

Residual charges on the microparticles after a direct current discharge turn-off in the “Plasma Kristall-4” facility

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Residual charges on the 3.38 μm microparticles remained after direct current discharge turn-off were measured by the analysis of the cloud expansion. The experiment was performed in frame of 10th experimental campaign of the “Plasma Kristall-4” experiment. The microparticle velocities and accelerations were determined from the particle tracks measurements. We assume that radial electric field in the discharge tube was determined by the volume charge retained on the microparticles, when free electrons and ions were lost. The residual charges were depended on the position of a particle in the cloud and reached 900 elementary charges near the cloud boundary.