

This article presents the mechanical properties, fire retardancy behavior and the morphology of polypropylene/polyamide66 blends compatibilized with PP-g-MAH and modified with nanoclays. All PP/PA66 formulations modified with untreated and treated nanoclays were prepared by using internal mixer and single screw extruder followed by injection molding. Maleic anhydride polypropylene (MAH-g-PP) was used as the compatibilizer and the nanoclays content was varied between 0 and 8 wt.%. The mechanical and flammability properties of PP/PA66 nanocomposites were examined. Also the structure of PP/PA66 nanocomposites has been characterized by the Scanning electron microscopy (SEM) and the X-ray diffraction (XRD).

The obtained results indicate that the incorporation of nanoclay has a significant effect on the strength of PP/PA66 nanocomposites. Furthermore, it was found that SEM and XRD results revealed the intercalation, exfoliation of nanoclays of nanocomposites and the flame retardancy properties were improved significantly. In addition a good balance of impact strength and flame retardancy was obtained for PP/PA66 nanocomposites in the presence of PP-g-MA compatibilizer