BAB V
KESIMPULAN DAN SARAN

5.1 Kesimpulan

Berdasarkan penelitian yang telah dilakukan, dapat disimpulkan bahwa

1. Variasi rasio katalis 0.3 mol/mol AGU menghasilkan nilai DS tertinggi.
2. Waktu reaksi 6 jam menghasilkan banyak *network crosslinking* menandakan banyaknya ikatan *crosslinking Diels Alder* yang terbentuk.
3. Suhu *annealing* 70 ^{o}C menghasilkan produk yang memiliki lebih banyak *network crosslinking*.
4. Pati ester memiliki ketahanan suhu rendah dan bersifat amorf.
5. Pati *crosslinking* lebih tahan terhadap suhu dibandingkan pati ester dan pati sagu, bersifat kristalin dan granulanya menjadi runcing serta beraglomerasi dan bersifat *thermoreversible* berdasarkan uji kelarutan.

5.2 Saran

Selama melakukan penelitian juga ada beberapa saran untuk penelitian kedepannya. Saran tersebut adalah sebagai berikut:

1. Perlu dilakukan analisa DSC untuk mengetahui thermoreversibilitas dari pati *crosslinking* dan *glass transition temperature*.
2. Perlu dilakukan penelitian lebih lanjut mengenai kinetika reaksi transesterifikasi antara pati dengan *methyl 2-furoate*.
3. Untuk membuktikan produk bersifat *thermoreversible* akan lebih baik bila pada produk pati *crosslinking* dicetak kemudian dihancurkan dan dicetak ulang kembali.
4. Perlu dilakukan uji kekuatan mekanis pada pati crosslinking yang dicetak menjadi T-*bone*.

5. Perlu dilakukan analisa *degree of crosslinking* pada pati *crosslinking*.
6. Perlu diuji biodegredabilitas dari produk pati *crosslinking*.
7. Perlu pengujian XRD untuk melihat perubahan kristalinitas pati *crosslinking* pada berbagai suhu *annealing*.

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