

عنوان مقاله:

Fischer-Tropsch Reaction over Nano Alumina Supported Trinickelheptamolybdate catalyst

محل انتشار:

پانزدهمین کنگره ملی مهندسی شیمی ایران (سال: 1393)

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خلاصه مقاله:

Trinickelheptamolybdate $Ni_3Mo_7O_{24}$ a multitransition-metal complex was prepared. Using the precipitation procedure, the complex was deposited evenly on nano alumina catalyst support. The partial reduction of nickel/molybdate pre-catalyst was performed in a batch reactor with hydrogen gas at a pressure of 40 bars and temperature of 873oK for 5 hours. The catalyst was characterized using XRD, BET and SEM. The nickel/molybdenum catalyst was employed for Fischer-Tropsch reaction. The evaluation occurred in a batch reactor at different temperature (423-623oK), over a pressure range of 5-30bars with the H_2/CO ratio varying from 2 to 6. This catalyst was active and stable for use at moderate temperature and pressure. This catalyst gave a high conversion of carbon monoxide into a mixture of hydrocarbons (mainly gaseous hydrocarbons). The degree of carbon monoxide conversion increased with increasing temperature and pressure. Using the nickel/molybdenum catalyst, 46% of the carbon monoxide was converted into hydrocarbons in one half hour and 90% conversion occurred in 20 hours

کلمات کلیدی:

Fischer-Tropsch, Hydrogenation, catalyst, multitransition-metal, trinickelheptamolybdate

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