

## Registration form

Interested participants are required to send the scan copy of the Registration Form, and Payment details to

Name: \_\_\_\_\_

Gender:  Male  Female

E-mail ID: \_\_\_\_\_

Contact No.: \_\_\_\_\_

Category:  Industry and R&D Personnel  
 Faculty  
 Research Scholar/students  
 Technical staff

Organization: \_\_\_\_\_

### Payment Details:

Rs. \_\_\_\_\_ Date of Transaction: \_\_\_\_/\_\_\_\_/\_\_\_\_

Transaction ID: \_\_\_\_\_

Signature of the Applicant: \_\_\_\_\_

**OR**

Use the following [link/QR](https://forms.gle/kWZuTqJ2vad5W6yk7) code for registration.

<https://forms.gle/kWZuTqJ2vad5W6yk7>



### Address for Communications

**Prof. Anshuman Patra**

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## ABOUT US

**National Institute of Technology (NIT)**, Rourkela, was founded as Regional Engineering College, Rourkela, in 1961, and declared as an institution of national importance by the act of parliament in 2007. The mission of the institute is to become an internationally acclaimed institution of higher learning that will serve as a source of knowledge and expertise for society and be a preferred destination for undergraduate and postgraduate studies. It is a prestigious Institute with a reputation for excellence at both undergraduate and postgraduate levels, fostering the spirit of national integration among the students, close interaction with industry and a strong emphasis on basic and applied research. NIT Rourkela has ranked 32nd, 15th, and 24th in NIRF Overall, Engineering and Research for the year 2022-23, respectively.



Department of **Metallurgical and Materials Engineering** Established in 1964. This Department has emerged as a powerhouse for academics, scientific research, and cutting-edge technologies. The department is actively involved in fundamental research in diversified fields like steel technology, advanced manufacturing processes, alloy designing, nanotechnology, composites, computational materials, and machine learning. The department attracts highly qualified faculties and bright students from the entire nation. At present, various research projects are being run in the department by external sponsoring agencies like the Department of Science and Technology (DST), Council of Scientific and Industrial Research (CSIR), TATA Steel, Steel Authority of India Ltd. (SAIL). The Metallurgical and Materials Engineering Department at the NIT Rourkela has a strong and gracious history of organizing technical national/international conferences, workshops, and short-term courses.

## Online Short Term Course on *Roadmap for Green Steel Production : Industry 4.0*



### Coordinators

**Prof. Anshuman Patra**

**Prof. Prakash Gulabrao Ranaware**

**Prof. Soumitra Kumar Dinda**

### Secretary

**Prof. Arnab Sarkar**

**Date: July 1-5, 2024**

### Organized by



**Department of Metallurgical and  
Materials Engineering,  
National Institute of Technology  
Rourkela  
Odisha 769008**

## Objective

The objective of the short-term course is to provide a comprehensive roadmap for the Iron and Steel Industries. Dependence on fossil fuel-based energy sources needs very serious attention to mitigate greenhouse gas (GHG) emissions and climate change. The possible sources of GHG and alternative counteracting strategies will be discussed in the course. The potential complete/partial substitution of fossil fuel by hydrogen and associated techno-commercial challenges will be elaborated. The mass-scale green steel production and thermodynamic, kinetic aspects are an area of immense interest among steel industry researchers and scientists. Several experts from industry, academics, and research laboratories will deliver their ideas in the short-term course. Undergraduate, postgraduate students, research scholars working in allied fields, and industry personnel will be benefitted from the course.

## Speaker List

1. Prof. Dierk Raabe - Max Planck-Institut für Eisenforschung, Germany
2. Prof. Hiroyuki Matsuura - The University of Tokyo
3. Mr. Biswadeep Bhattacharjee - Vice President Sales, Head of Green Steel India.
4. Mr. Fernando B. Guerra - P.Eng STELCO, Canada
5. Dr. Suneeti Purohit- CSIRO, Australia
6. Prof. G. G. Roy - IIT Kharagpur
7. Prof. Deepak Moghe - VNIT Nagpur
8. Prof. Binod Kumar - NIFFT Ranchi
9. Prof. N. B. Dhokey - COEP, Pune
10. Prof. Snehanshu Pal - IEST Shibpur
11. Prof. Khushubo Devi - IIT Indore
12. Dr Arghya Majumder - Kazi Nazrul University
13. Prof. Srinibas Mishra - NIT Srinagar
14. Prof. Ashok Kamaraj - IIT Hyderabad
15. Prof. M. Kumar - NIT Rourkela
16. Dr. Madan M. - CSIR-NML
17. Dr. Madhu Ranjan - Former Vice President JSW, COE Pune
18. Dr. Binay Kumar - NIT Jamshedpur
19. Dr. Arunabha Sengupta - Tata Steel
20. Dr. Prince Singh - IIT Ropar
21. Dr. Snigdha Ghosh - IIT Bhubaneswar

## Course content

This short-term course will cover but is not limited to the following topics:

- ❖ Green steel production.
- ❖ Clean Steel technology
- ❖ Thermodynamic and Kinetics of Hydrogen based steel making.
- ❖ Techno-commercial challenges of Iron and Steel Industries.
- ❖ Role of machine learning in Iron and Steel making.
- ❖ Strategies for Clean coal process.
- ❖ Energy efficient and environment friendly coke making process.
- ❖ Innovation in Alternative Iron and Steel making.
- ❖ Advances in secondary steel making process.
- ❖ Cutting edge technologies in continuous casting of steel.
- ❖ Waste utilization in Iron and Steel Industry.
- ❖ Sustainability in Iron and Steel Industries.
- ❖ Computational advancement in Iron and Steel Industries.

### Patron

Prof. K Umamaheshwar Rao  
Director (NIT Rourkela)

### Chairman

Prof. Debasis Chaira,  
Head, Department of Metallurgical and  
Materials Engineering

### Coordinator

Prof. Anshuman Patra  
Prof. Prakash Gulabrao Ranaware

Prof. Soumitra Kumar Dinda

### Secretary

Prof. Arnab Sarkar  
Department of Metallurgical and Materials  
Engineering

## Important Guidelines

- ❖ Faculty members, Research scholars, PG students, Industry personnel, Technical Staff- members of different academic institutes are eligible to apply for the workshop.
- ❖ **Registration Fee (Including 18 % GST):**  
For Facilities, Industry and R&D Personnel: **Rs.1180/-**  
Research Scholars/ Students/ Technical Staff : **Rs. 590/-**  
**Foreign Delegates: USD 100**
- ❖ **Mode of Payment:**  
Online payment should be made in favor of:  
Account Name: **CONTINUING EDUCATION NIT ROURKELA**  
Payable Bank: **State Bank of India**  
Branch: **NIT Campus, Rourkela-769008**  
Account No.: **10138951784**  
IFSC Code: **SBIN0002109**  
MCIR No.: **769002007**  
SWIFT Code: **SBININBB137**
- ❖ **NB:**
  - Incomplete registration-form (without proof/details of online transaction) will not be considered.
  - Registration fee is non-refundable.
  - **E-Certificate** will be provided for the candidates attending all the sessions.
  - There is no registration fee for the participants from the host institute.
  - Online joining link(s) through Google-meet/ MS-Team will be shared **in due course**.
- ❖ **Last date of registration: Will disclose soon**