عنوان مقاله:

Construction of zeolite nanoreactor with complex geometry and combined properties for production of light olefins

محل انتشار:

دومین کنفرانس ملی زئولیت ایران (سال: 1394)

تعداد صفحات اصل مقاله: 3

نویسندگان:

L Vafi - *Department of Chemical Engineering, Tarbiat Modares University, Jalal Al Ahmad Highway, P.O. Box ۱۴۱۵۵-۴۸۳۸, Tehran, Iran*

R Karimzadeh - *Department of Chemical Engineering, Tarbiat Modares University, Jalal Al Ahmad Highway, P.O. Box ۱۴۱۵۵-۴۸۳۸, Tehran, Iran*

R Pouria - *Department of Chemical Engineering, Tarbiat Modares University, Jalal Al Ahmad Highway, P.O. Box ۱۴۱۵۵-۴۸۳۸, Tehran, Iran*

S Asadi Zeydabadi - *Department of Chemical Engineering, Tarbiat Modares University, Jalal Al Ahmad Highway, P.O. Box ۱۴۱۵۵-۴۸۳۸, Tehran, Iran*

خلاصه مقاله:

In this work by creating mesopore in catalyst using carbon templates, and then modify the catalyst structurewith steaming and phosphorous, can also facilitate access to micropores, also to minimize coke formation. Phosphoruswas loaded by wet impregnation method on ZSM-5 zeolite created by template-free technique. Mesoporous wascreated by 30%.wt of carbon nanotube template. Created mesoporous causes availability of catalyst active sites,increase in coke formation and deactivation of catalyst in initial reaction time. Hence, in order to decrease cokeformation, steaming process would make mesoporous unsuitable with coke formation, although micropores would bepreserved from dealumination. Modification of zeolite by phosphorus and steaming process has increased light olefinsyield and selectivity to 50% and 60%, respectively. In addition, coke formation has been declined from .14% to 7% onZSM-5 and ZSM-5 CNT(30) P(0.5) steam (1 h) zeolites

کلمات کلیدی:

ZSM-5 zeolite, Mesoporous, Carbon nanotube, Phosphorous, Catalytic cracking