

## Registration form

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

Designation: \_\_\_\_\_

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

Address for correspondence: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

Phone: \_\_\_\_\_

### Particulars of Registration Fee:

DD No.: \_\_\_\_\_ Date: \_\_\_\_\_

Amount: \_\_\_\_\_ Bank: \_\_\_\_\_

Accommodation Required: Yes/No

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

Place: \_\_\_\_\_

The complete registration form accompanied by DD/ Cheque of requisite amount may be mailed well in advance to the coordinator. The payments should be made in favor of "Continuing Education, NIT Rourkela" payable at Rourkela.

## Course venue

### Dept. of MME

Established in 1964, the department has been emerged as powerhouse for academics, scientific research and cutting edge technologies. With time, the department grew noticeably and established new areas of research and teaching in materials engineering, while retaining its strength in traditional areas in Metallurgical engineering. The well-developed infrastructure and diversified expertise of the faculties have provided the department a global acceptance. The department is actively involved in research activities in the front line areas of metallurgical and materials engineering in collaboration with reputed R&D organizations and industries throughout the country.

### Course deliverables

This 5 day basic corrosion course will cover fundamental aspects of corrosion control and its prevention to analysis of corrosion in different sectors. The course will enable beginners to establish a solid foundation in corrosion before moving on to advanced topics. Exercises, hands-on practical sessions and virtual experiments throughout the course will help participants understand the basic concepts and fundamentals important to corrosion. It provides an excellent avenue for corrosion practitioners, designers, technical managers, inspection and maintenance engineers, quality control personnel and those involved in failure analysis to update their appreciation of corrosion and the awareness of the emerging technologies for corrosion control and prevention.

### Contact details

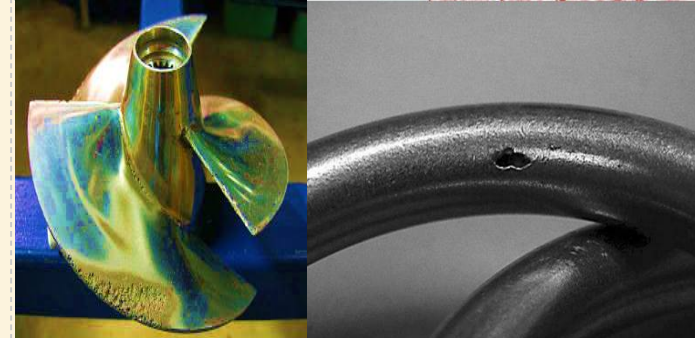
**Dr. Archana Mallik**  
Coordinator

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Dept. of Metallurgical and Materials Engineering  
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**2<sup>nd</sup> Summer school**  
**On**  
**Corrosion and its control and**  
**characterization**  
**July 08 - 12, 2019**



Organized by

Dept. of Metallurgical and Materials Engineering  
National Institute of Technology Rourkela  
Rourkela-769008  
Odisha, India





## Introduction to the course

Corrosion intrudes itself into many parts of our lives and hence the field can never be ignored or perished in this material based civilization. In the most common use of the word, this means aqueous oxidation of metal in reaction with an oxidant. Corrosion degrades the useful properties of materials and structures including strength, appearance and permeability to liquids and gases. Hence proper selection of materials and design, control of environment, application of coatings, addition of inhibitors are most effective in cutting the cost of corrosion and achieving low cost reliability as corrosion can be designed out of the system. It is always easier and cheaper to erase lines on a drawing than to repair or replace failed equipment or components in service. And corrosion testing and evaluation is the backbone of these methodology. Hence proper knowledge and approach to analyze and achieve are inevitable.

This course aims at covering the basic fundamental thermodynamic and kinetic principles underlying the phenomenon of corrosion and then the testing procedures to evaluate corrosion. Finally corrosion in real situations including oil and gas lines, marine environments, electronic industries etc have also been covered.



## Course outline

<b>Module – I</b>	Introduction to corrosion and its control; Thermodynamics, Pourbaix diagram, Reference electrodes, Passivity, point defect model etc.
	Exercise, practical session, Software practice on corrosion fundamental and construction of Pourbaix diagrams
<b>Module – II</b>	Corrosion kinetics; rate of corrosion, mixed potential theory, exchange current density, Polarization, Evans diagram etc.
	Exercise and practical sessions
<b>Module – III</b>	How do metals corrode: Mechanism and recognition, Uniform corrosion, Inter granular corrosion, Selective leaching, stress corrosion cracking, Corrosion fatigue, Pitting and Crevice corrosion etc.
	Hands on training on corrosion forms
<b>Module – IV</b>	Corrosion Testing and Monitoring Techniques, weight loss coupon, Electrical resistance, LPR, Tafel polarization, EIS, EPR etc.
	Software practices for rate measurements and impedance analysis
<b>Module – V</b>	Corrosion control techniques; Materials selection and design, Cathodic and Anodic protections, Alteration of environment, Coatings etc.
	Hands on training on formation of anti-corrosion coatings
<b>Module - VI</b>	Applications of Corrosion Testing Techniques, Marine corrosion and prevention, Oil and gas line corrosion and protection etc.

## Who should attend?

- young faculties
- Corrosion practitioners, designers, architects, technical managers, inspection and maintenance engineers.
- Quality control personnel and those involved in failure analysis.
- Facility owners and users who are concerned with corrosion

*The successful participants who will attend the whole will be given participation certificate.*

## Important Dates

Last date for receipt of application is 15<sup>th</sup> of June 2018 and the notification of acceptance will be by 23<sup>rd</sup> June.

## Registration Fees

Faculties from institutes	: INR 4000
Industry delegates	: INR 5000
Research Scholars	: INR 2000

The course fee includes course material, lunch, and refreshment during the program days. Participants (Faculty members and Ph.D. students) from NITRKL are exempted from paying registration fees.

## Accommodation

Accommodation on payment will be provided in institute guest house on first come first serve basis. Double occupancy rooms for scholars and young faculties.

South block guest house	: INR 1200 per day
North block guest house	: INR 600 per day

