

## Feasibility study of adsorption of a textile dye on activated carbon prepared starting from the coffee grounds

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### ABSTRACT/RESUME

*Abstract: The activated carbon used in this study is prepared starting from the coffee ground whose abundance is important in our country and of which the use is often limited to food consummation. The physical characterization (porosity and surface) was determined by the adsorption of gas nitrogen to 77 K (BET), showed the presence of macropores (1.77 m<sup>2</sup> /g), as well as the analysis by electronic scan microscopy MEB revealed the presence of a broad specific surface. The activated carbon obtained starting from the coffee ground was the object of an application to the aqueous medium for tests of elimination of a cation dye (methylene blue) used in the industry of textile, prepared synthetically. Several parameters were studied in order to optimize the ideal conditions for a good adsorption of the pollutant to study; in particular, the kinetics of adsorption, the effect of the initial concentration and the effect of the pH of the solution examined. The simulated isotherms of adsorption are very correctly described by the models of Langmuir and Freundlich. The percentage of discolouration reached is of: 99%. Therefore, one can conclude that this study showed that the coffee ground chemically activated can be used like new adsorbent for the water treatment contaminated by the textile dyes.*

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