

Today's dramatic shortage of water resources and alarming pollution has recently triggered a lot of research for alternative water resources. This study consists in modifying cellulose by grafting of the amidoxime groups for its use in the adsorption of the Cu^{2+} , Cr^{3+} and sulphide ions present in industrial waste waters. Cellulose is an abundant biodegradable polymer. The amidoxime groups are strong complexants of metal ions. The grafting is achieved in two steps: cyanoethylation and amidoximation, confirmed by FT-IR. The optimum conditions and the parameters influencing the two reactions are determined by the kjeldahl's method and by FT-IR. The amidoxime quantity is determined by measuring the quantity of the amine functions by HCl proportioning. The implementation of the modified cellulose is intended for the adsorption of the metal ions Cu^{2+} and Cr^{3+} and sulphide ions S^{2-} in a double adsorption. The FT-IR analysis reveals that the fixing of metal cations is based on the complexation of the latter with the ligands of the adsorbent. The optimum adsorption was recorded at $\text{pH} = 6$ for a contact time of 5 h and an initial concentration of 10^{-1}M in metals. The desorption of fixed metals is possible by the EDTA, and the re-use of the adsorbent confirms the effectiveness of recycling