

Removal and recovery of copper from aqueous solutions by *Streptomyces rimosus* biomass: Enhancement of regeneration by desorption-electrolysis coupling

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Description

Biosorption has emerged as an alternative treatment for the removal of heavy metals. Although it is simple, effective and economic, it is nevertheless merely considered as a displacement of pollution. The loaded biomass constitutes a solid waste requiring regeneration, which is often achieved by a spontaneous desorption. In this study, we investigated the effect of an electric field applied through desorbent solution to enhance desorption flow. Moreover, desorbed metal ions may be recovered as metal deposit. The regeneration by the desorption-electrolysis process of *Streptomyces rimosus* biomass loaded with copper was carried out and the effects of the operating parameters, such as desorbent nature, pH and current intensity, were examined. Our results showed that adsorption agreed with the Langmuir isotherm. A maximum capacity of 25.32 mg.g⁻¹ was reached. Among tested desorbent solutions, sulphuric ...