

Preparation and characterization of poly(ethyl hydrazide) grafted oil palm empty fruit bunch for removal of ni(ii) ion in aqueous environment

ABSTRACT

Poly(ethyl hydrazide) grafted oil palm empty fruit bunch (peh-g-opefb) fiber has been successfully prepared by heating poly(methylacrylate)-g-opefb at 60 °C for 4 h in a solution of hydrazine hydrate in ethanol. The chelating ability of peh-g-opefb was evaluated based on removal of Ni(II) ions in aqueous solution. Adsorption of Ni(II) by peh-g-opefb was characterized based on effect of pH, isotherm, kinetic and thermodynamic study. This cheap sorbent based on oil palm empty fruit bunch fiber has a great future potential in water treatment industries based on high adsorption capacity, biodegradability and renewability.

Keyword: Grafted polymer; Nickel ions; Oil palm empty fruit bunch; Sorbent.