CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

5.1. CONCLUSIONS

From this work, it can be concluded as follows:

1. The poly(PE-b-PP) copolymer can be synthesized by converting the H-terminated chain ends to hydroxyl-terminated ones and then blocking with diisocyanate. The diisocyanate linkage of poly(PE-b-PP) copolymers were determined by IR, indicating that Poly(PE-b-PP) copolymers occurred in the blocking reaction.
2. The poly(PE-b-PP) copolymer performs the effective compatibilizer for immiscible blend of PE/PP as shown in the morphology of compatibilised PE/PP blends which can be observed by SEM with images analysis.
3. The presence of 3% and 6 %wt block copolymer dramatically reduced the phase size. Furthermore, the mechanical properties, such as tensile strength, elongation at break and crystallinity have been improved due to poly(PE-b-PP) copolymers contain PE and PP segments which attached to PE/PP blend ,leading to superior properties via changing morphology than the normal mixing blend without poly(PE-b-PP). Confirmed by DMA, DSC showed the increase of cystallinity percentage of compatibilised blends.
4. The optimum content of compatibilizer is 6% poly(PE-b-PP) (%wt).

5.2 RECOMMENDATIONS

From the results in this work, the further investigation in the following subjects will be useful.

1. The poly(PE-b-PP) copolymer should be applied to compatibilised the recycled PE/PP blend and investigates the mechanical properties compare to the uncompatibilised recycled PE/PP blend.
2. Investigate the quantity of pure poly(PE-b-PP) in synthesized poly(PE-b-PP) and fractionate into required product.
3. Further study on the effect of content of poly(PE-b-PP) in PE/PP blend to the mechanical properties and justify the optimum content.
4. Synthesized the PEOH and PPOH which have the molecular weight closely to PE/PP blend in order to be more effective compatibilizer.