

## **CHAPTER V**

### **CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Conclusions**

Polyaniline can polymerize by interfacial polymerization with using PSS, CoPSS 3:1 and CoPSS 1:1 as template, capping agent and stabilizing to provide water soluble PANI. The best condition to produce water soluble polyaniline was 3 mM APS and 10 mM capping agent with 0.1 M sulfuric acid in aqueous phase. PANI can use as pH or optical sensor by changing color. To make PANI films, pH, salt concentration, dipping time and number of layer had effect on them. The best capping agent to produce PANI solution and films is 100 percent sulfonate group. PANI can use as capping agent to synthesize silver nanoparticles and the best condition to make films is PANI-CoPSS 1:1.

#### **5.2 Recommendations**

Polyaniline should do dialysis after polymerization to get only PANI and study conductivity of PANI. In further study the silver nanoparticles should be synthesized by in situ on polyaniline film to get rid of excess capping polymer synthesizing polyaniline.