

Report on Faculty Development Program

Topic: "Green Manufacturing"

Date: February 24th – 28th, 2025

Venue: Maharaja Agrasen Institute of Technology (Remote Centre), Rohini, Delhi

Organized by: National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh, in collaboration with Maharaja Agrasen Institute of Technology (MAIT), Delhi

Overview of the FDP

The **Faculty Development Program (FDP) on Green Manufacturing** was successfully conducted from **February 24th to 28th, 2025**, at **Maharaja Agrasen Institute of Technology (Remote Centre)**, Rohini, Delhi. This specialized training program was designed to enhance faculty competence in **sustainable manufacturing methodologies, energy-efficient processes, and environmentally responsible engineering solutions**. The curriculum integrated theoretical foundations with practical case studies, enabling participants to bridge the gap between academic research and industrial application.

The FDP emphasized life cycle assessment, waste reduction strategies, circular economy principles, and advancements in renewable energy technologies. The program provided participants with quantitative tools and methodologies to evaluate and implement **sustainable practices** within their respective domains.

A total of **28 faculty members, researchers, and industry professionals** attended the FDP, engaging in technical discourse and collaborative knowledge-sharing.



About the Organizers:

Maharaja Agrasen Institute of Technology (MAIT)

MAIT is a renowned technical institution, affiliated with Guru Gobind Singh Indraprastha University (GGSIPU) and approved by AICTE. Established in 1999, MAIT is an ISO 9001:2015 certified institute, offering a diverse range of undergraduate and postgraduate programs in engineering and management.

The Mechanical Engineering Department is dedicated to integrating fundamental and interdisciplinary knowledge with modern teaching methodologies. Hosting this FDP reflects MAIT's commitment to fostering technical innovation and promoting capacity-building among educators and industry professionals.

National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh

Founded in 1967, NITTTR plays a pivotal role in enhancing technical education in India. The institute specializes in faculty training, curriculum development, research, and consultancy in engineering education. It actively contributes to developing advanced teaching methodologies in the field of technical education.

Through collaborations with various institutions, **NITTTR** ensures the delivery of high-quality teaching and impactful training programs. Its partnership with **MAIT** aims to equip educators and researchers with the technical expertise and skills necessary for sustainable development.

Program Highlights

This FDP encompassed a structured series of expert lectures, interactive technical sessions, and case-based discussions covering:

1. **Environmental Impact Metrics & Compliance Regulations – By Mr. Sunil Jassal**
2. **Green Manufacturing Fundamentals & Industrial Implementation – By Dr. Sanjeev Mishra, Rajasthan Technical University, Kota**
3. **Advanced Renewable Energy Systems for Sustainable Production – By Dr. J.L. Bhagoria, MANIT, Bhopal**
4. **Environmental Impact Metrics & Compliance Regulations – By Sunil Jassal**
5. **Innovative Additive Manufacturing for Sustainability – By Prof. Ajay Singholi, GGSIPU**
6. **Data-Driven Optimization for Sustainable MSME Manufacturing – By Dr. Sonal Khurana, New Delhi**
7. **Circular Economy & E-Waste Management Techniques – By Dr. Ashish Agarwal, IGNOU, New Delhi**
8. **Green Logistics & Performance Evaluation Frameworks – By Dr. Deepti Chhabra, DTU**
9. **Decarbonization of Industrial Processes & Clean Energy Transition – By Mr. Anup Khare, BHEL, Bhopal**

Speakers' Profiles

1. Sunil Jassal

Affiliation: Associate professor NITTTR, Chandigarh.

Expertise: Green Technology, Environmental Regulations

Mr. Jassal is an expert in environmental compliance and green technology implementation. His sessions provided insights into environmental impact assessment and regulatory frameworks.

2. Dr. Sanjeev Mishra

Affiliation: Professor, Mechanical Engineering, Rajasthan Technical University, Kota.

Expertise: Green Manufacturing, Industrial Process Optimization

Dr. Mishra specializes in sustainable manufacturing practices, process efficiency improvements, and industrial waste minimization techniques. His session covered fundamental principles of green manufacturing and their real-world applications.

3. Dr. J.L. Bhagoria

Affiliation: Professor, Mechanical Engineering, MANIT Bhopal.

Expertise: Renewable Energy Systems, Thermal Engineering

Dr. Bhagoria's research focuses on sustainable energy systems, particularly solar and wind power. His session covered advancements in renewable energy for sustainable manufacturing.

