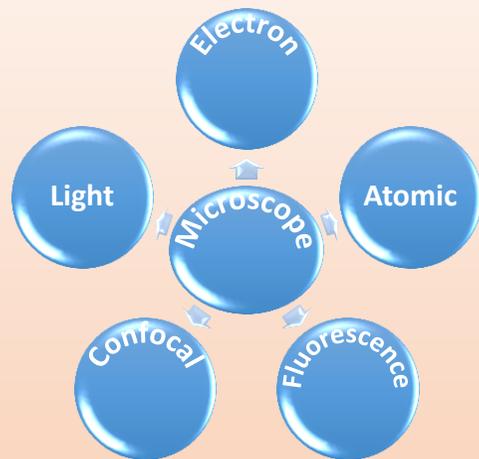


Workshop Relevance:

- ❖ This workshop aims to offer a speculative course work on various **MICROSCOPES** shown below:-



- ❖ This will be followed by the **LAB ACTIVITIES** like:-

- Detailed demonstration of twenty (20) microscopes and their usage
- Various analysis techniques
- Specimen preparation
- Basic level of data analysis

Detail Schedule of Workshop is attached.

Objectives of the Program:

- ❖ To enable the participants to understand the principles, applications, and hands-on experience on all types of microscopic instruments.
- ❖ To gain knowledge about the in-depth analysis of the characterization techniques using microscopy
- ❖ To interact with eminent professors, discuss real-time research and make collaborations.
- ❖ To encourage the participants to utilize the facilities and enhance the research temper.

RESOURCE PERSONS: Lectures and demonstration of instruments will be delivered by the leading experts from NIT Rourkela:

- Prof. Krishna Pramanik, Biotechnology and Medical Engineering
- Prof. Santanu Paria, Chemical Engineering
- Prof. Swadesh Kumar Pratihar, Ceramic Engineering
- Prof. Devendra Verma, Biotechnology and Medical Engineering
- Prof. Sujit Kumar Bhutia, Life Science
- Prof. Debasis Chaira, Metallurgical and Materials Engineering
- Prof. A Thirugnanam, Biotechnology and Medical Engineering
- Prof. Monalisa Mishra, Life Science
- Prof. Bijesh Kumar Biswal, Life Science
- Prof. Rajesh Kumar Prusty, Metallurgical and Materials Engineering
- Prof. Rekha S., Earth and Atmospheric Sciences

Executive members:

- Prof. Arnab Sarkar, Metallurgical and Materials Engineering
- Prof. Prateek Khatri, Chemical Engineering
- Prof. Rudranarayan Kandi, Mechanical Engineering
- Prof. Earu Banoth, Biotechnology and Medical Engineering
- Prof. Tushar Gupta, Mining Engineering
- Prof. Bimalendu Adhikari, Chemistry
- Prof. Amrita Singh, Biotechnology and Medical Engineering
- Prof. Bharat Kumar, Physics and Astronomy



Five days WORKSHOP on MICROSCOPY (**PARSHINI**)

Cluster of Microscopic Equipment

in

Materials & Biotechnology

3rd – 7th June 2024

Organised

By

Central Research Facility (CRF)
NIT Rourkela



Coordinators

Prof. Dayal R. Parhi (Head, CRF)
Dr. Smrutisikha Bal (SSO, CRF)
Mr. Sudhir Kumar Bai (PSO, CRF)

CENTRAL RESEARCH FACILITY
National Institute of Technology Rourkela
Rourkela-769008, Odisha, India



About National Institute of Technology (NIT) Rourkela (<https://nitrkl.ac.in>)

NIT Rourkela (NITR) has created a massive infrastructure for R & D in most branches of engineering and science utilizing various funding sources. At NITR, the equipment and software procured are available for use by the entire research community. In order to maximize the utilization of all the high end equipment and their better management, these are brought under one umbrella “Central Research Facility” (CRF).

CRF (<https://nitrkl.ac.in/crf/>) is established with an objective of providing central facility of latest and advanced techniques for research in various scientific as well as technical arena. The aim is to house several sophisticated and modern analytical equipment that can offer its users, a wide range of methods for chemical/material analysis/ testing/ characterization

Important Dates:

Registration Deadline	27 th May 2024
Confirmation to Participants by email	30 th May 2024
Commencement of Program	03 rd June 2024

Target Participants:

Students, Research scholars & Staffs:

B.Sc, M.Sc., B.Pharm, M.Pharm, B.Tech, M.Tech., Ph.D., Industrial/ Laboratory Technical staffs & Teaching personnel etc.

