

Abstract Submitted
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Kinetics of electrons in BF_3 O. ŠAŠIĆ, Z. L.J. PETROVIĆ, Z. RASPOPOVIĆ, Institute of Physics, POB 68, 11080 Zemun, Belgrade, Serbia and Montenegro, L. GODET, S. RADOVANOV, Varian Semiconductor Equipment Associates, Gloucester, MA01930, USA — We have used the available data for electron scattering cross sections for electrons in BF_3 to calculate the transport coefficients for electrons. Monte Carlo simulation was used to perform calculations for a broad range of E/N for DC and RF fields. Even though the drift velocity does not show the negative differential conductivity (NDC), the shape of the cross sections is such that it supports the NDC so the drift velocity has a broad plateau from 20 Td to 80 Td. The diffusion is very anisotropic with D_T/D_L ratio of up to 4. One may expect the kinetic phenomena that were observed for other gases with Ramsauer Townsend minimum and large vibrational cross sections to take place. These calculations will be taken as the basis for interpretation or modelling of electron kinetics in pulsed plasma sources of ions for implantation during the glow and afterglow periods.

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