



Advancing Plasma-Based Technologies

PLASMIONIQUE

À l'Avant-Garde des Technologies Plasma

FLARION Series Plasma Reactors



The FLARION series plasma reactors are designed for plasma-enhanced chemical vapour deposition (PECVD), plasma etching (PE), reactive or deep reactive ion etching (RIE, DRIE), or surface functionalization. The FLARION series plasma reactors could be offered with inductively- and capacitively-coupled plasma configurations (ICP and CCP). The ICP sources could operate with or without Faraday filter, offering significant flexibility for controlling ion energies. Reactors offered with an ICP source could have an independent substrate biasing capabilities included. The turn-key system offers full process automation, and with data logging. Option to integrate plasma diagnostics for process control or monitoring is also available. All industrial and research system are customized to meet end user requirements.

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FLARION Reactor Characteristics

<p>FLARION Plasma Source</p>	<ul style="list-style-type: none"> • Inductively or capacitively coupled RF plasma • Units with max. power from 100W and over 3000W • Continuous or pulsed operation modes • Modes with or without Faraday filter to modify capacitive coupling effects and ion energy distributions • Gas distribution ring (ICP) or showerhead (CCP) • Dual frequency option for plasma excitation and substrate biasing
<p>Substrate/Sample Mount</p>	<ul style="list-style-type: none"> • Custom ized for single or multiple substrates of various sizes • Heating to over 700 °C with PID control / Water cooling/ or both Cooling and Heating to450 °C capability • Fixed or adjustable axial position, manual or motorized • Biasing (RF or DC) to tailor energy of impinging ions • Load-lock sample transfer station (optional)
<p>Process Environment</p>	<ul style="list-style-type: none"> • Stainless steel chamber (or aluminum) • Access door or split chamber design • Vacuum down to 10⁻⁸ Torr range with turbomolecular pump; Two stage rotary vane or dry mechanical pump • Operation with oxygen or corrosive gases • Vacuum gauges: wide-range gauge and capacitance manometer for process pressure control • Throttling gate valve with automatic control option
<p>Gas Management</p>	<ul style="list-style-type: none"> • FLOCON series flow control system for user defined number of gases or precursors • Mass flow controllers with pneumatic shut-off valves • Vapor flow control with Temperature controlled flow tubes for condensable gases • Purge/vent line with safety pressure relief valve
<p>Process Control System</p>	<ul style="list-style-type: none"> • Process monitoring and control software • Intuitive graphical interface • Real time graphic data display and data-logging • Program mode for programming multi-step processes • Alarms and safety interlocks, emergency shut-off
<p>Supply requirements</p>	<ul style="list-style-type: none"> • Electrical: Typically, 208/380V, 60/50Hz, 3-phase, 5-wire • Cooling water: 1-4 gpm (reactor size dependent), 15-30 °C • Instrument air: 40-80 psig (3-5 bar) • Purge/vent gas, regulated • Process gases, regulated