Contribution ID: **640** Type: **not specified**

P2.068 Upgrade of scattered light collection systems for KSTAR Thomson scattering diagnostic

Tuesday, 18 September 2018 11:00 (2 hours)

Thomson scattering diagnostic system consists of a laser, a collection system, spectroscopy and a digitizer section. Recently, KSTAR Thomson scattering system has found some problems in collection system. The first problem is that the light transmission of the lens glass drops to less than 10% due to the browning of the lens due to the neutron, and when the plasma disruption occurs, the impact is transferred to the collection lens as it is, causing the Thomson scattering measurement problem. In order to solve these problems, we newly designed the core and edge lens of plasma and made a new lens using this design. This new lens has confirmed through simulation that vignetting and modulation transfer function (MTF) are improved compared to previous lenses[1]. Also, the collection lens installed in the cassette hanging on the cryostat is very vulnerable to vibration. To prevent such vibration errors, the design of the lens support has been changed so that the entire lens is floated without touching inside the cassette. This research mainly explains newly designed lenses and briefly describes lens supports.

Reference
[1] S. Oh, and J.H. Lee, Review of Scientific Instruments, 81, 10D504 (2010)

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