



Faculty of Women for Art,
science and Education

Heavy Metals Water Pollution Control Using Sol-Gel Immobilized Fulvic Acid

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Abstract

In this work fulvic acid (FA) was entrapped in solid matrix of polysiloxane polarized microscope photographs were taken and particles of FA are immobilized in the pores of silica. The immobilized matrix is used to reduce the concentration of Cu, Zn, Cd, Co, Ni, Fe, Hg, Zn and Pb. The IR spectrum of immobilized FA and the metals interact with immobilized FA indicate that there is an interaction between metals under study and imm.FA. Parameters such as pH, buffer type, buffer concentration, temperature, particle size of the matrix were investigated and optimized for each metal. Kinetic study for each metal was performed at optimum condition for each metal and it was found that metal uptake reaches plateau after three hours. It was found that the matrix can be reused for metal uptake without any treatment with a good performance. But its performance can be further improved when it is treated with EDTA.

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APPENDIX

Abbreviations used

g	Gram
h	Hour
FA	Fulvic acid
Imm.	Immobilized
M	Molar concentration
HA	Humic acid
PAHs	Poly aromatic hydrocarbons
PCBs	Polychlorinated biphenyls

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