CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

This thesis has described the study of the process of synthesis graft copolymer between EPDM and styrene and the polymer blend between synthesis graft copolymer and polystyrene. The conclusions of this research can be summarized as follows:

1. Time to give maximum yield (%) for synthesis graft copolymer in these research between EPDM and styrene is 4 hrs and appears to increase if the time is increase.

2. Concentrations of BPO initiator to give maximum yield (%) for synthesis graft copolymer between EPDM and styrene is 4.97×10^{-3} mol/L

3. Synthesis graft copolymers give maximum yield (%) in the no oxygen and water condition (under argon atmosphere).

4. Toluene solvent gives maximum yield (%) for synthesis graft copolymer between EPDM and styrene at 90 °C which is the best condition.

5. Temperature that give maximum yield (%) for synthesis graft copolymer between EPDM and Styrene is 90 °C

6. The more concentrated of Styrene monomer, the more increase in yield (%) for synthesis graft copolymer between EPDM and Styrene in these research is 2.49×10^{-3} mol/L and appears to have some maxima at higher concentration as described by Jing Sheng 1996.

7. Aging time of BPO initiator gives maximum yield (%) for synthesis graft copolymer between EPDM and Styrene is 10 mins.

8. Polymer blend between synthesis graft copolymer (EPDM-g-PS) and polystyrene have a good morphology than pure polystyrene.

9. Polymer blend between synthesis graft copolymer (EPDM-g-PS) (5 % w/w) and polystyrene and polymer blend between EPDM (5 % w/w) and polystyrene can improve the toughness of polystyrene in two fold approximately.

From this research, the recommendations for further study are as follows:

1. The effect of aging time in synthesis graft copolymer to the mechanical properties of polymer blend should be investigated.

2. Synthesis the salami structure between EPDM and polystyrene should be studied in order to improve the mechanical properties in excess from HIPS.