

Abstract Submitted
for the GEC11 Meeting of
The American Physical Society

Monte Carlo simulations of breakdown in radio-frequency discharges MARIJA SAVIC, MARIJA RADMILOVIC-RADJENOVIC, ZORAN LJ. PETROVIC, Institute of Physics, University of Belgrade, Pregrevica 118, POB 68, 11000 Belgrade — The mechanism of gas breakdown in radio-frequency electric fields represents a topic of fundamental and practical importance in the field of low-temperature plasma physics and applications. Although, a number of groups have performed experimental, modeling and theoretical studies in this area, many aspects are insufficiently explored even at the present day. This work represents the investigation of the effect of the various parameters (pressure, gap size, frequency,) on the breakdown voltage in rf argon discharges. Calculations were performed by using a Monte Carlo code with simulation conditions based on the experimental conditions. The obtained simulation results are in a good agreement with the available experimental data. We have analyzed double valued breakdown curves, the role of drift, diffusion and ionization in achieving balance of charged particles and the role of ions on the breakdown in rf regime.

Marija Savic
Institute of Physics, University of Belgrade,
Pregrevica 118, POB 68, 11000 Belgrade

Date submitted: 20 Jul 2011

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