

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

Solution plasma process (SPP) was applied in deacetylation and depolymerization reactions of chitin hydrogel to obtain chitosan with high values of % DD. Compared with the conventional heat treatment, SPP treatment was an effective process to increase the % DD by using the low alkali concentrations. Using SPP, the % DD increased with the increasing of KOH concentrations in MeOH as well as the increasing of the cycles of plasma treatment time. The reduction of the initial molecular weight of chitin hydrogel by depolymerization with SPP under mild acidic condition before being subjected to the deacetylation with SPP could improve the % DD of the obtained chitosan products.

5.2 Recommendations

During the deacetylation reaction, the corrosion of insulator contaminated in to the chitin hydrogel solution which made the product became blacken material, thus, the purification process should be used by dissolving in 1 % v/v acetic acid solution and filtrating before using in the next process .

- 5.3 Suggestion for future works

The further work should be vary the type of acid such as succinic acid , adipic acid and citric acid in order to compare the effect of acid on the reducing of initial molecular weight of chitin hydrogel and the increasing of degree of deacetylation.