Uptake of copper (II) ions from acidic aqueous solutions using a continuous column packed with microcapsules containing a ?-hydroxyoximic compound

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In this paper, the uptake of Cu(II) ions from an acidic aqueous solution using a continuous column packed with microcapsules containing the chelating extractant LIX-860 N-IC was examined. A simple, economical method was employed to synthesise the microcapsules' polymeric matrix consisting of an in situ radical polymerisation method followed by the subsequent impregnation of the extractant compound 5-nonylsalicylaldoxime. The microcapsules had a spherical shape with a rough surface and a strong hydrophobic character that assured that the organic extractant was immobilised on the microspheres' porous structure. During the metal sorption experiments, three different columns were used, and the aqueous feed solution circulated through them at different flow rates in repetitive sorption-desorption cycles. The results of these experiments revealed that the metal extractability was improved when the flow rate of the feed phase decreased and when the largest column was used, likely because of t