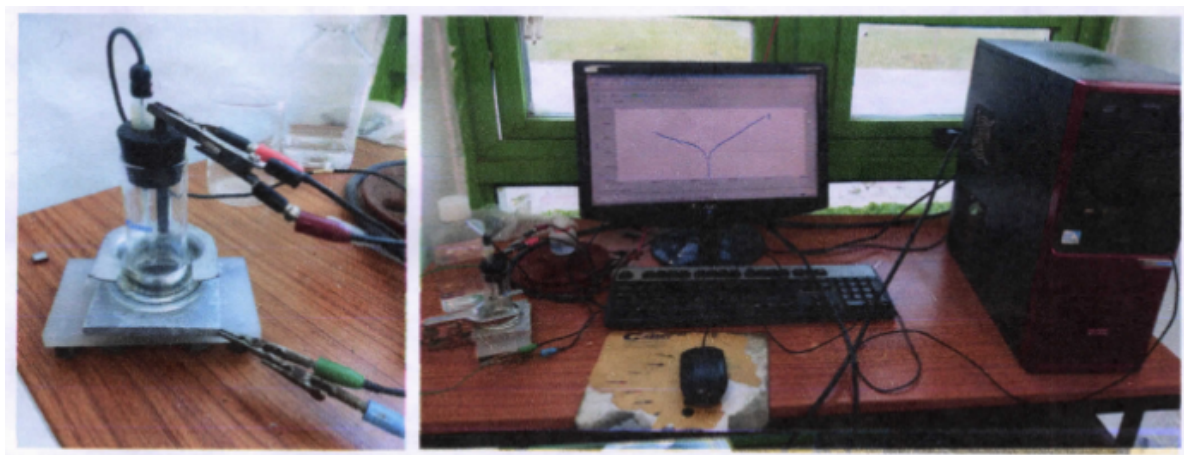


Gamry Electrochemical Cell



Contact Details:

Student coordinator: Vinay Gidla

Email: gidla.20mez0002@iitrpr.ac.in

Faculty in charge: Prof. Harpreet Singh

DRF staff coordinator: me.drf@iitrpr.ac.in

Electrochemical testing kit for corrosion measurement

Technical specifications (in brief):

The setup can be used to investigate corrosion behavior of electrically conductive materials using various DC and AC methods. Some of the available DC techniques includes Polarization Resistance (ASTM G59), Potentiodynamic (ASTM G5), Cyclic Polarization (ASTM G61 and F2129) and the Repassivation Potential (ASTM G192). AC techniques include Potentiostatic EIS, Hybrid Galvanostatic EIS, Mott-Schottky and Multiplexed Potentiostatic EIS. Gamry EIS software can measure impedances spanning 15 order of magnitude (10 μHz to 1 MHz)

Application of the equipment/machine:

It is used to accurately measure corrosion rate [LT^{-1}], corrosion current and potential of electrically conductive materials.

Limitations of the equipment/machine:

Instrument cannot be used for measuring non-electrical conductive material.

Consumables/sample preparation of the machine:

Solution (min 20ml to 50ml per test) in which samples need to be tested. Suggested size of the sample is 10*10 mm². Larger size (provided thickness is low) sample can be tested but the maximum area of exposure will be limited to diameter of cell (30mm).