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## BIOSORPTION OF SAFRANIN ONTO CHEMICALLY MODIFIED BIOMASS OF MARINE *Aspergillus wentii*: A KINETIC STUDY

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### Abstract

The biosorption of a basic dye, safranin from aqueous solutions by marine fungus *Aspergillus wentii*, which was chemically-modified by esterification of the carboxylic acids (CB), or methylation of amine (NB), or raw biomass (RB) was investigated. The equilibrium was established after 40 min and the experimental kinetic data obtained for various forms of *A.wentii* were applied to the pseudo-first order, pseudo-second order, Bingham and Weber-Morris kinetic models. The pseudo-second order model gave a better description of the kinetic data and was able to correlate the model constants for all the biosorbents. The diffusion pattern is complex for the biosorption process, involving pore and film diffusion in the rate determining step and followed the same pattern for all the three biosorbents. The biosorption isotherm data were fitted well to pseudo-Langmuir-1 isotherm and the monolayer biosorption capacity was found to be 367.4, 366.8 and 334.4 mg/g for CB, RB and NB, respectively.

*Key words:* *Aspergillus wentii*, biosorption, diffusion models, isotherm, kinetics, safranin

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