

CHAPTER V

CONCLUSION AND RECOMMENDATION

IV.1. Conclusion

The significant factor in the NCC production from passion fruit peels waste was the interaction between sulphuric acid concentration and temperature. The best condition of NCC production for pre-treated cellulose was using 52% wt. of sulphuric acid solution at 50°C, it was determined by the highest yield of NCC which was obtained.

NCC from passion fruit peel characterisation have been done by TGA, XRD and SEM, which results confirmed as it is in the literature.

NCC was suitable for drug carrier of tetracycline antibiotic. In adsorption process, this NCC adsorbed tetracycline antibiotic until 251.7667 mg/g using 500 ppm as tetracycline initial concentration in 60 minutes at 30°C. And it was released slowly in 12 hours, where the desorption efficiency reached 90.51%.

IV.2. Recommendation

This NCC is suitable as tetracycline antibiotic drug carrier, but the amount of desorbed tetracycline at equilibrium desorption time is still low. Modification of NCC as drug carrier is recommended in order to increase the ability of NCC for desorbing tetracycline antibiotic.

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