About the Institute:

National Institute of Technology Raipur situated in the capital of Chhattisgarh, has proven to be "avant-grade' in the field of science and technology over past few decades in this region. With sweet memory of foundation ceremony by our president Hon'ble Dr. Rajendra Prasad on 14th September 1956. The institute started with two departments namely Metallurgical and Mining Engineering. Later the inauguration of the Institute building was done by our Prime Minister Hon'ble Pt. Jawahar Lal Nehru on 14th March 1963. From 1st 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.

How to reach:
https://maps.app.goo.gl/Soi2cGrHntrBRCUb6

About the Department:

The Department of Metallurgical and Materials Engineering was established in 1956 at NIT Raipur is as old as institute itself. The vision of the department is to provide a high-quality education in Metallurgical Engineering with emphasis on student-centered research and scholarity activities, service to community and industry and professional practice in Metallurgical and all conducted in an environment that celebrates discovery and diversity. The MME Department offers academic programs like B.Tech and Ph.D. Present intake of UG Program is 115 and currently more than 20 research scholars working in various domains.

Chief Patron

Dr. N V Ramana Rao

Director,

National Institute of Technology, Raipur

Patron

Dr. G P S C Mishra

Dean R&C,

National Institute of Technology, Raipur

Chairperson

Dr. Subhas Ganguly

Head, Department of Metallurgical and Materials Engineering,

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National Institute of Technology, Raipur

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Two Day workshop

Artificial Intelligence and Machine Learning in Metallurgical Engineering Application

Sponsored by

Under the Scientific Social Responsibility (SSR) Policy of DST-SERB Project Titled

"**Development of high throughput digital metallography tool for analysis steel microstructure using artificial intelligence**" with the reference number CRG/2021/005256

Organized by

Department of Metallurgical and Materials Engineering

National Institute of Technology, Raipur,

Chhattisgarh, India

Objectives

The primary objective of this program is to motivate the researchers and end users towards a clear understanding of todays' technologies based on Machine learning and Deep Learning for real time materials discovery applications. The role of AI has been increased in the last decade to make the smart environment like smart healthcare, smart transportation system, AR/VR, smart agriculture etc. ML/DL is required for materials discovery to predict analytics, optimal resource allocation, pattern recognition, and phase recognition etc. This workshop is devoted to address the need to enhance the knowledge about the latest technologies pertaining to Machine Learning and Deep Learning using Python. The integration of ML and DL into steel applications often involves addressing challenges such as classification and detection of complex phases present in steel microstructures. Additionally, the choice between artificial intelligence and cloud-based solutions depends on the specific requirements of the application. Dynamic interactive sessions with prominent experts will be conducted in different domains of research such as Machine Learning, Deep Learning, Artificial Intelligence, steel metallography, and many more.

Topics to be covered:

- Artificial Intelligence and its applications
- Introduction about machine learning, Types of Learning algorithms
- Hands on to implementation of supervised and unsupervised methods
- Neural networks and practical implementations
- Python programming for ML

Agenda

Time	Program Schedule
Date: 22/08/2025	
09:00 AM - 10:00 AM	Registration and Welcome
10:00 AM - 10:45 AM	Inauguration
10:45 AM - 11:00 AM	Tea
11:00 AM - 12:45 PM	Expert talk on data informatics
12:45 PM - 02:00 PM	Lunch Break
02:00 PM - 03:30 PM	Expert talk on data informatics
03:30 PM - 05:00 PM	Hands on practice on python coding and machine learning
5:00 Onwards	High Tea
Date: 23/08/2025	
10:00 AM - 11:15 AM	Expert talk on AI/ML for design of composite materials
11:15 AM - 11:30 AM	Tea
11:30 AM - 01:00 PM	Expert talk on AI/ML for design of composite materials
12:45 PM - 02:00 PM	Lunch Break
02:00 PM - 03:30 PM	Expert talk on GNN in materials
03:30 PM - 05:00 PM	Hands on practice on deep learning
5:00 Onwards	Concluding remarks and closing ceremony

TARGET PARTICIPANTS

This program will be beneficial to all the faculty members, technical staff, and Ph.D. scholars of the Metallurgical & Materials Engineering Department, Electrical, Physics, Chemistry, and Basic Science departments of the nearby institutions. The maximum number of participants is restricted to 25 only.

REGISTRATION

- There is no registration fee.
- Seats are limited.
- Preference will be given to participants on a first come, – first-serve basis.
- Intimation regarding selection will be sent to the candidates by e-mail as per the schedule.
- Registration kit, snacks, and working lunch will be provided during the session break.
- Accommodation will be available at the institute's guest house on a payment basis, and No TA/DA will be paid to the participants.
- On-the-spot registration will be provided only if the seats are left vacant.
- Participants can apply through the online Google link given below.

Registration Link:
https://forms.gle/BjyDYVigmBj4C9C48

RESOURCE PERSON

Dr. Subhas Ganguly,

Associate Professor, NIT RR

LAST DATE OF REGISTRATION

20/08/2025

PROGRAMME DATES

August 22-23, 2024 (2 days)