Title:	Modeling of planar plasma diode
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Abstract:	To investigate the dynamics of a planar plasma diode system (PDS), a model based on the current density equilibrium at the interface was developed. The current densities and plasma boundary variations with the potential fields were obtained by simulating a single square pulse. The variation of an observed overshoot current density with the applied voltage is presented. Planar plasma diode system was also simulated for periodic, sine, square, triangular and saw tooth voltage patterns by varying the amplitude and frequencies. A method to find the lower bound of the electron density of plasma for a specified PDS is presented. Particle-In-Cell simulation technique was used to investigate the plasma particles and electric field distributions over the anode cathode gap for different intensities of external electric fields. The system became stable after few time steps and this time depends upon the intensity and polarization of the external field.