ADSOPRTION OF METHYLENE BLUE FROM AQUEOUS SOLUTION USING NITRIC ACID TREATED DURIAN LEAVES POWDER

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ABSTRACT

The purpose of this study was to investigate the feasibility of newly develop agricultural waste adsorbent to remove cationic dyes from aqueous solution. The durian leaf powder modified by nitric acid (NADLP) was prepared, characterized and utilize in removing methylene blue (MB) from aqueous solution at numerous physiochemical condition for instance initial MB concentration, adsorbent dosage, pH and contact time. From the result obtained, equilibrium data best fitted to the Langmuir isotherm model. In addition, kinetic studies revealed that the adsorption mechanism well explained using pseudo-second-order kinetic model. The maximum monolayer adsorption capacity of MB onto NADLP was 270.27 mg g^{-1} at 30^0 C, which is higher than several available adsorbent previously studied signifies the high potential of NADLP to remove MB from the wastewater.

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