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Possibilities of synthesis monodisperse nanoparticles of latex based on Vinyl Monomers**A.A. Hovhannisyan¹, G.K. Grigoryan¹, N.H. Grigoryan¹, A.G. Nadaryan¹**¹*The Scientific Technological Center of Organic and Pharmaceutical Chemistry NAS RA, Yerevan, Armenia*

Reproducible synthesis of latexes with a specific particle size is one of the urgent problems of modern polymer chemistry. Monodisperse latexes are especially valuable in immunological diagnostics of a wide variety of diseases. The main method for producing latexes is polymerization in a nano dispersed monomer-water system (emulsion polymerization). However, the regulation of the diameters of the size of latex particles is so far possible only by empirical selection of the components of the emulsion system. This report demonstrates the results of studying the topology of nucleation and formation of latex particles and methods for regulating their sizes when polymerization is carried out in a heterogeneous static monomer - water system. The selectivity of immunodiagnostic latexes depends on the chemical structure of the latex particle surface. The surface of latex particles is covered with layers of emulsifier during emulsion polymerization, and this greatly complicates the possibility of changing its structure. The report presents the results of the synthesis of monodisperse latexes without the use of emulsifiers, which makes it possible to change the chemical composition of the particle surface by changing the nature of the monomer. Methyl methacrylate, styrene and vinyl acetate were used as monomers. The report also demonstrates electron microscopic photographs of latexes and indicates ways of regulating their diameters.

Biography

A.A. Hovhannisyan received his doctorate at the age of 31 from the Moscow Technical Institute of Fine Chemical Technologies. Doctor of Chemical Sciences, Professor. Leading Researcher at the Laboratory of Polymer Dispersions. Author more than 90 papers in reputed journals and a monograph titled "The Theory of Emulsion Polymerization". Editorial Board member for the Evolution in Polymer Technology Journal.