Abstract Submitted
for the GEC12 Meeting of
The American Physical Society

Kinetics of Electrons in H_2O at High Values of Reduced Electric Field[1] ZORAN PETROVIC, JELENA SIVOS, DRAGANA MARIC, NIKOLA SKORO, VLADIMIR STOJANOVIC, Institute of Physics, University of Belgrade, P.O.BOX 68 11000 Belgrade, Serbia — In this work we present electron transport coefficients in H_2O for the conditions used in plasma assisted technologies. Monte Carlo technique, already used for similar discharges in nitrogen, argon and hydrogen is used to obtain transport parameters for a range of reduced electric field values (E/N=100-10 kTd). In this work we focus on anisotropic scattering of electron transport and its effects on spatially resolved emission. Agreement with experimental data for electron drift velocity and effective electron ionization for the conditions of moderate E/N allowed us to study production of heavy particles and subsequently spatial emission as a consequence of their transport.

[1]Results obtained in the Laboratory of Gaseous Electronics Institute of Physics University of Belgrade under the auspices of the Ministry of Education and Science, Projects No. ON171037 and III410011.

Zoran Petrovic
Institute of Physics, University of Belgrade,
P.O.BOX 68 11000 Belgrade, Serbia

Date submitted: 18 Jun 2012 Electronic form version 1.4