

Biosorption Kinetics, Isotherms, and Thermodynamic Studies of Copper (II) on Spirogyra sp.

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Abstract : The ability of non-living Spirogyra sp. biomass for biosorption of copper(II) ions from aqueous solutions was explored. The effect of contact time, pH, initial copper ion concentration, biosorbent dosage and temperature were investigated in batch experiments. Both the Freundlich and Langmuir Isotherms were found applicable on the experimental data ($R^2 > 0.98$). Q_{max} obtained from the Langmuir Isotherms was found to be 28.7 mg/g of biomass. The values of Gibbs free energy (ΔG°) and enthalpy change (ΔH°) suggest that the sorption is spontaneous and endothermic at 20°C-40°C.

Keywords : biosorption, Spirogyra sp., contact time, pH, dose

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