

Abstract Submitted
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Modeling of the Ion Induced Secondary Electron Emission in RF PLASMAS with the PIC/MCC Method ZORAN PETROVIC, ALEKSANDAR BOJAROV, MARIJA RADMILOVIC-RADJENOVIC, Institute of Physics POB 68 11080 Zemun Serbia — The effect of the secondary emission process on the characteristics of rf plasmas has been studied with PIC/MCC simulations with precise model of the ion-induced secondary electron production. Simulations were performed for a dual-frequency capacitively coupled plasma by using 1d3v PIC/MCC code [1]. In the model, as suggested by Phelps and Petrovic, the energy dependence of the yields per ion for differently treated metal surfaces have been implemented [2,3]. We have compared results for yields for the so called “dirty” and “clean” surfaces and observed the spatial profiles of charged particles and ion energy distributions. The obtained simulation results indicate that the plasma characteristics are greatly affected by the secondary emission, changing the overall parameters of dual-frequency CCP reactors especially in applications as etching devices. Overall conclusion may be that in modeling CCP an exact model of the secondary electron emission should be included, as to ensure better agreement between simulation and experiment. [1] J. P. Verboncoeur, *Plasma Phys. Control. Fusion*, 47, A231, 2005. [2] A. V. Phelps and Z. Lj. Petrovic, *Plasma Sources Sci. Technol.*, 8, R21, 1999. [3] M. Radmilovic-Radjenovici and Z. Lj. Petrovic, *Europ. Phys. J.*, D 54, 445, 2009.

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