

Rare earth conversion coatings grown on AA6061 aluminum alloys. Corrosion studies (Article)

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Abstract

The present work is aimed to investigate the corrosion resistance of rare earth (RE) protective coatings deposited by spontaneous deposition on AA6061 aluminum alloy substrates. Coatings were deposited from water-based Ce(NO₃)₃ and La(NO₃)₃ solutions by varying parameters such as rare earth solution concentration, bath temperature and immersion time. The values of the Tafel slopes indicate that the cathodic process is favored by concentration polarization rather than activation polarization. © 2014, Sociedad Química de México.

Author keywords

Aluminum alloy; Cerium oxide; Chemical conversion coatings; Corrosion evaluation; Lanthanum oxide; Rare earth elements