The Influence of Silicate on The Anodization of AZ31B Magnesium Al

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ABSTRACT

This study used AZ31B magnesium alloy to investigate the influence of changing concentration of potassium hydroxide plus potassium fluoride and the concentration of the solution after adding silicate, respectively. On the anodic spark deposition, solution temperature was kept at 15°C and a constant current density of 1A/dm2 was applied for 10 minutes. In addition, several specimens being processed in the previous treatment were undergone a 10-minunte constant voltage past process. It is found that adding silicate can restrain the attack of fluoride ions on the substrate. Anodic film keeps growing as the consequence of sparking. Measured anodization polarization curves can indicate the corrosion velocity of anodic film and therefore the corrosion resistance of the processed film. Moreover, solution concentration affects sparking behavior during the anodization. The higher solution concentration is, the larger sparking appears.

Keywords : AZ31B magnesium alloy, concentration, silicate, anodic spark deposition, sparking, polarization curve

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