## Comparative study between MgO-impregnation and mechanical mixture effects on the CO<sub>2</sub> adsorption over NaY zeolites

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**Abstract.** MgO-Impregnated NaY zeolites and mechanical mixture are prepared from NaY zeolite, using MgO as a basic agent. Textural parameters are determined by N<sub>2</sub> adsorption–desorption isotherms at –196 °C. The isotherms of impregnated zeolites exhibit type Ia isotherm, while mechanical mixtures show a combination of the type Ia and IVa.  $CO_2$  adsorption over these modified zeolites is studied at 30, 35, 40, 45 °C. Results show that 2% of MgO-impregnation and 5% of mechanical mixture seem to be the better rates for the  $CO_2$  retention. The evolution of the isosteric heats reveals the heterogeneity of adsorption sites of modified zeolites. In addition, most of models used in this work to fit experimental isotherms showed a good correlation with the adsorption isotherms. This correlation is in the following order: du-al–site Langmuir > Sips > Toth > Jensen–Seaton > UNILAN > Langmuir > Freundlich.

Keywords: CO<sub>2</sub> Adsorption, Impregnated NaY Zeolite, Mechanical Mixture.

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