

Adsorption and desorption of aqueous uranium onto amidoxime fabric adsorbent in a recycle system

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Amidoxime fabric adsorbent was synthesized by grafting AN(acrylonitrile) and MAA (methacrylic acid) onto the PP non-woven fabric with electron beam irradiation, and subsequently by amidoximating the grafted PP fabric. Test on adsorption of low concentration of aqueous uranium ions was carried out with the synthesized adsorbent by changing in initial pH ranges of 2.25 to 10. In which, at uncontrolled PH, adsorption rate was much faster compared to controlled pH. It was found that continuous adsorption performance in recycle system was superior to batch adsorption. Proper adsorption and desorption rates were derived by correlating the rate equations with experimental data.