활성탄을 사용한 Acid Fuchsin 흡착의 평형,
동력학, 열역학 및 등량흡착열 특성

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Adsorption equilibrium, kinetics, thermodynamics and isosteric adsorption heat for the adsorption of acid fuchsin from aqueous solution using activated charcoal were obtained by varying the adsorption amount, initial concentration, contact time, temperature and pH as adsorption parameters. The adsorption of acid fuchsin with activated carbon showed the highest percentage of adsorption(88.6%) at pH3. Adsorption equilibrium data showed the highest agreement with Freundlich isotherm. This confirmed that the adsorption process is a multilayer adsorption process. From Freundlich separation factor (1/n=0.32~0.38), it was confirmed that the adsorption process was efficient. From the adsorption energy values evaluated from the Temkin and Dubinin-Radushkevich isotherms, this process was found to be the physical adsorption. Kinetic analysis was found that the pseudo second order model are more consistent than the pseudo first- order model. The activation energy(20.2kJ/mol) and enthalpy change(23.1kJ/mol) were evaluated the process as physical adsorption and endothermic. Gibbs free energy change was -8.39~-10.50kJ/mol were confirmed that the spontaneity increased with increasing temperature.