CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The conclusions of the present research are the following:

1. The chromium salts contain chromium in different oxidation states provide the different amount of chromium incorporated into the synthesized catalyst structure.

2. The catalysts synthesized from adding $Cr(NO_3)_3.9H_2O$ in B1 solution gives the highest amount of incorporated chromium, whereas the ones synthesized from adding CrO_3 in B1 and C1 solutions have no incorporated chromium.

3. The different methodology of adding chromium salt and kinds of chromium salt do not affect the surface area, the pore volumes and the MFI structure of the synthesized.

5. The Cr(III)-TS-1-A1A2, Cr(III)-TS-1-B1, Cr(III)-TS-1-C1, Cr(VI)-TS-1-A1 and Cr(VI)-TS-1-A1A2 catalysts consist of Cr^{5+} bonded in octahedral form outside the framework structure.

6. The synthesized catalysts have two different types of acid strength, the weaker one desorbs NH_3 at 137-149°C and the stronger one desorbs NH_3 at 224-247°C.

7. The catalytic behavior in the gas phase oxidation of 2-propanol of the synthesized catalyst does not depend on the amount of incorporated chromium.

5.2 Recommendations for future studies

From the previous conclusions, the following recommendations for future studies are proposed.

1. Since other synthesis factors (e.g. pH and temperature) affect the property of the synthesized catalyst; therefore, the effects of these factors should be further investigated.

2. The catalytic activity of the synthesized catalyst should be tested with other reaction such as hydroxylation reaction.

3. Use the synthesized Cr-TS-1 catalyst as a support for other active metals.