

## عنوان مقاله:

Catalytic Conversion of Methanol to Propylene Using H-[B]-ZSM-5 Borosilicate in a Fixed-Bed Reactor

## محل انتشار:

چهارمین کنفرانس بین المللی دوسالانه نفت، گاز و پتروشیمی (سال: 1401)

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## خلاصه مقاله:

Two H-[B]-ZSM-5 zeolites were synthesized using silicic acid and aerosil ۲۰۰ as the silica sources with the seed-assisted hydrothermal technique. The catalytic performance of zeolites was studied in methanol to propylene (MTP) reaction at ۴۸۰ °C using a fixed-bed tubular reactor. To compare, an industrial ZSM-5 zeolite from Sud-Chemei was also studied and referenced. The synthesized catalysts were characterized with a variety of investigating methods including XRD, FE-SEM, N<sub>2</sub> adsorption-desorption, FT-IR, and XRF analyses. The results revealed that the zeolite prepared by silicic acid (SA) proposed a high yield of propylene in MTP reaction (۱۳۶ g/g catalyst) much higher than the other studied catalysts. The activation time of SA was also noticeable (up to ۱۱۰ h in methanol WHSV of ۸ h<sup>-1</sup> and feed MeOH/H<sub>2</sub>O of ۹۰/۱۰), which was ۱.۵ times that of the industrial catalyst

## کلمات کلیدی:

H-[B]-ZSM-5 zeolite, Silicic acid, Aerosil ۲۰۰, Methanol to propylene (MTP), Characterization, Catalytic performance

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