BITS Pilani
Pilani Campus

PRE-CONFERENCE WORKSHOP

ON

SMART MANUFACTURING:
INTEGRATING DIGITAL TECHNOLOGIES, AI, AND AUTOMATION FOR FUTURE-READY MANUFACTURING

4th MARCH 2027



ABOUT BITS PILANI

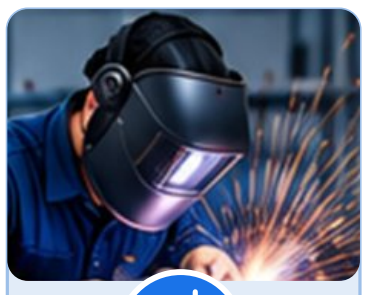
Birla Institute of Technology and Science (BITS) Pilani is an all-India institute for higher education. Founded with strong technical collaboration with MIT (USA) under the Ford Foundation Grant, BITS Pilani has evolved into a leading institute of higher education, distinguished by its illustrious legacy, modern campuses, and exceptional placement records. The institute's commitment to excellence, merit, transparency, innovation, and enterprise has been the hallmark of its journey. In addition to Pilani, BITS Pilani has campuses in Dubai, Hyderabad, Goa, and Mumbai. These expansions have further strengthened its reputation as a premier educational institution.

ABOUT MECHANICAL ENGINEERING DEPARTMENT

The Mechanical Engineering Department at BITS Pilani, spread across its four campuses, offers undergraduate, postgraduate, and Ph.D. programmes with a strong focus on theoretical learning and hands-on experience. The department is known for research in design, manufacturing, thermo-fluids, and engineering management. Students are trained in software tools such as ANSYS, AutoCAD, CATIA, COMSOL, MATLAB, and Fusion 360. Faculty members are actively involved in cutting-edge research addressing fundamental and applied problems, with strong industry links. The department aims to prepare skilled graduates for impactful careers in industry, academia, and research.

ABOUT PRE-CONFERENCE WORKSHOP

The workshop will provide hands-on demonstrations and exposure to emerging technologies in smart manufacturing through the following facilities:



01 Virtual Welding Simulator

A virtual welding simulator uses VR and simulation technology to provide hands-on welding practice in a safe and controlled environment.



02 Tab to bus bar joints in batteries

Demonstration using an ultrasonic metal welding machine for battery tabs and busbars, including its basic working principle and applications.



03 3D Printing (Additive Manufacturing)

Demonstration of polymer-based 3D printing facilities, filament fabrication, and the printing of different structures and materials.



04 Digital Twin of Engineered Systems

Real-time communication between a Raspberry Pi and CAD software for monitoring. A 6-DOF robotic arm and a virtual model developed in Unity will be demonstrated.



05 Robotic Kinematics and Motion Control

Hands-on demonstration of robotic manipulation, kinematics, sensor-based pose estimation, and real-time motion control, highlighting applications in Smart Manufacturing and Industry 5.0.



06 Sustainable Assessment

Demonstration and discussion of sustainability aspects in manufacturing, including life cycle assessment and environmental impact.

RESOURCE PERSONS

Prof. Srikanta Routroy
https://www.bits-pilani.ac.in/pilani/srikanta-routroy/

Prof. Arun Kumar Jalan
https://www.bits-pilani.ac.in/pilani/arun-kumar-jalan/

Prof. Radha Raman Mishra
https://www.bits-pilani.ac.in/pilani/radha-raman-mishra/

Prof. Sunil Sinhmar
https://www.bits-pilani.ac.in/pilani/sunil-sinhmar/

Prof. Madhurjya Dev Choudhury
https://www.bits-pilani.ac.in/pilani/madhurjya-dev-choudhury/

Prof. Yogesh Singh
https://www.bits-pilani.ac.in/pilani/yogesh-singh/

KEY HIGHLIGHTS

- Hands-on Demonstrations
- Integration of AI & Automation
- Exposure to Advanced Tools
- Interaction with Experts

IMPORTANT DATES

Registration
31st December 2026

Pre-conference Workshop
4th March 2027

REGISTRATION FEES

Category	Amount (Rs.)
Industry / R&D Organization	3,000/-
Faculty from Academic Institute	2,500/-
Research Scholars / Students	2,000/-

Note: For a group of 5 Research Scholars/Students or more, the registration fee will be Rs 1600 per delegate.

Registration fee can be paid through Bank transfer/Online.
Access the registration link/QR code for details.
(All registrations are inclusive of GST)

BANK DETAILS

Beneficiary Name	:	Birla Institute of Technology & Science, Pilani
Bank Account (Saving)	:	918010089946355
Bank	:	AXIS BANK LTD (Pilani Branch)
IFSC CODE No.	:	UTIB0001188

VENUE

Department of Mechanical Engineering,
BITS Pilani, Pilani Campus, Rajasthan – 333031, India

CONTACT DETAILS

Email: conference.me@pilani.bits-pilani.ac.in
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REGISTER NOW

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Scan QR code to register