Electrochemical behavior of coper in nitric acid solution

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Corrosion is a major issue for the increase of service life and reliability of metallic materials. A detailed understanding of the mechanisms of corrosion helps us to solve existing corrosion problems and to prevent future problems. This work discusses the corrosion inhibition of copper in nitric acid solution.This work contains three chapters:Chapter one ”Introduction”This chapter includes different theories of corrosion, causes of corrosion, forms of corrosion, corrosion inhibition and types of inhibitors, and literature survey on corrosion of copper in acid medium.Chapter two” Experimental Techniques”It includes the chemical composition of the investigated material, preparation of the used nitric acid solution, and procedures used for the corrosion measurements such as a weight loss and electrochemical techniques.Chapter three” Results and Discussion”It deals with the results obtained and their discussion and this chapter is divided into three sections:First Section:1) The inhibition efficiency of quinazoline compounds toward the corrosion of copper in 2MHNO3 was calculated using weight loss method measurements. The inhibition efficiency of there compounds increases with increasing the inhibitor concentrations. The order of inhibition efficiency decreases in the following order:5 4 > 3 > 2 > 1.Third Section:In this section potentiodynamic anodic > 4 > 3 > 2 polarization curves of copper electrode in 2M HNO3 at different concentrations of NaCl solution