

Characterizations on the effect of processing of polymers blend with petroleum coke (part I)

Abstract

Global demand for plastics has grown significantly over the past decades, and will continue to expand with rising income levels in emerging economies; a number of approaches have been used to recycle polymer waste. While chemical recycling is one of the key methods used as it recovers and reuses the polymer in high-end product; new avenues for waste recycling need to be developed. In-depth interfacial behaviour investigation was carried out to study interactions between polymers and petroleum coke (PC). Polypropylene (PP), polyethylene (PE) and polystyrene (PS) polymers are three major polymers that abundantly found in waste streams were chosen and their properties and the effect of petroleum coke presence on the degradation process of polymer have been characterized. The polymer was mixed and homogenized prior pyrolysis up to 600C. The residues yield after pyrolysis was collected and analyzed.

Keywords

Petroleum coke; Polymer degradation; Pyrolysis; Waste recycling