



Anodic Oxidation of Zr-Nb in 0.1M Sodium bisulphite: Scanned Electron Micrograph Studies

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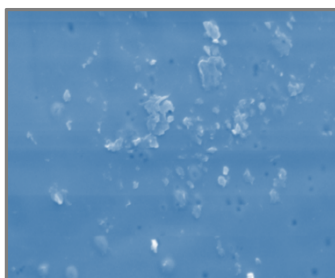
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ABSTRACT

The Kinetic studies were done on the films formed on Zr-Nb in 0.1M sodium bisulphite at a constant current density of 8mA.cm^{-2} and at 273K. The plots of formation voltage vs. time, reciprocal capacitance vs. time and reciprocal capacitance vs. formation voltage were drawn. From these plots, formation rate, current efficiency and differential field were calculated. The Addition of Solvent (Ethylene glycol) showed better kinetic results. For different aquo-glycolic media, the dielectric constant values are low leading to the marked improvement in the kinetics as Aquo-organic solutions aid in the formation of good oxide films and act as better electrolytic capacitors. The surface morphology of the anodic films was also studied by Scanning Electron Micrographs (SEM).

Graphical Abstract



SEM formed in 0.1M Sodium bisulphite
(aqueous media)

Keywords: Anodization, formation rate, Current efficiency, Differential field, Zr-Nb, Sodium bisulphate.
