



Kinetic, Thermodynamic and Isotherm Studies on the Removal of Methylene Blue Dye using *Thespesia Populnea* Bark

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Abstract: The research of the present work was to investigate the removal of methylene blue dyes from aqueous solution by using biosorbent such as *Thespesia Populnea* bark carbon (TPC). Generally, dyes are organic compounds used as colouring products in chemical, textile, paper, printing, leather, plastics and various food industries. The need for the treatment of dye contaminated waste water passed out from the industry. In this study, *Thespesia Populnea* bark carbon was studied for its potential use as an adsorbent for removal of a cationic dye methyleneblue. The various factors affecting adsorption, such as initial dye concentration, contact time, adsorbent dose and effect of temperature, were evaluated. The experimental data were fitted into the pseudo-first order kinetic model. The equilibrium of adsorption was modeled by using the Langmuir and Freundlich isotherm models. The objective of the present work suggests the TPC may be utilized as a low cost adsorbent for methylene blue dyes removal from aqueous solution.

Key words: *Thespesia Populnea* Bark Carbon (TPC); Methylene blue; Adsorption isotherm; Kinetics; Equilibrium models

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