Figure 6

Measured normalized spatio-temporal plots of the emission of the 706.5 nm He I line (top row) and spatio-temporal plots of the electron-impact excitation rate from the He I ground state into the He I (3s)3S1-state obtained from the simulations (bottom row). Results are shown for diﬀerent ﬂows of N2 at a constant He ﬂow of 1 slm (columns). The powered electrode is situated at x = 0, while the grounded electrode is located at x = 1 mm. Discharge conditions: 13.56 MHz, 315 V. In the simulation the ion induced SEEC is set to 0.1, 0.3, and 0.2 for N+ 2 , He+, and He+ 2 ions, respectively, and the electron reﬂection probability at the electrodes is 50%.Experimental data are marked as exp

Simulation data are marked as sim

x [t/TRf] , y[mm]

(Figure6a-6c): exp Exc rate [a. u.] emission of 706.5nm line for 0.5sccm, 2.5sccm and 5sccm respectively

(Figure6d-6f): sim Exc. Rate [a. u.] electron-impact excitation rate from the He I ground state into the He I (3s)3 S1-state for 270V, 315V and 355V respectively