

Abstract Submitted
for the DAMOP07 Meeting of
The American Physical Society

Measurements of Electron Temperature and Density, in an AC Pulsed Oxygen Plasma Discharge FAROOK YOUSIF, Facultad de Ciencias, Universidad Autónoma del Estado de Morelos (UAEM)., HORACIO MARTINEZ, Instituto de Ciencias Fisicas Universidad Nacional Autonoma de Mexico, FERMIN CASTILLO, Instituto de Ciencias Nucleares Univeridad Nacional Autonoma de Mexico — Emission and analytical spectroscopy was applied to investigate O₂ plasma, which was generated by an AC discharge between 0.15 and 0.5 Torr pressure. For the diagnostic study, a double Langmuir probe was employed. The derivation of plasma parameters is based on a theoretical description of the double-probe current-voltage characterization in the Thick Sheath Limit (TSL) region [1]. Electron temperature of $T_e = 1.09$ eV and an ion density of $n_i = 2.08 \times 10^{10}$ cm⁻³ were evaluated at 2 Torr. We present electron temperature and ion density as a function of the pressure at 3 different power discharge levels. Also we present emission spectroscopy in the wavelength range of 200-1100 nm as a function of the pressure.

[1] J.D. Swift and J. R. Schwar, Electric Probes for Plasma Diagnostics (New York: Elsevier) 1971.

Farook Yousif
Facultad de Ciencias, Universidad Autónoma del Estado de Morelos (UAEM).

Date submitted: 06 Feb 2007

Electronic form version 1.4