

عنوان مقاله:

Effect of anodizing electrolyte temperature on Al-epoxy bonding strength

محل انتشار:

اولین کنفرانس بین المللی مواد پیشرفته (سال: 1391)

تعداد صفحات اصل مقاله: 5

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خلاصه مقاله:

Adhesive bonding of aluminum requires activating of surface to improve the adhesion process. A thin layer of anodized aluminium oxide, containing nano-sized pores leads to a strong polymer/metal bond. In this work, an epoxy coating was applied on Al anodized surfaces. A 10 wt.% H₃PO₄ solution was utilized as an electrolyte. The effect of the electrolyte temperature in the range between 10 -70°C on the adhesion strength was examined using a pull-off method. Surface morphology and topography were identified, using FE-SEM and AFM, respectively. Effects of surface topography on hydrophilic behavior of the nano structured Al anodized layer were investigated using a contact angle test. Changes in the anodizing conditions led to remarkable improvements in adhesion strengths

کلمات کلیدی:

"Anodizing, Electrolyte temperature, Adhesion, Epoxy coating

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