

CHAPTER VII

CONCLUSIONS AND RECOMMENDATIONS

The success of the admicellar polymerization of polystyrene and poly(methyl methacrylate) coat on surface of natural rubber and magnetite particles was investigated by using FTIR, SEM, OM, and TGA. From the FTIR study, all admicelled PS-NR, PMMA-NR, PS-Mag, PMMA-Mag showed the same IR absorption peaks as presented in standard polystyrene and poly(methyl methacrylate). The admicellar PS-NR in with CTAB, the SEM micrographs revealed the even coating of PS over latex particles and they showed the core-shell structure of PS and NR. And without CTAB, the SEM micrographs showed the separation between the NR and PS. In PS-NR and PMMA-NR, the OM and SEM micrographs revealed the even coating of PS, and PMMA over latex particles and they showed the core-shell structure of PS, PMMA, and NR. As seen in the result of TGA, the admicelled rubbers began to lose weight at higher temperature, compared to that of NR, and they also showed the shift of major decomposition of pure PS to higher temperature. The DTG curves also demonstrated an increase of char yields of the admicelled rubbers. As PS content increased, the residual content also increased. This resulted in slowing down the degradation of admicelled rubber at 194 to 378.7°C. These indicated that the admicelled rubbers were more thermostable than natural rubber.

There are many factors that can not investigate in this research work, such as the effect of PS-Mag and PMMA-Mag to the PS-NR and PMMA-NR in varies % wt. of admicelled PS-Mag and PMMA-Mag. Some of physical properties should be studied such as impact strength, tear resistance, fatigue/flexing resistance, resilience and abrasion test, etc. These methods should be further investigated.