BAB V
KESIMPULAN DAN SARAN

V.1 Kesimpulan

Hasil dari penelitian adalah pada keberhasilan sintesis COF-5 dan komposit COF-5@TiO_2 dan COF-5@AuNPs. Pada uji fotodegradasi 4-NP di bawah penyinaran lampu UV, TiO_2 menunjukkan kinetika fotodegradasi tertinggi, diikuti oleh komposit COF-5@TiO_2 dan COF-5@AuNPs, AuNPs, COF-5. Hasil kinetika menunjukkan bahwa proses fotodegradasi 4-NP sesuai dengan SO ditinjau dari nilai R^2 yang hampir mendekati satu. Selain itu, *reusability* komposit menunjukkan stabilitas dan efisiensi yang baik hingga pemakaian ketiga. Secara keseluruhan, modifikasi COF-5 dengan TiO_2 dan AuNPs dalam bentuk komposit ini mampu meningkatkan kemampuan fotodegradasi dari COF-5 terhadap 4-NP dan mampu membuka peluang pengembangan fotokatalis berbasis COF yang lebih efisien.

V.2 Saran

Untuk pengembangan selanjutnya, disarankan melakukan optimasi lebih lanjut terhadap komposisi dan rasio COF-5 dengan TiO_2 dan AuNPs untuk memaksimalkan aktivitas fotodegradasi. Selain itu, studi jangka panjang mengenai stabilitas COF-5 dan mekanisme reaksi fotodegradasi secara mendalam dapat membantu memahami interaksi antar material dalam komposit terutama dalam konteks *reusability* dari material.

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