

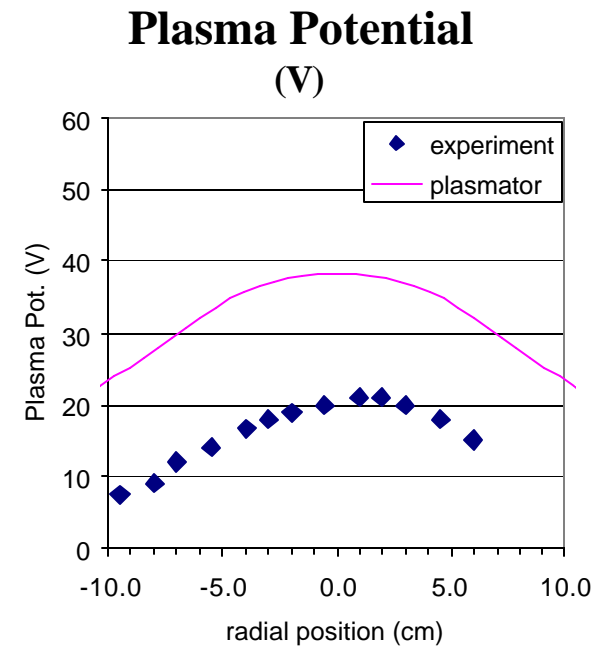
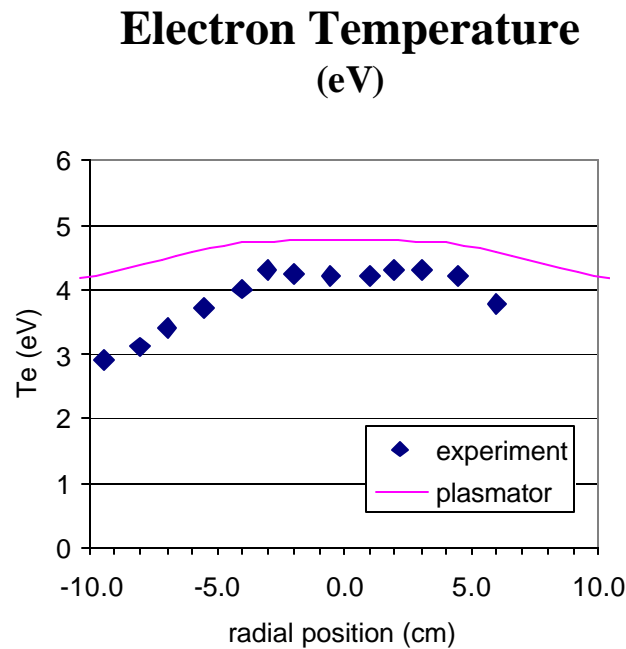
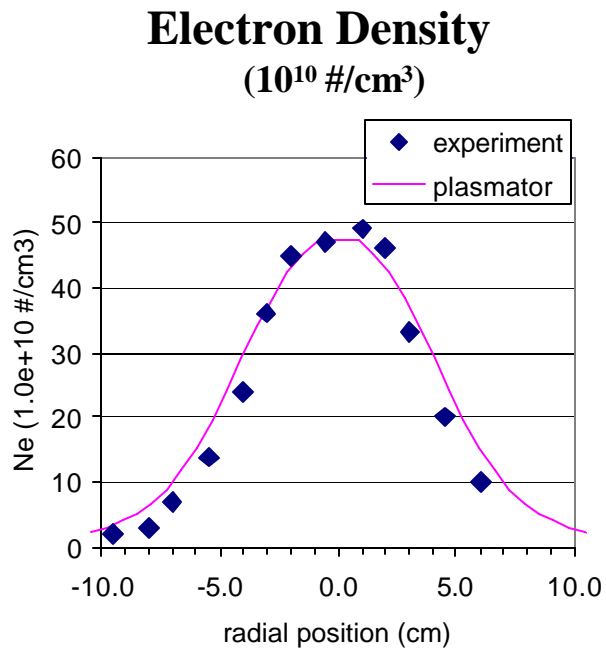
PLASMATOR VALIDATIONS

