

A NEW METHOD OF SYNTHESIS SMALL DISPERSED PARTICLES IN LOW TEMPERATURE PLASMA

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In this work a new method of synthesis small dispersed particles in the plasma of combined discharge was presented. The method is based on two processes: synthesis of polydisperse particles in the plasma of arc discharge and extraction of small dispersed synthesized particles from dusty plasma of radio-frequency discharge. Cathodic arc deposition method was used for evaporating graphite cathode and forming a dust structure of polydisperse microparticles in the plasma of radio-frequency (RF) discharge. The technology of extraction of small dispersed microparticles is well described in [1-3].

Obtained samples were analyzed by using scanning electron and probe microscopies. It was found, that the diameter of synthesized polydisperse graphite microparticles before extraction process was in range of 1-100 μm . Then, the average diameter of graphite microparticles after extraction was equal to 5 μm . The Raman spectra and X-ray fluorescence analysis show that obtained samples do not contain impurities.

The advantage of proposed method is the simplicity of technology for obtaining small dispersed microparticles of different materials, including their composites.

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3. D. G. Batryshev , T. S. Ramazanov, M. K. Dosbolayev, M. T. Gabdullin, S.A. Orazbayev, *News NAS RK*, 2014; No. 2, P. 145.