



1. Title:	Modeling of the atomic processes in EUVL source plasmas.
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3. Abstract body:

We present progresses in the modeling Sn and Xe plasmas. The emission in the 13.5nm wavelength region is attributed to 4d-4f transition arrays of Sn and 4d-5p transition of Xe¹⁰⁺ with satellite lines. In the case of Sn, the spectral structure is determined by the detailed structure of the 4d-4f transition, and the width of the array is determined by the distribution of satellite lines. As the opacity of the plasma increases, the absorption through strong resonance lines considerably modifies the spectrum. We improve accuracy of the wavelengths and transition probabilities of 4d-4f and 4d-5p transition arrays of each charge state, after detailed comparisons between calculations and experiments. Emission spectrum from the various EUVL sources are compared with the result from the charge exchange spectroscopy and the opacity measurement. We calculate the emissivity and opacity of the plasma, which are used in the radiation hydrodynamics code to perform optimization of the source power and conversion efficiency, with respect to target and laser conditions.

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