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 of requisite amount may be mailed well in advance to the coordinator. Payment in form of DD should be made in favor of "Director, NIT Rourkela", payable at Rourkela.

Course venue

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 days workshop will cover fundamental aspects of electroplating, electrophoretic deposition and corrosion different sectors. The workshop will enable the beginners to establish a solid foundation in electrometallurgy 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 importance of material formation through electrolytic and electrophoretic deposition and material destruction by corrosion. It provides an excellent avenue for plating and corrosion practitioners, designers, technical managers, inspection and maintenance engineers, quality control personnel and those involved in coating design and failure analysis to update their appreciation.

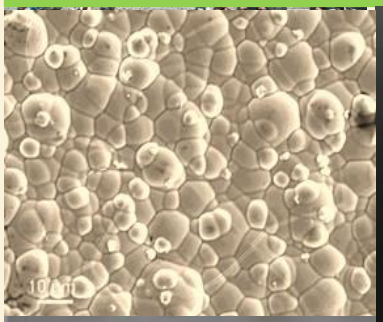
Coordinators

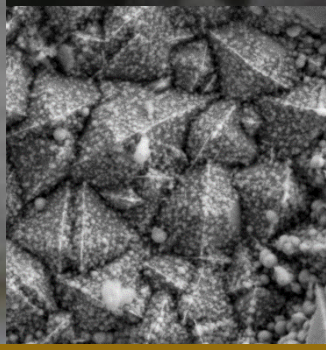
Dr. Anindya Basu
Associate Professor
Dept. of Metallurgical and Materials Engineering
NIT Rourkela
Phone: +91-661-2462553 (O)
Mobile: +919437437579
E-mail: elfconitr@gmail.com

Dr. Archana Mallik
Assistant Professor
Dept. of Metallurgical and Materials Engineering
NIT Rourkela
Phone: +91-661-2462558 (O)/2464555 (Lab),
Mobile: +919439445250
E-mail: elfconitr@gmail.com

TEQIP – III SPONSORED WORKSHOP ON ELECTROFORMING AND CORROSION

September 24 - 28, 2018





Organized by

Dept. of Metallurgical and Materials Engineering

National Institute of Technology Rourkela
Rourkela-769008
Odisha, India

Introduction to the course

Electrolytic deposition -
Electroplating can be described as a common metal finishing or improving process used in a number of industrial applications. With the advancement of industrial and manufacturing practices over the past two hundred years, this process has greatly evolved. This workshop will provide hands on training covering all the approaches made in industrial scale to achieve the quality of metal finish.

Electrophoretic deposition –
Charged powder particles (metals/ ceramics/ organic materials) dispersed or suspended in electrolyte are attracted and deposited on a conductive substrate of opposite charge is called electrophoretic deposition (EPD). Combination of electrolytic deposition and EPD is known as composite deposition. The work shop will demonstrate basics and different case studies of EPD.

Corrosion - Corrosion intrudes itself into many parts of our lives and hence the field can never be ignored or perished in this material based civilization. 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. This workshop aims at covering the basic fundamental thermodynamic and kinetic principles underlying the phenomenon of corrosion and then hands on training to evaluate corrosion.

Course outline

Module – I	***Electroplating of Metals:*** Nucleation and growth aspects, basic techniques for deposition, Practical sessions on deposition of metals and their characterization by XRD, SEM, Profilometry and SPM
	Electroplating of alloys: Basics of alloy plating, Practical sessions on deposition of alloys from acidic and basic mediums and their characterization
Module – II	***Electroplating of composites:*** Basics of composite plating, case studies, Practical sessions on deposition of nano-composites from acidic and basic mediums and their characterization
	Electrophoretic deposition: Basics of Electrophoretic deposition, zeta potential, factor affecting electrophoretic deposition, concept of Composite deposition, pulsed deposition, case studies
Module – III	***Electrophoretic composite deposition:*** some common systems, case studies relating deposition parameters with final structure and properties
	Characterization of electrophoretic/ composite coatings: case studies. Hands on demonstration of deposition and basic characterization
Module – IV	***Tafel Extrapolation:*** Mixed potential theory, Evans diagram, Practical session for corrosion rate and potential measurement, Software practices
	Linear Polarization: Theory, Practical session for corrosion rate measurements, Software practices
Module – V	***Electrochemical Impedance Spectroscopy:*** Basic theory, Equivalent circuit modelling, Practical session for corrosion and coatings analysis, Software practices

Who should attend?

- Young faculties
- Surface engineering personnel, 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 plating and corrosion

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

Important Dates

Last date for receipt of application is 5th of September 2018 and the notification of acceptance will be by 10th of September.

Registration Fees

Faculties from institutes	: INR 2500
Industry delegates	: INR 4000
Research Scholars	: INR 1500

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

Accommodation

Accommodation 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

Resource Persons:

Dr. Anindya Basu, NIT Rourkela

Dr. Archana Mallik, NIT Rourkela