SET 1



CODE VALIDATION: ICP Discharge

GEC Reference Cell, Ar ICP Discharge*

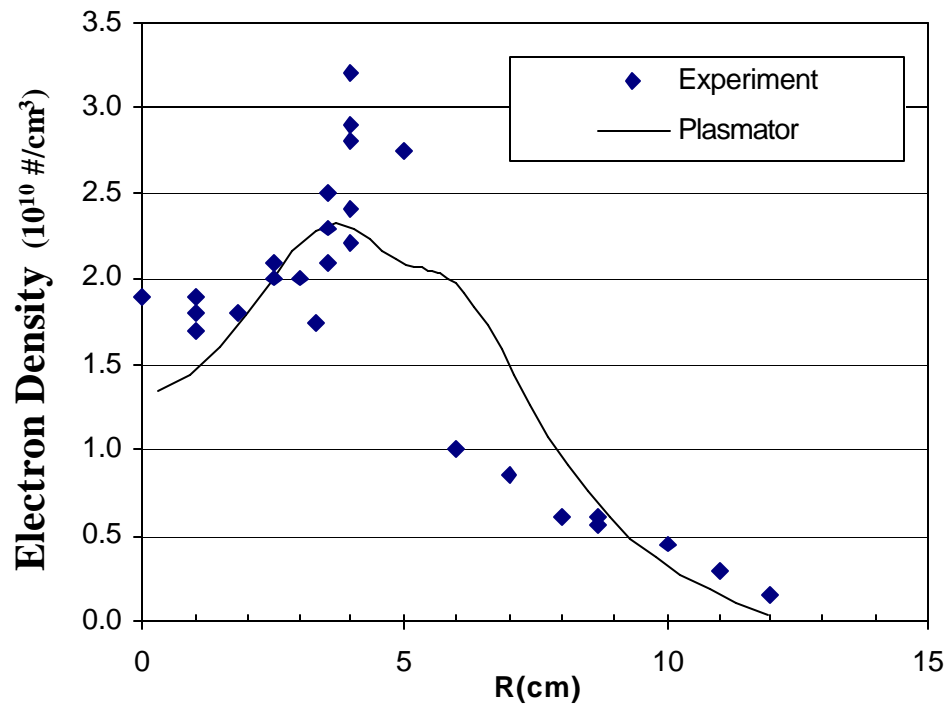


Flow Parameters:
20 sccm Ar
10 mTorr
150 W ICP

*P.A. Miller and G.A. Hebner, J. Res. Natl. Stand. Technol. **100**, 427 (1995)

