**عنوان مقاله:**

Synthesis of Nanostructured MnNiAPSO-۳۴ Catalyst: Catalytic Properties and Performance

**نویسندگان:**

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**خلاصه مقاله:**

Silicoaluminophosphate (SAPO-۳۴) molecular sieve doped with transition metals, Mn and Ni, with different molar ratios (Mn/Ni=۰.۳۳, ۳) were investigated for their activity, selectivity and lifetime in biomethanol to olefins reaction. MnNiAPSO-۳۴ nanostructured catalyst was synthesized by hydrothermal method and addition of metals was carried out by isomorphous substitution into the crystalline framework of SAPO-۳۴. The nanostructured catalysts were characterized by XRD, FESEM, PSD, EDX, BET and FTIR techniques. MnNiAPSO-۳۴ nanostructured catalyst synthesized with high concentration of Mn, demonstrated larger crystallite size evidenced by XRD analysis. The FESEM results indicated that the concentration of metal ions could affect the morphology of nanostructured MnNiAPSO-۳۴ catalyst due to different rate of crystal growth. The catalytic performance of samples was studied in biomethanol to olefins reaction at atmospheric pressure and GHSV of ۴۲۰۰ cm۳/g.h-۱ in a fixed bed reactor. MnNiAPSO-۳۴ with high concentration of Mn illustrated higher selectivity toward light olefins and had longer lifetime for which the selectivity of light olefins for this nanostructured catalyst was ۶۰% after ۱۸۰ min time on stream.

**کلمات کلیدی:**

MnNiAPSO-۳۴, Biomethanol, Ethylene, Propylene, MTO