



1. Title:	Tin material consumption and the mirror lifetime for droplet laser plasma sources
2. Full names of all authors:	Kazutoshi Takenoshita, Simi A. George, Tobias Schmid, Vivek Bakshi*, Martin Richardson

3. Abstract body:

The total tin inventory for EUVL source operations is now one of the issues being discussed for HVM of EUVL. Both, GDP and LPP sources that utilize solid or liquid metallic tin as the radiator for 13.5 nm emission consume micrograms of tin for each plasma generation event, equating to >100 kg for a billion pulses. On the other hand our tin-doped LPP targets contains only a few nanograms of tin for the same EUV emission per event. The total tin consumption for HVM operation is over three orders of magnitude less than the other source configurations. This is a major advantage for the tin-doped droplet targets.

Collector mirror lifetime is strongly affected by the amount of tin usage in the plasma generation. Debris mitigation schemes must keep the suppression to many orders magnitude for high tin consumption sources. Estimated mirror lifetime for our tin-doped target will be only a factor of 500 less than the requirement. This is also advantageous in extending the collector mirror lifetime. We present detailed studies on tin usage and mirror lifetime estimation for our tin-doped droplet laser plasmas.