PLASMA TECHNOLOGY IN THE DEPARTMENT OF MEASUREMENT TECHNOLOGY AND EUV SOURCES

Fields of Activity

The Department of Measurement Technology and EUV Sources at the Fraunhofer ILT has been offering R&D services for the generation and diagnostics of plasma in technical fields of application.

It focuses on plasmas as intense emitters of short wavelength radiation in the extreme ultraviolet and soft x-ray range, laser-induced plasmas for the spectroscopic analysis of materials and atmospheric plasmas for surface treatment or exhaust cleaning.

Distinguished contributions the department has made are the supply of a radiation source at a wavelength of 13.5 nm for the next generation lithography of semiconductor devices, the design and build-up of devices that can sort metal scrap based on plasma spectroscopy and new techniques that can sterilize surfaces based on a hybrid system of UV and plasma treatment.

In the course of conducting these activities, the department has acquired comprehensive and special knowledge that can contribute considerably to implementing innovative approaches in plasma technology. On customer order, we develop new methods, components and devices up to fully automated systems.

Competences

Power Electronics und Pulsed Power Technology
- Pulsed-power devices up to a power of 100 kW
- Generators for pulsed currents up to 100 kA
- Capacity charger and power supplies
- Regenerative electrodes for high, pulsed currents
- High voltage and high current diagnostic

Fast Data Acquisition and Processing
- Measurement and control of pulsed systems
- Real time data processing
- Design and build-up of fast electronics

Plasma Generation and Diagnostics
- Discharge and laser-induced plasmas
- Spectroscopy from soft x-ray to the IR range
- Absolute measurement of photon fluxes
- Determination of plasma parameters
- High speed photography
- Modelling of plasmas

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