INHIBITION EFFECT OF 5-(4-DIMETHYLAMINOBENZYLIDEN)RHODANIN ON THE CORROSION OF COPPER IN 0.5 M H₂SO₄ SOLUTION

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The copper has been one of the most commercial metals for a long time. Its protection against corrosion is usually carried out by inhibitor applications [1-2]. Heterocyclic organic compounds containing nitrogen, sulfur or oxygen atoms are often used to protect metals against corrosion [3,4]. For this reason, protection of copper against corrosion could be achieved by using inhibitors [5].

The aim of this work is to investigate the inhibiting influence of 5-(4-Dimethylaminobenzyliden) rhodanin (DRh) inhibitor (Scheme 1) on a copper electrode corrosion in 0.5 M H₂SO₄ solution. Potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) techniques were used in this study. The surface of copper samples in 0.5 M H₂SO₄ solution with and without the inhibitor was studied by scanning electron microscopy (SEM) and atomic force microscopy (AFM) to evaluate the inhibitor effect on surface morphology. The high inhibition efficiency was related to the protective film formation on the metal surface.

![Scheme 1. Chemical structure of DRh](image)

References