



双孔块状SiO₂载体材料的孔结构及其酶活性的研究 Double-pore Structure and Enzyme Activity of SiO₂ Monolithic Carrier

摘要点击: 23 全文下载: 46

[查看全文](#) [查看/发表评论](#) [下载PDF阅读器](#)

中文关键词: 双孔结构; 多孔块体; 溶胶-凝胶法; 酶载体; 酶活性

英文关键词: double-pore structure; porous monolithic; sol-gel; enzyme carrier; enzyme activity

基金项目:

作者	单位
杨洪斌	华东理工大学材料科学与工程学院, 上海 200237
陈奇	华东理工大学材料科学与工程学院, 上海 200237
宋鹂	华东理工大学材料科学与工程学院, 上海 200237
陆剑英	华东理工大学材料科学与工程学院, 上海 200237
李会平	华东理工大学材料科学与工程学院, 上海 200237

中文摘要:

英文摘要:

SiO₂ monoliths with double-pore structure were synthesized with tetraethyl orthosilicate, polyethylene glycol, starch, ethanol and ammonia as the main raw materials via a sol-gel route. The effect of different content of starch of the samples was studied on the mesopore structure, macropore appearance, hydrothermal stability and enzyme activity to immobilize glucyyme. The results indicate that porous blocks with mesopores of 10~12 nm and macropores of 10~30 μm can be formed by the removal of polyethylene glycol and starch after heating at 600 °C. The minimal density of the obtained samples was 0.34 g·cm⁻³ and the maximal porosity was 76%. After being immersed in water at 80 °C for 7 d, the density, porosity and shape of N₂ adsorption-desorption curves of the samples were almost unchanged, showing that the sample has a good hydrothermal stability. The initial enzyme activity of sample P2KD30 was 11 190 U, and definite enzyme activity could be maintained after five cycles.

[关闭](#)

您是第149248位访问者

主办单位: 中国化学会 单位地址: 南京大学化学楼

服务热线: (025)83592307 传真: (025)83592307 邮编: 210093 Email: wjhx@netra.nju.edu.cn

本系统由北京勤云科技发展有限公司设计