

## عنوان مقاله:

Corrosion, Erosion and Erosion-Corrosion Performance of Plasma Electrolytic Nitrocarburising (PEN/C) on AISI 4140 Steel

## محل انتشار:

دهمین کنگره ملی خوردگی ایران (سال: 1386)

تعداد صفحات اصل مقاله: 8

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## خلاصه مقاله:

Plasma electrolytic nitro carburizing (PEN/C) has been used on the surface to modify AISI 4140 steel to a depth of approximately 200  $\mu\text{m}$  of compound and diffusive layer. Potentiodynamic polarizations and electrochemical impedance spectroscopy (EIS) have been made under static conditions in order to evaluate the corrosion performance of PEN/C coatings. The erosion and erosion-corrosion performance of the PEN/C coating has also been assessed with a rotating disk electrode at specified rates of stirring, with and without a given potential to the sample. The erosion and erosion-corrosion tests were carried out using sub angular sand particles, ranging in size from 135 to 235  $\mu\text{m}$ . Scanning electron microscopy (SEM) was used to investigate the coating microstructure and the coating/substrate interface. The analysis shows that the PEN/C nitrocarburised coatings studied in this investigation had a pore/crack network to the steel substrate, which compromised the corrosion and erosion-corrosion performance.

## کلمات کلیدی:

Erosion-Corrosion, Plasma electrolytic nitro carburizing, Ceramic coating, Rotating disk electrode, AISI 4140 steel

## لینک ثابت مقاله در پایگاه سیویلیکا:

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