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Title
Reconciling Resist Resolution Metrics

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6. Presentation preference:	☒ oral	☐ poster

7. Abstract body:

Resist resolution is an important parameter and various methods for determining the intrinsic resolution of resist have been developed and evaluated (C. N. Anderson, et. al., EUVL Symposium, Sapporo, Japan, 2007). Ideally the resolution determined using these metrics should, to within an overall constant scale factor, match the resist "blur" determined from fitting LER data to the analytic form of the roughness power spectral density (PSD). Indeed comparison of the PSD determined "blur" to the contact hole resolution metric do show good qualitative agreement for a wide set of resists. Unfortunately the quantitative agreement is not as good as one would desire. In this talk we review the data, show how the deprotection "blur" radius changes with the deprotection rate even if the acid diffusion range is fixed and evaluate whether this effect can account for the quantitative difference in resolution determined using different techniques. Finally, it should be noted that the "diffused aerial image" approach to modeling resist behavior is now in wide use and having the precise shape of the deprotection "blur" for a given resist is crucial for obtaining accurate predictions of CD and LER using this approach.