عنوان مقاله:

CORROSION BEHAVOR OF ELECTROLESSN-P/ZNONANO PARTICLECOATINGS

محل انتشار:

سومین کنفرانس بین المللی مواد فوق ریزدانه و نانوساختار (سال: 1390)

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خلاصه مقاله:

The Electroless Nickel-phosphorus (EN) coatings possess high performance in various industrial fields due to their unique properties such as excellent corrosion and wear resistance. The aim of this paper is to study the effect of ZnO nano-particles on corrosion behavior of EN coatings. For this purpose, various amounts of ZnO nano-particles with average diameter of 50 nm, alternately added to hypophosphite reduced EN bath. Microstructrural investigations were carried out via Optical Microscopy (OM) and Scanning Electron Microscopy (SEM). The results revealed that the optimized concentration of nano particle was approximately 3 grislit. The analyses of coating compositions, carried out via Energy Dispersive Analysis of X-ray (EDAX), showed that plain Ni-P and Ni-P/ZnO nano-particles deposits contained around 8.9 wt.% phosphorus. Also, Electrochemical Impedance Spectroscopy (EIS) and polarization tests revealed improved corrosion resistance of electroless Ni-P/ZnO nano-particle in 3.5 wt.% NaCl solution.

کلمات کلیدی:

Electroless, Nickel-phosphorus, ZnO nano-particle, Corrosion

لینک ثابت مقاله در پایگاه سیویلیکا: