

The creation of double dust structures in inhomogeneous dust traps in a glow discharge in neon

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The conditions for obtaining double dust structures in neon in a stratified glow discharge were studied in this work. The volumetric dust trap which has a nonuniform distribution of the electric field, concentration, and energy of electrons was used for creation of double dust structures. The calibrated melamine-formaldehyde particles of two sizes: 5.2 and 8.2 μm in diameter (with a mass ratio of 4) were injected in the discharge. It is allowed to fill the trap throughout the volume. As a result, the double dust structure was obtained in the different regions of the same stratum, where the upper and lower areas were filled with 5.2 μm and 8.2 μm particles correspondingly. The report gives the geometric dimensions of the structures, their location relative to the stratum phase, and interparticle distances.

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