

Abstract Submitted
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A global model of a dual frequency capacitive discharge considering the nonlinearity of the sheath and a bulk-chemistry PHILIPP MERTMANN, THOMAS MUSSENBROCK, RALF PETER BRINKMANN, PETER AWAKOWICZ, Ruhr-University-Bochum, INSTITUTE FOR PLASMA TECHNOLOGY TEAM, INSTITUTE FOR THEORETICAL ELECTRICAL ENGINEERING TEAM — A global model of a capacitive coupled low pressure plasma which considers the nonlinear behavior of a boundary sheath and a bulk chemistry, excited by two frequencies is developed. On the basis of certain assumptions the global model for the plasma bulk is derived. The bulk model, which can be solved for its own, is combined with a sheath model to get a self-consistent global model. By that, not the bulk power but the radio frequency voltages over the whole discharge are input parameters of the model, which is close to the experiment. Results for different voltages of the two frequencies and a variation of the pressure are presented.

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