



CHAPTER V

CONCLUSION AND SUGGESTIONS

5.1 Conclusion

Based on the preliminary experimental results, it was confirmed that talc mostly imparted the α -crystalline form in both PP and PP/EPR blends, as indicated by WAXD and DSC measurements. Addition of talc to PP and PP/EPR blends suppressed the K-value of both materials to be since zero, the unfilled PP and PP/EPR blend presented the K-value of 0.089 and 0.209, respectively corresponding to β -content. The melting peak of the β -PP which shifted to the higher value than the α -PP indicated the PP/EPR blend filled with Ca-Pim (as β -nucleator) at various concentration, 0.001, 0.01, 0.025, 0.05 and 0.1 %wt, showed higher K-values than filling with talc. However, at lower concentration of Ca-Pim the higher K-value was obtained. DSC diagrams of all filled Ca-Pim PP/EPR blend exhibited the shift of the melting peak to higher temperature also confirmed the α - β transformation. It was evident that the β -PP/EPR blend filled with 0.001% wt of Ca-Pim showed the highest K-value of 0.745 which resulted in the highest Izod impact strength.

The attribution to this phenomenon was possibly due to the defect developed from the grain boundaries formed. It is a known fact that formation of boundary defects usually leads to the reduction in the impact strength.

5.2 Suggestions for future work

1) To further study on finding out the appropriate concentration of Ca-Pim (0.0005 – 0.005%wt.) which provides the highest K-value and Izod impact strength enhancement.

2) Based on the facts that the β -crystalline form of PP or PP/EPR blend exhibit much lower crystal density than that of the α -form and it is known that when it subjected to elongation deformation (under the right conditions), the β -form will transform into the α -form. Therefore, it will be resulting in the formation of microporous film structure. Porous PP or PP/EPR blend films can be used as microporous membranes. Applications in medical, Pharmaceutical, biological,

and electronic fields are envisioned. Consequently, it should be very interesting to further develop the knowhows in order to obtain either PP or PP/EPR blend films to having the highest content of the β -crystalline form and exploring for the most efficient ways to produce microporous films from the prepared films.