# Laser Produced Plasma Light Source For Euvl Cymer

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## Laser-produced plasma (LPP) light sources have the highest potential to achieve the brightness requirements for all the range of mask inspection tools currently foreseen. High brightness of LPP...

## (PDF) Laser-produced plasma light source for extreme ...

Laser-Produced Plasma Light Source Development for Extreme ...

our laser-produced plasma EUV light source development including light source characterization, fast ion character-ization and their e ect on Mo/Si multilayers. 2. EUV System Development and Source Character-izations Due to its inert characteristics, xenon is a very attractive plasma target and was therefore selected for the EUV source

# Laser-produced-plasma (LPP) sources are expected to deliver the necessary power for critical-dimension high-volume manufacturing (HVM) scanners for the production of integrated circuits in the post- 193 nm immersion lithography era.1 LPP EUV lithography light sources generate the required 13.5 nm radiation by focusing a 10.6 micron wavelength CO2

Laser Produced Plasma Light Source for EUVL

## Plasma light sources utilize the properties of various plasmas to produce extremely high-power sources of light. Laser-Produced Plasma Light Sources Researchers are able to produce extremely high-power sources of light. Laser-Produced Plasmas by using a visible (VIS) or near infrared (NIR) Q-switched laser or a long-wave infrared (LWIR) CO2 laser incident on a dense medium.

## Plasma Light Sources Entering the Tech Industry: A ... Laser produced plasmas (LPPs) 4 Temperature depends on laser power density ( ), Te(eV) ( 2 )3/5 ... CR model Average charge 0.67 (ZT e)1/3 Expansion velocity 10 6-10 7cms-1 Critical electron density, nec = 10 19 - 10 21 cm-3 depends on laser wavelength (nec ~[10 21 / (µ m)2] cm-3 ) For ns duration plasmas Collisional Radiative (CR)

Laser Produced Plasma Light Sources for Short Wavelength ... Toshihisa Tomie "Tin laser-produced plasma as the light source for extreme ultraviolet lithography high-volume manufacturing: history, ideal plasma, present status, and prospects," Journal of Micro/Nanolithography, MEMS, and MOEMS 11(2), 021109 (21 May 2012).

Tin laser-produced plasma as the light source for extreme ..

The light source in such machines is a tin plasma. To produce it, a drop of tin is heated by a laser to a point where it becomes plasma that emits EUV radiation. Exactly how this process takes...

breakdown and attainable with modest laser pulse energies, CW plasmas can be sustained only when pumped by >~100 W lasers. First attempted in Siberia in Dark Ages\* by using 10 mCO 2 laser. They got ~1 cm size plasmas. Use of ~1 msolid state fiber-coupled laser results in sub-mm size plasmas. Linear geometry Introduction: Laser Sustained Plasma

# High Power Laser-Sustained Plasma Light Sources for KLA ...

Laser-produced transient tin plasmas are the sources of extreme ultraviolet (EUV) light at 13.5 nm wavelength for next-generation nanolithography, enabling the continued miniaturization of the features on chips.

Physics of laser-driven tin plasma sources of EUV ... Keywords: EUV light source, laser-produced plasma, droplet 1. INTRODUCTION Extreme ultraviolet lithography (EUVL) is the candidate for next generation lithography (NGL). But the HVM light source requirements are very high with a EUV output power (13.5nm 2% bandwidth) of more than 115 — 180W at the intermediate focus (IF).

### Sn droplet target development for laser produced plasma ..

High repetition rate and high-power CO 2 laser-produced plasma sources operating on tin droplet targets are described. Details of laser architecture, source chambers and system operation.

### Performance results of laser-produced plasma test and ...

In this paper a new approach to a laser-produced plasma EUV source based on a tin target is presented. A thin layer of pure tin and composite layers consisting of Sn with Si, SiO and LiF are investigated.

### Laser-produced plasma EUV source based on tin-rich, thin ...

A new approach for discharge-produced plasma (DPP) extreme ultraviolet (EUV) sources based on the usage of two liquid metallic alloy jets as discharge electrodes has been proposed and tested...

## Laser-Produced Plasma Sources for High-Volume ..

Laser produced plasma EUV light source Download PDF Info Publication number US7671349B2 US 7671349B2 US 76713

US7671349B2 - Laser produced plasma EUV light source .. LPP -EUV light source is the most promising solution as the high power light source for 13.5nm lithography because of its power scalability. It pro duces the light of 13.5 nm wavelength from tin plasma which is produced by high power CO2 laser shooting to tin droplet.

### LPP-EUV light source for HVM lithography

Laser-produced plasma light source for EUVL Laser-produced plasma light source for EUVL Laser-produced plasma light source for EUVL Fomenkov, Igor V. 2009-03-13 00:00:00 Igor V. Fomenkov, Oleh V. Khodykin, Jerzy R. Hoffman, Christopher P. Chrobak, Shailendra N. Srivastava, Daniel J...

### Laser-produced plasma light source for EUVL, Proceedings ..

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## Plasma Sources Science and Technology - IOPscience

Laser-produced plasma (LPP) light sources can produce a very high flux of soft x-rays, with over 70 % conversion efficiency (CE) of input laser energy into soft X-ray photons possible,,,. Additionally, LPP 's can produce very small plasma volumes which can greatly increase the radiance of the light source.

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