KINETICS AND ISOTHERMS OF CD (II) AND PB (II) ADSORPTION ONTO NANOCOMPOSITES OF CLAY AND LIGNOCELLULOSE FROM AQUEOUS SOLUTION

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ABSTRACT

Nanocomposites of clay and lignocellulose were prepared for application as adsorbents in the removal of Cd^{2+} and Pb^{2+} ions from synthetic water. The nanocomposites were prepared by graft polymerisation of methyl methacrylate and methacrylic acid onto the clay mineral and lignocellulose. The equilibrium and kinetics data for the adsorption of Cd (II) and Pb (II) ions onto the prepared adsorbents are reported. The adsorption data were fitted to the Langmuir and Freundlich isotherm equations for the determination of the adsorption capacity. The pseudo first- and second-order models were employed in order to assess the adsorption mechanism of the heavy metals onto the nanocomposite adsorbents.