

V CONCLUSIONS AND SUGGESTION

V.1 Conclusions

From the experimental result, it can be concluded that:

1. The activated carbon prepared from durian shell with chemical activation is a potential adsorbent for textile-coloring waste adsorption. The activation temperature and impregnation ratio influence the adsorption ability of activated carbon produced. Activated carbon which is resulted from durian shells soaked in KOH solution with impregnation ratio 0.5 weight of KOH per sample weight and processed in the pyrolysis reactor at temperature 773.15 K is the best resulting product because it has the best adsorption ability, high micropore volume and surface area.
2. The surface area estimated by the N₂ adsorption isotherms shows higher values than the surface area estimated by methylene blue adsorption isotherms. Activated carbon which is resulted from durian shells soaked in KOH solution with impregnation ratio 0.5 weight of KOH per sample weight and processed in the pyrolysis reactor at temperature 873.15 K has the highest surface area. The presence of mesopores together with micropores in the activated carbons (bimodal pore size distribution) provides good access of sorbate molecules to the interior. enhances their adsorption capacities
3. For adsorption equilibrium, it was found that Langmuir model can represent the data well compared with Freundlich isotherm. The adsorption kinetics of

methylene blue can be described well by both of the pseudo first model equation and Langmuir surface kinetics model.

V.2 Suggestion

The suggestion for the development of the next research is to study the surface chemistry of activated carbon prepared from durian shell. The chemical nature surface of activated carbons can be selectively modified in order to improve their adsorption capacity.

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