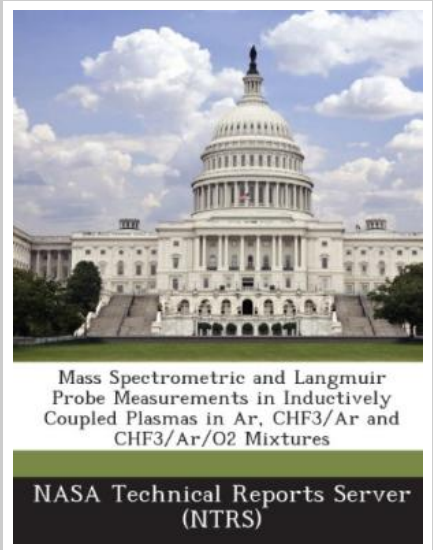

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Mass Spectrometric and Langmuir Probe Measurements in Inductively Coupled Plasmas in AR, Chf3/AR and Chf3/AR/O2 Mixtures

By -

Bibliogov, United States, 2013. Paperback. Book Condition: New. 246 x 189 mm. Language: English . Brand New Book ***** Print on Demand *****.Absolute fluxes and energy distributions of ions in inductively coupled plasmas of Ar, CHF3/Ar, and CHF3/Ar/O2 have been measured. These plasmas were generated in a Gaseous Electronics Conference (GEC) cell modified for inductive coupling at pressures 10-50 mTorr and 100-300 W of 13.56 MHz radio frequency (RF) power in various feedgas mixtures. In pure Ar plasmas, the Ar(+) flux increases linearly with pressure as well as RF-power. Total ion flux in CHF3 mixtures decreases with increase in pressure and also CHF3 concentration. Relative ion fluxes observed in the present studies are analyzed with the help of available cross sections for electron impact ionization and charge-exchange ion-molecule reactions. Measurements of plasma potential, electron and ion number densities, electron energy distribution function, and mean electron energy have also been made in the center of the plasma with a RF compensated Langmuir probe. Plasma potential values are compared with the mean ion energies determined from the measured ion energy distributions and are consistent. Electron temperature, plasma potential, and mean ion energy vary inversely with pressure, but increase with CHF3 content in...

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