

## CHAPTER V

### CONCLUSIONS

In this work, the surface modification of cellulose sheet was treated by solution plasma. The results showed that the hydrophilicity of treated cellulose sheet was increased due to the incorporation of oxygen-containing polar groups, including C-O, C=O and O-C=O. The deposition capacity of polyaniline coated on cellulose sheet by solution plasma process was better than oxidative polymerization method. The solution plasma method can provide higher %yield of polyaniline than oxidative polymerization method. The electrical conductivity of polyaniline coated on cellulose sheet was determined. It was found that the electrical conductivity of polyaniline coated on cellulose sheet with the ratio of cellulose to aniline monomer 1:5 by weight equal to  $7.42 \times 10^{-4}$  S/cm. Moreover, the electrical conductivity of polyaniline coated on cellulose sheet can be improved to  $3.36 \times 10^{-3}$  S/cm with the aid of silver nitrate. As a result, the polyaniline and silver co-coated cellulose sheet can be used as the semiconductor in flexible LED display.