



Chapter IV

Conclusion

The purpose of this research was to investigate whether NR-ionomers could be synthesized via sulfonation, as in the case of EPDM. That is, to obtain a material with a high melt strength and transparency which could be important to the packaging industry of Thailand, and also since the raw material is available here.

Our experimental data indicate, however, that this is not possible as a result of degradation occurring during the sulfonation. Instead of obtaining a tough material we obtained a yellow-brown sticky derivative of NR which has good adhesion properties. The failure to carry out the sulfonation successfully without having degradation as a side-reaction is most likely to favor due to the presence of a double bond in each polymer unit and also of chain scission. The complexity of the degraded material after sulfonation could not clearly be elucidated by NMR spectroscopy as very little NMR research has been performed on the chemical modification of NR.

Due to the susceptibility of NR to degrade with sulfonic reagents, it would be of interest to investigate the carboxylation of NR and then again use the same metal acetates used in this research. A comparative study between

acetates used in this research. A comparative study between these two types of chemical modification could be very interesting.