

FORMATION OF DUSTY STRUCTURES IN SPHERICAL GLOW DISCHARGE

A.I. Scherbina, S.V. Burdyukh

Petrozavodsk State University,
Research and Educational Center on Basic Problems
of Application of Low Temperature Plasma Physics
(10, Universitetskaya Str., Petrozavodsk 185910, Russia;
e-mail: burduch@onego.ru, dusty@plasma.karelia.ru)

S u m m a r y

We study, for the first time, plasma-dust structures in the spherical geometry of a discharge, which are formed either spontaneously or specially. High molecular gases, such as acetone and ethyl alcohol, are used for the generation of strata. Strata are required for the formation of structures of injected grains. The generation of grains in air plasma occurs spontaneously, and a structure is formed around the anode, when strata are not observed. Experiments were carried out in the range of pressures 30-100 Pa at a discharge current of 20–30 mA. To control the chemical composition of the gas environment, mass-spectrometry is used.