

Instruments covered under training:

Fluorimeter	Atomic Absorption Spectrophotometer
Drop Shape Analyzer	Field Emission Scanning Electron Microscope
Experimental Test RIG	MTS Servo Hydraulic 250 kN Fatigue Testing System
NaI Gamma Spectrometer	Rapid Chloride Permeability Tester
Gas Chromatography	100 kN/250 kN Close Loop Servo-controlled Actuator System
Powder XRD	

Drop Shape Analyzer

Make: Kruss Scientific

Model: DSA-25

Analysis/Application: Used to determine the hydrophilicity and hydrophobicity of the surface by the measurement of the contact angle of a sessile drop and the surface tension of a pendent drop. Almost all type of surfaces including polymers, metals, thin films and nanoparticles

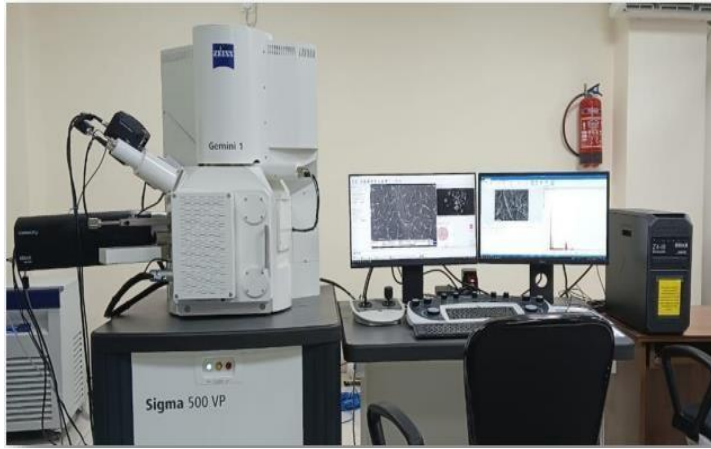


Fluorescence Spectrophotometer

Make: Agilent Technologies

Model: Cary Eclipse

Analysis/Application: Used for measurement of fluorescence of materials to study their photo physical properties. Suitable for testing of Organic and inorganic compounds, small polymers and composites, nanomaterials, biomolecules such as proteins, DNA etc.



Field Emission Scanning Electron Microscope

Make: ZEISS

Model: SIGMA 500VP

Analysis/Application: It is used for Microscopic feature measurements, Corrosion evaluations, Striation measurements for high-cycle fatigue fractures, Coating evaluations, Characterization of very fine specimen features and surface contamination analysis



Gas Chromatography

Make: Nucon

Model: 5765

Analysis/Application: This technique is used to separate and purify the different components from a mixture, To test the purity of a particular substance and To identify a compound. It is used for testing the samples in Pharmaceutical and Clinical Testing, Food and Beverage, Environmental and Chemical Industry, Drug Testing, Security, Forensics etc.

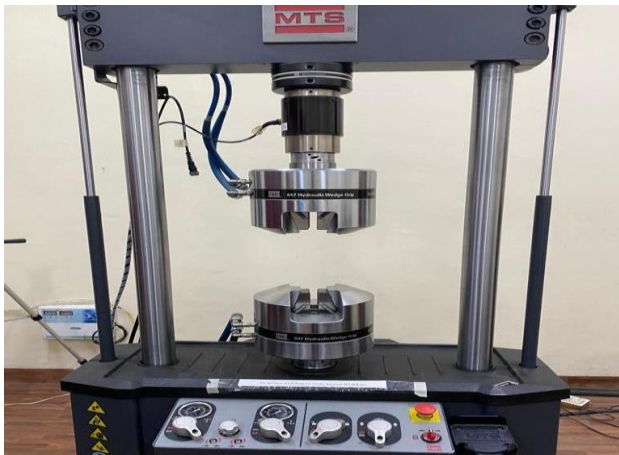
NaI Gamma Spectrometer

Make: Atomtex, Belarus

Model: NaI scintillation based gamma spectrometer

Analysis/Application: To check the suitability of soil in terms of radionuclide concentrations (^{226}Ra , ^{232}Th , ^{40}K) and corresponding dose rates for use as a construction material. To study the effect of fly ash addition in cement. To determine the concentration of natural radionuclides in dry, powdered food products





