

عنوان مقاله:

Crystal Violet Dye Removal by Low-Cost Nano-Superabsorbent Hydrogel : Thermodynamic and Isotherm Model

محل انتشار:

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خلاصه مقاله:

Dye contamination is a major source of environmental pollution and health dangers practically in each section of the developing world, as people add color to textiles, paper, leather, and other materials to adorn and preserve them. Nowadays, green methods are considered the most important ways to solve environmental problems, especially the problems of the aquatic environment, and they fulfill the requirements of social, environmental, and economic guarantees. A new, environmental-friendly, and stable absorbent material has been prepared with absorbent properties based on biopolymers that have been successfully applied during the polymerization process with free radicals as a superabsorbent Ag-g-PAA/AC hydrogel. Many techniques were used to study the surface properties of the prepared hydrogel, including (FTIR, XRD, and FE-SEM). Several factors that affected the adsorption process were studied, including the effect of dye concentration, effect of hydrogel weight, effect of pH, and surface reactivation. Also, the adsorption isotherms of the Freundlich and Langmuir models were studied. Based on the findings, it was discovered that, depending on the R^2 value, adsorption isotherms followed the Freundlich model.

کلمات کلیدی:

Adsorption Isotherms, guluuronic acid, hydrogels, liquid wastes, Pollutants

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