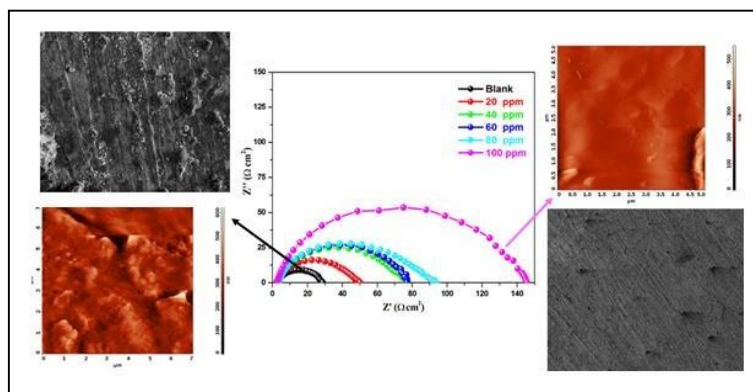


UTILISATION OF BIO-WASTE AS ECO-FRIENDLY BIODEGRADABLE CORROSION INHIBITOR FOR METALS IN ACID MEDIA

Name of the PI	Dr.V.Hemapriya	Sanctioned Year	2018
Name of the Co PI's	Dr.S.Chitra	Amount Sanctioned in Rs.	2,00,000

Project outcomes:

- ✓ Biodegradable green corrosion inhibitor from human hair, a bio-waste was developed and analysed for its corrosion inhibitive performance on mild steel, copper and aluminum in, HCl, H₂SO₄ and H₃PO₄ by weight loss, electrochemical impedance and potentiodynamic polarization techniques. The results reveal that the inhibitor shows excellent corrosion inhibitive efficiency by adsorption on the metal surface.
- ✓ The interaction between the inhibitor and the metal surface was not exclusively a physisorption or chemical sorption process, but instead involved a complex comprehensive type comprising both the interactions.
- ✓ The polarization technique revealed the mixed-mode inhibition behavior of the extract
- ✓ Surface analysis of the protected and unprotected metal specimens by FTIR, SEM equipped with EDX, AFM, XRD, and XPS studies compliment the above results.



- ❖ Publications: Two papers are communicated in Scopus indexed Journals.
- ❖ Conference/ Seminar/ Workshop: Presentation –
 1. **International Conference on Chemical and Environmental Research (ICCER-2018) at Jamal Mohamed College, Trichy, during 19.12.2018, Title: The inhibition Effect of human hair extract towards the corrosion of mild steel in sulphuric acid**
 2. **National Seminar on Innovations in Chemical Sciences and Green Technology at PSGRKC, Cbe, during 6th and 7th Sep, 2018, Title : Mitigation of mild steel corrosion by a biowaste in 1M hydrochloric acid**
- ❖ Any other achievements: Nil

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