

***Welcome to the 2019 EUVL
Workshop CXRO EUVL
Program Showcase***



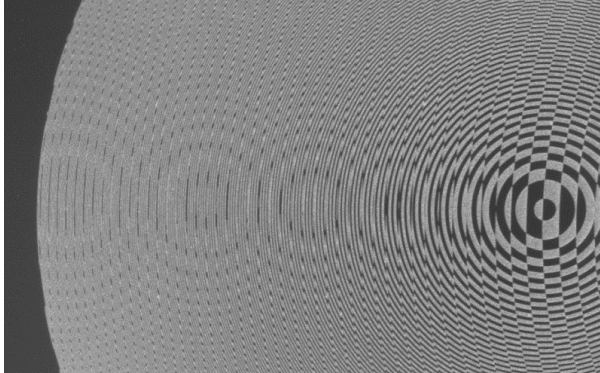
2019 EUVL Workshop
June 10-13, 2019, CXRO, LBL, Berkeley, CA, USA

- Founded 1931
- Managed and operated by UC for the U.S. Department of Energy
- 4200 Employees
- 200+ UC-Berkeley faculty on staff
- 13 Nobel Prizes
- 63 members of the National Academy of Sciences (~3% of the Academy)
- 18 members of the National Academy of Engineering

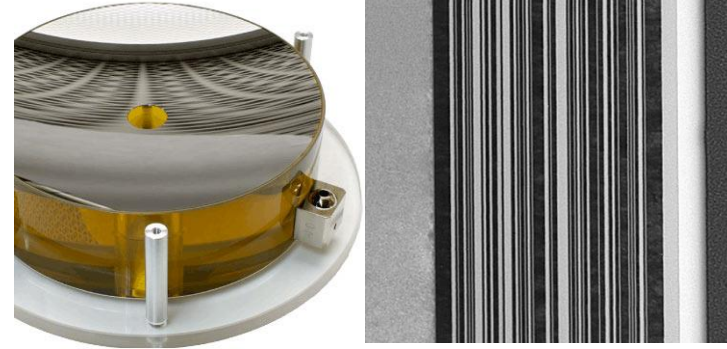


CXRO: A Berkeley Lab research center for EUV/soft-x-ray instrumentation and science

