

Study of the Behavior of an Organic Coating Applied on Algerian Oil Tanker in Seawater

Authors : N. Hammouda, K. Belmokre

Abstract : The paints are used extensively today in the industry to protect the metallic structures of the aggressive environments. This work is devoted to the study of corrosion resistance and aging behavior of a paint coating providing external protection for oil tankers. To avoid problems related to corrosion of these vessels, two protection modes are provided: An electro chemical active protection (cathodic protection of the hull). A passive protection by external painting. Investigations are conducted using stationary and non-stationary electro chemical tools such as electro chemical impedance spectroscopy has allowed us to characterize the protective qualities of these films. The application of the EIS on our damaged in-situ painting shows the existence of several capacitive loops which is an indicator of the failure of our tested paint. Microscopic analysis (micrograph) helped bring essential elements in understanding the degradation of our paint condition and immersion training corrosion products.

Keywords : epoxy paints, electrochemical impedance spectroscopy, corrosion mechanisms, seawater

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