BAB V

KESIMPULAN DAN SARAN

5.1. Kesimpulan

Dari penelitian yang telah dilakukan, dapat disimpulkan bahwa:

1. Katalis PVA/SSA dapat digunakan sebagai katalis dalam reaksi esterifikasi pada pembuatan biodiesel karena adanya gugus $–SO_3H$ yang terbentuk (dapat dilihat dari hasil FT-IR) akibat adanya modifikasi pada PVA dengan penambahan SSA sehingga katalis dapat menghantarkan proton.

2. Konsentrasi SSA yang meningkat akan menyebabkan kenaikan pada nilai kapasitas asam, berbanding terbalik dengan karakterisasi *swelling degree* yang menurun.

3. Konsentrasi PVA yang meningkat akan menyebabkan kenaikan kuantitas struktur kristalinitas yang menyebabkan kemampuan *swelling degree* yang menurun.

4. Katalis PVA/SSA dapat dijadikan alternatif untuk reaksi esterifikasi dalam pembuatan biodiesel karena memiliki konversi yang cukup tinggi bila dibandingkan dengan penggunaan katalis DPT-3.

5. Katalis PVA/SSA dapat disintesis dengan menggunakan prosedur penelitian yang ditunjukkan pada BAB III.

5.2. Saran

Berikut adalah beberapa hal yang perlu dierhatikan untuk penelitian yang akan dilakukan pada penelitian penelitian selanjutnya adalah.

1. Perlu dilakukan analisis *X-Ray Fluorescence* (XRF) /*Elemental analysis* untuk menguji *sulfur content*. Untuk mengecek apakah terjadi *leaching* setelah dilakukan reaksi esterifikasi.

2. Perlu diuji juga performa PVA/SSA sebagai katalis pada reaksi hidrolisis, terutama pada rantai asam lemak yang pendek.

3. Perlu dilakukan studi lebih lanjut untuk membuat bentuk PVA/SSA menjadi *beads*

4. Kondisi operasi dan komposisi masukan dari esterifikasi perlu disesuaikan ke kondisi operasi dan komposisi masukan pada *reactive distillation* dari PT Ecogreen Oleochemicals.

5. Perlu dilakukan analisis SEM untuk resin DPT-3.

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