

A study was conducted to evaluate the influence of nanoclay on the final properties of polypropylene-based nanocomposites. Polypropylene/nanoclay nanocomposites with a varied content of nanoclay ranging from 0 wt% to 11 wt% were prepared using a co-rotating twin screw extruder. The polypropylene-grafted maleic anhydride (PP-g-MA) was used as a compatibilizer to improve the dispersibility of the nanoclay. Properties and characteristics of nanoclay and PP/PP-g-MA/nanoclay nanocomposites were investigated by means of laser diffraction spectroscopy, Fourier-transform infrared spectroscopy, X-ray diffractometer, ZWICK/ROELL testing machine, capillary rheometer, thermogravimetry/differential scanning calorimetry and scanning electron microscopy. The results of morphological characterization indicated that the dispersion and the distribution of the charges are the essential characteristics likely to influence the mechanical, rheological, thermal and morphological properties of the nanocomposites. Thus, the results manifested that the incorporation of a small amount of nanoclay had a significant effect on the final properties of nanocomposites