



CHAPTER IV CONCLUSIONS

The hydrochloric acid hydrolysis was applied to prepare the low molecular weight chitosan. The molecular weight was reduced significantly for 96% to obtain water-soluble chitosan with slightly change in chemical structure. Chitosan macromonomer was achieved by conjugating reactive acrylic acid monomer onto low molecular weight chitosan. The polymerization of acrylic acid monomer and the vinyl-chitosan macromonomer gave polymer gel. The gel obtained performed high water adsorption upto 2000 times, especially at the molar ratio of chitosan macromonomer:acrylic acid for 1:40. It is important to note that the gel achieved in the present work was formed by the layer chain of chitosan and poly(acrylic acid) without any crosslinking agent. The present work explored the possibility to obtain chitosan biomimetic composite material by using macromonomer strategy.