vir Singh, Deptt. of Biotechnology, GLA University
- Prof. Reeta Goel, Deptt. of Biotechnology, GLA University.
- Mr. Pushkar Sharma, Associate Director CSED, GLA University.
- Prof. Charul Bhatnagar, Deptt. of Computer Science & Engineering, GLA University.
- Prof. Ashish Sharma, Dean academic, GLA University
- Prof. Santanu Chaudhary, Deptt. of E&C GLA University.
- Prof. Manoj Kumar, Chief Coordinator, Newgen, IEDC, GLA University.
- Dr. Aasheesh Shukla, Asso. Prof., Deptt. of Electronics & Communication, GLA University.
- Prof. V.K Deolia, Deptt. of Electrical Engineering, GLA University.
- Dr. Pooja Pathak, Asso.Prof. Deptt. of Computer Science & Engineering GLA University.
- Dr. Himanshu Sharma, Asso.Prof. Deptt. of Computer Science & Engineering, GLA University.
- Dr. Subhas Chandra, Deptt. of Electrical Engineering, GLA University.
- Dr. Sonia Singh, Institute of Pharmaceutical Research, GLA University.
- Dr. Satendra Kumar Yadav, IBM, GLA University
- Prof. Anirudh Pradhan, GLA University
- Dr Archna Dixit, Deptt. of Maths, GLA University

## Technical and Organizing Committee

- Prof. Vijay Kumar Dwivedi, Deptt. of Mechanical Engineering, GLA University, Mathura
- Prof. Naveen Kumar Gupta, Deptt. of Mechanical Engineering, GLA University, Mathura
- Dr. Bharat Singh, Deptt. of Mechanical Engineering, GLA University, Mathura
- Dr. Soni Kumari, Deptt. of Mechanical Engineering, GLA University, Mathura
- Dr. Balaji B, Deptt. of Mechanical Engineering, GLA University, Mathura
- Dr. Punit Singh, Deptt. of Mechanical Engineering, GLA University, Mathura
- Mr. Gaurav Bhardwaj, Deptt. of Mechanical Engineering, GLA University, Mathura
- Dr. Ajitesh Patel, Deptt. of CSE, GLA University, Mathura
- Dr. Santosh Kumar Singh, United College of Engineering, Prayagraj
- Mr. Kuwar Mausam, Deptt of ME, GLA University, Mathura
- Mr. Toshit Jain, Deptt. of ME, GLA University, Mathura
- Mr. Sunil Kumar, Deptt. of ME, GLA University, Mathura
- Mr. Viyat Varun Upadhyay, Deptt. of ME, GLA University, Mathura
- Mr. Vikas Sharma, Deptt. of ME, GLA University, Mathura
- Mr. Vishwesh Mishra, Deptt. of ME, GLA University, Mathura
- Mr. Gaurav Pant, Deptt. of ME, GLA University, Mathura
- Mr. Sanjeev Gupta, Deptt. of ME, GLA University, Mathura
- Dr. Rajkumar Sharma, Deptt. of ME, GLA University, Mathura
- Mr. Pankaj Sonia, Deptt. of ME, GLA University, Mathura
- Mr. Harish Kumar Sharma, Deptt. of ME, GLA University, Mathura
- Mr. Deepak Sharma, Deptt. of ME, GLA University, Mathura
- Dr. Amit Gupta, Deptt of ME, GLA University Polytechnic, Mathura
- Mr. Rishabh Chaturvedi, Deptt. of ME, GLA University, Mathura
- Mr. Aman Sharma, Deptt. of ME, GLA University, Mathura
- Mr. Rajat Yadav, Deptt. of ME, GLA University, Mathura
- Mr. Akash Deep, GLA University Polytechnic, Mathura
- Ms. Aditi Saxena, Deptt. of CSE, GLA University, Mathura
- Er. Ritesh Dixit, Technical Manager, Deptt. of ME, GLA University, Mathura
- Mr. Moazzam Mohamad, Deptt. of ME, GLA University, Mathura
- Mr. Prem Babu, Deptt. of ME, GLA University, Mathura
- Ms. Medha Tikha, Branding Executive, GLA University, Mathura.

## Scope of the Conference

Energy is the pivot of all material manifestations progressing with engineering and technological growths supported by natural sciences. The whole world has now become a high-tech global village. We are reaching the end of the first quarter of the 21st century. The past three years have been very tumultuous due to the COVID-19 pandemic. The world has witnessed an adverse time and suffered heavy losses in life and economic setbacks. Every sector, industry, academic, and economy suffered from it. Now engine of growth is once again getting momentum. Industrial activity, particularly in computing, manufacturing, and material processing gaining momentum. With the changed socio-economic and industrial scenario, there is a need to reshape academic and research activities to make them relevant to the ordinary person's needs and eco-sustainability. ICMME-2023 intends to address these issues of society, industry and the health of the planet and living beings. Research themes included in the conference are synergistic with the needs of the contemporary world.

The themes "Thermal Augmentation Processes and Materials" and "Strategic Applications Materials" represent contemporary research's thrust area and address eco-sustainable growth using clean energy and supporting technologies. All themes of the conference are relevant and fulfilling the needs of industry, society and researchers.

