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Green porogen adsorbent of modified pectin and its application as removal of Pb(II)

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Recently, perfection of synthesis film adsorbent materials was focused on finding the films adsorbent with high stabilities of chemical and physical. Organic based material such as pectin and chitosan produces films with low physical stability, and hence modification of materials are necessary. In this research to improve the physical characteristic, chitosan initially was grafted with acetate to form carboxymetyl chitosan (CC). And than CC and Pectin (Pec) were crosslinked using crosslinked agent BADGE (bis phenol A diglycidyl ether) to get CC-Pec-BADGE film adsorbent. It was intended to formed stable structure, resistance on low pH. And than to increase of the adsorption capacity in remove Pb(II), the adsorbent were added with NaCl particle to formed macroporous adsorbent named CC-Pec-BADGE-Na. The structure and the morphology of the resulting adsorbent were characterized by Fourier transform infrared spectroscopy (FT-IR) and scanning electron microscopy (SEM). The parameter adsorption of CC-Pec-BADGE-Na film to adsorb Pb (II) ion was determined. The result of this study was biosorbent of CC-Pec-BADGE-Na could increased sorption capacity for remove Pb(II) ion. The CC-Pec-BADGE-Na adsorbent can adsorbted Pb(II) ion follow Langmuir isotherm curve models. The ΔG of porogen adsorbent of CMC-Pec-BADGE-CMC-Na on ratio CMC-Pec-BADGE:Na = 1:1 and 1:3 was 23.83 and 22.08 kJ /mol respectively while pectin and chitosan 16,6 and 19,54 kJ/mol.

Biography

Budi Hastuti is doctoral student on chemistry department at Gadjah Mada University, Yogyakarta. She is a lecturer in Department of Chemistry Education, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Indonesia. She has Publised approximately 11 papers in reputed journals.

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