



Novel biosorbent (Canola Wastes) and Ciprofloxacin antibiotics removal ability at different temperatures

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Abstract:In this study, a novel biosorbent (Canola Wastes) was used as an effective adsorbent for ciprofloxacin (CIP) removal from wastewater. The adsorption performance, mechanism and effect of CIP ion on sorption were investigated. Adsorption capacity reached a maximum (45.31 mg/g) when the pH value was 7. The intraparticle diffusion, pseudo-first order and pseudo-second order kinetic models were examined to evaluate the kinetic data and the rate constants were calculated. Thermodynamic parameters such as free energy, enthalpy and entropy of dye adsorption were obtained. Adsorption kinetic of CIP followed pseudo-second order kinetics. The thermodynamic studies showed that the antibiotic adsorption onto Canola biomass is spontaneous, endothermic and physical reaction. The result indicated that Canola wastes could be used as a novel natural biosorbent for the removal of antibiotics.

Keywords : Canola Wastes, Ciprofloxacin, Kinetics, Thermodynamics, Antibiotics.