

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The following are the summary of the findings of this study :

1. Catalysts prepared using a high surface area alumina powder generally gave higher *E. coli* destruction efficiency than alumina balls.
2. *E. coli* destruction depended on the amount of silver, contact time and dissolved oxygen level.
3. When the silver loading was increased, the *E. coli* destruction increased significantly for both types of the support surface.
4. An increase in contact time resulted in increasing the *E. coli* destruction.
5. The higher the dissolved oxygen level was, the higher the *E. coli* destruction was obtained.
6. Silver loss from the alumina powder was detected while silver loss from the alumina balls was not found.

5.2 Recommendations

This experimental work was a fundamental study to reveal some insights into understanding how supported silver catalyst can destroy

microorganisms present in water. Before actually employing silver catalysts for disinfection applications, further studies are recommended as follows:

- to determine effects of hardness, temperature, organic impurities and pH on the silver catalyst activity for disinfection.
- to develop an appropriate procedure to obtain tiny and uniform silver particles bound to the support.
- to determine an average working life for the catalyst.
- to develop an appropriate procedure to reactivate the spent silver catalyst.