

### 论文摘要

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## 水滑石先驱法制备的Al-Li复合阳极氧化膜的性能

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**摘 要:** 利用水滑石先驱法在高纯铝表面引入Li元素, 然后通过阳极氧化在高纯铝表面制备Al-Li复合阳极氧化膜。采用XPS、XRD、SEM、极化曲线及电化学阻抗谱技术研究氧化膜的性能。结果表明: 通过水滑石先驱法能制备Al-Li复合阳极氧化膜, 膜中Li含量可达8%; 与纯铝氧化膜相比, 复合氧化膜更加致密; 无论是否封闭, Al-Li复合氧化膜在中性NaCl溶液中的耐蚀性都较纯铝氧化膜更好。

**关键字:** 锂; 水滑石; 阳极氧化膜; 铝; 腐蚀

## Properties of Al-Li anodic films by hydrotalcite precursor method

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**Abstract:** Lithium element was introduced into high purity aluminum by a hydrotalcite precursor method, and an amorphous Al-Li composite anodic film was obtained by anodizing. The methods of XPS, XRD, SEM, potentiodynamic polarization and electrochemical impedance spectroscopy (EIS) were used to investigate the properties of the films. The results show that a composite Al-Li anodic film is obtained by the method, and Li content in the film is up to 8%. The composite film is more compact than the anodic film on pure aluminum. No matter sealing or not, in NaCl solution, the composite anodic film shows higher corrosion resistance than the anodic film on pure aluminum.

**Key words:** lithium; hydrotalcite; anodic film; aluminum; corrosion

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