

# STUDY OF PROPERTIES OF SOME POLYETHYLENE-CLAY NANOCOMPOSITES: INFLUENCE OF PREPARATION METHOD ON THE DEGREE OF CLAY INTERCALATION/EXFOLIATION

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**Abstract.** New nanocomposites based on high density polyethylene (HDPE) and organically modified nanoclay (Cloisite 20A) were obtained by two different methods, namely melt compounding and solution blending, and their properties were comparatively studied by XRD, DSC, POM and SEM in order to establish the dependence of the clay degree of exfoliation/intercalation on the preparation procedure. Nanocomposites prepared in molten state under shear stress were found to possess the most extensive dispersion of nanometric clay particles and high levels of exfoliation.

**Keywords:** polymer-clay nanocomposites, preparation, properties, exfoliation, intercalation.