

## National Workshop

On

### “3D Printing and Design in Engineering Applications” (3DDPEA-2019)

Sponsored by

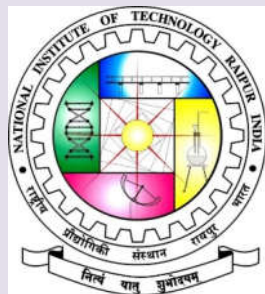
AICTE Training and Learning (ATAL)  
Academic Programme

From

02<sup>nd</sup>- 06<sup>th</sup> December 2019



Organized by



Department of  
Metallurgical and Materials Engineering &  
Mechanical Engineering

National Institute of Technology  
Raipur-492 010 (Chhattisgarh)

### Chief Patron

Dr. A. M. Rawani, Director, NIT Raipur

### Patron

Dr. (Mrs.) Shubhrata Gupta,  
Dean (R&C), NIT Raipur

### Chairperson

Dr. M. K. Tripathi, HoD Department of  
Metallurgical and Materials Engineering  
NIT Raipur

### Dr. R. Salhotra, HoD

Department of Mechanical Engineering  
NIT Raipur

### Course Coordinators

#### Dr. Jagadish

Assistant Professor, NIT Raipur

#### Dr. Neha Gupta

Assistant Professor, NIT Raipur

### Address for Correspondence

#### Dr. Jagadish

Department of Mechanical Engineering  
NIT Raipur (CG) - 492 010

Email: jagdish.mech@nitrr.ac.in

Contact No.: +91-8811940517 /9113270595

#### Dr. Neha Gupta

Department of Metallurgical and Materials  
Engineering

NIT Raipur (CG) - 492 010

Email: ngupta.met@nitrr.ac.in

Contact No.: +91-7389037915

### About the Institute

National Institute of Technology Raipur situated in the capital of Chhattisgarh, has proven to be 'avant-garde' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by President Hon'ble Dr. Rajendra Prasad on 14<sup>th</sup> September, 1956, the institute started with two departments namely Metallurgical and Mining Engineering. From 1<sup>st</sup> December 2005, the institute has become the National Institute of Technology. It is well connected with Mumbai, Delhi and all metro cities by regular flights and is on the main Howrah-Mumbai railway route. The institute is 5 km from the Raipur railways station and 18 km from airport on NH-6, the Great Eastern Road.

### Objectives of the Workshop

Manufacturing concepts are rapidly changing and manufacturing processes are completely being redefined in the last decade. Industry 4.0, digitalization and IoT are at the core of next-generation manufacturing technologies. Additive Manufacturing, considered to be one of the cornerstones of next-generation digital manufacturing, is replacing/will replace some of the traditional manufacturing methods in several industries not only in our country but also globally. For digital transformation of manufacturing industries, it is critical that scientific research and R&D studies on Additive Manufacturing technologies need to be shared on a common platform where scientific community and researchers from industry come together.

The workshop will address to individual researchers and institutions interested in the development and/or implementation of 3D Printing technologies. This will give excellent academic forum for sharing knowledge and results in theory, design, methodology and applications of additive manufacturing in different disciplines of engineering as Mechanical, Metallurgy, Material Science, Biotechnology, Biomedical, Architecture etc.

**National Institute of Technology Raipur  
National Workshop**

**On**

**“3D Printing and Design in Engineering Applications (3DDPEA-2019)”**

**Sponsored by AICTE under ATAL Program**

**Duration: 02<sup>nd</sup>- 06<sup>th</sup> December 2019**

**Schedule Plan**

Date	10:00 AM to 11:30 AM	11:30 AM to 12.00 PM	12.00 PM to 1.30 PM	1.30 PM to 2:30 PM	2:30 PM to 4.00 PM	4:15 PM to 4:45 PM
02.12.2019	Registration and Inauguration	High Tea	Session 1 Introduction to 3D Printing (Additive Manufacturing)	Lunch	Session 2 Types of 3D Printing (Additive Manufacturing) Processes	Tea
03.12.2019	Session 3 Design for 3D Printing (Additive Manufacturing)	Tea	Session 4 CAD for 3D Printing (Additive Manufacturing)	Lunch	Session 5 CAD for 3D Printing (Additive Manufacturing)	Tea
04.12.2019	Session 6 Materials for 3D Printing (Additive Manufacturing)	Tea	Session 7 Application Domains of 3D Printing (Additive Manufacturing)	Lunch	Session 8 Hands on Experience on Equipment	Tea
05.12.2019	Session 9 Novel Materials and Advances in Additive Manufacturing	Tea	Session 10 Recent Developments in Additive Manufacturing Equipment	Lunch	Session 11 Process Planning for 3D Printing (Additive Manufacturing)	Tea
06.12.2019	Session 12 Functionally Graded Materials in 3D Printing (Additive Manufacturing)	Tea	Session 13 Post-Processing Operations of 3D Printing (Additive Manufacturing)	Lunch	Session 14 Product Quality Control of 3D Printing (Additive Manufacturing)	Valedictory Function

**Targeted Participants and Registration:**

The participants to the course are faculty & Ph.D. Scholars from AICTE approved technical institutions. Number of seats are limited to 50, the selection will be made on *first cum first basis*. There is no Registration fee from any participant. No TA/DA will be paid to any participant. Participants will have to make their own stay arrangement during the five days. Only tea during sessions/working lunch will be provided to the participants. On completion of the programme on all the days, participants will be awarded a Certificate of participation by respective ATAL Academy. Register online Registration at: <https://forms.gle/WyEbDKT85QM75gSY7>

**Course Content:**

The workshop will cover but is not limited to following topics: Hybrid Processes, Design for Additive Manufacturing, Process Planning for Additive Manufacturing, Post-Processing Operations, Characterization of Components Fabricated by Additive Manufacturing, Additive Manufacturing Process Modeling and Simulation, Data Analytics in Additive Manufacturing, Product Quality Control, Novel Materials for Additive Manufacturing,