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Dyes adsorption on low cost adsorbents: inorganic materials

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ABSTRACT

A comparative study of liquid-phase adsorption of two dyes on several inorganic materials was carried out. The adsorbents used were bentonite, Fuller's earth, kaolinite, hydrotalcite and high-purity hydrotalcite Syntal HSA 696. The experimental results described the equilibrium adsorption capacity and were fitted to different isotherm equilibrium models. The effect of temperature, pH and surface modification were also studied. Bentonite, Fuller's earth and kaolinite presented higher adsorption capacity for methylene blue (MB), and hydrotalcite and Syntal HSA 696 were better for OII (orange II) adsorption.

Keywords: Adsorption; Clays; Methylene blue; Orange II; Wastewater; Dyes

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