

## **CHAPTER V**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Conclusions**

Zeolites-A with different types of cation namely lithium, sodium, and potassium ions was successfully synthesized via sol-gel process and microwave technique using fumed silica, aluminium hydroxide, lithium, sodium, and potassium hydroxide, as silica, alumina, and hydrolytic agents, respectively. After loading different types of metal, such as gold and platinum, via impregnation method, platinum loaded Na-A zeolite showed higher CO conversion for CO oxidation than gold loaded Na-A zeolite. The highest conversion of platinum loading was 100% at 240 °C while gold loading was only 26% at 350 °C. Moreover, the cation type showed slightly different conversion for the CO oxidation and reached 100% at 240 °C. For PROX reaction, the conversion was lower and reached the highest conversion of 89% at 240 °C.

#### **5.2 Recommendations**

The other types of zeolite should be studied and in order to find the most efficiency of catalyst for CO oxidation and PROX reaction.