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## **Effect of Encapsulated SWNT on Mechanical Properties and Morphology of PA6/SWNT Composites**

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Styrene maleic anhydride copolymer (SMA) encapsulated single wall carbon nanotubes (SWNT) are melt-mixed with polyamide 6 (PA6) in order to disperse SWNT homogeneously with enhanced interfacial adhesion between PA6 and SWNT. The process of encapsulation by SMA copolymer leads to enhanced interfacial adhesion between PA6 and SMA modified SWNT as observed from the tensile fractured surfaces of PA6/SWNT+SMA composites. A closer inspection of fractured surfaces of SMA modified PA6/SWNT composites reveal the encapsulation process where SMA and PA6 are found to form thick layers around SWNT bundles. This observation is supported by increased values of elongation at break and tensile strength of SMA modified PA6/SWNT composites as compared to unmodified PA6/SWNT composites. The process of encapsulation leads to higher storage modulus in SMA modified PA6/SWNT composites as compared to pure PA6. An attempt has been made to establish the relationship between the morphology and mechanical properties.