

## Comparative Study of Impedance Parameters for 42CrMo4 Steel Nitrided and Exposed at Electrochemical Corrosion

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**Abstract :** This paper presents corrosion behavior of alloy 42CrMo4 steel nitrided by plasma. Different samples nitrided were tested. The corrosion behavior was evaluated by electrochemical impedance spectroscopy and the tests were carried out in acid chloride solution 1M. The best corrosion protection was observed for nitrided samples. The aim of this work is to compare equivalent circuits corresponding to Nyquist curves simulated and experimental and select who gives best results of impedance parameters with lowest error.

**Keywords :** plasma nitriding, steel, alloy 42CrMo4, electrochemistry, corrosion behavior

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