

# **PHYSICAL-MECHANICAL AND RHEOLOGICAL PROPERTIES OF COMPOSITES BASED ON THERMOPLASTIC AND NANODIAMONDS**

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Nanocomposites based on polyamide, polypropylene and nanodiamonds of detonation synthesis prepared by melt mixing in “spurt” regime - in strong shear flow where elastic turbulence takes place. Rheological properties of nanocomposites melt under shear and at small amplitude harmonic oscillation were investigated. Viscosity and dynamical modules essentially increased with rising of ND content. Mechanical properties (tensile strength, Young’s modulus, impact strength, hardness) of the composites significantly improved. Introduction of nanodiamonds into polymers increase their flame resistance and chemical resistance to some aggressive media.