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Adsorption of phenol from aqueous solution onto Faujasite zeolites with different Si/Al ratios

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ABSTRACT/RESUME

Abstract: *Adsorption of phenolfrom aqueous solution onto zeolites has been investigatedin the region of low concentrations (10 to 100 mg L^{-1}).Materials used are zeolites Y (Faujasite structure) with different Si/Al ratio (5.2, 30 and 60) in order to determine the effect of Al content on organic molecules uptake. Results show that capacity of adsorption increases with Si/Al ratio, indicating that for selective adsorption of phenol from aqueous solution adsorbent must be hydrophobic, which implies low aluminum content in the zeolite structure. Experimental data were fitted by the models of Langmuir, Freundlich and Dubinin-Raduskevich calculated by non-linear regression, in order to determine adsorption parameters, which showed us that on the more silicic zeolite the competition effect of water molecules to occupy the active surface is lower.*

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