

Advances in Additive Manufacturing

Overview

Recently additive manufacturing has been identified as the next generation of manufacturing and is gaining its importance under the era of Industry 4.0. The term additive manufacturing covers a wide spectrum of processes, where parts can be manufactured directly from a CAD data layer-by-layer with reduced the lead-time. Moreover, it is expected to save material, time and at the same time introduce added functionalities. This course will make the participants familiar with both the theory and practice of the different additive manufacturing processes and their principles.

The expected outcome of the course is the following:

- Innovate new additive manufacturing processes
- Select the right process for fabrication of the right component
- Provide a basic understanding of the emerging additive emerging technologies

This course is organized in two modules that should be taken together. The topics in Module A will expose the participants to the introduction of additive manufacturing, its advantages, disadvantages, applications of additive manufacturing, design for additive manufacturing, and introduction to different additive manufacturing processes. In Module B, lectures will be devoted to metal additive manufacturing processes with the focus on laser-based powder-bed fusion process (Selective laser melting) followed by the metallurgy of additive manufacturing, alloy design along with some case studies, additive manufacturing process selections, and finally, the participants will be exposed to the future of additive manufacturing.

Course participants will learn these topics through lectures and hands-on experiments. Also, case studies and assignments will be shared to stimulate the research motivation of participants.

Modules	A: Introduction to Additive Manufacturing : November 23 – November 29 B: Advances in Metal Additive Manufacturing : November 30 – December 05 Number of participants for the course will be limited to FIFTY.
You Should Attend If...	<ul style="list-style-type: none">▪ you are a mechanical, manufacturing, production, or materials engineer or research scientist interested in next-generation manufacturing, the metallurgy of additive manufacturing, design aspects of additive manufacturing, and/or interested in developing next-generation additive manufacturing processes/materials.▪ you are a student or faculty from an academic institution interested in learning the nuances of additive manufacturing
Fees	The participation fees for taking the course is as follows: Participants from abroad : US \$ 500 Industry/ Research Organizations : INR 15000 Academic Institutions : INR 6000 Student / Scholar : INR 5000 The above fee includes all instructional materials, tutorials, assignments and internet facility. Fee does not include accommodation and food. On request, accommodation will be provided to the participants on payment basis.

The Faculty



Prof. Dr.-Ing. Prashanth K. G. is the Head of the Additive Manufacturing Laboratory and Full Professor at the Department of Mechanical and Industrial Engineering, Tallinn University of Technology (Taltech), Tallinn, Estonia. His research interests include but not limited to additive manufacturing, powder metallurgy, non-equilibrium materials and processes, amorphous materials, light metals, solidification, and renewable processes/materials.



Dr Katakam Sivaprasad is working as Associate Professor in Department of Metallurgical and Materials Engineering, National Institute of Technology, Tiruchirappalli, India. His research interests include mechanical behavior of materials, advanced materials processing, structure-property-process correlations, light weighting of structures. He is the first recipient of Sir Dorabji Tata – T R Anantharaman Faculty Fellowship. He has published more than 80 peer reviewed journal articles with more than 2400 citations and h-index 26. He has guided 6 PhD scholars.

Course Co-ordinator

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