CHAPTER V
CONCLUSIONS

In this work, MAH-g-HDPE and Na-EMAA as compatibilizers were added to the PTT/HDPE and PTT/LLDPE blends by melt mixing. SEM micrographs show that the average size of the dispersed phase decreased by the addition of small amount of compatibilizer. Only 0.1 – 1 phr of compatibilizer was sufficient to produce maximum reduction in dispersed phase size. The mechanical properties increased with the addition of compatibilizer, including tensile strength, Young's modulus and impact strength. PTT/HPDE/Na-EMAA: 80/20/1 gave the highest tensile strength at 46.87 MPa while PTT/HDPE/MAH-g-HDPE : 80/20/1 gave the highest Young's modulus at 925 MPa and PTT/LLDPE/MAH-g-HDPE:60/40/1 gave the highest impact strength at 8.2 KJ/m^2.Viscosity of blends increased with increasing amount of compatibilizer and at 5 phr of compatibilizer, Na-EMAA blends gave higher melt flow index than MAH-g-HDPE blends. The addition of MAH-g-HDPE in the blends shifted T_c of PTT to lower temperature but shifted T_c of HDPE or LLDPE to higher temperature. On the other hand the addition of Na-EMAA shifted the T_c of PTT to higher temperature but shifted T_c of HDPE or LLDPE to lower temperature. The addition of MAH-g-HDPE and Na-EMAA did not effect to T_m of both PTT and HDPE or LLDPE. All composition ratios of uncompatibilized and compatbilized blends showed that % Crystallinity for both PTT and HDPE or LLDPE components was less than neat polymers.