

**IEUVI Source TWG meeting
Lake Tahoe, CA
02 October 2008**

Comments on Technical Challenges:

DPP:

- Given the power requirements of exposure collector lifetime and thermal loading should be red
- Debris mitigation and thermal loading are of primary concern
- Large gap in level; debris mitigation should not be yellow – should be red
- Debris mitigation should be red
- Source cleanliness is a major problem but limited data available; more experimental data needed
- No specific issues with issues listed or ranking; but scaling with Sn will run into a brickwall with both technologies
- Reliability and stability are critical and should be moved up the list
- Debris mitigation should be red and high efficient collector should be yellow
- Reliability and cost of ownership are critical issues and should be red
- Good ideas in scalability color should not be red; debris mitigation at yellow and with current ranking is OK
- Need more stable source should be ranked higher
- Reliability and stability should be #1; CE is at 2% recommend staying with this performance and focus on the reliability
- Scalability is a critical issue
- Thermal loading should be red
- Cost of ownership is a major concern
- Collector lifetime and debris mitigation should both be yellow
- Need to focus more at the performance of the whole system; reliability and stability of the system needed now
- Scalability should be yellow
- Reliability and stability are major issues
- Reliability and stability should be orange (red to yellow)
- Collector lifetime and debris mitigation should have a the same color
- Reliability and stability should be ranked separately. Reliability and stability as well as debris mitigation should be ranked higher. Are the most important issues

LPP:

- Thermal loading should be ranked higher
- Integrates system should be ranked higher
- No specific issues with issues listed or ranking; but scaling with Sn will run into a brick wall with both technologies
- Spectral purity should be yellow
- Spectral purity needs data at higher plasma temperatures

- No integrated tool is very critical, should be ranked higher
- Need integrated system – rank higher
- Cost of ownership is a major concern
- Spectral purity should be between yellow and red
- Collector lifetime should be more yellow than red
- Need to focus more at the performance of the whole system; reliability and stability of the system needed now
- Spectral purity should be yellow
- Would like to see data on thermal loading; spectral purity needs to be ranked higher; laser power should be yellow
- Spectral purity and scalability should be red
- Debris mitigation, collector lifetime, and laser power should be yellow
- Integrated sources and cost of ownership should be red

Fundamental understanding and engineering development lists:

- Fundamental Understanding Needed
 - Debris mitigation of LPP sources
 - Power scaling of sources
 - Reliability and stability
 - *Accurate source / plasma modeling
 - *Maintainability and reasonable downtimes
 - *Understanding out of band emission from plasma
 - *Impact of out of band on resist imaging and contamination rates
- Engineering Development Needed
 - LPP source/collector/DMS integration
 - Improved debris mitigation and handling of fuel of DPP sources
 - Improvement of source component designs/materials/lifetimes
 - Solutions for spectral filtering, particularly IR
 - Design optimization of illuminator
 - Improved cost of ownership
 - ^Efficiency of power transmission to IF
 - *Environmental Safety – particularly on DMS and purge gases
 - *Stability and Reliability
 - *Collector lifetimes as power is scaled up

*New – added during IEUVI Source TWG 02Oct2008

^Moved – moved from fundamental understanding needed to engineering development