AICTE Training And Learning (ATAL) Academy FDP

On

Manufacturing and Characterization of 3D Printed Materials (MC3DPM-2021)
(December 13-17, 2021)

Course Coordinator

Dr. Anuj Bansal
Dr. Anil Kumar Singla

Organized by

Department of Mechanical Engineering
Sant Longowal Institute of Engineering and Technology,
(Deemed to be University under MOE, Govt. of India)
Longowal, Dist. -Sangrur-148106 (Punjab)

www.sliet.ac.in

About ATAL Academy:

The primary objective of the ATAL Academy is to plan and help in imparting quality technical education in the country and to support technical institutions in fostering research, innovation and entrepreneurship through training. The online FDP of 2020-21 has been recognized as a world record by World Book of Record, London. This is also important that FDP sessions are recorded and available on portal so that anyone can learn in the future.

About the Institute:

Sant Longowal Institute of Engineering & Technology (SLIET), Deemed to be University, has been established and funded by MHRD (now MoE), Government of India in 1991 to provide technical education in emerging areas of Engineering and Technology. Accepting the new challenge of new education policy, the institute has the new concept of flexible, modular and multi-point entry/exit system and aims to provide technical manpower requirements of all levels to the industries. The institute offers Integrated Certificate-Diploma, B.E., M. Tech., and Ph.D. in various disciplines of Engineering and Technology, Science and Management. The 451 acres campus presents a spectacle of harmony and natural beauty.

About the Department:

The Department of Mechanical Engineering offers Bachelor of Engineering programme, two Master of Technology programme, and Ph.D. programme. Five Integrated Certificate-Diploma (ICD) courses are also being offered covering major areas of mechanical engineering to produce skilled manpower for shop floor in industry. At present, there are 40 highly qualified and motivated faculty members in the department, who are actively involved in different sponsored projects funded by DST, MHRD, AICTE etc. The department has produced approximately 45 PhDs and 30 scholars are currently working in different research areas. Patents are also to the credit of the faculty of the department. The department regularly organizes conferences and AICTE sponsored STTP courses.

Introduction:

3D Printing or Additive manufacturing is a novel method of manufacturing parts directly from digital model by using layer by layer material build-up approach. This tool-less manufacturing method can produce fully dense metallic parts or components with desired porosity values in small duration, with high accuracy. Some of the unique features of additive manufacturing like freedom of part design, desired complexity, controlling the component weight, and design for required functionality make it one of the best suitable option to manufacture components for various industries such as aerospace, oil & gas, marine and automobile. Before commercialization of these 3D printed components, the in-depth characterization of the components should be done to insure the desired life span.

Course Contents:

The programme is focused to discuss the process of manufacturing a component using 3D printing and its characterization. Few important aspects that will be covered in this programme are -

- History and importance of 3D printing technology in industrial sector.
- Biomedical application of 3D printed components.
- Mechanical properties of 3D printed components.
- Defects in 3D printing
- Demonstration of component manufacturing using 3D printer: various practical sessions.
- Post processing of 3D printed component.

Resource Persons:

Faculty from reputed Academic Institutions/ Industries/ R&D labs across the globe who are broadly working in the field of 3D printing at research and application level will conduct the online sessions in the programme.

Who can participate?

The faculty members of the AICTE approved institutions, Research scholars, PG Scholars, participants from Government, Industry (Bureaucrats/ Technicians/ Participants from Industry etc.)/ School Teachers and staff of host institutions.

Important Dates:

Last date for applying	10 December 2021
Intimation of selection	11 December 2021
Mode of Intimation	Through email/ATAL portal

Registration Fee:

There is **no registration fee** for eligible participants of AICTE approved institute.

How to Apply:

- The interested candidates are required to register for the FDP through following link on or before the last date by following the given steps https://www.aicte-india.org/atal

  Step 1: Register as a participant on ATAL portal.
  Step 2: Select workshop tab on left side
  Step 3: Select State-Punjab, Month-December,
  Step 4: Select thrust area – Thrust Areas
  Step 5: Apply by clicking on the + sign in the workshop MC3DPM-2021 (1614678143)

- The number of participants is limited to 200 and will be selected based on first come first serve basis. For any clarification, contact the FDP coordinator.

Certificate:

The certificates shall be issued to the participants who have attended the program with minimum 80% attendance and scored minimum 60% marks in the test. The participants also have to provide compulsory online Feed-back on the last day of FDP.

Expected Outcomes:

At the end of the program the participants shall be able to understand the following key factors in the field of 3D printing.

- Fundamental design aspects and parameters involved in 3D printing.
- Mechanical properties of 3D printed components.
- Metallurgical properties like porosity and defects in 3D printed components
- Simulation and post processing of 3D printed components

Organizing Committee:

Chief Patron:	Prof. Shailendra Jain, Director
Patron:	Prof. J. S. Dhillon, Dean (Acad.)
Chairman:	Prof. A. S. Shahi, HOD (ME)
Coordinator:	Dr. Anuj Bansal Dr. Anil Kumar Singla
Co-coordinators:	Mrs. Ankita Omer Mr. Jonny Singla

Address for Communication:

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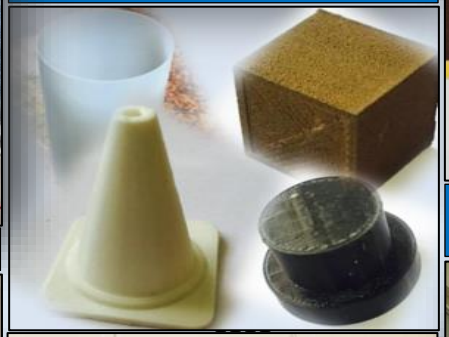
Additive Manufacturing and Characterization Facilities in SLIET:

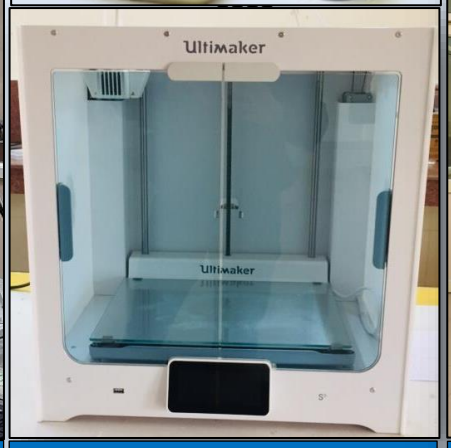
Wire Arc Additive Manufacturing

Single Screw Extruder (Felfil evo)

Polymer/Ceramic FDM/LDM Printer (Delta Wasp 2040)



FE-Scanning Electron Microscope (FESEM) (JSM-7610Fplus, JEOL)



Polymer-Metal/Composite FDM Printer (Ultimaker S5)

X-ray diffractometer (Bruker D-8 Advance)