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ABSTRACT BOOK

Treatment of electroplating wastewaters using flocculent cells of *Saccharomyces cerevisiae*

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As part of a one going project, flocculent cells of *Saccharomyces cerevisiae*, a by-product from fermentative industry, were used as biosorbent for removing nickel from a real electroplating effluent. The treatment of the effluent was carried out in a stirred batch system, with 12 g dry weight/l of non-viable flocculent cells of *Saccharomyces cerevisiae*, killed at 45°C and washed with deionized water. The solid separation was carried out by settling, using the auto-aggregation properties of the flocculent cells. Chemical characterization (total heavy metals, total inorganic ligands and total and organic carbon concentrations) of the electroplating effluent was performed. The efficiency of the overall system was studied using the real electroplating effluent containing 17 ppm of nickel (effluent A) and two synthetic effluents (labelled as effluents B and C), prepared in deionized water with the same amount of nickel than effluent A. In the case of effluent C, the same amount of inorganic ligands, quantified in effluent A, were also added. For all three effluents, most of nickel biosorption occurred in the first stage of biosorption; the second and third (if necessary) stages acted as polishing steps that pushed down the final concentration of nickel to values below the legal values for water discharge (2 ppm). In conclusion, our results evidence that the use of flocculent cells of *Saccharomyces cerevisiae* could be a new and promissory alternative in the treatment of industrial wastewaters loaded with heavy metals, since it is a low cost biosorbent, which combines an efficient removal of the metals with an inexpensive and rapid separation of biomass from the reaction mixture after contact. Acknowledgment: Financial support by Foundation of Science and Technology from Portuguese Government (Project POCTI/CTA/47875/2002), with FEDER funds, is gratefully acknowledged. *Author, who will present the communication; mmmachado@net.sapo.pt; #Corresponding author: phone +351 22 5081650, fax +351 22 5081449, hsoares@fe.up.pt

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