



Advancing Plasma-Based Technologies

# **PLASMIONIQUE**

À l'Avant-Garde des Technologies Plasma

## ***CVD, MOCVD and ALD Systems w/wo Plasma Assist***



PLASMIONIQUE offers custom designed CVD, MOCVD, and ALD systems with and without plasma for R&D and small batch productions. The customized reactors include FLOCON series liquid, vapor and gas flow management systems. Various types of Plasma sources, including PLUME series, remote ICP, FLARION series volume ICP and MIRENIQUE series microwave plasma sources could be integrated for plasma assisted processes. Full computer controlled operation with a data acquisition system for process parameters and diagnostics is a standard feature.

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## ***CVD, MOCVD , ALD Reactor Characteristics***

<p>PLUME, Remote ICP MEAglow Hollow Cathode MIRENIQUE, MW plasma Source</p>	<ul style="list-style-type: none"> <li>• Scalable plasma source with power determined by deposition area</li> <li>• RF (13.56 MHz) Continuous or pulsed operation in RF mode</li> <li>• Operation pressure process dependent</li> </ul>
<p>Substrate/Sample Mount</p>	<ul style="list-style-type: none"> <li>• User defined diameter or custom size/shape</li> <li>• Heating to over 800°C with PID temperature control or cooling</li> <li>• Adjustable axial position, manual or motorized</li> <li>• Optional Biasing (RF or DC)</li> <li>• Load-lock sample transfer station (optional)</li> </ul>
<p>Process Environment</p>	<ul style="list-style-type: none"> <li>• Custom designed stainless steel chamber</li> <li>• Vacuum to 10<sup>-8</sup> Torr range with turbomolecular pump, backed with rotary vane or dry scroll mechanical pump</li> <li>• Operation with oxygen or corrosive gases (optional)</li> <li>• Vacuum gauges: wide-range gauge and capacitance manometer for process control</li> <li>• Throttling gate valve with automatic control</li> </ul>
<p>FLOCON series Flow Management</p>	<ul style="list-style-type: none"> <li>• FLOCON series flow control system for user defined number of gases and vapors</li> <li>• Option for liquid flow controllers with vaporizers</li> <li>• Flow controllers with pneumatic shut-off valves</li> <li>• Temperature controlled flow tubes for condensable gases</li> <li>• Purge/vent line with safety pressure relief valve</li> </ul>
<p>PLASMICON Process Control Sys- tem</p>	<ul style="list-style-type: none"> <li>• LabView®-based monitoring and control software</li> <li>• Intuitive graphical user interface</li> <li>• Real time data monitoring and Plotting</li> <li>• Data-logging</li> <li>• Unlimited number of Recipe save and call feature</li> <li>• Program mode for programming multi-step processes</li> <li>• Alarms and safety interlocks, emergency shut-off</li> </ul>
<p>Supply requirements</p>	<ul style="list-style-type: none"> <li>• Electrical: Typically, 208/380V, 60/50Hz, 3-phase, 5-wire</li> <li>• Cooling water: 1-2 gpm (4-8 L/min), 15-30 °C</li> <li>• Instrument air: 40-80 psig (3-5 bar)</li> <li>• Purge/vent gas, regulated</li> <li>• Process gases, regulated</li> </ul>

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