

纳米SiO₂颗粒组装改性蒙脱土汽油脱硫剂

赵少云, 陈爱平, 刘伟, 陈晓萍

华东理工大学材料科学与工程学院超细材料制备与应用教育部重点实验室, 上海 200237

收稿日期 2005-8-1 修回日期 2005-9-23 网络版发布日期 接受日期

摘要 以钠基蒙脱土为原料, 利用模板导向技术在其层间组装多孔纳米SiO₂颗粒, 并浸渍负载过渡金属氧化物纳米颗粒制得汽油脱硫剂. 通过XRD、TG、TEM、FT-IR和孔结构分析等手段表征了合成的多孔材料的结构和性能. 汽油吸附脱硫实验结果表明, 经纳米材料组装改性的蒙脱土具有择形吸附的特性, 对汽油中的含硫化合物的脱除率相比钠基蒙脱土提高了52%. 过渡金属氧化物纳米颗粒改性补强SiO₂柱撑蒙脱土的热稳定性有显著提高.

关键词 [蒙脱土](#) [模板导向](#) [组装](#) [汽油脱硫](#)

分类号 [TB383](#), [TQ426](#)

Montmorillonite Assembled with Nano-SiO₂-particles for Gasoline Desulfurization

ZHAO Shao-Yun, CHEN Ai-Ping, LIU Wei, CHEN Xiao-Ping

Key Laboratory for Untrafine Materials of the Ministry of Education, School of Materials Science and Engineering ECUST, Shanghai 200237, China

Abstract Montmorillonite (MMT) is a natural layer-layer material. The template-directed method was used to assemble the nano-SiO₂-particles within the layers of MMT. And a desulfurizer for gasoline was developed through loading the transition metal oxide on Si/MMT. The modified montmorillonite was characterized by XRD, TG, TEM, FT-IR and N₂ adsorption-desorption. The results of gasoline desulfurization show that nano-particle assembled montmorillonite is an excellent selective adsorbent and its desulfurization ratio is increased by 52% than Na-MMT. The SiO₂ pillared montmorillonite modified with rare earth oxides and transition metal oxides nano-particles shows an excellent heat-stability.

Key words [montmorillonite](#) [template-directed](#) [assemble](#) [gasoline desulfurization](#)

DOI:

通讯作者 赵少云 apchen@ecust.edu.cn

扩展功能

本文信息

- ▶ [Supporting info](#)
- ▶ [PDF\(488KB\)](#)
- ▶ [\[HTML全文\]\(0KB\)](#)
- ▶ [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“蒙脱土”的 相关文章](#)
- ▶ [本文作者相关文章](#)

- [赵少云](#)
- [陈爱平](#)
- [刘伟](#)
- [陈晓萍](#)