



Shaddock peel as a novel low-cost adsorbent for removal of methylene blue from dye wastewater

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ABSTRACT

Shaddock peel was found to be a novel low-cost and locally available adsorbent for the removal of methylene blue (MB) from dye wastewater. The effects of initial pH, adsorbent diameter, dye concentration and contact time on the adsorption of MB were studied. MB could be removed effectively when initial pH ≥ 6 . The adsorption data fitted very well with the Langmuir adsorption model and the maximum adsorption capacity was 305.81 mg/g at 303 K. The adsorption process followed the pseudo-second-order kinetic model. The results indicated that shaddock peel is a promising adsorbent for the removal of MB from dye wastewater.

Keywords: Adsorption; Dye wastewater; Methylene blue; Shaddock peel; Kinetics; Low-cost adsorbent

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