

عنوان مقاله:

A comparative study of malachite green removal from an aqueous solution using raw and chemically modified expanded perlite

محل انتشار:

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خلاصه مقاله:

Adsorption of malachite green (MG) from an aqueous solution onto unexpanded perlite (UP), expanded perlite (EP) and NaOH-modified unexpanded perlite (NaOHUP) powders has been investigated. The effects of contact time, pH, initial dye concentration, adsorbent dosage and temperature have been evaluated. The adsorbents were characterized by Brunauer-Emmett-Teller (BET) analysis, Fourier transform infrared (FTIR) spectroscopy, and scanning electron microscopy (SEM). The obtained results proved that the three examined powders can be used successfully for removal of MG from aqueous solutions as low cost mineral adsorbents. The maximum adsorption capacities of UP, EP and NaOH-UP were 23.81 mg/g, 29.41 mg/g and 39.68 mg/g, respectively. Kinetic studies show that the kinetics of the MG adsorption onto the adsorbents followed the second order model. The MG equilibrium adsorption data were best described by the Langmuir isotherm model for all adsorbents

کلمات کلیدی:

Modified perlite, Isotherm, Malachite green, Adsorption

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