

Adsorption properties of heavy metals on functional chitosan(CHS)/PVA films prepared by casting and UV curing method

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The main objectives of this work are to prepare the functional chitosan(CHS)/PVA films for the selective separation of heavy metals such as Zn, Cd, and Pb. In this work, the high functional CHS/PVA films were synthesized by casting method and UV curing process. The prepared films were characterized by scanning electron scanner (SEM), fourier transform infrared (FT-IR), and low temperature nitrogen adsorption analysis. In addition, the physical properties of prepared films were investigated using several techniques such as tensile strength (TS), elongation at break (%E), swelling behavior (SB), and solubility (S). The adsorption properties of heavy metals on functional CHS/PVA films were evaluated in terms of adsorption isotherm and kinetics, and the selectivity factor (α). Our results clearly indicate that the functional CHS/PVA films prepared in this study have high separation efficiency with excellent selectivity.