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化学

稻壳碱溶活化制备P型分子筛

杨君, 马红超, 付颖寰, 宋宇, 王永为, 于春玲, |董晓丽

大连工业大学 化工与材料学院, 辽宁 大连 116034

摘要:

以农业副产物稻壳为硅源、 硫酸铝为铝源, 通过炭化、 碱溶和水热合成工艺, 无需老化过程及添加晶种制备了洗涤助剂P型分子筛, 并考察了硅铝比、 碱度比、 反应时间和反应温度对合成分子筛的影响. 实验结果表明, 分子筛合成的最佳条件为: n (Na_2O) : n (SiO_2)=1.43, n (SiO_2) :n (Al_2O_3)=4, n (H_2O) : n (Na_2O)=18.3, 在85 ℃反应8 h. 产品的XRD和SEM表征表明, 上述条件下合成的P型分子筛产品具有较高的结晶度, 无杂相且晶粒细小, 其Ca^{2+} 交换容量可达330 mg/g.

关键词: 稻壳; P型分子筛; 水热法; 洗涤助剂

Alkali Activated Synthesis of Zeolite P from Rice Husk

YANG Jun, MA Hong chao, FU Ying huan, SONG Yu, WANG Yong wei, YU Chun ling, DONG Xiao li

School of Chemistry Engineering &|Material, Dalian Polytechnic University, Dalian 116034, Liaoning Province, China

Abstract:

P type zeolite was synthesized by carbonization, alkali dissolving and hydrothermal method with rice husk and aluminum hydroxide as t
he starting materials without aging prouss and adding crystal seeds. It was found that the optimal zeolitization conditions are temperature 85 ℃; time 8 h; n (Na_2O) : n (SiO_2)=1.43, n (SiO_2) :n (Al_2O_3)=4, n (H_2O) : n (Na_2O)=18.3. The prepared product shows a calcium ionic exchange capacity of 330 mg/g. XRD and SEM of the product show that pure, single phase and high crystalline zeolite P samples were synthesized under optimum conditions.

Keywords: rice husk zeolite P hydrothermal synthesis detergent builder

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通讯作者: 马红超

作者简介:

作者Email: m h c@sohu.com

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