

Mechanical and Thermal Properties of Polyetherimide with Nanofiller Halloysite Nanotubes

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Abstract—Poly (etherimide) nanocomposite based on halloysite nanotube has been prepared with the help of twin screw extruder. The dispersion of halloysite nanotubes has been visualized with the help of scanning electron microscopy (SEM). The thermal stability has been found to increase with increasing HNT loading. Higher enhancements have been observed at 3 phr loading of HNT in PEI matrix. It is also worth mentioning that with the increase of loading of HNTs in PEI matrix, almost all the mechanical properties such as tensile strength, tensile modulus, elongation at break, hardness etc, have been found to increase. The enhancements in mechanical properties, thermal properties and and better interfacial adhesion between the nanofiller and the polymer matrix.

Keywords: Poly (etherimide), HalloysiteNanoclay, SEM, Tensile Strength, TGA.