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Elaboration of Composites with Thermoplastic Matrix Polypropylene Charged by the Polyaniline Synthesized by the Self-Curling Method

Authors : Selma Saadia, Nacira Naar, Ahmed Benaboura

Abstract : This work is dedicated to the elaboration of composites (PP/PANI) with Polypropylene (PP) as thermoplastic polymer and the polyaniline (PANI) as electric charge doped with sulfanilic acid (PANI-As). These realized formulations are intended for the antistatic domain. The used conductive polymer is synthesized by the method self-curling which proved the obtaining of the nanoparticles of PANI in regular morphological forms. The PANI and PP composites are fabricated into a film by a twin-screw extruding. Several methods of characterization are proposed: spectroscopic, thermal, and electric. The realized composites proved a pseudo-homogeneous aspect and the threshold percolation study, showed that the formulation with 7% of PANI presents a better formulation which can be used in the antistatic domain.

Keywords : extruding, PANI, Polypropylene, sulfanilic acid, self-Curling
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