

Abstract Submitted  
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**2D PIC/MC simulations of electrical asymmetry effect in capacitive coupled plasma**<sup>1</sup> QUAN-ZHI ZHANG, School of Physics and Optoelectronic Technology, Dalian University of Technology, WEI JIANG, School of Physics, Huazhong University of Science and Technology, YOU-NIAN WANG, School of Physics and Optoelectronic Technology, Dalian University of Technology — Recently a so-called electrical asymmetry effect (EAE), which could achieve high-degree separate control of ion flux and energy in dual-frequency capacitively coupled plasmas, was discovered theoretically by Heil et al. and was confirmed by experiments and theory/numerical simulations later on. However, since there always is a bigger grounded surface area for experiment devices, which reduces the geometrical symmetry, and all the simulations were limited to 1D before, it is, thus, worth studying the EAE when coupling the electrically and geometrically asymmetric discharges theoretically. Here, we perform 2D PIC/MC simulations, which can include both electrically and geometrically asymmetric factors. The EAE on plasma parameters, such as dc self-bias voltage, density profiles, ion energy distribution and power absorption of electron have been examined for different pressures and geometry conditions.

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