

MODELING OF HEATING AND ACCELERATION OF NANOPARTICLES IN A PLASMA JET

The heating of dust nanoparticles in a plasma jet and its effect on their velocity are studied using the computer simulation. It is shown that at plasma pressures at the inlet $p=1-100$ Torr dust particles are strongly heated in the plasma, and the temperature of the dust particles depends on their radius and plasma density. In the case of a rarefied plasma, small particles acquire a higher temperature, and in the case of a denser plasma the temperature of larger particles is higher. The latter effect is associated with the significant role of energy exchange of dust particles with neutral atoms in the case of a denser plasma and small particles.

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Track Classification: Plasma Physics