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Synthesis and uranyl ion adsorption study of cross-linked allyl propionate-maleic anhydride-styrene terpolymer

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Abstract: Allyl propionate-maleic anhydride-styrenÂ terpolymer has been modified with glycerin in order to prepare a new cross-linked functional polymer sorbent. The synthesized cross-linked polymer sorbent has a network structure and contains carboxylic acid, carbonyl, hydroxy, and ester groups, all of which are capable ofinteracting with metal ions. The sorption behavior of UO_2^{2+} ions under optimum sorption conditions was determined. The sorption properties of the sorbent were determined under different conditions by varying of the pH of medium, the sorbent weight, and the initial concentration of uranyl ions. The maximum experimental sorption capacity of the sorbent for uranyl ions was measured as 1.63 mmol g^{-1} (440