عنوان مقاله:

Properties and Catalytic Activity of Nano-sized ZSM-5 in Thiophene Removing

محل انتشار:

دومین کنگره بین المللی علوم و فناوری نانو (سال: 1387)

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خلاصه مقاله:

Organosulfuric compounds remain in the fuel even after refining; leading to produce SOx as an air pollutant and a cause of acid rain and catalyst poisoning. Many research activities are in process to find selective sorbents for these sulfuric compounds. Among these sorbents zeolites are the most favorable ones due to their selectivity, easy usage and high performance [1,2].ZSM-5 a MFI type zeolite is a medium pore channel zeolite with three-dimensional channels defined by 10-member rings. The ZSM-5 catalysts are important from industrial and academic point of view because of their unique structure, thermal stability, acidity, shape selective property and applications in oil refinery and environmental catalysis. This molecular sieve with MFI structure is synthesized from hydro gels containing precursors of silicon and aluminum at autogenous pressure and temperature above 100 C° [3]. The efficiencyof the zeolites as catalysts is related to their morphological and particular properties (well- defined crystalline Structure, high internal surface areas, uniform pores, good thermal stability, etc.) [4]. In this work nano sized ZSM-5 was synthesized by hydrothermal method using Tetrapropylammonium bromid (TPA-Br) as template and the surface properties of the prepared ZSM-5 were also explored. In the next process some catalysts were prepared with LPIE (Liquid Phase Ion Exchange) method. The ion exchanged ZSM-5 zeolites were used as catalysts for removing of fuel organosulfurs in order to reduce air pollution

کلمات کلیدی:

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