



**Department of Mechanical Engineering
Indian Institute of Technology Tirupati India
announces**

AICTE Training and Learning Academy (ATAL)

Sponsored

A Five-Day Online Faculty Development Program

on

Processing of Novel Materials for Defense and Aerospace Applications

6th – 10th December 2021

Inauguration (6th December, 09.30 AM – 10.00AM)

Welcome Address

Dr. Madan Mohan, HoD, ME, IIT Tirupati, India

Inaugural Address

Prof. K. N. Satyanarayana, Director, IIT Tirupati, India

Introductory Remarks

Prof. Ajay Kumar, IIT Tirupati, India

Vote of Thanks

Dr. Baburaj M., IIT Tirupati, India

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<https://atalacademy.aicte-india.org/signup>

Session-wise Tentative Schedule (IST)	
Inaugural Function	09.30 AM– 10.00 AM
Monday, 06/12/2021	
Topic	Duration
Additive manufacturing for aerospace and defence applications	10.00 AM – 11.30 AM Dr. D.V. Kiran, IIT Tirupati, India
Processing of porous ceramics and interpenetrating metal/ceramic composites for aerospace applications	11.30 AM – 01.00 PM Dr.-Ing. Siddhartha Roy, IIT Kharagpur, India
Lunch Break (01:00 PM– 02:00 PM)	
Titanium alloys for aerospace applications	03.00 PM – 05.00 PM Dr. K.S. Suresh, IIT Roorkee, India
New frontiers in lightweight composites enabled by additive manufacturing	05.00 PM – 06.15 PM Prof. Nikhil Gupta, NYU USA
Tuesday, 07/12/2021	
Topic	Duration
Flash sintering: A novel way to process ceramics	09.00AM – 11.00 AM Dr. Devinder Yadav, IIT Patna, India
Potential of Casting on Enhancing Structural Efficiency of Magnesium Alloy for Defense and Aerospace Application	11.00 AM – 01.00 PM Dr. Biranchi Narayan Sahoo, NIT Surat, India
Lunch Break (01:00 PM – 02:00 PM)	
Multi-Scale manufacturing of composites - coupons to structures	02.00 PM – 04.00 PM Dr. Subbareddy Daggumati, IIT Tirupati India
Wednesday, 08/12/2021	
Novel Rheological Fluids to Finish Simple to Complex Surface Features	09.00 AM – 11.00 AM Dr. Ravi Sankar M., IIT Tirupati, India
Processing, properties and aerospace applications of different classes of Titanium alloys	11.00 AM – 01.00 PM Dr. Amit Bhattacharjee DMRL Scientist G, DRDO India
Lunch Break (01:00 PM – 02:00 PM)	
Smart manufacturing of aerospace light alloys products through digital twin concept	02.00 PM – 04.00 PM Dr. EL MANSORI Mohamed, Texas A&M USA
Recent Developments in the Lightweight Materials for Aerospace and Defense Applications	04.00 PM– 06.00 PM Dr. Chandra Shekhar Perugu, IISc Bangalore India

Thursday, 09/12/2021	
Development and characterization of magnesium alloys	09.00 AM – 11.00 AM Dr. Sudhanshu Shekhar Singh, IIT Kanpur India
Industrial carbon fibers and composites	11.00 AM – 01.00 PM Dr. Swati Sharma, IIT Mandi India
Lunch Break (01:00 – 02:00 PM)	
Advanced composites and structures for lightweight defense and aerospace applications	02.30 PM - 04.00 PM Prof. Dr.-Eng. Nikolaos Michailidis, Texas A&M University, USA
Advancing manufacturing and materials processing through explainable AI principles	04.00 PM - 06.00 PM Prof. Satish Bukkapatnam, Texas A&M USA
Friday, 10/12/2021	
Advanced machining of defence materials	9.00 AM – 11.00 AM Dr. N. Venkaiah, IIT Tirupati India
Friction Stir Welding for Defence Application	11.00 AM – 01.00 PM Dr. Gourav Rao , NMRL India
Lunch Break (01:00 – 02:00 PM)	
New CoNi based superalloys and their creep deformation behavior	02.00 PM – 04.00 PM Dr. Surendra Kumar Makineni, IISc Bangalore India
Closing Remark	