CODE VALIDATION: CCP Discharge

GEC Reference Cell, Ar CCP Discharge*

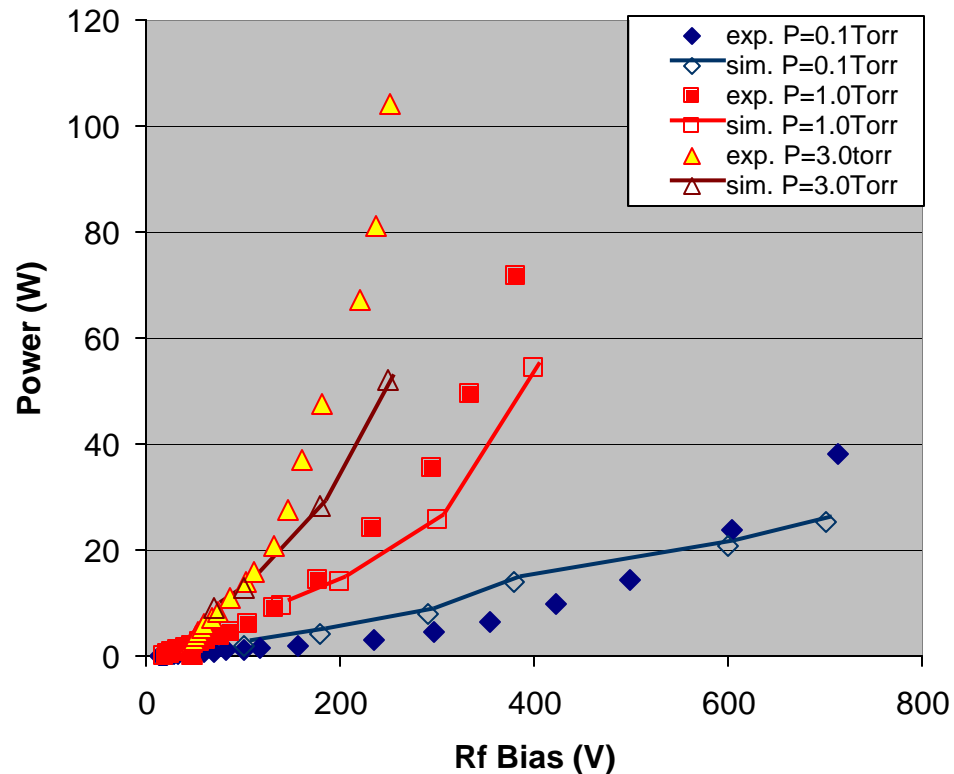


Flow Parameters:
20 sccm Ar
100 mTorr
100 V ac bias

*L.J. Overzet and M.B. Hopkins, Appl. Phys. Lett. **63**, 2484 (1993).

CODE VALIDATION: CCP Discharge

Symmetrically Driven CCP Reactor, Ar Chemistry



Flow Parameters:

20 sccm Ar

P = 0.1 - 3.0 Torr

Powered Electrodes:

13.56 MHz

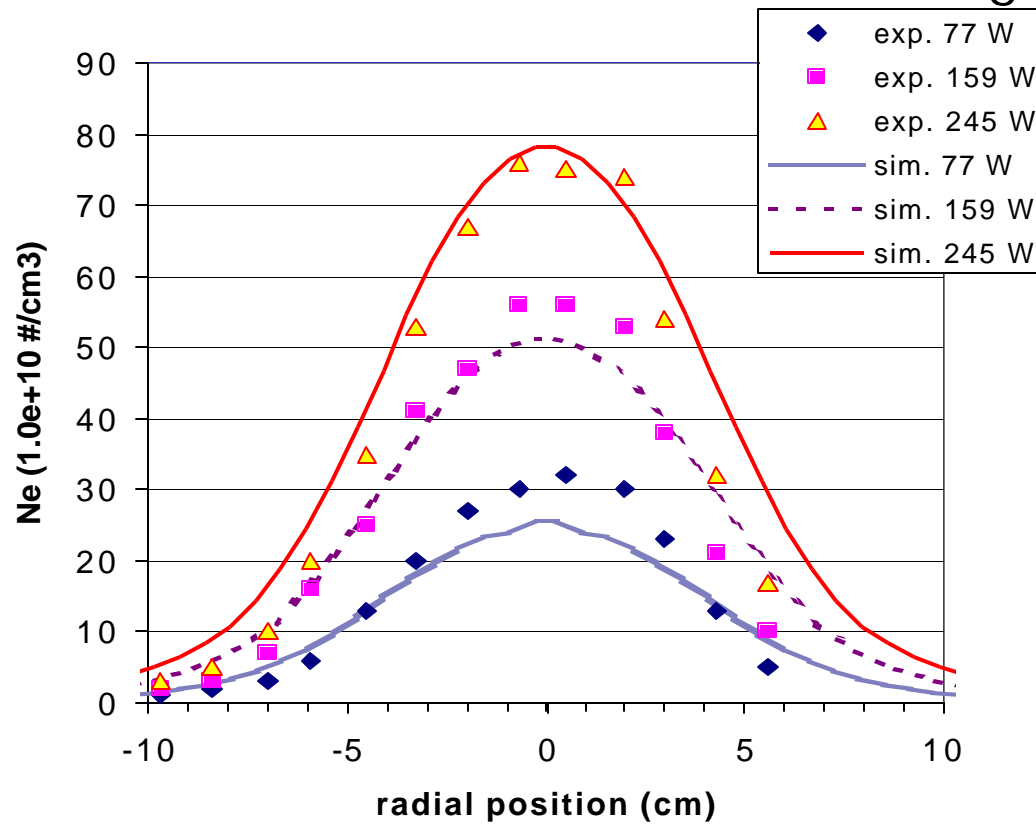
180° out of phase

Vrf : 100 - 400 V

*V. A. Godyak, R. B. Piejak, B. M. Alexandrovich, IEEE Trans. Plasma Sci., 19 (4), 660 (1991).

