

Abstract Submitted
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Low-pressure breakdown in fluorocarbon gases DRAGANA MARIĆ, NIKOLA ŠKORO, GORDANA MALOVIĆ, MARIJA RADMILOVIĆ-RADJENOVIĆ, ZORAN PETROVIĆ, Institute of Physics Belgrade, Serbia — Fluorocarbon plasmas are typically considered for applications in plasma etching and therefore systems operating in rf fields are studied. However, one needs a lot of information from the basic dc discharges and gas breakdown in order to understand and test the kinetics of secondary electron production at electrodes and to describe the non-local electron kinetics in the cathode fall. We will present experimental and modelling results of breakdown and low current discharge properties obtained for fluorocarbons CHClF_2 , CF_4 and CF_4 -Ar mixtures, in the range of pressures from 100 mTorr to 1 Torr. Experimental measurements in the pulsed mode of operation were used to obtain the basic experimental data especially the spatio-temporal profiles of emission obtained by using ICCD. Particle in cell (PIC) code which includes proper description of secondary electron yield [1] was used to obtain the theoretical data and properties of low current discharges. In addition, we have used a standard Monte Carlo Code [2] to study the non-hydrodynamic region close to the cathode and also the effective electron multiplication coefficients. [1] Radmilović-Radjenić, J. K. Lee, F. Iza and G. Y. Park, *J. Phys. D*, **38** (2005) 950. [2] G. Malović, A. Strinić, S. Živanov, D. Marić and Z. Lj. Petrović, *Plasma Sources Sci. Technol.* **12** (2003) S1.

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