CHAPTER V
CONCLUSION AND RECOMENDATION

IV.1. Conclusion

The results of this study indicate that the titanium dioxide bentonite composite has great potential to remove cationic dyes such as Methylene blue and Rhodamine B from aqueous solutions over a wide range of concentrations. The initial pH, temperature, and initial dye concentration significantly affected the adsorption of MB and RhB on BTC. The optimum condition for increasing MB degradation is at pH 9.03 for all types of adsorbents while to increase the degradation of RhB, the optimum pH is adjusted to 3.05 for Ca-bentonite and composite, except B+20% TiO_2 optimum pH value 3.98. Freundlich isotherm model can describe the experimental data very well with respectable error (0.94-0.99). The best adsorbent to photodegrade MB is B + 10% TiO_2 composite at 70°C with adsorption capacity maximum achieved at optimum condition is 0.3571 mmol/g. The best adsorbent to degrade RhB is B+20% TiO_2 at 70°C with an adsorption capacity is 0.1684 mmol/g. Equilibrium data analyzed using Langmuir and Freundlich isotherms showed that the Freundlich model gave the best correlation for MB and RhB adsorption to the BTC.

IV.2. Recomendation

Bentonite titanum dioxide composite (BTC) as adsorbent is recommended to adsorb dyes. It's caused by the ability of titanium dioxide to breakdown the complex molecule of dyes in to the simplyer molecule.

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