



1. Title:	Debris mitigation and cleaning for Sn-fueled EUV source
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3. Abstract body:

Sn is being widely used as a fuel material of EUV source because of its higher conversion efficiency of 13.5-nm radiation than previously-used Xe. However, on the other hand, collector lifetime became a severe issue. Sn is easily condensed on the surface of the collector to decrease the reflectivity. In order to ensure EUV source realization, debris-shielding technology is being developed at Gotenba Branch of EUVA. Several techniques are under development, which includes mechanical (static) shield and gas (dynamic) shield. By measuring deposition rate using QCMs, and measuring reflectivity of Ru grazing-incidence mirror, debris emitted from the discharge source were characterized and performance of the shields was evaluated. Even with good shields, a small portion of debris might gradually affect the collector reflectivity during long term discharge operation. Such residuals can be treated by cleaning method. For the sake of adoption of the cleaning method as a support technology for Sn-fueled source, development is also being conducted. In the presentation, detailed and latest results are provided. This work is supported by NEDO.