

Abstract Submitted
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Measurement of Electron Temperature and Plasma Density via Thomson Scattering and Electric Probe in Low Temperature Plasmas

HYUN-JONG WOO, Center for Edge Plasma Science, Hanyang University, KYUSUN CHUNG, Dept. of Electrical Engineering, Hanyang University, TAIHYEOP LHO, Convergence Plasma Research Center, National Fusion Research Institute — Laser Thomson scattering system has been developed for the measurements of electron temperature and plasma density in low temperature plasma by means of the Q-switched Nd:YAG laser with 2nd Harmonics (250 mJ at 532 nm, repetition rate of 20 Hz), triple grating spectrometer and ICCD camera. The triple grating spectrometer is composed of 3 grating (1800 gr/mm and 100 x 100 mm dimensions), 6 achromatic doublet lens (f=400 mm and 100 mm diameter) for reducing the abbreviation effect, two slits (entrance and exitance), opto- mechanical instruments, etc. The alignment and calibration of TGS system were performed by a diode laser and diffraction optics, Ne lamp (wavelength) and metal halide lamp (intensity), respectively. The LTS measurements were done wide ranges of $1 < T_e < 10$ and $10^{11} < n_e < 10^{13} cm^{-3}$ without different magnetic fields and neutral pressures in Divertor Plasma Simulator-II (DiPS-II) and it compared with the single probe measurements.

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