

**Competences (Research) Center:
Interfaces - Tribocorrosion and Electrochemical Systems (CC-ITES).**

Offer name:	Preparation and evaluation of the effectiveness of corrosion inhibitors for different use environments												
Description	<p>Consultancy, expertise, technical assistance in preparing and evaluating the effectiveness of corrosion inhibitors for different environments. The use of corrosion inhibitors is an effective method of corrosion protection of metallic materials against liquid aggressive media. Adding inhibitors to the corrosive environment reduces corrosion rates by slowing the anodic or cathodic process by changing the nature of the corrosion products or by changing the ohmic resistance of the electrolyte. Depending on the metal material to be protected against corrosion and its working environment, various corrosion inhibitors from plant herbal extracts (garlic, onion, aloe vera leaves, etc.) can be prepared and evaluated within our research center.</p> <p>The evaluation of the effectiveness of corrosion inhibitors for different use media (acidic, basic) can be done by various electrochemical methods such as Open Circuit Potential (OCP), Electrochemical Impedance Spectroscopy (EIS), Potential Dynamic Polarization (PD) linear polarization and cyclic voltammetry (CV).</p> <p>Figures 1, 2, and 3 show the preparation and evaluation of corrosion inhibitors</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div data-bbox="416 1144 735 1384"> <table border="1"> <thead> <tr> <th>Parameter</th> <th>(1) 0.5 M HCl without inhibitor</th> <th>(2) 0.5 M HCl with inhibitor</th> </tr> </thead> <tbody> <tr> <td>E_{corr} (V)</td> <td>-0.618</td> <td>-0.618</td> </tr> <tr> <td>i_{corr} (mA/cm²)</td> <td>16.7407</td> <td>0.3317</td> </tr> <tr> <td>Corrosion Rate (mm/Year)</td> <td>135.6</td> <td>3.875</td> </tr> </tbody> </table> </div> <div data-bbox="746 1144 1054 1384"> </div> <div data-bbox="1066 1144 1374 1384"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div data-bbox="539 1397 616 1435">Fig. 1</div> <div data-bbox="858 1397 935 1435">Fig. 2</div> <div data-bbox="1177 1397 1254 1435">Fig. 3</div> </div>	Parameter	(1) 0.5 M HCl without inhibitor	(2) 0.5 M HCl with inhibitor	E _{corr} (V)	-0.618	-0.618	i _{corr} (mA/cm²)	16.7407	0.3317	Corrosion Rate (mm/Year)	135.6	3.875
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