This program would be beneficial to all the participants (both internal and external) with a through demonstration of microscopic world. CRF will take a step further to develop and upgrade the required skills of the trainees through planned and structured training.

Contact and Queries: Please send your queries to following :-

Name	Dr. Smrutisikha Bal	Gopal Krishna
Details	(Co-ordinator, DARSHINI)	
Email	balss@nitrkl.ac.in	gopal05krishna.jha@gmail.com
Contact	8763115908	7991143516



Registration Details:

The registration fee (non-refundable) for various participants to attend the workshop is given below:

Registration Type	Fees (Rs.)*
NIT Rourkela participant	3540/-
External participants	4720/-

*Note:- Fees inclusive of GST

Bank Account Details for Paying Registration Fee:

The registration fee is to be deposited in the following bank account followed by filling Registration Google Form (Link Given Below).

Account Name	CRF NIT Rourkela
Account No.	41275103745
Bank	STATE BANK OF INDIA
Branch	NIT CAMPUS BRANCH
IFS Code	SBIN0002109

Registration Form:

To complete online registration, the participants need to fill the following google form:



Payment QR-Code

Short URL :-

<https://forms.gle/X5LFARHNrgpgctX39>

Certificates will be provided to the registered participants upon successfully completing the program.

Technical Organising Team:

- Mr. Shiv Kumar Verma (FESEM)
- Mr. Nitish Kumar (TEM)
- Mr. Prasant Manna (TEM)
- Mr. Rabindra Ku. Maharana (Fluorescence)
- Mr. Susanta Pradhan (Bio-AFM)
- Mr. Chittaranjan Bhoi (Metallurgical)
- Ms. Chahat Kausar (Inverted Microscope)
- Mr. Sonu Bharti (Bright Field Microscope)
- Mr. Jayant Kumar Sahoo (Petrological)
- Mr. Dhiren Bhoi (Laser Confocal)
- Mr. Subrat Pradhan (AFM)
- Mr. Rajesh Pattnaik (FTIR)
- Mr. Uday Kumar Sahu (High Temperature)
- Mr. Anup Acharya (SEM)
- Mr. Soumitra Gayn (Petrological)
- Mr. Arindam Pal (CRF)
- Mr. Aishwarya Khamari (CRF)
- Mr. Nirmalya Patra (CRF)
- Ms. Priyanka Das (Table Top SEM)
- Mr. Debidutta Shubhasankalpa (TT SEM)
- Mr. Gopal Krishna (CRF)



FLUORESCENCE MICROSCOPE



FTIR MICROSCOPE

Important Information:

- Payments once made will not be refunded back.
- Unavoidable circumstances may be resolved with due permission of competent authority.
- All charges for accommodation & food are to be paid by the respective participant.
- In case of unavoidable circumstances the dates of the event may be altered and will be intimated to all participants.



CONFOCAL MICROSCOPE



OPTICAL MICROSCOPE



ADVANCED OPTICAL MICROSCOPE

Boarding & Lodging Details:-

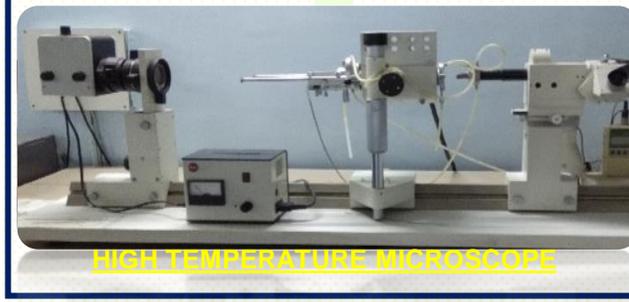
[Room Rent, Food To be Paid by the Participant, First Come First Serve Basis]

Type of Accomodation	Category - B		Category - C (C1 & C2)	
	North Block	South Block	North Block	South Block
Single Occupancy	Rs. 400	Rs. 750	Rs. 750	Rs. 1200
Double Occupancy	Rs. 500	Rs. 1000	Rs. 1000	Rs. 1550
Special Suite	-	Rs. 1200	-	Rs. 2200

- North Guest House Ph: 7815072433; 06612464100
- South Block Contact : 0661-2464000
- Lunch/Dinner (Veg): Rs 110/-, Breakfast: Rs 50/- (Tentatively)
- Guest house Link:-
<https://guesthouse.nitrkl.ac.in/Users/HomePage.aspx>

