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REMOVAL OF Cd(II) IONS FROM AQUEOUS SOLUTION BY RETENTION ON PINE BARK

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Abstract

Among the different types of waste products tested, the bark of different *Pinus* species have been identified as a promising class of low- cost sorbents for heavy metal binding. In this context, the potential of Romanian pine bark wastes as green and economical sorbent for cadmium (II) ions removal from aqueous solutions has been tested in batch conditions as function of initial pH, contact time, sorbent dose, metal ion concentration and temperature. The equilibrium data at three different temperatures were processed using the Langmuir isotherm model. The monolayer Cd(II) sorption capacity of *Pinus sylvestris* L. bark is not very high, however quite sufficient for waste materials. The thermodynamic parameters of Cd(II) sorption process on pine bark were also evaluated based on the Langmuir constant. From present work it is obvious that an unused resources like pine bark waste under study can be regarded as Cd(II) remover from wastewaters and industrial effluents to overcome water pollution.

Key words: Cadmium(II), pine bark, sorption

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