



## Liquid Phase Epitaxy Reactor

Reliable and repeatable system for growing liquid phase epitaxial layers



Load lock transfer



Rolling Furnace

The Liquid Phase Epitaxy (LPE) Reactor system provides the user with a process controlled furnace for automated user specified segment driven process recipes that provide optimum control over wafer processing and repetitive results from run to run. The overall system is designed to give the user reliability and repeatability for growing liquid phase epitaxial layers.

The LPE system is capable of processing a wafer over a uniform flat temperature zone. All system components are located on the side, top, or front of the furnace and either a left or right side glovebox.

An automatic, cantilevered, non-contact wafer loading system is incorporated for loading and unloading of the graphite process boat. The loading system consists of a quartz boat holder that is cantilevered from the automatic end cap assembly. The end cap assembly locates the process boat within the quartz condensation sleeve inside the quartz process tube. The translation speed of the loading system is adjustable from 50-300 mm/min. Door interlocks are provided to prevent startup of a process run in the event of an incomplete door closure.

See our vertical dipping system for LPE growth of thicker films at higher rates on the reverse side.

### powered by **CVDWinPrC™**

Operated through our CVDWinPrC™ process control software, the systems automatically log data and graphically show time-dependent values of user-selected parameters. CVDWinPrC™ also allows users to load preprogrammed recipes, modify, check and create new recipes, and view realtime or saved process data.

### Safety Protocols

The systems have application configured safety protocols embedded into relay logic, PLC, and CVDWinPrC™ software.



## LPE System Features

- CVDWinPrC™ based process control software for real time process control, data logging and display, recipe generation, and editing
- Multi-zone rolling resistance furnace for temperatures up to 1000 °C and controlled heat-up and cool down of the LPE boat
- High purity graphite LPE boat
- Glovebox with load lock
- Automatic boat slider
- Integrated vacuum system to 10<sup>-6</sup> Torr
- User settable warnings and alarms
- Comprehensive software and hardware safety interlocks
- 1 year warranty

CVD Equipment Corporation also offers a vertical dipping system for LPE growth of thicker films at higher rates, e.g. HgCdTe (MCT). It operates at pressures up to 200 PSIG and temperatures to 600 °C. The system has a load lock which can be evacuated to 10<sup>-6</sup> Torr and pressurized to 200 PSIG.



Vertical Dipping LPE System  
(Requires a platform)

## Our Other System Capabilities

- Atomic Layer Deposition (ALD)
- Atmospheric Pressure CVD (APCVD)
- Crystal Growth
- Chemical Vapor Infiltration (CVI)
- High Temperature Annealing (HTA)
- Hydride Vapor Phase Epitaxy (HVPE)
- Low Pressure CVD (LPCVD)
- Metal Organic CVD (MOCVD)
- Plasma Enhanced CVD (PECVD)
- Rapid Thermal Processing / Annealing (RTP/A)
- Selenization and Sulfurization (SAS)
- Ultra-High Vacuum CVD (UHVCVD)
- Ceramic Matrix Composites (CMCs)

## Core Technologies

- Automation
- Cluster Tools
- Dry Etching
- Exhaust Abatement/Scrubbing
- Multi-Chamber Tools
- Reel-to-Reel Processing
- High Vacuum / UHV Systems

CVD Equipment Corporation offers CVD processing systems with support equipment such as gas cabinets and exhaust gas conditioning systems. All major components from one vendor makes component interfacing seamless.

Call us at **+1 631-981-7081** to discuss a product solution for your project. We can also be reached at [sales@cvdequipment.com](mailto:sales@cvdequipment.com) or visit our website.



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