

CHAPTER VI

CONCLUSIONS AND RECOMMENDATION

6.1 Conclusions

The experimental results lead to the following conclusion:

1. The catalytic coke was synthesized at 800 °C and reaction time 60 min to improve the mechanical properties of PP.
2. The degradation temperature of catalytic coke/PP composites and fresh catalyst/PP composites decreased with increasing filler contents and extrusion cycles. In addition, the degradation temperature of catalytic coke/PP composites was higher than of fresh catalyst/PP composites.
3. The melting temperature and glass transition temperature of PP composites were not different when filled with spent catalyst. On the contrary, the melting temperature and glass transition temperature of PP composites decreased when filled with fresh catalyst.
4. The effect of the filler contents and extrusion cycles has not affected to the melting temperature and glass transition temperature of PP composites.
5. The pure PP, spent catalyst/PP composites and fresh catalyst/PP composites with increasing filler contents and extrusion cycles showed no significant changed in tensile strength.
6. Young's modulus of spent catalyst/PP composites and fresh catalyst/PP composites increased with increasing filler contents. On the contrary, elongation at

break and area under stress-strain curve of spent catalyst/PP composites and fresh catalyst/PP composites decreased with increasing filler contents.

7. The cycles of extrusion has less affected to the mechanical properties of spent catalyst/PP composites and fresh catalyst/PP composites.

6.2 Recommendations for Future Work

1. Preparation composites should be filled compatibilizer to improve the composite interfacial adhesion for further investigation.

2. Preparation composites should be filled more filler content to improve the mechanical properties of composites for further investigation.

3. Should increase the characterization method such as impact, hardness, flexural and DMA which may improve other properties of the composites.

4. We may use a by-product in industry and separate filamentous coke which may improve the mechanical properties.