

**O 29. ACRYLAMIDE/SODIUM ACRYLATE/POLYETHYLENE GLYCOL/KAOLIN
COMPOSITE HYDROGELS FOR REMOVAL OF METHYLENE BLUE: DYE
ADSORPTION ISOTHERMS AND KINETICS**

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ABSTRACT: In recent years, removal of dyes by adsorption process from aqueous solutions has received great interest. Especially, utilization of facile synthesized and cheap composite hydrogels as adsorbent is in the spotlight for dye adsorption [1]. This study focused on methylene blue adsorption by acrylamide/sodium acrylate/polyethylene glycol/kaolin composite hydrogels which were pH sensitive materials. Maximum methylene blue removal efficiency was specified as about 73% using 0.05 g composite hydrogel at pH 7 for 120 min. According to adsorption data obtained at optimum experimental conditions, methylene blue adsorption isotherms and kinetics were investigated. The adsorption data was well fitted to Langmuir adsorption isotherm model and pseudo-second-order kinetic model. The results indicate that the hydrogel composites, even in low amount, are efficient adsorbents at neutral pH for a cationic dye removal.

Keywords: Adsorption, Hydrogels, Isotherms and Kinetics

[1] Hu, X.-S., Liang, R., Sun, G., Super-adsorbent hydrogel for removal of methylene blue dye from aqueous solution, Journal of Materials Chemistry A, 2018, 6, 17612-17624.