Compact rotating Sn disc target LPP source

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Compact, versatile, easy-to-use EUV source

Target design specifications

Driver
- Nd: YAG laser

Target
- Liquid Sn-covered rotating disc target

Debris filter
- Multi-stage filters

Collector
- Grazing-incidence collector

Dimensions
- 1200x1400x2200 mm

Operating frequency (laser power)
- Up to 100 kHz (350 W)

Source plasma
- Emission size: 110x50 μm
- Emission power: 7 W/2πsr (2 % bandwidth at 13.5 nm)

Intermediate focus
- Intensity: 65 W/cm²
- Brightness: 40 W/mm²/sr
EUV spot obtained at IF

- A 2-ns, 400-W laser was selected for the current development.
- CE is approximately 2-2.5 %.
- EUV energy stability is <2 % (best case).
- EUV light was observed at the intermediate focus (IF) point after the debris filters and collector.

![Graph showing EUV radiance at plasma vs. laser power](image1)

![Graph showing EUV intensity vs. distance at IF plane](image2)

![Graph showing EUV intensity vs. wavelength](image3)

EUV image at plasma

EUV image at IF after debris filters and collector
Summary and future work

Summary
• Experimental setup was modified with a new target module, debris filters and a collector module.
• Grazing-incidence collector is currently being tested.
• EUV spot was confirmed at the intermediate focus (IF).

Future work
• Introduction of the prototype source.
• Experiment at higher power (scaling to the target performance).
• Long-term stability/reliability test.