PLD-Workstation

the all-in-one PLD system

plug‘n‘play installation

easy and safe to operate

highly flexible

designed with research in mind

PLD-Workstation – The Ultimate Oxide Prototyping System

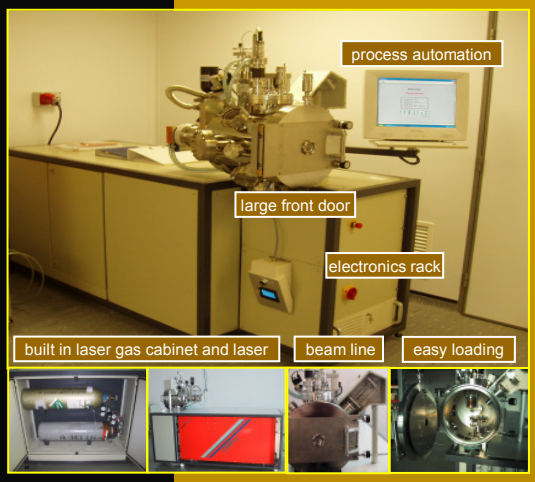
Pulsed laser deposition (PLD) is a versatile process for thin film deposition with the major advantage of stoichiometric material transfer from a target to the substrate. The **SURFACE *PLD-Workstation*** is *the* excellent prototyping and research system for thin films, providing easy access to new materials and especially to advanced oxide layers.

The ***PLD-Workstation*** integrates all components of a PLD system including laser and laser gas supply into one single rack. The compact design enables the most flexible use of the system and avoids many hardware installation efforts. All this is the key to an unbeatable versatility and opens the access to PLD even for users with no previous experience in PLD technology!

The ***PLD-Workstation*** delivers advanced deposition technology in a powerful and compact package – suitable for a wide range of applications.

Despite all the built-in flexibility – safety is always a priority:

- Fully enclosed laser beam line with externally actuated mirror adjustments safely protects from exposure to UV laser radiation
- Laser and laser gas cabinet are permanently connected to an external exhaust line



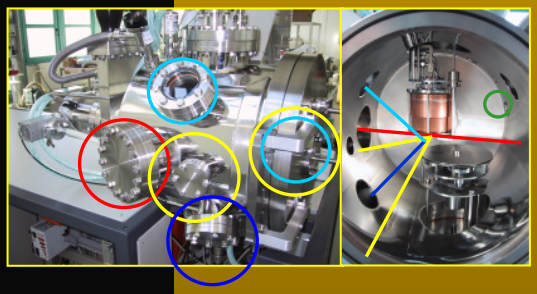
The Vacuum Chamber – With Built-in Flexibility

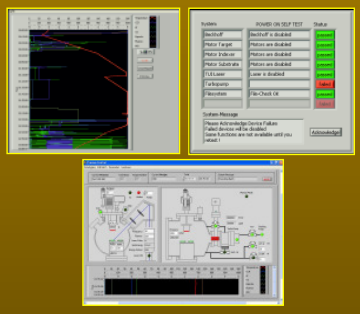
The vacuum chamber is designed for research. It has spare flanges suitable for the most common in situ analytical tools or other system extensions:

- optical analysis methods: OES or FTIR
- RHEED
- mass spectroscopy
- additional deposition or plasma sources

In addition, two windows allow visual contact to the process from two different angles and two sides. The large front door gives total access to the major process components: target and substrate manipulator. The standard configuration provides a 2“ substrate heater and a 4×2“ indexed target manipulator. Heaters for 1“ or 3“ substrates are optionally available.

To adjust the process conditions, two mass flow controller channels for process gas supply into the chamber are standard. They enable automated control of the process atmosphere and pressure.





PlumeMaster – The Powerful Automation Platform

All **SURFACE** PLD systems are highly automated to control the whole deposition process. This ensures easy operation of the system.

The software is based on the proven Windows ***XP pro*** operating system and implemented in LabView. Several process steps with individual settings can be combined into one deposition program. Intuitive process visualization, highly flexible data logging with data export, and self-test capability are additional features.

Customer Support through Advanced IT Features

The supplied software includes ***SURFWARE*** – the advanced customer support tool from **SURFACE**:

- Fast contact to the **SURFACE** support group
- Audiovisual support by **SURFACE** support engineers via internet (TCP/IP) and the integrated webcam
- The support engineer can remotely control the system while maintaining audiovisual contact
- Easy troubleshooting of hardware problems as well as customer issues with process programming
- Automated software update procedure via internet

Specifications:

Laser:	**Coherent COMPexPro 201F or 205F, 0.7 J max. pulse energy**
Wavelength:	**248 nm**
Laser gases:	**20 l premix, 10 l He**
Process gases:	**2 MFC channels**
Substrate heater:	**2“ 850°C or 1000°C, 1” or 3” optional**
Substrate rot.:	**0 - 50 RPM**
Targets:	**4 × 2“ , 0 - 50 RPM, target track control for even wear**
Control system:	**PC based control, integrated TFT monitor**
IT features:	**LAN connectivity, SURFWARE support software**
Size, approx.:	**2200×850×1600 mm³**
Power supply:	**3×400 VAC/50 Hz or 3×208 VAC/60 Hz**
Water cooling:	**Included chiller (201F)**

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