



1. Title:	Selective etching of Sn from Ru EUV mirrors with Ar/Cl ₂ Plasma
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3. Abstract body:

In this study, a cleaning method for Sn debris build-up with plasma etching will be discussed. Plasma etching cleaning method has a potential of in-situ cleaning or at least it can minimize time and effort to take out mirrors for cleaning. Moreover, compared to other cleaning methods, reactive ion etching with Cl₂/Ar plasma etching can remove Sn very fast (400 nm/min) with certain chemistry but it is the issue to remove Sn selectively from the mirror surface material. Therefore, in this study, the selectivity between Sn and Ru was measured by etch rates of Sn and Ru to see if Cl₂/Ar plasma etching is a possible method to clean Sn. Primarily, sample bias power was controlled to see the behavior of etch rates of each material. Gas mixture ratio was also changed to see how it affected the etch rates.