عنوان مقاله:

Synthesis and characterization of thin films iron oxides by anodization method

محل انتشار:

ششمین کنفرانس و نمایشگاه بین المللی مهندسی متالورژی و مواد (سال: 1396)

تعداد صفحات اصل مقاله: 7

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خلاصه مقاله:

In this study, iron oxides (hematite and magnetite) thin films were prepared on low carbon steel sheets, in basic solution (KOH) as electrolyte, by electrochemical anodization method with direct current. The effects of KOH concentration, potential, processing time and additives were investigated. Design of experiment (DOE) method was utilized and the optimum of parameters was improved to obtain the highest porosity and highest free surface to volume ratio of the particles. Finally, the films were characterized by scanning electron microscopy (SEM), x-ray diffraction (XRD) and energy dispersive x-ray spectroscopy (EDS) techniques. By adjusting the value of concentration of solution, time and potential of anodizing, the oxide film was held on the base and thickness and porosity of the film .were controlled

کلمات کلیدی:

Hematite, Magnetite, Anodization, KOH, Thin film