ADSORPTION OF METHYLENE BLUE FROM AQUEOUS SOLUTION BY CARBON MATERIALS: A KINETIC STUDY

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Abstract

This study aimed to investigate the kinetic properties of methylene blue adsorption on carbon cryogel samples and nitrogen doped and nitrogen and sulfur co-doped carbon cryogel. Nitrogen and sulfur were incorporated into the carbon structure to enhance surface, electronic and textural properties. Methylene blue, a widely utilized dye in the textile industry, has become one of the most commonly detected substances in water systems. Experimental data were fitted with four kinetic models and showed excellent fits with the linear pseu-do-second-order model. Results confirmed satisfactory kinetic properties of all investigated samples without significant influence of doped nitrogen and sulfur on adsorption.

Keywords: *carbon cryogel, nitrogen doped, nitrogen and sulfur co-doped, water contamination, adsorption, methylene blue.*