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NMR detection of phase transition in a ZSM-5 silicalite caused by the adsorbed hexane and decane molecules

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Abstract

Times of longitudinal T1b and transverse T2b magnetic relaxation of hexane and decane molecules in micropores of ZSM-5 silicalite were measured as functions of the content of these liquid n-alkanes in zeolite and of temperature. The stepwise changes in the T1b and T2b times were revealed in the region of 8% content of hydrocarbons. The observed changes in the concentration and temperature dependences of T1b and T2b times are explained by the rearrangement of silicalite crystal lattice under the action of adsorbed molecules.