



Adsorption of Basic Textile Dye from Aqueous Solution By Prepared Activated Carbon

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ABSTRACT

Activated carbon was prepared from Jackfruit waste and it was used to remove basic dyes like Basic Fuchsin (BF) from aqueous solution. The prepared carbon was named as JC_{HNO_3} . Batch adsorption experiments were carried out to study the impact of variables such as pH of the solution, initial dye concentration, particle size, adsorbent dose and contact time on adsorption process. The experimental analyses reveal that the solution pH has tremendous effect on the sorption process. The JC_{HNO_3} was characterised by BET, SEM and FTIR analyses. In order to describe the adsorption equilibrium Freundlich, Langmuir, Tempkin and Dubinin- Radushkevish (D-R) Isotherms were used. The kinetics of adsorption was studied using pseudo-first order, pseudo-second order, Intraparticle diffusion, pore distribution and Elvoich models. The BET surface area of prepared carbon JC_{HNO_3} was found to be $987m^2g^{-1}$.

Keywords: Adsorption, Basic Fuchsin, Isotherms, Kinetics.
