

عنوان مقاله:

Effect of silicate concentrations on nanostructure and corrosion performance of oxide coatings on aluminum by plasma electrolytic oxidation

محل انتشار:

دهمین همایش مشترک و پنجمین کنفرانس بین المللی انجمن مهندسی مواد و متالورژی و انجمن علمی ریخته گری ایران (سال: 1395)

تعداد صفحات اصل مقاله: 9

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خلاصه مقاله:

ceramic coatings are fabricated on pure aluminum by plasma electrolytic oxidation (PEO) in four kinds of electrolyte systems [phosphate-phosphat/silicate(2g/l)-phosphate-silicate(8g/l)-silicate]. Effect of silicate concentrations on nanostructure and corrosion performance of PEO coatings were examined by means of scanning electron microscopy, x-ray diffraction, potentiodynamic polarization in 3.5% NaCl solution. The results showed that PEO films obtained in solutions with 8g/l silicate had better corrosion resistance. Phosphate/silicate (8g/l) electrolyte in comparison to phosphate, silicate and phosphate/silicate (2g/l), had lower porosity and cracks. Corrosion resistance of phosphate/silicate (8 g/l) electrolyte was higher than other electrolytes

کلمات کلیدی:

PEO, oxide coatings, corrosion resistance, potentiodynamic polarization

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/574624>

