

## Development of Electron Temperature and Density Probe (TeNeP) for Nano- and Micro-satellites -II

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The nano/micro-satellite becomes popular for the study of near earth environment. To measure the electron temperature ( $T_e$ ) and electron density ( $N_e$ ) in the ionosphere, we have developed the Electron Temperature and Density Probe (TeNeP). The TeNeP measures  $T_e$  and  $N_e$  based on principles of electron temperature probe (ETP) and planar impedance probe (IP). By combining systems of ETP and IP,  $T_e$  and  $N_e$  can be measured by one single probe. The TeNeP system has advantages not only as being small, light weighted and low power consumption that fulfills the needs of instruments onboard nano/micro-satellites. It also overcomes problems associated with electrode surface contamination and satellite/probe surface area ratio for DC Langmuir probes.

Keywords: Electron Temperature and Density Probe, nano/micro-satellite, Electron Temperature, Electron Density, electrode surface contamination, satellite/probe area ratio