

## Influence of $Y_2O_3/Nd_2O_3$ Particles Additive on the Corrosion Resistance of MAO Coating on AZ91D Magnesium Alloy

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doi: 10.20964/2017.03.23

Received: 28 November 2016 / Accepted: 4 January 2017 / Published: 12 February 2017

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Micro-arc oxidation (MAO) coatings with the addition of  $Y_2O_3/Nd_2O_3$  particles were formed on AZ91D magnesium alloy. The corrosion behaviors of the coated AZ91D samples were studied by using potentiodynamic polarization, electrochemical impedance spectroscopy (EIS), and immersion test. Scanning electron microscope (SEM) and energy dispersive spectrometer (EDS) were used to characterize the microstructure and elemental compositions of the coatings. It is found that the micropores and defects of the coating decreases with the addition of  $Y_2O_3$  particles, resulting in the improved corrosion resistance, while the corrosion resistance of AZ91D magnesium alloy is decreased with the addition of  $Nd_2O_3$  particles.

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**Keywords:** Magnesium alloy; MAO;  $Y_2O_3$ ;  $Nd_2O_3$ ; Corrosion resistance

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