Dynamicity in research provides traction for innovation. This conference aims to provide an open horizon at GLA University Mathura, where the divine source of knowledge will meet with human-acquired learning. Progress in engineering and technologies often manifests in tangible devices, apparatuses, systems and complex objects like spaceships. This is possible due to the synergistic integration of interdisciplinary approaches in research. The technological superiority of any nation can be measured by its success in integration and coordination among interdisciplinary departmental research.

This conference will provide a suitable platform to discuss and interact with other researchers about current research problems and their solutions and promote interdisciplinary research activities for eco-socio-economic and environmentally friendly development gain.

Keynote lectures from eminent researchers and working industry professionals' academicians will further boost the intended goals of the conference.

## About Organizing Institutes GLA University Mathura, India

GLA University, Mathura is one of the premier universities in India, situated in Northern India. The university was established by our present Chancellor, Shri Narayan Das Agrawal in 1998. The chancellor envisioned GLA as a quality educational institution to serve the higher education needs of the youth of the region and beyond. The institute was accorded the status of university under the U.P. State Legislative Act of 2009 (UP Act 21 of 2010). Recently the University was accredited with 'A' grade by NAAC. It spread across 110 acres of land and is home to more than 12,000 students, enrolled in a variety of professional courses. It boasts of well-designed and maintained buildings, contemporary laboratories, spacious residential complexes and recreational facilities. The facilities of such kind and grandeur make the GLA campus one of the best in the region, providing its students an ideal environment to hone their skills in an increasingly competitive and demanding world. Under the banner of GLA University, Department of Mechanical Engineering is constantly and consistently working to achieve core objectives of the University.

Department facilitates, state of art laboratories where students can realize their ideas into tangible objects in terms of new technologies and engineering products. Department has Solar Energy Research Centre (SERC), Micro Nano Development & Research Centre (MNDRC), Automotive Research Centre and well-established workshops and other laboratories. Department is consistently delivering high quality research. The faculty of the department are highly qualified and extending their expertise in academic and research. The department of Mechanical Engineering blossoms with the specialized technical and professional excellence and as on date it has developed into a pillar of strength of GLA University. In order to cater the need of skilled professionals for rapidly growing industrial base the department is offering Undergraduate (B. Tech) in Mechanical Engineering, Mechatronics Engineering, Automobile Engineering and Smart Manufacturing Post Graduate (M. Tech) and Doctoral (Ph.D) programmes in Mechanical Engineering. The department is constantly decisive to educate the mechanical engineers of tomorrow by integrating the theoretical and practical knowledge and accentuating on the learning and critical thinking.

## THE FEDERAL UNIVERSITY OF RIO GRANDE DO SUL (UFRGS)

The Federal University of Rio Grande do Sul, headquartered in Porto Alegre, capital of the State of Rio Grande do Sul, is a century-old institution, recognized nationally and internationally. He teaches courses in all areas of knowledge and at all levels, from elementary school to graduate school. The qualification of its teaching staff, mostly composed of masters and doctors, the permanent updating of the infrastructure of laboratories and libraries, the increase in student assistance, as well as the prioritization of its national and international insertion are policies in constant development. Around 40,000 people circulate daily through its buildings in search of one of the most qualified educations in the country. This combined with research, with recognized levels of excellence, and the extension, which provides diverse activities to the community, makes UFRGS reach high levels of evaluation. UFRGS, as a public institution at the service of society and committed to the future and critical awareness, respects differences, prioritizes experimentation and, above all, reaffirms its commitment to education and knowledge production, inspired by the ideals of freedom and solidarity.

## THE SCHOOL OF ENGINEERING OF THE FEDERAL UNIVERSITY OF RIO GRANDE DO SUL

The School of Engineering has approximately 5,000 undergraduate students; around 2,000 strictu-sensu graduate students and more than 1,500 specialization students. It offers 13 undergraduate courses and 10 postgraduate courses. Its infrastructure comprises 10 teaching laboratories and more than 80 research laboratories, spread across 16 buildings. The teaching staff is approx. 230 permanent professors; and in the administrative staff are approx. 130 administrative technicians. In its Strategic Planning, the School of Engineering established the following guidelines to guide its activities:

Mission: "The fundamental purpose of the School of Engineering is to train and qualify human resources, establishing a culture of excellence and generation of new knowledge through research, in all areas of Engineering, contributing to the development of society with broad interaction with the sectors public and private production".  
Vision: "A dynamic unit, which follows changes in the technological sector, renewing undergraduate and graduate courses and maintaining regular research and extension activities in all its departments. Due to these activities, relevant to society and to the national productive sector, the School intends to become a reference center of international expression".  
Values: Leadership / Qualified interactions with society / Teaching-research-extension balance / Growth and collaboration / Continuous improvement / Sustainability and responsibility / Reduced bureaucracy / Contribution to national development.

### Contact us:

Team ICMME 2023

E-mail: [icmme2023@gla.ac.in](mailto:icmme2023@gla.ac.in)

Phone: +91 -9557831312, 8005196087,  
8881685600, 8126596888 (India)

Brazil: +55-5193458891

Website: [www.gla.ac.in/icmme](http://www.gla.ac.in/icmme)

