



1. Title:	Managing the Vacuum Environment of a Source-Collector Module
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3. Abstract body:

Xenon and Tin have both been successfully demonstrated as source materials for EUV light production at 13.5 nm. Both source materials present their own set of challenges for the source-collector module environment.

In the case of xenon, there are thermal challenges in pumping high throughputs of this heavy gas. The high cost of xenon has an important cost of ownership impact to the overall operating cost of the EUV tool. Xenon recycling will be critical to enabling cost effective xenon based EUV sources. In some cases, light gases are added to the module to mitigate fast ions, therefore xenon recycling technology which includes light gas separation will be required.

In the case of tin, careful thermal management of the system is essential to avoid tin deposition and various debris mitigation and cleaning schemes have been implemented. Managing the vacuum pumping of gas mixtures which may include corrosive and /or volatile species is important to maintain source performance.

The paper will discuss the most recent developments in vacuum pumping, recycling technology and management schemes to maintain source-collector lifetime.

Keywords: Xenon, Tin, Recycling, Recovery, Gas Separation, EUV sources, Vacuum.