STUDY ON THE UTILIZATION OF RICE HUSK FOR CARBON NANOSHEETS PRODUCTION AND APPLICATION FOR ADSORPTION OF METHYLENE BLUE IN AQUEOUS SOLUTION

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Summary

This paper presents results of the study on adsorption capacity of methylene blue (MB) in the water environment using 2-dimension thin carbon sheet (CNs) made by water-grinding method. Some influencing factors to MB adsorption capacity of CNs were investigated by batch adsorption method such as influence of pH (2-11), contact time (0-180 min), amount of CNs (0.01 - 0.07 g), temperature (25 ^{o}C – 50^{o}C), and concentration of MB (50 - 250 mg/L). The results showed that optimal condition for MB adsorption were pH 8, adsorption time of 90 min, and adsorbentamount of 0.04 g. The MB adsorption of CNs follows with the Langmuir adsorption isotherm model and the maximum adsorption capacity was 135.13 mg/g. The results show that CNs produced by rice husk is potential to be used as a low-cost adsorbent to treat methylene blue dye from water.

Keywords: Adsorption, methylene blue, husk, carbon, environmental water.