

CHARACTERIZATION OF POLYPROPYLENE AND POLYCARBONATE BLEND

MOHAMMED NASSER ALGHAMDI

Faculty of Mechanical Engineering, Yanbu Industrial College, Yanbu Alsinaiah, Kingdom of Saudi Arabia

ABSTRACT

Engineering plastics have unique structural properties because of its high stability and inherent characteristics. Polycarbonate is one of the engineering thermoplastic employed in several applications all over the world, yet it is very expensive when compared with commodity plastics. In order to reduce the cost of the product, polypropylene (PP) and polycarbonate (PC) were blended in specific weight ratio and the results are presented in this research work. The blends were partially miscible in nature and the properties were not improved significantly; thus, a suitable compatibilizer was used and appropriate combinations were tested to achieve the optimum compatibility. The blend was studied based on physical, mechanical and chemical properties including tensile testing, degradation and thermal behaviour and structural identification. The result showed that the composition of ~10% of PC with PP system demonstrated the best measured properties.

KEYWORDS: *Plastic, Thermoplastic blend, Composite & Polymer Blend*

Received: Feb 22, 2020; **Accepted:** Mar 15, 2020; **Published:** Apr 03, 2020; **Paper Id.:** IJPPTJUN20201