

## Abstract

Gaseous Electronic conference (GEC) reference cell is designed for radio frequency plasma generation. Optical emission spectroscopy (OES) is being used to investigate electron temperature ( $T_e$ ) and electron number density ( $n_e$ ) in pulsed DC Ar plasma. The electron temperature and electron number density is calculated as a function of the pressure and current density. Boltzmann plot method is used for the estimation of the electron temperature and electron number density is calculated using McWhirter's criteria  $N_e \geq 1.6 \times 10^{16} \Delta E^3 T_e^{1/2}$  formula. Both electron temperature and electron number density show similar trends in results i.e., by increasing power temperature and electron number density both temperature and density increases. On the contrary a small change is being noted regarding the change in current density.