Abstract Submitted
for the GEC06 Meeting of
The American Physical Society

Striations in a low pressure RF-driven argon plasma W.J.M. BROK, H.C.J. MULDERS, W.W. STOFFELS, Eindhoven University of Technology, The Netherlands — In experiments we observed spatially periodic modulations of the light emitted by an argon plasma in a tube of 30 cm length and 2.5 cm radius. The plasma is capacitively excited by RF electrodes positioned towards the ends of the tube. The argon pressure is approximately 2 Torr. We studied the space and phase dependence of the light emitted by the spheroidally shaped striations. Temporal phase-shifts within one striation were clearly visible. Furthermore, a simple model of the electric field modulation inside the tube was used in conjunction with a Monte Carlo model in order to study the electron kinetics in the tube. The excitation rates resulting from this model are compared with the measurements.

W.J.M. Brok
Eindhoven University of Technology

Date submitted: 16 Jun 2006 Electronic form version 1.4