



Advancing Plasma-Based Technologies

# **PLASMIONIQUE**

À l'Avant-Garde des Technologies Plasma

## ***EVAD Series Horizontal Tube Furnaces CVD, PECVD and ALD***



- EVAD series CVD and PECVD Horizontal Tube Furnaces are highly versatile units allowing synthesis of various types of materials from gaseous, vapour, liquid and solid sources.
- Single and multi zone furnaces combined with FLOCON series gas, vapour and liquid flow management systems offer unparalleled flexibility.
- PLUME series ICP plasma sources could easily be integrated for conversion of system to a PECVD Furnace
- PLASMICON control system allows full automation of processes and it includes data acquisition system.
- The Users could save and recall data and process recipes.

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# ***System Characteristics***

Furnace	<ul style="list-style-type: none"> <li>• Quartz or Stainless Steel Chambers with 1" to 8" diameter</li> <li>• Multi-zone heating capabilities</li> <li>• Heating to 1200 C with better than +/-0.5% accuracy. Option for higher temperature is available. Higher temperature options are available.</li> <li>• Independent PID control of each zone.</li> <li>• Programmable ramp rates for individual zone is included</li> <li>• Operation in atmospheric or low pressure regimes</li> <li>• Provisions for injection of gases, vapour, liquid aerosol in chamber</li> <li>• Manual or computer control transfer tray for samples and solid precursors into the chamber</li> <li>• Options include Rotary motion and Tilting of the chamber; customized design of the system frame structure, allowing manipulation of furnace on rail, pumping station interface, ETC.</li> </ul>
Substrate/ Sample Mount	<ul style="list-style-type: none"> <li>• User defined samples (size / shape), limited by tube diameter</li> <li>• Single or multiple sample holder</li> <li>• Option for loading / unloading through a glovebox.</li> </ul>
Upgrade to Plasma-Assisted CVD (PACVD) reactor	<ul style="list-style-type: none"> <li>• PLASMIONIQUE PLUME series Inductively Coupled Plasma source is included between the heating zone and the gas injection flange.</li> <li>• A 300 W RF generator with automatic matching network is included. Option for 600 W is also available. Power control to within +/- 1 W</li> <li>• Pulsed or continuous operation is included and programmable</li> <li>• Pulse frequency and duty cycle are set by the end user</li> </ul>
Gas Management	<ul style="list-style-type: none"> <li>• PLASMIONIQUE's FLOCON series gas, vapor and liquid flow management system is included</li> <li>• User defined number of Mass and Liquid Flow Controllers</li> <li>• Vaporizers or bubblers are also available</li> <li>• Multiple entry ports prevents interaction of gases outside the chamber</li> </ul>
Process Control System	<ul style="list-style-type: none"> <li>• LabView®-based monitoring and control software with Intuitive graphical user interface, real time data display and time stamped data-logging</li> <li>• Program mode for programming multi-step processes</li> <li>• PC-Windows OS included with 3 Y free software upgrade</li> <li>• Alarms, safety interlocks, emergency shut-off and spare interlocks</li> <li>• Options for integration of various diagnostics</li> </ul>
Utility Requirements	<ul style="list-style-type: none"> <li>• Electrical: Typically, 208/380V, 60/50Hz, 3-phase, 5-wire</li> <li>• Cooling water : If required, typically 1-4 gpm (system dependent)</li> <li>• Instrument air if required: 40-80 psig (3-5 bar)</li> <li>• Purge/vent gas, and Process gases, regulated</li> </ul>