

AMINOSILICA NANO- AND SUBMICROSPHERES: ANALYSIS OF FACTORS INFLUENCING MORPHOLOGY, STRUCTURE AND PROPERTIES

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Abstract. Current paper focuses on the analysis of influence of main factors (stages of the synthesis, the ratio of the reacting components, the order of their introduction, the concentration of water and ammonia, the synthesis temperature) on the morphology, size and content of functional groups of aminosilica nano- and submicrospheres. The recommendations for the synthesis of particles with predetermined properties were done. It is shown, that the ratio of the reacting components mainly affects the content of 3-aminopropyl functional groups and the temperature of the hydrolytic polycondensation reaction - the size of the particles.

Keywords: silica nanoparticles and submicrospheres, aminopropyl groups, Stöber method.