MTS Servo Hydraulic 250 kN Fatigue Testing System

Make:

Model: MTS Systems

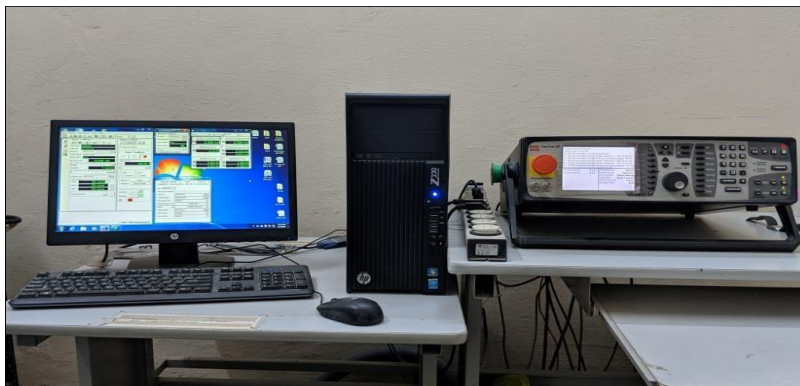
Analysis/Application: The machine has the capability to carry out static as well as fatigue tests on a range of materials like Metals, Composites, Ceramics, Polymers etc. It is a high end research equipment with acceptability and installations in industries all over the world.

Powder X-Ray Diffractometer

Make: PANalytical

Model: Empyrean

Analysis/Application: This instrument is used to determine phase identity, crystal structure. Approximate percentage phase composition etc. characteristics of crystalline compound.



100 kN/250 kN Close Loop Servo-controlled Actuator System

Make: Materials Test System, USA

Model:

Analysis/Application: It is a versatile system used for conducting static and cyclic flexural and compression tests. The system can run in displacement/strain/load control modes.

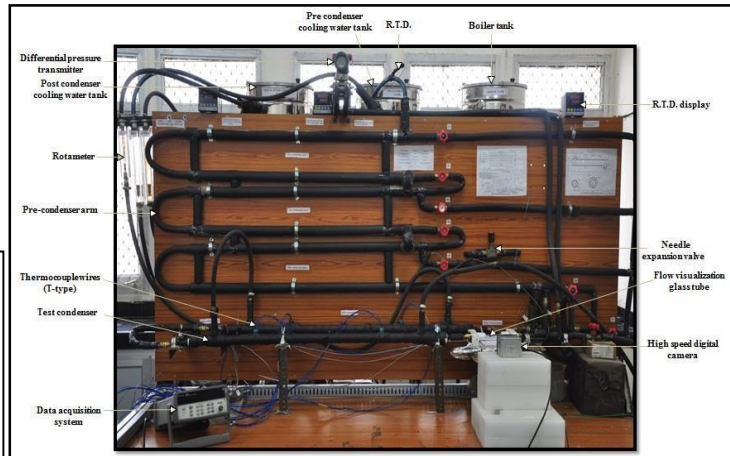




Rapid Chloride Permeability Tester (RCPT) **Make:** GERMANN INSTRUMENTS

Model: ASTM 1202

Analysis/Application: It is used to measure the resistance offered by concrete to penetration of chloride ions. The resistance to chloride ions is measured in terms of charge passed through the concrete specimen in terms of 'Coulombs'.



Experimental Test Rig (Assembly)

Make/Model: Assembled Experimental Test rig system supported by DST, GOI (Department of ME)

Analysis/Application: It is used to predict the accurate value of heat transfer coefficient for a range of refrigerant at a broad range of Reynolds Nos.



Atomic Absorption Spectrophotometer

Make: Shimadzu

Model: AA-7000

Analysis/Application: It is used to estimate concentration of various chemical elements in aqueous solutions and to check the concentration of heavy metals in dry and wet food samples.