

Study the Effect of Rubbery Phase on Morphology Development of PP/PA6/(EPDM:EPDM-g-MA) Ternary Blends

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Abstract : This study aimed to investigate the phase morphology of ternary blends comprising PP, PA6, and a blend of EPDM and EPDM-g-MA in a 70/15/15 ratio. Varying ratios of EPDM to EPDM-g-MA were examined. As the proportion of EPDM-g-MA increased, an interlayer phase formed between the dispersed PA6 domains and the PP matrix. This resulted in the development of a core-shell encapsulation morphology within the blends. The concentration of the EPDM-g-MA component is inversely correlated with the average size of PA6 particles. Additionally, blends containing higher proportions of the EPDM-g-MA rubbery phase exhibited an aggregated structure of the modifier particles. Notably, as the concentration of EPDM-g-MA increased from 0% to 15% in the blend, there was a consistent monotonic reduction in the size of PA6 particles.

Keywords : phase morphology, rubbery phase, rubber functionality, ternary blends

Conference Title : ICAPMT 2024 : International Conference on Advances in Polymer Materials and Technology

Conference Location : New York, United States

Conference Dates : March 18-19, 2024