



Quantum Design

LATIN AMERICA

Raising The Science

Materials Science

Spectroscopy

Cryogenics

Optics

Nanoscience

Sample Synthesis

Biotechnology & Chemistry

Industries

Microscopy

Quantum Technology

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Founded in 2003, Arradiance combines unique talents in material science, charged particle physics, equipment design, modeling, simulation, vacuum technology, and metrology providing world class application of Atomic Layer Deposition (ALD) and Plasma Enhanced Deposition (PEALD) equipment and services. Using ALD you are capable to deposit ultra-thin films, controlled layer by layer, on flat surfaces or substrates possessing both high surface areas ($>9 \text{ m}^2$) and high aspect ratios ($>>100:1$).

GEMStar XT is the product family from Arradiance and delivers high quality performance in a compact benchtop platform. With configurable options to meet specific customer requirements and budgets, GEMStar can take your ALD research or low volume manufacturing to the next level.

XT systems can be configured as single (4 ALD port) or dual (8 ALD port) 200 °C manifolds with four easily locatable ALD precursor bottles, heated zones, and up to four external gas lines. All systems have one port equipped with Pulsed Vapor Push technology for low vapor pressure materials. The GEMFlow™ scripting software allows easy creation of jobs for the most complicated nanaolaminate films providing real time history of process and equipment parameters.

Key features:

- 300 Watt Air Cooled Direct ICP Head with four metal sealed mass flow controlled plasma gas inputs
- Adjustable reactor temp up to 300°C
- Up to 200°C uniform gas distribution delivery Pulsed Vapor Push (PVP™) to handle very low pressure material
- Substrate configurable end effectors up to 200 mm diameter substrates, as well as a 500 °C heated platen option
- User selectable carrier gas MFC controlled input up to 200 SCCM
- Field proven GEMFlow™ Control System Watchdog protection and EMO interface Operator touch safe exterior

Most common applications:

- Solar cells
- Energy Storage
- Medical Device
- High Energy Physics
- Astronomy
- Homeland Security
- Semiconductor research
- Catalysis
- Superconductors
- Device research
- Genetic sequencing

BIG AREAS

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Sample Synthesis

