

BAB 5

KESIMPULAN DAN SARAN

5.1 Kesimpulan

Kesimpulan yang dapat diperoleh dari hasil penelitian ini adalah sebagai berikut:

1. ι -karagenan memberikan hasil perolehan massa karbon dan %kristalinitas yang lebih rendah dibandingkan dengan κ -karagenan dan λ -karagenan. Tetapi morfologi ι -karagenan menunjukkan struktur yang lebih berpori dibandingkan dengan κ -karagenan dan λ -karagenan. Struktur karbon aktif yang diperoleh berstruktur *amorf*.
2. Semakin tinggi pengaruh rasio ZnCl_2 terhadap *hydrochar* memberikan nilai perolehan massa yang lebih besar. Secara morfologi rasio mempengaruhi pori yang dihasilkan. Perbandingan rasio yang lebih besar menghasilkan pori yang lebih banyak namun tidak signifikan dimana perbedaan %kristalinitas yang dihasilkan hanya $\pm 1\%$
3. Komposit karbon sulfur dari ι -karagenan memberikan hasil komposisi % sulfur (62,23%) paling tinggi dibandingkan dengan κ -karagenan dan λ -karagenan. Dan κ -karagenan memiliki % kristalinitas tertinggi (46,67%) dibandingkan dengan ι -karagenan dan λ -karagenan.
4. Proses difusi lebur menggunakan sulfur terhadap karbon aktif yang diaktivasi dengan ZnCl_2 1:4 memberikan nilai % komposisi sulfur dan % kristalinitas yang tinggi. % Komposisi karbon mengalami penurunan dengan ditandakan adanya sulfur setelah dilakukan difusi Struktur kristalin yang berupa sulfur ditandai dengan puncak-puncak tajam pada analisis XRD

5.2 Saran

Saran yang dapat dilakukan untuk penelitian ini adalah sebagai berikut :

1. Perlu dilakukan karakterisasi BET atau adsorpsi metilen biru pada karbon aktif dan karbon komposit sulfur untuk mengetahui nilai luas permukaan, volume pori dan kapasitas adsorpsi karbon
2. Perlu dilakukan pengaruh variasi temperatur terhadap pengaktivasian

menggunakan $ZnCl_2$ terhadap jenis karagenan pada karbon aktif yang dihasilkan.

3. Perlu dilakukan variasi penelitian mengenai rasio penambahan sulfur untuk mengetahui rasio yang optimal untuk memaksimalkan pengkompositan sulfur kedalam pori-pori karbon aktif.
4. Perlu dilakukan analisis SEM terhadap komposit karbon sulfur untuk melihat karakterisasi morfologi dari karbon komposit sulfur.

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