



P-3-712

**INFLUENCE OF TYPE SUFACTANTE ON MECHANICAL PROPERTIES OF NANOCOMPOSITES
HDPE/CLAY NATIONAL**

Ariana Sá Dantas Wanderley Ariana, Sara Verusca de Oliveira Sara, Edcleide Maria Araújo Edcleide, Ariana Sá Dantas Wanderley

Departamento de Ciências e Engenharia de Materiais, Universidade Federal de Campina Grande

The mechanical and physical properties of polymeric materials have been improved with the use of organoclays in the production of nanocomposites. The polymeric nanocomposites are materials that exhibit a change in composition at the nanometer scale (1-100) and feature attractive due to very favorable combinations like strength and toughness, plus an improved optical, electrical, thermal and barrier, and reduction flammability of the resins employed. Nanocomposites may include polymer matrices such as polyethylene, epoxy resin, polyamide, and others. The objective of this research is to produce nanocomposites of polymer matrix-type HDPE (High Density Polyethylene) with abundant smectite clays in the region of Paraíba. The organoclay is obtained at the Laboratory of Engineering Materials-UFCG through chemical treatment with quaternary ammonium salts. Will be used 3 wt% organoclay in the polymer matrix. For the preparation of nanocomposites, will be obtained initially concentrated using a high speed mixer and then the nominal rate will be dispersed in a twin screw extruder corrotacional. The extruded pellets are injection molded. The nanocomposites are characterized by mechanical properties and thermogravimetry. It was observed that the tensile strength increases for the nanocomposites compared to pure HDPE matrix was verified by means of thermogravimetric curves that probably the organoclay acted as a barrier to providing greater thermal stability nanocomposite.