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Biosorption of indigo from aqueous solution by dead fungal biomass *Aspergillus alliaceus*

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ABSTRACT

The capacity of a nonviable *Aspergillus alliaceus* to remove the textile indigo dye from aqueous solution was investigated using different parameters such as pH and temperature. The effects of pH (at a pH range from 1 to 8) and temperature (at 30, 40 and 50˚C) on dye biosorption were studied. The indigo dye bioremoval reached its maximum with 99% after 240 min, at pH 4. In batch experiments, the biosorption capacity increased with the increase of the temperature, and the maximum dye uptake capacity of the biosorbent was 195 mg/g at 500 mg/l dye concentration at 50˚C. The modeling of the experimental data at equilibrium was performed with Langmuir and Freundlich isotherms. On the basis of regression coefficient values, the Freundlich model is almost more successful in representing experimental isotherm data for the biosorption of indigo on inactive *A. alliaceus* than the Langmuir model.

Keywords: *Aspergillus alliaceus*; Biosorption; Dead fungus; Decolourization; Indigo

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