

عنوان مقاله:

Effects of catalyst particle size on methanol dehydration at different temperatures and weight hourly space velocities

محل انتشار:

فصلنامه علوم و فناوری ذرات، دوره 2، شماره 1 (سال: 1395)

تعداد صفحات اصل مقاله: 7

نویسندگان:

Leila Khoshrooyan - *Chemical Technology Department, Iranian Research Organization for Science and Technology (IROST), Tehran, Iran*

Ali Eliassi - *Chemical Technology Department, Iranian Research Organization for Science and Technology (IROST), Tehran, Iran*

Maryam Ranjbar - *Chemical Technology Department, Iranian Research Organization for Science and Technology (IROST), Tehran, Iran*

خلاصه مقاله:

The effect of catalyst particle size on dehydration of methanol to dimethyl ether is investigated using fixed bed and micro-channel reactors at different temperatures and weight hourly space velocities. The experiments were carried out at 290 and 320°C. The space velocities were changed from 10 up to 90 h⁻¹ and from 1.22 to 3.65 h⁻¹ for fixed bed and micro-channel reactors, respectively. Considering the catalyst particle size effect on dehydration reaction, the particle size was changed from 0.063 to 1 mm. Commercial gamma alumina was used as catalyst in all the experiments. The fabricated micro-channel reactor had 40 channels with 1 mm diameter and 6 cm length. The channels were sub-coated with alumina and finally were coated with gamma alumina as dehydration catalyst. The results showed that methanol conversions were increased by increasing the temperature and decreasing the particle size of the catalyst. Furthermore, methanol conversion in micro-channel reactor was less than for fixed bed reactor under the similar WHSVs, due to the special geometrical shape of the micro-channels.

کلمات کلیدی:

,Methanol Dehydration, Fixed Bed Reactor, Micro-Channel Reactor, Catalyst Particle Size, DME, Gamma Alumina

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/706895>

