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Nanodispersion of polystyrene with the use of the method of supercritical fluid anti-solvent

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Abstract

Analysis of the present methods of materials dispersion with the help of supercritical fluid media has been made. Potentiality of the use of the method of supercritical fluid anti-solvent for dispersion of polymers to nano-sizes has been proved. Description of experimental stand which allows to realize the method of SAS (*Supercritical Anti-Solvent*) has been given. The authors' approach designed for and allowing to catch nanoparticles has been described. The results of polystyrene dispersion carried out for the system "toluene – polystyrene – supercritical carbon dioxide" in the pressure range 8.0-20 MPa at T = 313K have been given. The range of measuring the sizes of the obtained nanoparticles is characterized by values of 10-150 nm.