CHAPTER IV

CONCLUSION

Hexadentate Schiff's base metal complexes **NiL** and **ZnL** have been prepared from metal acetates and ligand **L**, which was obtained from salicylaldehyde and triethylenetetramine. It was found that these metal complexes underwent crosslinking reaction with DGEBA in the presence of tetrabutylammoniumhydroxide as a catalyst to give metal-containing epoxy polymers. Without catalyst, the order of reactivity of the complexes towards DGEBA was **NiL > ZnL**. When Bu_4NOH was employed, the order of reactivity of the complexes towards DGEBA was **ZnL > NiL.**

Zn-containing epoxy polymers had higher T_g than Ni-containing epoxy polymers. When the mole ratio of ML: DGEBA: Bu_4NOH was 1: 6: 0, the metal-containing epoxy polymers showed the highest T_g value. Ni-containing epoxy polymers showed good thermal stability and tensile strength at the ratios of Ni:DGEBA:Bu_4 NOH of 1:8:0.2 and 1:10:0.2.

The metal-containing epoxy polymers showed better thermal stability than the epoxy polymer crosslinked with diethylenetriamine. In comparison to the maleic anhydride-DGEBA system, the metal-containing epoxy polymers were obtained at lower crosslinking temperature and showed comparable thermal stability.

The suggestion for future work is use of hexadentate Schiff's base metal complexes together with maleic anhydride as crosslinking agents for DGEBA in the preparation of metal-containing epoxy polymer. The basic catalysts such as tetrabutyl ammonium hydroxide can be used to decrease the crosslinking temperature.