

Dynamic light scattering investigation of PNIPAM-co-MAA microgel solution

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The paper presents results of a study of the effect of the environment temperature and pH on the size of particles based on poly N (isopropylacrylamide) chain. The tested substance was the copolymer PNIPAM-co-MAA. The particle size measurements were performed by dynamic light scattering. It was found that the copolymer tested reacts specifically to temperature increase by shrinking more than two times. Important for stabilization of the structure are the chemical groups -COOH present in methacrylic acid that undergoes dissociation. Gradual increase in temperature results in a decrease in the dissociation constant, in binding of protons and thus causes shrinkage of the entire particle. It was also shown that PNIPAM-co-MAA in high concentrations undergoes crystallization.