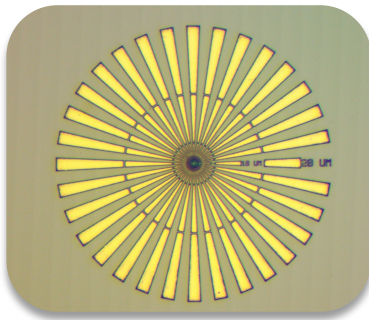


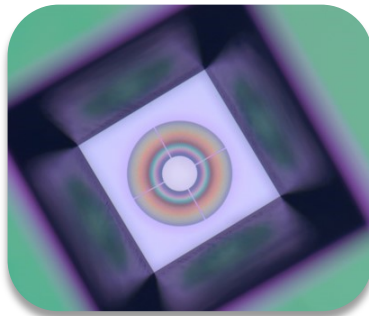
## Zone Plates

- EUV/ X-rays
- High efficiencies
- Large diameters
- Single/multi-layers



## Calibration Standards

- 15 nm soft/  
25 nm hard X-ray designs
- Custom designs

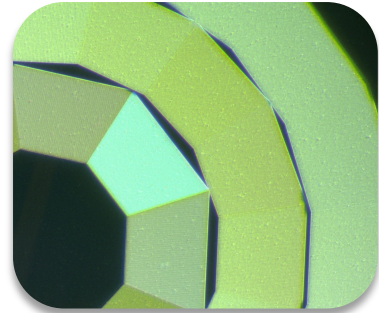


## EUV Diffractive Optics

- Free-standing (ZPs/gratings)
- Large areas
- Ultra-high resolution

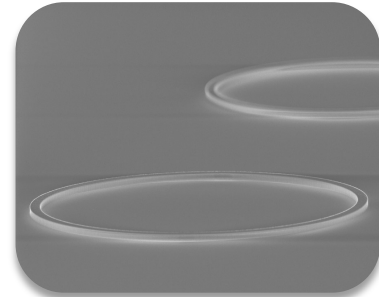
## Condenser Optics

- Large diameters
- Energies 10-50 keV
- Multi-level optics
- High Efficiency



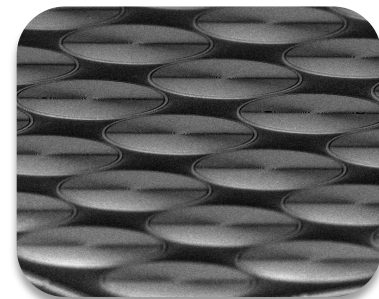
## Phase Rings

- SiO<sub>2</sub>, Ni, Cu, etc.
- Arrays
- Design help



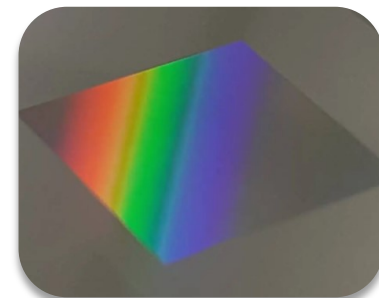
## Arrays

- Custom arrays
- Au, Cu, Ni, W



## Gratings

- EUV/X-ray gratings
- Au, Cu, Ni, W
- >5000 lines/mm





## Free online efficiency calculator

- Zone plate parameters
- Diffraction & transmittance calculations
  - ◆ Au, Cu, Ni, Pt, Si<sub>3</sub>N<sub>4</sub>, SiC, W, etc.

[www.appliednt.com/zpcalc](http://www.appliednt.com/zpcalc)

**Design Summary Calculation**

Energy/Wavelength:  8000 eV  0.1550 nm

Design Constraints

Outermost Zone Width (nm):

Zoneplate Diameter (μm):

**Efficiency Calculation**

Available Membrane Materials:

Membrane Thickness (nm):

Graph Type:  Efficiency (Grating/Zone Plate)  Transmittance of Material

Material:

Zoneplate Thickness (nm):

Order:  Steps (Zone Plate):

Optimal ZP thickness energy at 8000 eV: 1006+1006 = 2012 nm

Plot Generation Range (eV) (Max 30000 eV)

From:  To:

Append Graph

