



4-Days Workshop

on

Corrosion Monitoring Techniques: Research and Academic Style

Highlights



Course Completion Certificate



Discussion In Detail



Experts led Training



20+ hours Online training

The examination based on 4 days training will be conducted and passing certificates will be distributed.

Registration Link:

<https://cas.res.in/workshopreg.html>



Eligibility: B. Tech (4th Year ME / MME/ AC/CE), B.Sc/M.Sc chemistry and all interested students

Date : 10-13 May 2022, **Mode:** Offline,

Number of Seats: 50

Registration Fee – Free

Limited seats (First Come First Serve)

Last Date of Registration extended: 7 May 2022

Contents

- ✓ Corrosion Definition and examples, Origin of corrosion, Basics of Corrosion
- ✓ Types of corrosion, detailed discussion about each types Need for corrosion control, Corrosion Control Methods
- ✓ Need and Techniques of Corrosion Monitoring, detailed discussion on Weight loss measurements at room as well as at high temperature, Adsorption isotherms analysis, Gibbes free energy
- ✓ Electrochemical Measurements: Detailed discussion about EIS, Tafel Polarization , Linear Polarization Resistance and OCP

After Completion The Course

- ✓ You will be able to know how to start work in corrosion
- ✓ UG/PG/Ph.D students will be able to understand the basics of corrosion
- ✓ PG and PhD students will be able to write the manuscript on corrosion more effectively and scientifically.

Coordinator

Dr. Gopal Ji

Assistant Professor

Centre for Advanced Studies

Dr. A.P.J. Abdul Kalam

Technical University. Lucknow



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SCHEDULE

Session

Days	Forenoon	Afternoon
Day 1	Introduction and Basics of Corrosion: Origin of Corrosion, Reasons for Corrosion, Basic Concepts in Corrosion, Electrochemical theory of corrosion, Types of corrosion: galvanic, Crevice, Pitting, SCC, Intergranular, Selective Leaching, Erosion Corrosion, Corrosion fatigue, microbial Corrosion, Pipeline Corrosion, Need of corrosion prevention, Corrosion Control Methods: Material Selection, Design, Coating, Cathodic protection, Inhibitors,	Hands-on Session 1- Corrosion occurring reactions, Weight loss experiments in corrosive solutions in presence and absence of inhibitors,
Day 2	Corrosion Control Methods and Corrosion Monitoring: Need for corrosion monitoring, Monitoring techniques, Hydrogen Evolution Measurements, Weight loss Measurements at room and High Temperature, Adsorption Isotherm, Arrhenius Plot, Activation Energy, Enthalpy, Key conclusions, Basics, OCP, Key findings based on OCP, Introduction to Polarization	Hands-on Session 2- Weight loss experiments in corrosive solutions in presence and absence of inhibitors, Image and elemental analysis by SEM
Day 3	Electrochemical Corrosion Monitoring : Types of Polarization, Over potential, Tafel Polarization curves, Exchange and Corrosion Current Density, Mixed potential Theory, E_{corr} , I_{corr} , Tafel Extrapolation, Key findings based on Tafel curves, Solved examples,	Hands-on Session 3- Electrochemical Set up, OCP tests, Tafel polarization curves test, Linear polarization resistance finding
Day 4	Electrochemical Corrosion Monitoring : Nyquist and Bode Curves, Curve Fitting, EEC, Interface analysis, Solved examples	Hands-on Session 4- Electrochemical Set up for EIS, Impedance test, Nyquist and Bode plots explanation, Basic Curve fitting
Day 4	Examination will be held on Day 5. The examination will be objective type and containing 60 questions. The duration will be 60 minutes. Top 5 candidate will be given examination passing certificate mentioning their position and marks scored. Other will be having examination certificate having marks scored only.	