How to Reach NIT Rourkela:-

Distance from Rourkela Railway Station to NIT Guest House: 5.5 km (Tentatively)



HIGH TEMPERATURE MICROSCOPE

Schedule of 5 days WORKSHOP on MICROSCOPY (3rd-7th June, 2024)

DARSHINI: Cluster of Microscopic Equipment in Materials & Biotechnology

Day Date	SESSIONS		DEMONSTRATION					
Inaugural Day June-03	9:00 - 10:30am <i>Registration & Inauguration</i>	10:30 -11:30am <i>Introduction to the course and faculty</i>	High Tea	11:45 - 1:00pm Prof. Santanu Paria <i>Basic principles and techniques of optical microscopes in all types of research</i>	Lunch Break	3:00 - 4:15pm Prof. S.K. Pratihari Prof. Rekha S. <i>1.Field Emission Scanning Electron Microscope (FESEM) 2.Petrological Microscope</i>	Tea Break	4:30 - 5:45pm Prof. S.K. Pratihari Prof. Rekha S. <i>1.Field Emission Scanning Electron Microscope (FESEM) 2.Petrological Microscope</i>
Day 2 June-04	09:30 - 10:30am Prof. Krishna Pramanik <i>Fluorescence and Confocal microscope in tissue engg.</i>	10:30 -11:30am Prof. A Thirugnanam <i>Metallography-Sample preparation; Microstructure analysis;</i>	Tea Break	11:45 - 1:00pm Prof. Devendra Verma <i>Bio-AFM: modes of AFM, characterisation and sample preparation for BioAFM.</i>	Lunch Break	3:00 - 4:15pm Prof. Krishna Pramanik Prof. A Thirugnanam <i>1.Fluorescence microscope 2.Confocal Microscope 3.Metallurgical Microscope</i>	Tea Break	4:30 - 5:45pm Prof. Krishna Pramanik Prof. Devendra Verma <i>1.Environmental Scanning Electron Microscope 2.Bio- Atomic Force Microscope</i>
Day 3 June-05	09:30 - 10:30am Prof. Debasis Chaira <i>SEM-Microstructural and compositional analysis: Metals, alloys & composites</i>	10:30 -11:30am Prof. Rajesh Kumar Prusty <i>FTIR: Ageing characteristics in polymer composites & nanomaterials</i>	Tea Break	11:45 - 1:00 pm Prof. A. Mallick Prof. Rajesh Kumar Prusty <i>AFM & FTIR Microscope</i>	Lunch Break	3:00 - 4:15pm Prof. Debasis Chaira Prof. Ajit Behera <i>1.Scanning Electron Microscope 2.High temperature Microscope</i>	Tea Break	4:30 - 5:45pm Prof. Debasis Chaira Prof. Ajit Behera <i>1.Scanning Electron Microscope 2.High temperature Microscope</i>
Day 4 June-06	09:30 - 10:30am Prof. Santanu Paria <i>Transmission Electron Microscope (TEM): An insight journey to fundamental principle and application to various fields</i>	10:30 -11:30am Prof. Monalisa Mishra <i>Determination of eye ultra-structure under different photic condition (TEM)</i>	Tea Break	11:45 - 1:00pm Prof. Monalisa Mishra <i>Analysis of phenotypic defect in model Organism Drosophila Melanogaster</i>	Lunch Break	3:00 - 4:15pm Prof. Sujit Kumar Bhutia Prof. Bijesh Kumar Biswal <i>1.Immunofluorescence techniques in cell biology 2. Inverted Microscope in analysis of cells in cancer biology</i>	Tea Break	4:30 - 5:45pm Prof. Sujit Kumar Bhutia Prof. Bijesh Kumar Biswal <i>1.Immunofluorescence techniques in cell biology 2. Inverted Microscope in analysis of cells in cancer biology</i>
Day 5 June-07	09:30 - 10:30am Prof. Dayal R. Parhi <i>TEM: Sample Preparation Process</i>	10:30 -11:30am Prof. Santanu Paria <i>TEM Lab: BF & DF imaging, SAED, STEM imaging & EDS.</i>	Tea Break	11:45 - 1:00pm Prof. Santanu Paria <i>TEM Lab</i>	Lunch Break	3:00 - 4:15pm Mr. S. K. Bai <i>CRF Lab Visit</i>	4:15 - 5:30pm Dr. S. Bal <i>Valedictory Function & Certificate Distribution</i>	High Tea