

SP-004

<Invited Talk>

## **Spatially and Time Resolved Optical Diagnostics for High Pressure Microdischarges**

**Yi-Kang Pu, Xi-Ming Zhu, Bang-Dou Huang, Keisuke Takashima**

Department of Engineering Physics, Tsinghua University, Beijing 100084, China

This presentation will describe recent development in spatially and time resolved optical diagnostics for two kinds of the high pressure microdischarges. The first kind is a nanosecond pulsed discharge with two pin electrodes while the second kind is a microwave split ring resonator developed by Jeff Hopwood. Both spatially and time resolved optical emissions are collected for these two discharges and some interesting phenomena are observed. By using either the Stark broadening or a collisional radiative model for high pressure discharges, the evolution of electron density can be obtained. We will compare these different techniques for obtaining the electron density and discuss their limitations.