

A Monte Carlo Simulation for the Ion Transport in Glow Discharges with Dusts

SUN Ai-Ping, PU Wei and QIU Xiao-Ming

Southwestern Institute of Physics, P.O. Box 432, Chengdu 610041, China
(Received: 1999-12-22; Revised: 2000-3-21)

Abstract: We use the Monte Carlo method to simulate the ion transport in the rf parallel plate glow discharge with a negative-voltage pulse connected to the electrode. It is found that self-consistent field, dust charge, dust concentration, and dust size influence the energy distribution and the density of the ions arriving at the target, and in particular, the latter two make significant influence. As dust concentration or dust size increases, the number of ions arriving at the target reduces greatly.

PACS: 52.25.Fi, 52.25.Vy, 52.65.+z, 52.90.+z

Key words: glow discharge plasma, ion transport, dusts, Monte Carlo techniques

[\[Full text: PDF\]](#)

Close