



1. Title:	Theoretical Guidelines of LPP-EUV Sources for HVM
2. Full names of all authors:	Katsunobu Nishihara, Kazumi Fujima, Hiroyuki Furukawa, Takashi. Kagawa, Young Gwang Kang, Takako Kato, Fumihito. Koike, Richard More, Masakatsu Murakami, Takashi Nishikawa, Akira Sasaki, Atsushi Sunahara, Hajime Tanuma, Vasilii Zhakhovskii, Shinsuke Fujioka, Hiroaki Nishimura, Yoshinori Shimada, Keiji Nagai, Takayoshi Norimatsu, Noriaki Miyanaga, Yasukazu Izawa and Kunioki Mima

3. Abstract body:

At the EUV source workshop in Vancouver, May 25, 2006, the joint EUV source power requirement was updated, i.e., the expression of source power was compromised from the view points of both resist performance and lifetime of consumables to 115 W@5mJ/cm² – 180 W@10mJ/cm² at IF. The increase of EUV power requires higher conversion efficiency, more effective mitigation scheme of fast ions and debris. We have constructed both theoretical and experimental database of atomic data mostly for tin targets, such as dependence of CE on laser intensity, pulse duration and wavelength, energy spectra of charge separated fast ions for various different laser and target conditions, and fundamental atomic data, mostly for tin. We have also proposed benchmarking of LPP-EUV source models at the workshop. On the basis of our understanding, we here present theoretical guidelines of LPP-EUV sources for HVM to obtain higher EUV power, to reduce fast ion energy and their mitigation schemes. We will especially present physics related to our new guidelines.