4. Dr. Nishtha Agarwal

Affiliation: Assistant Professor, New Delhi Institute of Management

Expertise: Sustainable Business Practices, Academia-Industry Integration

Dr. Agarwal specializes in bridging sustainability and business efficiency. She discussed the role of green manufacturing in academia and industry collaborations.

5. Dr. Ranjeeta Khare

Affiliation: Professor & Head, Technocrats Institute of Technology, Bhopal

Expertise: Solar PV Systems, Sustainable Energy

Dr. Khare is an expert in solar photovoltaic installations and their role in green manufacturing. Her session focused on powering manufacturing through solar energy.

6. Prof. Ajay Singholi

Affiliation: Professor at, GGSIPU, East Campus

Expertise: Additive Manufacturing, Sustainable Materials

Prof. Singholi's research focuses on innovative 3D printing techniques and sustainable materials. His session explored additive manufacturing's role in waste reduction.

7. Dr. Deepti Chhabra

Affiliation: Faculty, IGDTUW

Expertise: Green Logistics, Sustainable Supply Chain

Dr. Chhabra specializes in environmentally friendly logistics strategies. Her session examined how green logistics enhances environmental and economic performance.

8. Dr. Ashish Agarwal

Affiliation: Professor, SOET, IGNOU, New Delhi

Expertise: Circular Economy, E-Waste Management

Dr. Agarwal's work focuses on e-waste recycling and sustainable disposal. He provided an in-depth analysis of circular economy principles in manufacturing.

9. Dr. Sonal Khurana

Affiliation: Assistant Professor, VIPS Paschim Vihar, New Delhi.

Expertise: Innovation in MSME Manufacturing

Dr. Khurana specializes in sustainable manufacturing for small enterprises. Her session covered innovation strategies for MSMEs in the green economy.

10. Prof. Praveen Kumar

Affiliation: Professor, Civil Engineering, Rajasthan Technical University, Kota.

Expertise: Green Materials, Eco-Friendly Construction

Prof. Kumar's research focuses on green materials and their role in sustainable infrastructure. His session covered the latest advancements in eco-friendly materials.

11. Mr. Anup Khare

Affiliation: Additional General Manager, Steam Turbine Engineering Division, BHEL, Bhopal.

Expertise: Industrial Decarbonization, Clean Energy

Mr. Khare specializes in clean energy solutions for industrial applications. His session examined green initiatives in steam power generation.

Role of MAIT as the Remote Centre

As the designated Remote Centre for this FDP, **MAIT** played a crucial role in ensuring the program's success. The institute provided:

- High-quality infrastructure for seamless online and offline participation.
- Well-equipped computer labs for hands-on sessions.
- Logistical support to facilitate participant engagement.



The program was coordinated by **Dr. Garima Sharma, & Mr. Vikas Sharma**, who worked hardly to manage the event and address participants' needs. The contributions of **Prof. V. N. Mathur** (Head, Department of Mechanical and Automation Engineering) and **Dr. Vaibhav Jain** (Head, Department of Mechanical Engineering) were helpful in ensuring the program's success. Their support greatly enhanced the overall learning experience for participants.



Concluding Session and Feedback

Upon completion of the FDP, a structured review session was conducted to gather participant feedback. Attendees acknowledged the technical depth of sessions and the expertise of the resource persons.

Dr. Garima Sharma and **Mr. Vikas Sharma**, serving as FDP Coordinators, conveyed appreciation towards **Prof. V. N. Mathur** and **Dr. Vaibhav Jain** for their unwavering support. Additionally, gratitude was extended to distinguished speakers, engaged participants, and the collaborative teams from NITTTR Chandigarh and MAIT, whose contributions were pivotal in ensuring the success of this event.

Special recognition was accorded to **Prof. Neelam Sharma, Director of MAIT**, for her instrumental role in facilitating this initiative. The joint efforts of **MAIT and NITTTR Chandigarh** exemplify the significance of institutional synergy in advancing technical education.

The FDP successfully met its objective of augmenting faculty proficiency in sustainable manufacturing strategies. It served as an invaluable platform for technical discourse, interdisciplinary collaboration, and industrial application, equipping participants with advanced methodologies to integrate into academic and professional settings. This initiative further underscores the necessity of fostering academia-industry partnerships to drive sustainable advancements in **green manufacturing and environmental engineering**.
