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# Synthesis of hierarchical SAPO-34 crystals with different preparation procedures for the conversion of methanol to olefins

**Marzieh Hamidzadeh,* Mahsa Majidi, Ali Abdolali and Ahmad Jafari Zangelanlo**

*Catalysis research group, Petrochemical Research & Technology Company, National Iranian Petrochemical Company, P.O. Box: 1493, Tehran, Iran.*

* *E-mail: hamidzadeh@nipc.ir*

A series of SAPO-34 molecular sieves with hierarchical porosity were prepared via four different preparation procedures with similar composition and hydrothermal conditions. The catalytic performance of these catalysts for methanol to light olefins reaction was investigated. The results indicated that the order of adding components in the synthesis gel has an effect on the selectivity and lifetime of the catalyst. The samples have a high proportion of framework Si (Si/(Si + Al + P) between 0.49 to 0.62) and framework charge density (0.21<(Al–P) /(Si + Al + P) <0.38). The results proved that the prepared samples with a high degree of crystallinity ,high specific surface area and more number of strong acid sites illustrated the high selectivity to light olefins in the reaction of methanol to olefin. The recently results indicated the order of increasing the ingredients affected the composition and crystalline phase of the product and the XRD results confirmed the presence of SAPO-56 phase next to the main SAPO-34 phase.

***Keywords:*** SAPO-34, different preparation procedures, methanol to olefins.

**References**

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