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## Featured Letter

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A highly compact coating responsible for enhancing corrosion properties of Al-  
Mg-Si alloy

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**Abstract**

The formation of a highly compact coating responsible for improvement in corrosion properties of Al-Mg-Si alloy was investigated. In this study, a plasma electrolytic oxidation (PEO) was performed in a citrate-aluminate electrolyte with potassium hexafluorosilicate ( $K_2SiF_6$ ), and the results were compared to the counterpart without  $K_2SiF_6$ . The addition of  $K_2SiF_6$  to the present electrolyte would give rise to the highly compact coating due to the insoluble compounds of  $SiO_2$  and  $AlF_3$  which were incorporated uniformly throughout the coating. This would lead effectively to superior corrosion-protection properties to the case without  $K_2SiF_6$ .

**Keywords:** Al-Mg-Si alloy; Plasma electrolytic oxidation;  $K_2SiF_6$ ; Ceramic; Corrosion

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