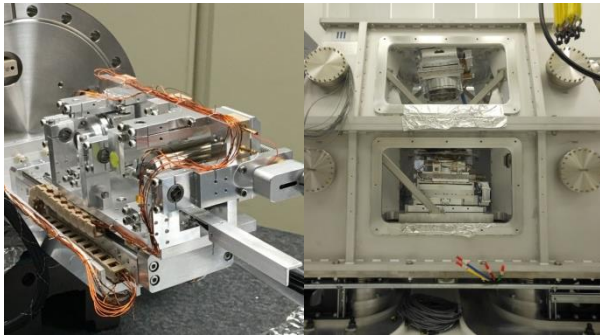
Nano-diffractive optics



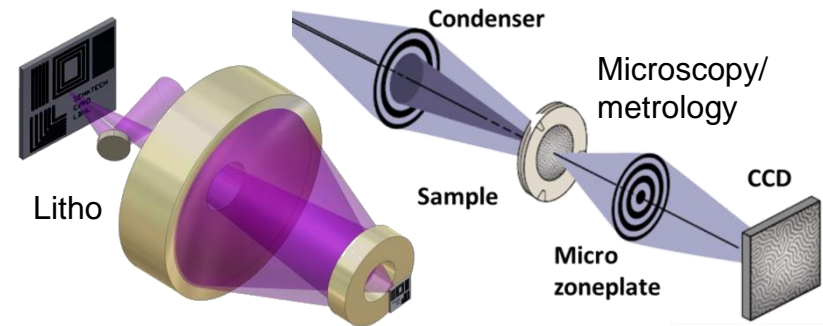
X-ray optical coatings



Precision engineering



Experimental systems



CXRO EUV program history

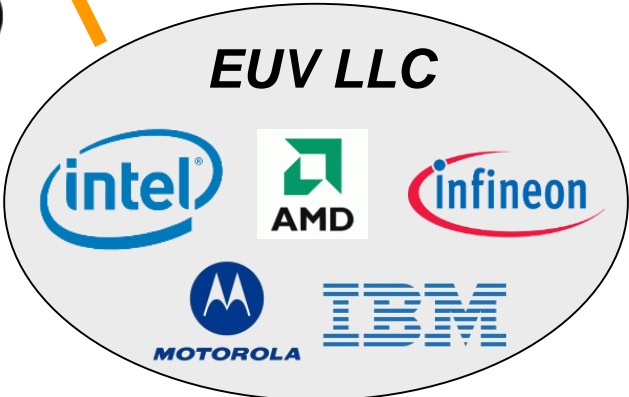
1995

2000

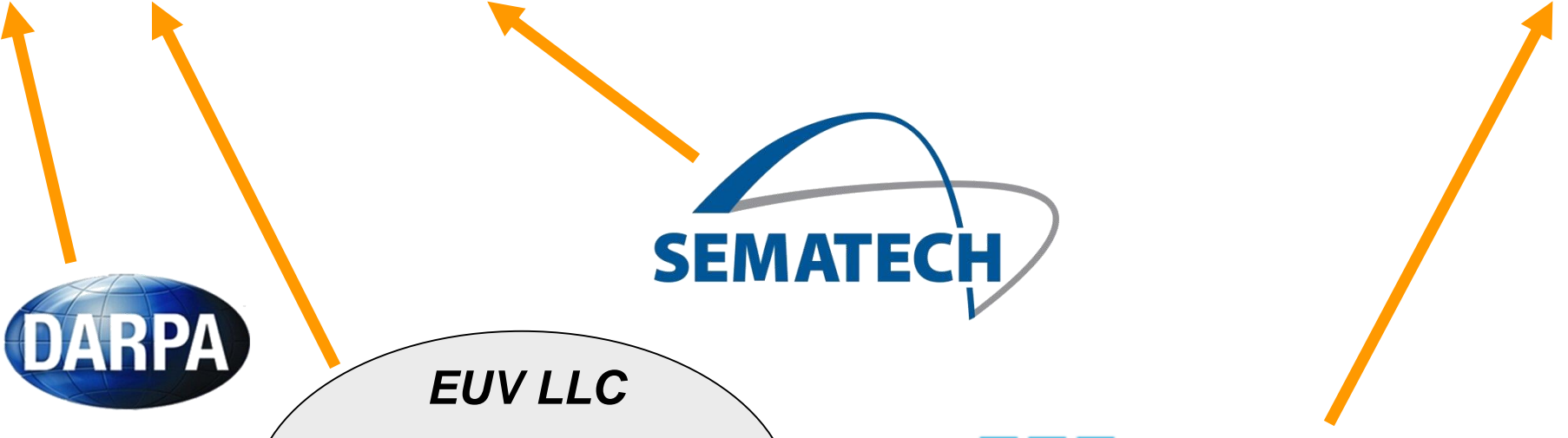
2005

2010

2015



EUREKA



Leveraging the Advanced Light Source a \$60M/year U.S. Department of Energy EUV/Soft-x-ray Synchrotron Facility

- An electron accelerator providing an ultra-clean, pure, and stable source of EUV photons
- CXRO currently operates 3 EUV beamlines effectively leveraging ~\$4M/year DOE funds



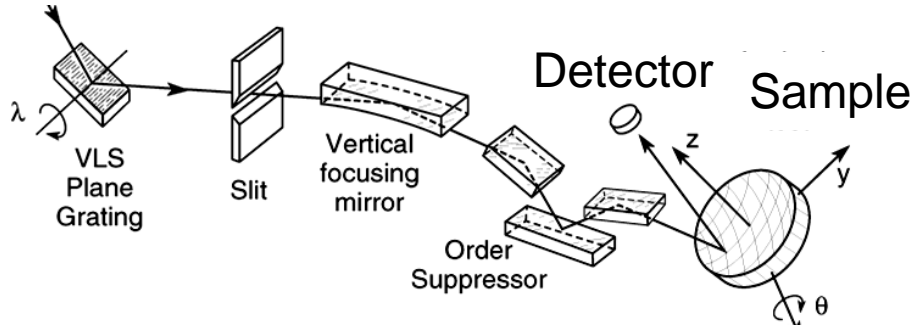
Leveraging the Molecular Foundry a \$20M/year DOE Nanoscience Facility

- World experts in synthesis, characterization and theory of materials at the nanoscale
 - Organic, inorganic, nanoparticles and hybrids synthesis
 - Engineered properties of hybrid nanomaterials
 - Tools to investigate dynamic nanoscale phenomena

