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## Kinetics, Isotherm and Thermodynamics Studies on Bisphenol A Adsorption using Barley husk

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**Abstract :** The aim of this study is to investigate the possibility of barley husk biomass as an alternative adsorbent for bisphenol A (BPA) removal from aqueous solution. Effect of various parameters such as Contact time, pH, temperature, initial BPA concentration and adsorbent dosage has been carried out in this study. Isotherm studies were conducted on a laboratory scale and the data evaluated for compliance with Langmuir, Freundlich, Tekmin and Dubinin-Radushkevich isotherm models. Equilibrium data fitted well with the Langmuir model. The optimum conditions for the removal of BPA within the experiment range of variables studies were 10 mg/L of initial BPA concentration, 5 g/L of adsorbent dose, pH value of 3 and 90 min of contact time. Under these conditions the maximum removal efficiency was 98.9%. The Pseudo-first order, pseudo second order and intraparticle diffusion models were used to describe the kinetic data. The data were best fitted with pseudo second order kinetic model. Thermodynamic parameters were also evaluated and it was found to be spontaneous, endothermic and physical adsorption in nature.

**Keywords:** Bisphenol A, Biosorption, Barley husk, Equilibrium isotherms.

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