Pengaruh rasio mol si/al untuk mengakselerasi proses gel aging menggunakan jet bubble column pada rute pembuatan zeolit ZSM-5 = Effect of mol ratio si / al to accelerate gel aging process using jet bubble column In the route of making zeolite ZSM-5

Meliala, Pindonta, author

Abstrak

ABSTRAK
Indonesia belum mampu memenuhi kebutuhan akan zeolit ZSM-5 walaupun penggunaannya banyak diterapkan di industri. Alhasil, pengembangan akan sintesis ZSM-5 terus dilakukan. Pada penelitian terdahulu, tahap nukleasi masih kurang efisien karena memerlukan aging yang lama (5 hari), suhu pre-treatment yang tinggi (1600C) dan pengamatan gel yang belum optimal. Penelitian ini meningkatkan performa nukleasi dalam pembentukan sol-gel menggunakan jet bubble column dengan variasi rasio mol Si/Al dan tanpa pre-treatment waterglass. Dari penelitian ini didapatkan pembentukan sol-gel selama 3 hari, rasio Si/Al 100 sebagai rasio optimum, serta kualitas sol-gel yang baik dengan dukungan data FESEM-EDX, AAS, FTIR, dan Gravimetri.
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ABSTRACT
Indonesia has been unable to meet its own need for zeolite ZSM-5 even though its use has been widely applied in industry. As a result, the development of the synthesis of ZSM-5 will continue to be made. In the previous study, the nucleation stage is less efficient because it requires a long aging (5 days), pre-treatment temperature is high (1600C) and the observation of the gel that is formed has not been optimal. This study intends to optimize the nucleation in the formation of sol-gel using jet bubble colum with variations in ratio Si/al and without waterglass pre-treatment. From this study, the result is formation of sol-gel need 3 days, ratio Si/Al 100 as the best ratio, and good quality sol-gel with FESEM-EDX, FTIR, AAS, Gravimetri data.