CODE VALIDATION: Power Variation

GEC Reference Cell, Ar ICP Discharge



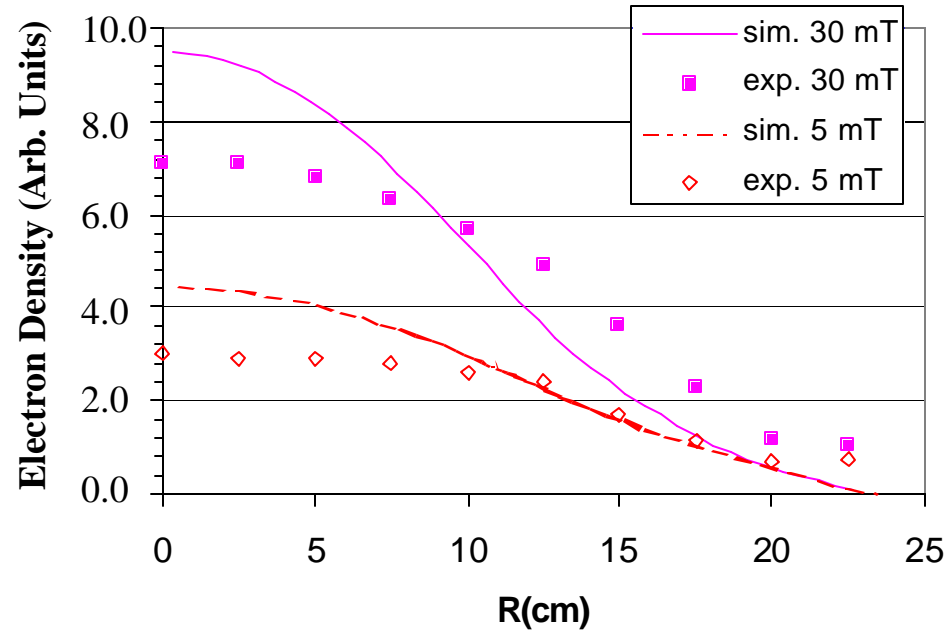
Flow Parameters:
20 sccm Ar
10 mTorr
77-245 W ICP

*P.A. Miller and G.A. Hebner, J. Res. Natl. Stand. Technol. **100**, 427 (1995)

CODE VALIDATION: Pressure Variation

Production Reactor, Ar ICP Discharge with Wafer Bias

Electron Density vs. Pressure



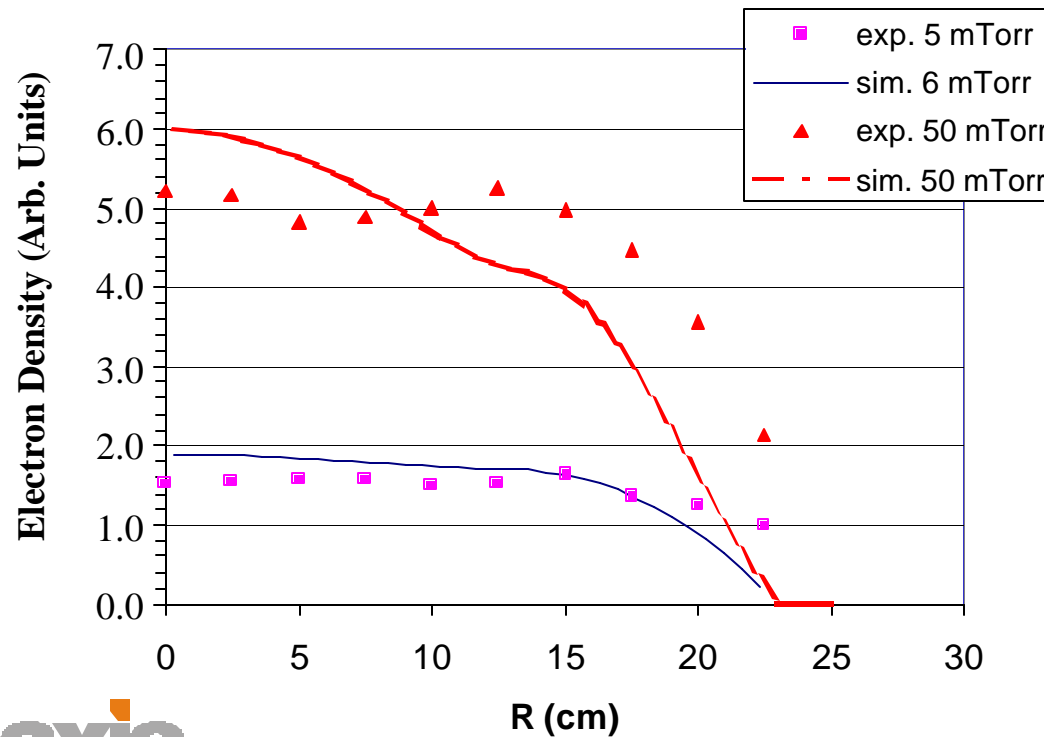
Flow Parameters:
50 sccm Ar
750 W ICP
250 W CCP

