

CHAPTER V

CONCLUSIONS

Previously, tosylation of chitin was proposed by Kurita et al. (1992) to be an approach for preparing active precursor in order to process graft copolymerization thermoplastic polymer. In the present work, it has been found that tosylation conducted on chitosan is also an effective approach to prepare a precursor chitosan for acylation. FTIR quantitative analysis reveals that the tosylation occurred at both the hydroxyl of the C-6 carbon and amino the C-2 carbon. When the amino group was protected, the tosylation was found to be preferential to C-6. Stearic acid was chosen for the acylation with tosylchitosan. It was found that more than half of the tosylate groups were substituted successfully. It was also confirmed that the modified chitosan shows the high thermal stability up to 300°C.

In this article, stearylated chitosan and stearylated chitosan acetate were prepared by using interfacial polymerization and heterogeneous reactions respectively. The introduction of hydrophobic alkyl chain into the chitosan molecule may not only improve its miscibility to induce biodegradability, but also promote blending with hydrophobic thermoplastic polymers.