

# ABOUT US:

NIT Rourkela, a premier national institution funded by the Government of India, has been elevated to a deemed university status and ranked 16th, 29th, and 37th in the NIRF 2023 rankings for Engineering, Research, and Overall categories, respectively. It is also placed in the 291-300 group in the QS World University Ranking: Asia 2024. The institute is committed to providing quality education in a diverse and multicultural environment, offering PhD and M.Tech by Research programs in 21 branches of Engineering. NIT Rourkela's research centers actively engage with government bodies and industries, including DST, DAE, CSIR, DRDO, BARC, and ISRO, for consultancy and research activities.



# ABOUT WORKSHOP:

A locomotive turbocharger boosts engine efficiency by using exhaust gases to drive a turbine, which compresses air and increases oxygen supply for better combustion. This process enhances power output, fuel efficiency, and reduces emissions without enlarging the engine. Turbochargers are essential in diesel locomotives, helping them handle heavy loads and steep terrains. Regular maintenance is necessary to prevent failures that can decrease performance. Modern advancements in turbocharger technology have improved durability and efficiency, making rail transport more sustainable. This workshop targets to provide hands on experience on locomotive turbocharger along with few experiments on it.

**SPONSORED BY.**



**One day Workshop cum  
Training on  
Locomotive Turbocharger  
(22<sup>nd</sup> March 2025)**

## MENTORS:

Prof. Suraj Kumar Behera, NIT Rourkela  
Mr. Hara Prakash Mishra, NIT Rourkela  
Mr. Sudhananda Pani, NIT Rourkela

## CONTACT DETAILS:

For any clarification, please contact  
Prof. Suraj Kumar Behera  
Department of Mechanical Engineering  
National Institute of Technology, Rourkela  
Odisha, India, 769008  
Tel: +91-661-246-2508 (O)  
Mob: +91-9040893760  
Rourkela 769008 (Odisha)  
Email ID: beherask@nitrkl.ac.in



## Workshop schedule :

### 1. Introduction to Turbocharger

- Overview of Turbocharger Components
- Bearings for turbocharger

### 2. Design and Performance Analysis

- Fundamentals of concepts of oil bearings
- Numerical modeling and simulation techniques

### 3. Experimental Techniques and Testing

- Overview of test rigs
- Experimentation on locomotive Turbocharger.

### 4. Discussion, Q&A, and Future Trends

- Open discussion on challenges and advancements
- Emerging trends in research and development of turbocharger
- Networking session for collaboration opportunities

*"Engineering the future, one innovation at a time."*



## REGISTRATION LINK:

<https://forms.gle/PE7QBS5i7xSju2ff8>

## PAYMENT DETAILS:

This One-Day Workshop cum Training on locomotive turbocharger is being offered **free of charge for all TEN participants**. There are no registration fees or hidden costs associated with attending the workshop. Transportation, boarding and lodging will be borne by the participant themselves.

## IMPORTANT DATES:

Last date for receipt of application: 19<sup>th</sup> March 2025

Last Day for Confirmation : 19<sup>th</sup> March 2025

