

Produced of the H₃PO₄-Activated Carbon from Biomass-PFCP for Methylene Blue dye removal from water: Characterization, kinetics, isotherm, thermodynamics and regeneration

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Abstract

There is a growing interest in the adsorption of pollutants on biosorbents, especially those of plant origin. This study deals with the development of activated carbon based on PFCP waste by phosphoric acid activation and their application as adsorbents of methylene blue dye. The activated carbon obtained was characterized by physicochemical methods and complementary analyses. The different adsorption experiments were followed by varying the mass of adsorbent, the contact time, the pH of solution, the initial dye concentration and variation of temperature. The obtained results indicate that the adsorption equilibrium is reached after a contact time of 110 min. The adsorption rates remain proportional to the mass of each adsorbent with adsorption capacity of 74.58 mg/g. PFCP could be a potential precursor for the preparation of ecological carbon for the reduction or elimination of organic pollutants with a high surface area and microporous a mesoporous structure.

References

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