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## LAYERED SILICATES CONTROLLED RHEOLOGY IN NYLON 6 – CLAY NANOCOMPOSITE

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It is important to get solid information on the network structure formed by the nano-fillers. To understand the effect of the montmorillonite (MMT) particles on the crystalline morphology of nylon 6 upon nano-composite formation, a quantitative evaluation of the network structures analyzed by the processing of images taken by TEM is done in the present study. The morphological parameters of the network structure in nylon 6 based nano-composites was analysed in this study. The slope of  $G'(\omega)$  and  $G''(\omega)$  versus the  $\omega T$  varied with the content of the filler and the slope of N6C3.7 is much gradual. Thus the formation of network structures in nylon nano-composite system is confirmed. Modeling techniques like ab-initio molecular dynamics, Monte Carlo, molecular dynamics were utilized in this study to investigate the interface motion mechanisms.