

## **BAB V**

### **KESIMPULAN DAN SARAN**

#### **5.1 Kesimpulan**

Berdasarkan penelitian yang sudah dilakukan ini, terdapat beberapa kesimpulan yang didapat.

1. Pengaruh agen sulfonasi terhadap keasaman, TsOH memiliki tingkat keasaman yang lebih tinggi dibandingkan *methanesulfonic acid*
2. Katalis dengan agen sulfonasi *methanesulfonic acid* menunjukkan kecenderungan konversi yang lebih tinggi dibandingkan TsOH
3. Katalis dengan agen sulfonasi *methanesulfonic acid* memiliki kestabilan thermal yang lebih stabil dibandingkan TsOH
4. Semakin tinggi suhu sulfonasi menunjukkan kecenderungan peningkatan konversi
5. Pengaruh agen pendispersi terhadap konversi, dikloroetana memiliki derajat sulfonasi yang lebih tinggi dibandingkan  $\text{CHCl}_3$
6. Dari hasil grafik DSC menunjukkan bahwa katalis aman ketika dilakukan pada suhu  $80^\circ\text{C}$

#### **5.2 Saran**

Adapun beberapa saran yang dapat diberikan untuk penelitian selanjutnya, yaitu :

1. Melakukan reaksi esterifikasi yang lebih lama (lebih dari 2 jam) untuk mengetahui katalis tersebut memakan waktu berapa lama untuk mendapatkan konversi lebih besar,
2. Melakukan uji *recycle* untuk mengetahui berapa kali katalis tersebut dapat dipergunakan kembali, dan
3. Melakukan uji karakterisasi katalis seperti BET (untuk menganalisis luas area spesifik dan pori katalis) , DSC (untuk menganalisis perubahan fasa dari katalis) dan FTIR (untuk mengidentifikasi gugus sulfonat dalam katalis).

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