AICTE Training and Learning (ATAL) Academy Sponsored
Faculty Development Program(FDP) on
Additive Manufacturing in Industry 4.0 Strategy from 6th to 10th Dec., 2021

National Institute of Technology, Andhra Pradesh
(Institution of National Importance)
Tadepalligudem, West Godavari District – 534 101, Andhra Pradesh, India.
Department of Mechanical Engineering

The Program

Additive Manufacturing technology has been emerging with the ability to produce customer customized products with competitive quality at low cost. AM is becoming more and more important in health care, automobile and space. AM enables manufacturers to reduce inventory, make products on-demand, create smaller localized manufacturing environments, and even reduce supply chains.

Many governments around the world in recent days are enforcing their manufacturing sectors to initiate the activities such as “Industry 4.0”, “Industrial Internet of Things”, “Factories of the Future” and “Made in China 2025” in their respective manufacturing sectors. Particularly governments of the United States, China, and the European Union, are supporting the industries whose innovation and investment activities are with the latest technologies.

Industry 4.0 can be programmed to be more environmentally conscious during the manufacturing of the products, thus, manufacturing products with lesser wastage. It prints product that we need at a specific destination, thereby reducing the logistics cost. AM technologies solve the problem of existing design boundaries, giving a perfect solution for an on-demand customized production system. It also plays an active role in making industry economically competitive.

With this motive, the FDP is aimed to address the fundamental concepts related to:

- Additive manufacturing technologies
- Technologies to control the AM products
- Industry 4.0 and Make-in-India
- Advanced sensor technologies
- Integration of AM with Industry 4.0
- The future of AM in Industry 4.0 in India

Expert lectures will be delivered by faculty members from academia. This program may be beneficial to faculty members and research scholars who are interested to practice/begin research in the field of additive manufacturing technologies with Industry 4.0 strategy.

NIT Andhra Pradesh

National Institute of Technology Andhra Pradesh is the 31st Institute among the chain of NITs started by the government of India. NIT Andhra Pradesh is established in the state of Andhra Pradesh in the academic year 2015-16. NIT Andhra Pradesh, a premier technical institute of India, offers B.Tech., M.Tech., and Ph.D. degrees in Biotechnology, Civil, Chemical, Computer Science, Electrical, Electronics and Communication, Mechanical and Metallurgical and Materials Engineering. NIT Andhra nurtures a rich and diverse cross-cultural environment with students coming from all around the India for various undergraduate programs. The Institute committed towards high quality teaching and research.

Dept. of Mechanical Engineering

The Department of Mechanical Engineering started in the year 2015 with an objective in providing education and training facilities, to carry out application-oriented research, development of in-house technologies, and promote consultancy services in various areas of Mechanical Engineering. The department also offers an M.Tech program in Manufacturing Engineering and Thermal Engineering specializations and Doctor of Philosophy (Ph.D.) program in different research areas. The department is equipped with state-of-the-art laboratory facilities in manufacturing and thermal engineering specializations.

Organizing Committee

Patron
Prof. C.S.P. Rao
Director, NIT Andhra Pradesh

Chairman
Dr. Veeresh Kumar G B
HoD - ME, NIT Andhra Pradesh

Eligibility & Registration

The participants to the course will be faculty & Ph.D. Scholars from AICTE approved technical institutions.
Workshop Details - 1220
Registration link:
https://atalacademy.aicte-india.org/co-ordinator/workshop-details/MTIyMA

Topics & Resource persons

Topic 1: Medical additive manufacturing and bio-printing.

Topic 2: Additive manufacturing for space and in-space applications.

Topic 3: Improvement in energy utilization with additive manufacturing.

Topic 4: Nano-additive manufacturing.

Topic 5: Electromechanical and robotic systems in additive manufacturing.

Topic 6: Additive manufacturing of 3D electronics, electromagnetics, and metamaterials.

Topic 7: Additive Manufacturing Applications in Industry 4.0.

Topic 8: Smart sensors and smart machines.

Topic 9: Integration of advanced sensor technologies for real-time monitoring of AM processes.

Topic 10: Data acquisition and processing for real-time monitoring of AM processes.

Topic 11: Integration of AM with Industry 4.0.

Topic 12: The future technologies for sensor controlled Additive Manufacturing in Industry 4.0 strategy.

Topic 13: Different Components Used to Implement Industry 4.0.

Expert lectures will be delivered by faculty members from academia and scientists from research laboratories.

Correspondence

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“The Abode of Technical Excellence”

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"Additive Manufacturing in Industry 4.0 strategy"

Date	Schedule of Sessions (Tentative)				
06/12/2021	**Session 1**: **10.00 AM to 11.30 AM** Registration and Inaugural Session		**Session 2**: **11.30 AM to 1.00 PM** Topic: Medical additive manufacturing and bio-printing.		**Session 3**: **3.00 PM to 4.30 PM** Topic: Additive manufacturing for space and in-space applications.
07/12/2021	**Session 4**: **10.00 AM to 11.30 AM** Topic: Improvement in energy utilization with additive manufacturing		**Session 5**: **11.30 AM to 1.00 PM** Topic: Nano-additive manufacturing		**Session 6**: **3.00 PM to 4.30 PM** Topic: Different Components Used to Implement Industry 4.0
08/12/2021	**Session 7**: **10.00 AM to 11.30 AM** Topic: Electromechanical and robotic systems in additive manufacturing		**Session 8**: **11.30 AM to 1.00 PM** Topic: Additive manufacturing of 3D electronics, electromagnetics, and metamaterials.		**Session 9**: **3.00 PM to 4.30 PM** Topic: Smart sensors and smart machines.
09/12/2021	**Session 10**: **10.00 AM to 11.30 AM** Topic: Integration of advanced sensor technologies for real-time monitoring of AM processes		**Session 11**: **11.30 AM to 1.00 PM** Topic: Data acquisition and processing for real-time monitoring of AM processes		**Session 12**: **3.00 PM to 4.30 PM** Topic: Additive Manufacturing Applications in Industry 4.0.
10/12/2021	**Session 13**: **10.00 AM to 11.30 AM** Topic: Integration of AM with Industry 4.0		**Session 14**: **11.30 AM to 1.00 PM** Topic: The future technologies for sensor controlled Additive Manufacturing in Industry 4.0 strategy.		**3.00 PM to 4.30 PM** Valediction/Feedback