



Proposed List of Topics for the 2015 Source Workshop

1. 13.5 nm laser produced plasma (LPP) sources to support high volume manufacturing (HVM) scanners

Fundamental physics approaches for sources

Update on performance of high power EUV Sources (LPP)

Approaches to power scaling to enable 250 W+ sources

Approaches to increasing source conversion efficiency

Innovative fuel delivery approaches including mist targets

Source debris mitigation strategies

In-situ cleaning of collector optics

Technologies for filtering out-of-band (OOB) radiation at UV, IR and 10.6μ wavelengths – including spectral purity filters, innovative approaches and new multi-layer collector designs

Refurbishment of multi-layer collectors for LPP sources

Coatings for increasing collector lifetime and OOB suppression

Innovative collector designs for LPP

Source Metrology

Synchrotron based metrology for HVM source collectors, filters, sensors and detectors

CO₂ laser amplifiers

Pre-pulse laser designs to support HVM LPP sources



Modelling of sources, collectors and its components

2. EUV Source for Mask Defect Metrology

Development status of sources for EUV mask defect metrology

Source brightness requirements for EUV mask defect metrology

Limits of brightness for LPP and DPP mask defect metrology sources

Lasers for mask defect metrology sources

Hybrid sources for mask defect metrology (Combination of laser produced plasma and discharge, e.g., LDP sources)

Spectral purity filters

Debris mitigation strategies for metrology sources

3. Free Electron Laser (FEL) sources for HVM and Mask Defect Metrology (at 13.5 nm)

FEL source designs to support HVM sources and mask defect metrology

Characteristics of FEL sources (brightness, power, source size, repetition frequency, techniques for altering coherence, foot print and cost of ownership)

Optics for FEL sources

Economics of FEL sources – Cost of ownership (foot print, cost of source and cost of operation), time lines for technology readiness and R&D funding requirements

4. XUV / Water window sources (~1 nm- 100 nm / 10 eV to 1 keV)

XUV Sources (plasma and non-plasma sources, incoherent and coherent) and its development status (power, brightness, wavelength region, repetition frequency, cost of ownership, lifetime, commercial readiness)

BEUV (6.x nm) sources and 6.x nm optics for Lithography Applications

Collector optics for XUV sources (GI and ML)

Spectral purity filters and debris mitigation

Optics for XUV metrology (normal and grazing angle optics, filters, and gratings)

Detectors for XUV metrology

XUV metrology applications including water window microscopy, applications supporting EUV and BEUV Lithography and microscopy