*Data courtesy of 
unaxis

CODE VALIDATION: Pressure Variation

Development Reactor, Ar ICP Discharge

Electron Density vs. Pressure



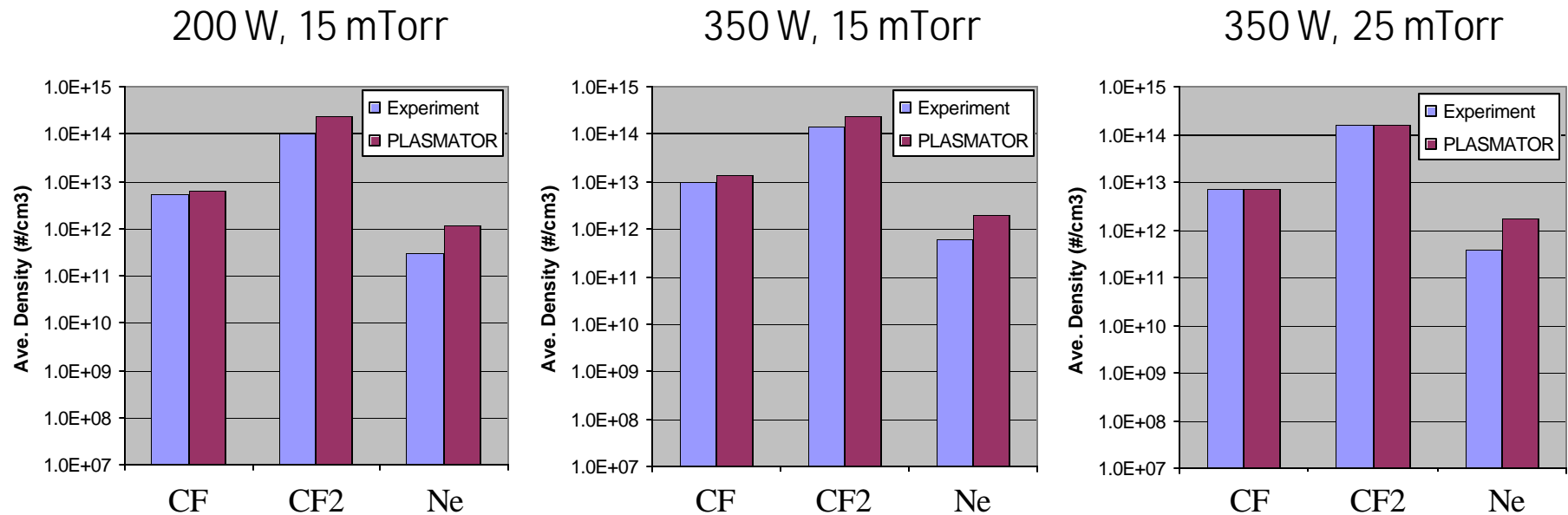
Flow Parameters:
50 sccm Ar
1000 W ICP
0 W CCP

