BAB V

KESIMPULAN DAN SARAN

V.1 Kesimpulan

MIL-100(Fe) telah disintesis dengan metode hidrotermal menggunakan logam Fe(III), ligan H_3BTC, dan HNO_3 dalam *RO water*. MIL-100(Fe) kemudian dikarakterisasi menggunakan XRD, SEM, *N_2 sorption* dan TGA. Dari hasil analisis, MIL-100(Fe) memiliki struktur kristal kubik dengan luas permukaan 1456,10 m^2/g, volume pori 1,25 cm^3/g, dan stabil hingga 340˚C.

Studi adsorpsi isoniazid ke MIL-100(Fe) menunjukkan bahwa model pseudo orde 1 dan Langmuir lebih sesuai dengan hasil percobaan. *Release* ekuilibrium isoniazid dari MIL-100(Fe) adalah 128 mg/g. Profil *realease* isoniazid dari MIL-100(Fe) lebik cocok pada model orde pertama dengan mekanisme *sustained release*. Persen release kumulatif isoniazid selama 24 jam untuk pH 5,8 adalah 50,38% dan untuk pH 7,4 sebesar 72,22%.

V.2 Saran

Pada proses sintesa MIL-200(Fe) yang telah dilakukan didapatkan hasil campuran antara ligan dan logam tidak larut sempurna sehingga menyebabkan struktur Kristal tidak sepenuhnya homogen. Didasarkan dari hal ini, pada sintesa MIL-100(Fe) yang dilakukan selanjutnya, ligan dan logam yang digunakan harus larut sempurna sebelum masuk ke dalam autoklaf untuk mendapatkan hasil yang lebih baik. Pada proses pemanasan autoklaf, suhu reaksi harus dijaga tetap stabil karena MIL-100(Fe) merupakan senyawa kristalin yang proses sintesanya peka terhadap suhu. Proses pencucian harus dilakukan hingga pelarut pencuci menjadi bening.

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