

电聚合漆酚镝配位聚合物研究

肖荔人, 高锋, 唐洁渊, 章文贡

福建师范大学化学与材料学院

收稿日期 修回日期 网络版发布日期 接受日期

摘要 根据漆酚结构特点和稀土元素的电子结构特殊性, 研究电聚合漆酚 (EPU) 与氯化镝反应生成配位聚合物 (EPU-Dy~(3+)), 采用 FT-IR, 元素分析, XPS, 荧光光谱, DMTA, DTA-TG 等手段对其进行表征, 探讨其结构与性质, 元素分析等测定 结构证明了每个 Dy~(3+) 分别与 EPU 分子中 3 个链节单元的羟基发生配位, 从而得到 配位聚合物的结构, 证实了配合物中存在着 Dy~(3+) 与 EPU 的配位作用, 并引起进一步交联, 且镝含量达 13.18%, DMTQ, DTA-TG 分析结果表明玻璃化转变温度和耐热 性能均有所提高, 荧光光谱表明 EPU 对 Dy~(3+) 不起敏化作用, EPU 与 Dy~(3+) 配位后 使 Dy 的特征荧光淬灭。

关键词 [镝](#) [漆酚](#) [荧光猝灭剂](#) [电化学合成](#) [荧光分析](#) [傅里叶变换](#) [红外分光光度法](#) [元素分析](#) [X射线光电子谱法](#) [差热分析](#)

分类号 [0646](#)

A Study on Coordination Polymer of Dysprosium-electropolyurushiol

Xiao Liren, Gao Feng, Tang Jieyuan, Zhang Wengong

College of Chemistry and Material, Fujian Normal University

Abstract According to the structural characteristics of urushiol and particular electronic structure of rare earth elements, the dysprosium- electropolyurushiol coordination polymer obtained by the reaction of dysprosium chloride with electropolyurushiol was studied. The coordination polymer was characterized by FT-IR, elemental analysis, XPS, fluorescence spectrum, DMTA and DTA-TG. Its composition and structure were identified. The results of elemental analysis indicate that each Dy³⁺ ion is coordinated by hydroxyls from three unit in the EPU molecule. It shows that there is certain coordination between Dy³⁺ and electropolyurushiol (EPU) in the coordination polymer, which further leads to cross-linking. Dy³⁺ content in the polymer reaches up to 13.18%. DMTA and DTA-TG analyses show that the glass transition temperature and heat resistance are considerably greater than those of EPU. The fluorescence spectrum shows that electropolyurushiol has no-sensitization effect to dysprosium and the coordination makes dysprosium characteristic fluorescence quenched.

Key words [DYSPROSIUM](#) [URUSHIOL](#) [FLUORESCENCE QUENCHER](#) [ELECTROCHEMICAL SYNT](#) [FLUORIMETRIC ANALYSIS](#) [FT IR](#) [ELEMENTAL ANALYSIS](#) [XPS](#) [DTA](#)

DOI:

通讯作者

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(0KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [参考文献](#)

服务与反馈

- ▶ [把本文推荐给朋友](#)
- ▶ [加入我的书架](#)
- ▶ [加入引用管理器](#)
- ▶ [复制索引](#)
- ▶ [Email Alert](#)
- ▶ [文章反馈](#)
- ▶ [浏览反馈信息](#)

相关信息

- ▶ [本刊中 包含“镝”的 相关文章](#)
- ▶ 本文作者相关文章

- [肖荔人](#)
- [高锋](#)
- [唐洁渊](#)
- [章文贡](#)