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COPPER (II) AND MERCURY (II) RETENTION PROPERTIES OF A POLYACRYLAMIDOXIME CHELATING FIBER

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Abstract

A polyacrylamidoxime chelating fiber containing amidoxime groups $-C(NH_2)=NOH$ was prepared through the reaction of Romanian commercial acrylonitrile-based fiber Melana with hydroxylamine in methanol and was used as sorbent to remove copper and mercury ions from aqueous solutions. The batch sorption experiments were conducted to establish the optimum retention conditions. The sorption behaviour of copper and mercury ions on the polyacrylamidoxime fiber is depended on the solution pH values, equilibration time, initial metal concentration and nature of anions. The infrared spectroscopy was employed to characterize the surface composition and the sorption mechanism.

Keywords: cooper, mercury removal, sorption, polyacrylonitrile fiber, amidoxime functional groups

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