*Data courtesy of



CODE VALIDATION: Power and Pressure Variation

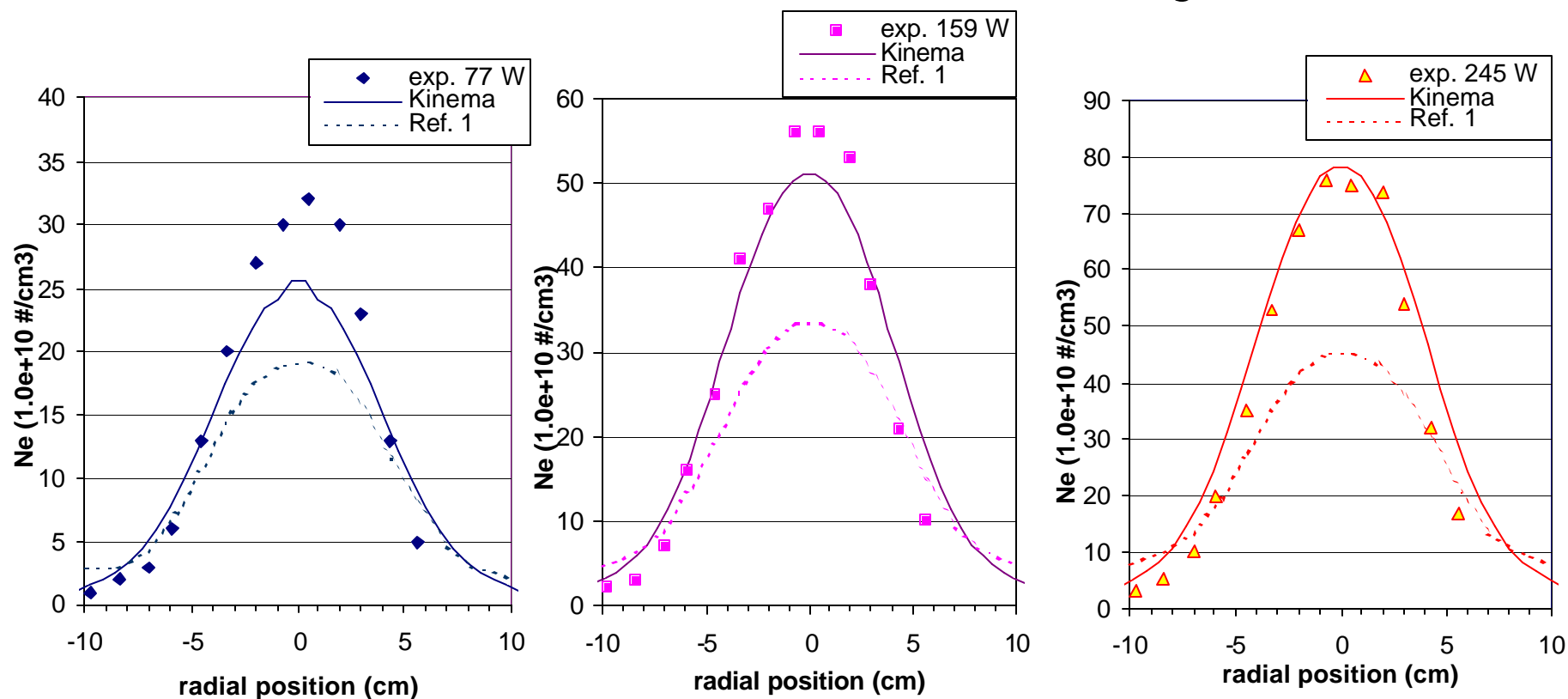
GEC Reference Cell, C₄F₈ ICP Discharge*



* Measurements courtesy of Karla Waters & Harold Anderson at the University of New Mexico

CODE VALIDATION: Power and Cross-Section Data Variation - Improved Cross Sections Produce Better Results

GEC Reference Cell, Ar ICP Discharge



¹L.R. Peterson & J.E. Allen Jr., J. Chem. Phys. **56**, 6068 (1972)

Flow Parameters: 20 sccm Ar, 10 mTorr, 77-245 W ICP

