CORROSION FAILURES AND ANALYSIS

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Indian Institute of Technology Kanpur

TYPE OF COURSE : New | Elective | UG
COURSE DURATION : 8 Weeks (26-Jul’ 21 - 17-Sep’ 21)
EXAM DATE : 26 Sep 2021

PRE-REQUISITES : Chemical Thermodynamics, Phase transformation and Electrochemistry

INTENDED AUDIENCE : Bachelor and Master students; Industry people, where corrosion is a problem;
PhD student working in corrosion

INDUSTRIES APPLICABLE TO : Oil companies, Chemical companies and Power sector, construction

COURSE OUTLINE :
The course will focus on citing failures of component due to corrosion and analysis of the corrosion events, which have led to the failures. It will take examples from different fields and industries such as (i) Household, (ii) Construction, (iii) Petrochemical, (iv) Naval structures and (v) Medical. The course will also discuss the possible protection philosophies on the basis of (i) Materials, (ii) Change of environment, (iii) Design, (iv) Coatings, (v) Inhibitors.

ABOUT INSTRUCTOR :
Kallol Mondal is an associate professor in the department of Materials Science and Engineering, IIT Kanpur. His specializations are phase transformations of metals and alloys, corrosion and oxidation behavior and multi-phase steel development.

COURSE PLAN :
Week-1: Introduction
Week-2: Corrosion failures
Week-3: Corrosion failures
Week-4: Corrosion failures
Week-5: Protection of Metals and Alloys
Week-6: Protection of Metals and Alloys
Week-7: Protection of Metals and Alloys
Week-8: Choice of protection route for preventing corrosion failure