1. Title:	Development of EUV wavefront metrology system (EWMS)
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3. Abstract body:

EUV wavefront metrology has been developed in EUVA using an EUV experimental interferometer (EEI) installed at New Subaru synchrotron facility in the University of Hyogo. Several error factors were analyzed and performance of EEI has been improved. System error of EEI was estimated using the method of test optics rotation. The system error is a criterion of measurement accuracy. The measured system error was 0.06nmRMS and 0.12nmRMS for PDI (Point Diffraction Interferometer) and CGLSI (Cross-Grating Lateral Shearing Interferometer), respectively. Less than 0.1nmRMS of measurement error, which was the target of our project, was successfully achieved using PDI. CGLSI is an easier metrology method with wider measurement range compared with PDI and its performance was beyond the expectation at beginning.

Based on those R&D results, EUV wavefront metrology system (EWMS) was developed. EWMS can measure the wavefront of full-field EUV projection optics. However, non-EUV wavefront metrology systems installed in the factories will be used in the manufacturing of EUV lithography tools, EWMS will play an important role as a standard system of EUV wavefront metrology. Installation of EWMS into New Subaru synchrotron facility has been completed. We are planning to start the EUV wavefront metrology of prototype EUV projection optics from this summer. The first data of EWMS will be presented at the conference.