Direct Synthesis of Composite Materials Type MCM-41/ZSM-5 by Hydrothermal at Atmospheric Pressure in Sealed Pyrex Tubes

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Abstract : The main objective of this study is to synthesize a composite materials by direct synthesis at atmospheric pression having the MFI structure and MCM-41 by using double structuring. In the first part of this work we are interested in the study of the synthesis parameters, in addition to temperature, the crystallization time and pH. The second part of this work is to vary the ratio of the concentrations of both structuring C9 [C9H19(CH3)3NBr] and C16 [C16H33(CH3)3NBr] and determining the area of formation of the two materials (microporous and mesoporous at same time), for this reason we performed a battery of experiments ranging from 0 to 100% for both structural. To enhance the economic purposes of this study, the experiments were carried out by using very cheap and simple process, the pyrex tubes were used instead of the reactors, and the synthesis were done at atmospheric pressure and moderate temperature. The final products (composite materials) were obtained at high and pure quality.

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