



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Conclusions

The following conclusions are drawn from the study:

1. All three types of chitosan can be used to remove both mercuric chloride and phenylmercuric acetate.
2. Removal of mercury compounds depends on type of mercury compounds.
3. Removal of  $\text{HgCl}_2$  depends on initial pH of the solution. Efficiency of  $\text{HgCl}_2$  removal decreases with increasing initial pH of solution.
4. Removal of PMA at some operating condition depends on initial pH of the solution and operating temperature, which are slightly affect on adsorption of PMA. Some operating condition can not be concluded. Efficiency of PMA removal slightly decreases with increasing initial pH of solution and slightly increases with increasing operating temperature.
5. Removal of  $\text{HgCl}_2$  at some conditions depends on degree of deacetylation, which is slightly affect on adsorption of  $\text{HgCl}_2$ . Some operating condition can not be concluded. Efficiency of  $\text{HgCl}_2$  removal slightly increases with increasing degree of deacetylation.
6. Effect of degree of deacetylation on adsorption of PMA can not be concluded.

## 5.2 Recommendations

1. A similar study should be conducted in continuous process such as fixed bed in order to study capacity and lifetime of adsorbent.

2. Chitosan can dissolve in diluted organic acid. Thus, the same experimental set should be study of chitosan derivative such as crosslinked chitosan for increase stability of chitosan.