



MODELLING OF SORPTION EQUILIBRIUM OF Cr(VI) ON ISOMORPHIC SUBSTITUTED Mg/Zn-Al – TYPE HYDROTALCITES

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Abstract

This paper dealt with Cr(VI) sorption on isomorphically substituted Mg/Zn-Al – type hydrotalcites under proper working conditions. The prepared samples were named Mg₃Al, Mg₂ZnAl, Mg_{1.5}Zn_{1.5}Al, MgZn₂Al and Zn₃Al. The experimental data concerning sorption isotherms were modelled in accordance with four equilibrium equations: Langmuir (L), Freundlich (F), Langmuir-Freundlich (L-F) and Redlich-Peterson (R-P) by using two ways: (i) estimation of q_{\max} , K and n; and (ii) estimation of K and n, for q_{\max} values equal to the experimental maximum uptake value. It was proved that Langmuir-Freundlich model was the best solution for fitting the experimental data. The results also allowed setting up a ranking order of the sorption capacities for the studied hydrotalcites.

Key words: equilibrium modelling, hydrotalcites, hexavalent chromium sorption

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