

## CHAPTER V

### CONCLUSION

In this study we can conclude that

1 The addition of NR 10 wt% together with 1-3 wt% MA compatibilizer was found to improved melt strength of LLDPE resins.

2 Addition of maleic anhydride (MA) to the LLDPE/NR blends strongly affected the melt viscosity and morphology of LLDPE/NR blends. The size of NR dispersed phase decreased with increasing MA wt% content due to a decrease in interfacial tension and an increase in interfacial adhesion between LLDPE and NR.

3 The crystalline ( $f_c$ ) and amorphous ( $f_{am}$ ) orientation were increased with increasing blow up ratio (BUR) and draw ratio (DR). The molecular orientation in chill roll cast film process was higher than blown film process due to faster cooling rate.

4 The crystalline orientation ( $f_c$ ) and amorphous ( $f_{am}$ ) were increased with increasing BUR and DR while impact strength decreased when increasing DR. Tensile strength at break for cast films and blown films in both MD and TD decreased when NR loading increased. But addition of MA compatibilizer can increase tensile strength of films due to an increase in interfacial adhesion.

5 Impact strength was improved by increasing amount of NR and MA but effect of MA amount was less pronounced than effect of NR amount. Impact strength reduced with increasing DR. It increased significantly with increasing BUR for LLDPE but not for the blends.

6 Tear resistance of films from blown film exhibited more balance between MD and TD at higher BUR. In contrast, films from chill roll cast film show much difference in MD and TD, due to the effect of molecular orientation.