Electron Heating Mechanisms in Helium rf Glow Discharges: A Self-Consistent Kinetic Calculation

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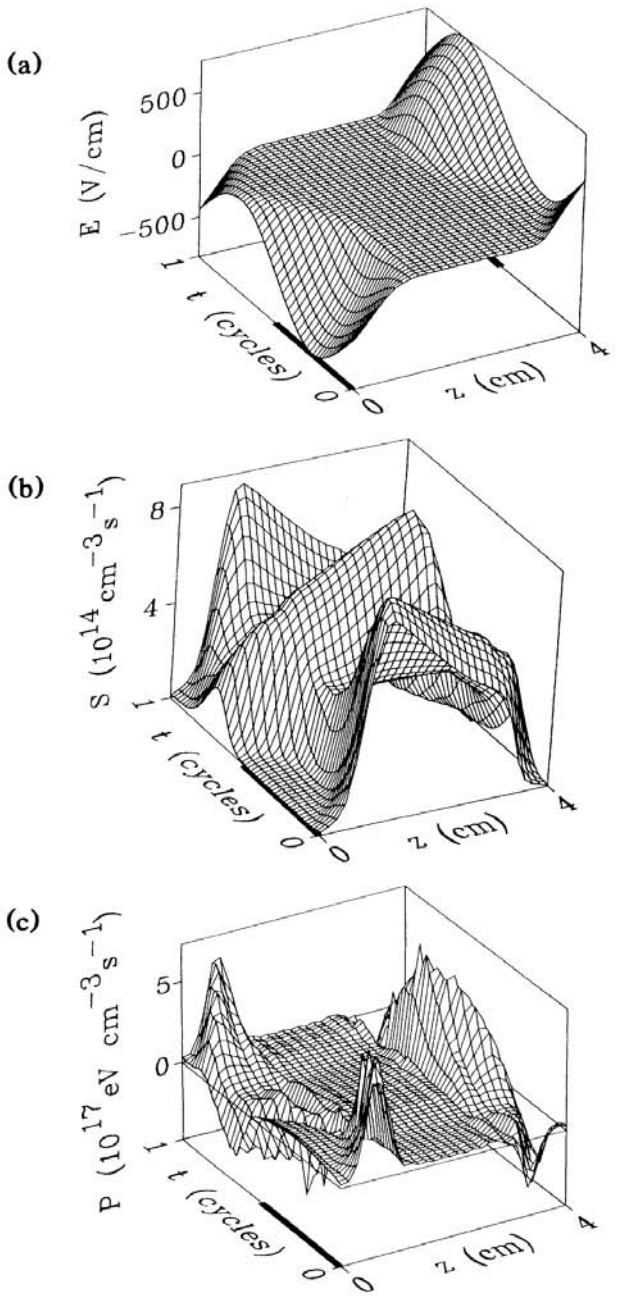

FIG. 1. Benchmark run: (a) electric field $E(z,t)$, (b) primary ionization rate per unit volume $S(z,t)$, and (c) power deposition into the electrons $P(z,t) = -n_e |e| E_z \langle v_z \rangle$, over one rf cycle $T = 7.375 \times 10^{-8}$ s. The heavy portions of the $z = 0$ and $z = 4$ cm lines indicate parts of the rf cycle where the corresponding electrode is cathodic.

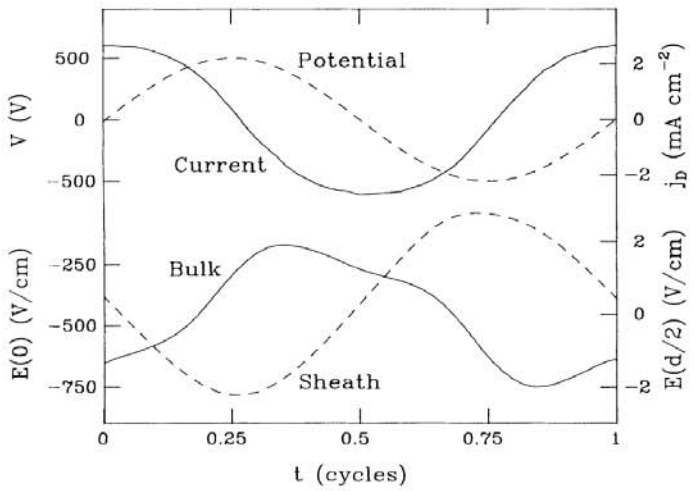

FIG. 2. The applied potential, discharge current, electric field at the $z = 0$ electrode, and bulk electric field ($z = d/2$) of the benchmark discharge over one rf cycle T.