BAB V
KESIMPULAN DAN SARAN

V.1. Kesimpulan

Dalam penelitian ini, mempelajari pengaruh adsorpsi zat warna metilen biru dengan membandingkan hidrogel guar gum (HGG) dan HGG-TiO_2 komposit. Karakterisasi secara fisik dari hidrogel tersebut menggunakan analisa FTIR, XRD, SEM-EDX, dan BET. Proses adsorpsi yang dilakukan menggunakan *water bath shaker*, percobaan adsorpsi HGG tanpa menggunakan efek lampu UV, sedangkan pada percobaan HGG-TiO_2 menggunakan lampu UV untuk membantu proses photodegradasi warna metilen biru sehingga meningkatkan kapasitas adsorpsi. Isoterm adsorpsi menggunakan model persamaan Langmuir, Freundlich, Redlich-Peterson, Sips, dan Dubinin-Radushkevich, persamaan tersebut digunakan untuk mengkorelasikan data adsorpsi eksperimental, dari model persamaan isoterm adorpsi yang digunakan menunjukan proses adsorpsi yang terjadi secara monolayer. Pada penerapan kinetika adsorpsi terhadap waktu menunjukan bahwa hasil yang terbaik pada pseudo orde satu. Hasil penerapan model termodinamika terhadap proses adsorpsi semakin naiknya suhu proses adsorpsi tidak spontan yang menandakan bahwa proses yang terjadi secara eksotermik.

V.2. Saran

Saran untuk penelitian berikutnya:

1. Proses adsorpsi terhadap zat warna lain oleh hidrogel guar gum dengan TiO_2 komposit perlu dipelajari lagi untuk mendapatkan kapasitas yang terbaik.

2. Perlu dipelajari lagi pengaruh ukuran hidrogel terhadap kapasitas adsorpsi yang terbaik.
3. Efek foto-degradari terhadap metilen biru setelah penambahan TiO_2 perlu dipelajari.

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