



## BAB V

### KESIMPULAN DAN SARAN

#### 6.1 Kesimpulan

1. Semakin besar jumlah  $K_2CO_3$ , maka nilai konversi reaksi esterifikasi asam asetat dan butanol menjadi butil asetat semakin besar.
2. Semakin besar waktu aktivasi, maka nilai konversi reaksi esterifikasi asam asetat dan butanol menjadi butil asetat semakin besar.
3. Variasi penambahan jumlah  $K_2CO_3$  dan waktu aktivasi berpengaruh secara signifikan terhadap nilai konversi reaksi esterifikasi.
4. Penambahan jumlah  $K_2CO_3$  dan waktu aktivasi tidak berpengaruh secara signifikan nilai *acid site density* pada katalis asam heterogen yang dihasilkan.
5. Pada rasio impregnasi 1:3 dengan waktu aktivasi 5 jam menghasilkan nilai konversi dan nilai *acid site density* yang terbesar yaitu konversi sebesar 89,72% dan 0,875 mmol/ gram untuk nilai *acid site density*.

#### 6.2 Saran

1. Penggunaan aktivator  $K_2CO_3$  dapat dipertahankan untuk meningkatkan nilai konversi dari reaksi esterifikasi asam asetat dan butanol menjadi butil asetat.
2. Menambahkan rentang yang lebih tinggi pada variasi rasio impregnasi untuk penelitian berikutnya agar dapat diperoleh kondisi optimum pembuatan katalis asam heterogen dengan aktivator  $K_2CO_3$
3. Pengujian katalis dilakukan pada reaksi yang berbeda untuk mengetahui aktivitas katalis pada reaksi - reaksi lainnya yang menggunakan katalis asam heterogen. Reaksi – reaksi yang dapat diuji dengan katalis asam heterogen diantaranya adalah reaksi hidrolisis, alkilasi, dehidrasi dan asetalisasi.
4. **Ketika melakukan titrasi, seharusnya dilakukan pengulangan minimal sebanyak dua kali agar data yang diperoleh benar – benar akurat.**



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