

## Measurement of EUV (Extreme Ultraviolet) and electron temperature in a hypocycloidal pinch device for EUV lithography

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We have generated Ne-Xe plasma in dense plasma focus device with hypocycloidal pinch for extreme ultraviolet (EUV) lithography and investigated an electron temperature. We have applied an input voltage 4.5 kV to the capacitor bank of 1.53  $\mu\text{F}$  and the diode chamber has been filled with Ne-Xe(30%) gas in accordance with pressure. If we assumed that the focused plasma regions satisfy the local thermodynamic equilibrium (LTE) conditions, the electron temperature of the hypocycloidal pinch plasma focus could be obtained by the optical emission spectroscopy (OES). The electron temperature has been measured by Boltzmann plot. The light intensity is proportion to the Boltzmann factor. We have been measured the electron temperature by observation of relative Ne-Xe intensity. The EUV emission signal whose wavelength is about 6~16 nm has been detected by using a photo-detector (AXUV-100 Zr/C, IRD) and the line intensity has been detected by using a HR4000CG Composite-grating Spectrometer