1. Title:	Fidelity of rectangular patterns printed with 0.3-NA MET optics.
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3. Abstract body:

Rectangular patterns are necessary for the isolation layer and other layers of the ULSI fabrication process. In optical lithography, fine rectangular patterns tend to deform because of optical proximity effects. This requires complex correction for mask patterns. Since EUVL uses a much shorter wavelength than optical lithography does, it should provide better pattern fidelity. In this study, rectangular patterns of various sizes were printed with the 0.3-NA MET optics at the Lawrence Berkeley National Lab, and their fidelity to the mask patterns was evaluated. The EUVL masks were fabricated by ASET and Dai Nippon Printing. MET-1K resist was used for most of the printing experiments. The pattern fidelity of 90-nm-node rectangular patterns was found to be very good. In 45-nm-node rectangular patterns, however, line shortening was observed in the lengthwise direction of the patterns. We used the SOLID-EUV lithography simulator to estimate aerial images and predict the shape of resist patterns. The simulation results indicate that the shortening is caused not only by the deformation of the aerial image, but also by deformation occurring during the resist development process. In order to mitigate the shortening, the effects of mask bias were also evaluated. This work was supported by NEDO.