

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

In this work, the investigation on the influence of fluorine by performing sequences of TPR and hydrogen chemisorption showed that the activity depended on the addition of fluorine. The activity of tetralin hydrogenation decreased in the order of Pt > Pd > PtPd. The addition of F before the metal increased the activity for all catalysts that can be because the F-promoted catalyst has the electron deficient more than the F-unpromoted catalyst so it can cause aromatic (high electron density) more easier to adsorb on the surface. But the addition of F after the metal decreased the activity for all catalysts because F precursor could reduce in the calcination step and when catalyst was reduced and calcined in the same time it can cause the agglomeration of metal catalysts. And for the study of S-tolerance of catalysts, it was found that the F-promoted catalyst give a higher S-tolerance than the F-unpromoted catalyst that can be due to the addition of F to the catalysts increases the amounts of both acid sites but the Bronsted sites are increased to a greater extent (Kim *et al.*, 2003) and from the previous work (Hu *et al.*, 2001) showed that strong Bronsted acidic sites would promoted the sulfur resistance of supported Pt, Pd and PtPd catalyst, while Lewis acidic sites do not. From the results of this study, it was shown that the catalyst preparation is an important role for the product distribution.