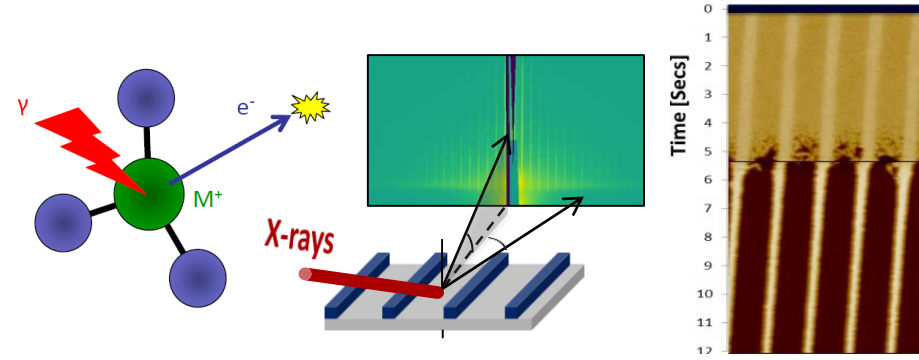


CXRO cornerstone EUV activities

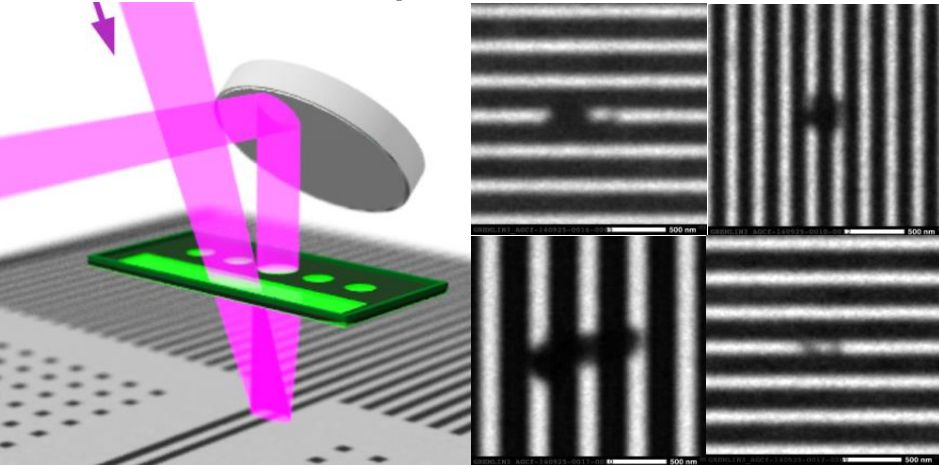
Scatterometry/Optical properties



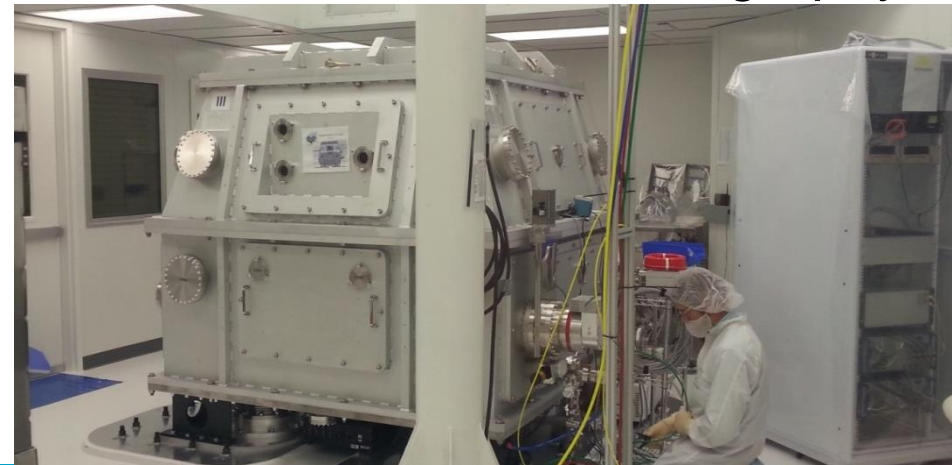
Resist fundamentals



EUV review up to 0.625 NA



0.3 and 0.5-NA Lithography



C-DEN

Center for Design-Enabled Nanofabrication
Berkeley UCLA UCSD

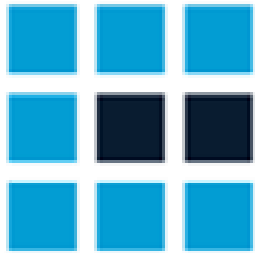


ASML

Qualcomm

**Mentor
Graphics**

KLA+



EUREKA



euv tech



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