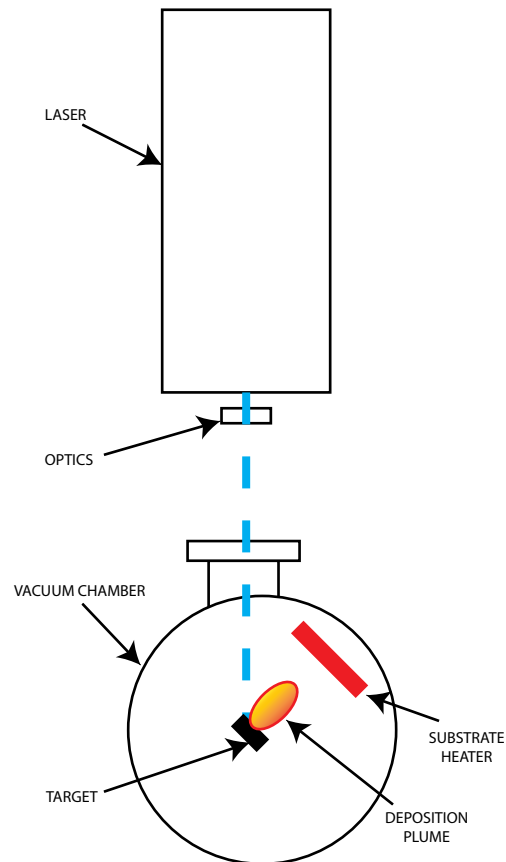


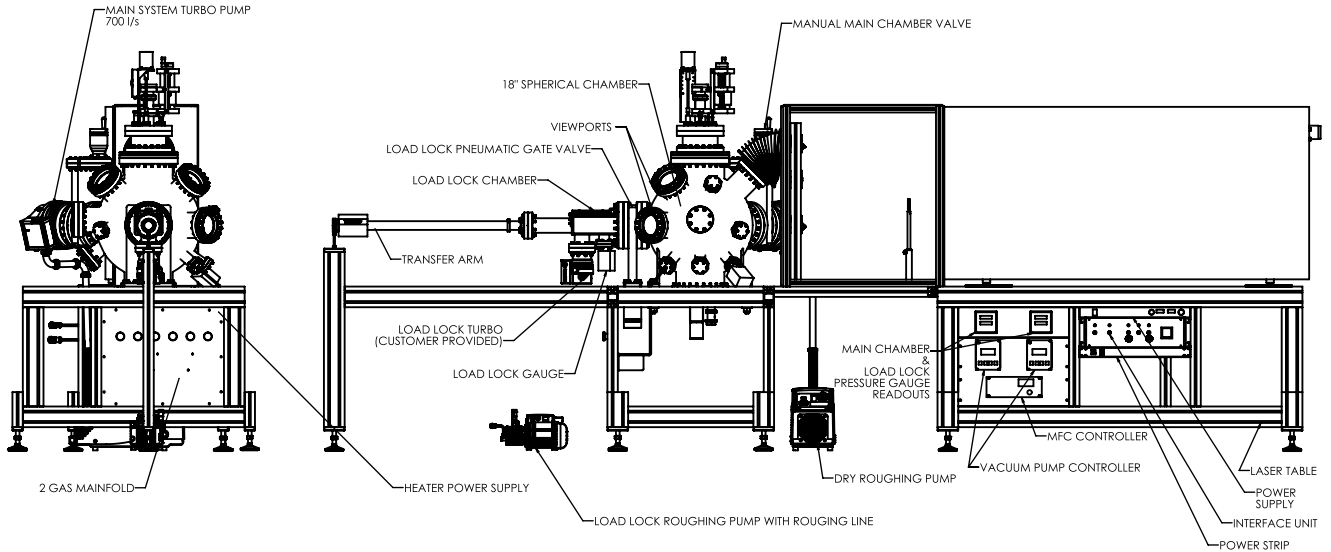
Pulsed Laser Deposition has quickly become a well-established deposition technique used for novel material science research. Due to the quick setup time and rapid deposition rates, PLD has been referred to as a rapid-prototyping tool for materials research. Many materials have been successfully deposited using PLD, including metals and metal oxides.

NBMD has delivered many systems to labs around the world that are producing high-quality films for various applications. Our key to success has been to listen to our customer needs and determine what system configuration will fit their requirements.

Our PLD systems have design elements that are similar to those used in semiconductor tools. We utilize techniques that have been proven in industry to enhance production systems and implement them into our designs. This philosophy provides for reliable and robust components, which enables our users to concentrate on their research rather than servicing their system.



The figure above shows a schematic of a typical Pulsed Laser Deposition System.



SPECIFICATIONS:

VACUUM SYSTEM:

- Spherical chamber with customizable port sizes and positions.
- Base Pressure: 1×10^{-8} Torr.
- Gas handling: (2) MFC's with automated control.
- Pumps: Oil-free turbo and dry roughing pump.

Target Manipulator:

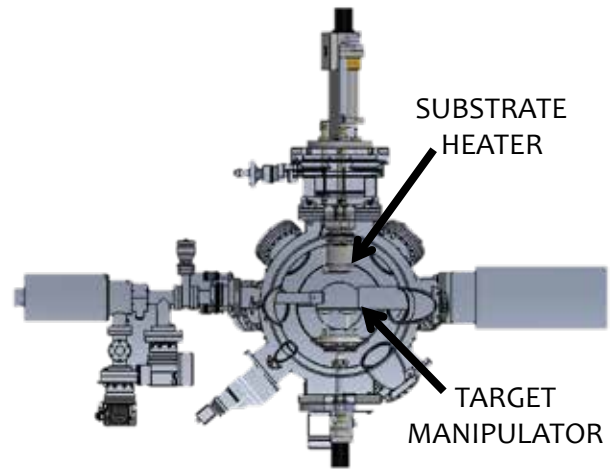
- Six $\varnothing 1"$ targets or three $\varnothing 2"$ targets.
- Independent rotation and target select axis for high reliability.
- Automated target select available.

Substrate Heater:

- Rotating or fixed substrate position.
- 1200°C Maximum heater temperature for increased thermal range.
- In-situ X-Y-Z-shift of substrate position.
- Customized substrate carriers for specific substrate sizes.

Universal Load Lock:

- Remove substrates and targets using a single load lock chamber without breaking main-chamber vacuum.
- Increases through-put of the system for maximum film growth.
- Eliminates the need to remove any flanges or flange-mounted accessories for access to chamber.



Picture above shows a typical geometry of a NBMD PLD system.

Available Options:

- High-pressure RHEED
- Ion sources
- Sputter sources
- Customized sample holders
- Deposition monitors
- Engineered transfer systems

