Glow Research

GLOW System Overview

Glow Research Background

- Glow Research started in 2007
- Have shipped over 100 system worldwide
- Products: Glow, OptiGlow 75, OptiGlow ACE, AutoGlow, AutoGlow 200 and the ST1200 RIE systems
- All plasma systems are CE certified and marked
- All products/parts have engineering drawings and documentation to the module and component level
- Manufacturing using a module approach
- Glow Research makes the entire system---RF generator, RF matching network, Chambers and Control Systems

Glow Research Background

- Final testing is separate from manufacturing
- All systems are leak checked with a helium leak detector in manufacturing to ensure vacuum integrity
- Have detailed technical manuals and instructional videos for each system
- Our table-top systems can operate at low wattage (10 watts) or as high as 600 watts
- Our systems tune very fast and do not arc, spark or have tuning issues
- Our table-top systems have LED diagnostics….to confirm all modules are working properly

GLOW Plasma System

All Glow Research Systems

•Reliability starts with the conductive coating of the cabinet metal prior to the powder coat. This is critical for RF containment and RF reliability.

•The outside cabinet is bolted in close intervals for RF containment.

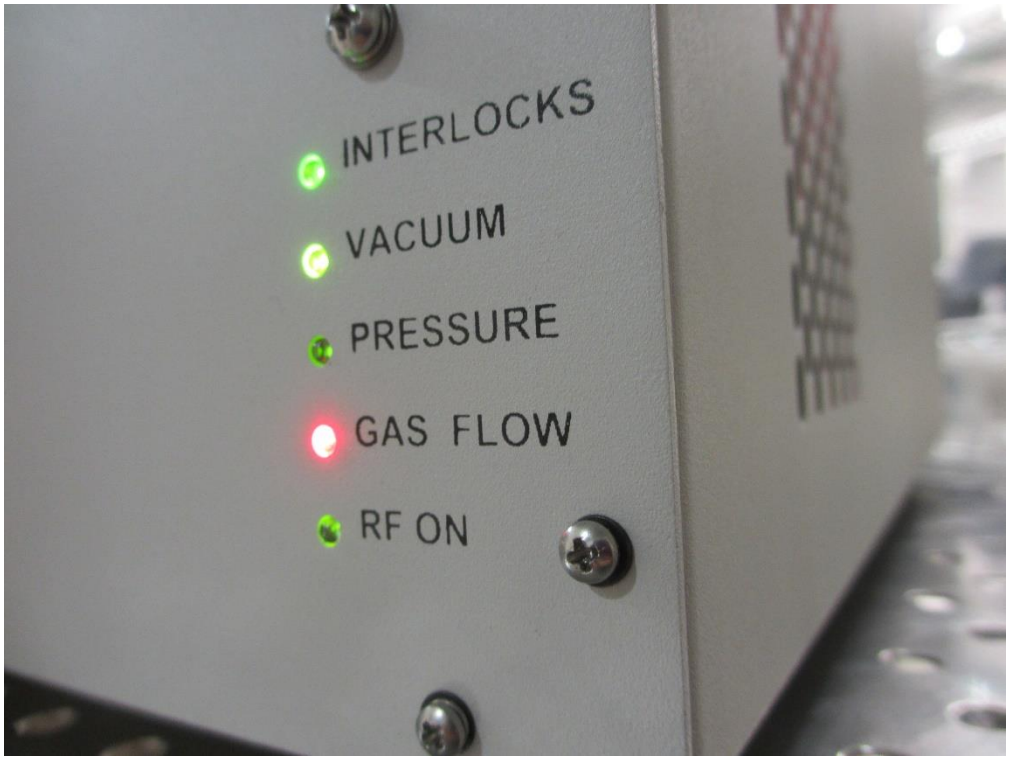
GLOW Plasma System
Timer

Process time can be set in minutes and seconds. RF processing will automatically stop at the set time limit.

GLOW Plasma Systems

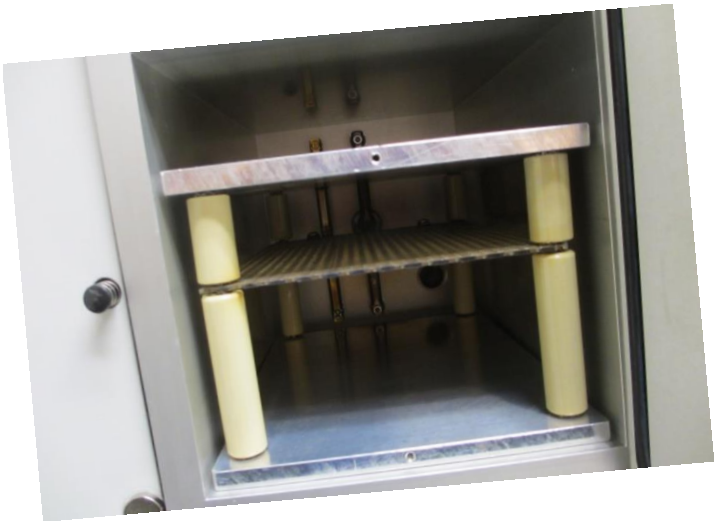
- Chamber door has dynamic hinge (see above)—so the door is drawn directly into the chamber under vacuum—avoids pinching the door seal on the hinged side.
- Magnet on door to keep it closed after processing
- Conversion charts are provided to show flow of a specific gas through the flowmeter in cc/min.
- One flowmeter standard
- Air, oxygen and argon are typical process gases used

All OptiGlow Systems
System Diagnostics



LED Display for Confirmation of: Interlocks, Vacuum, Pressure , Gas Flow , RF ON

GLOW Sample Carrier

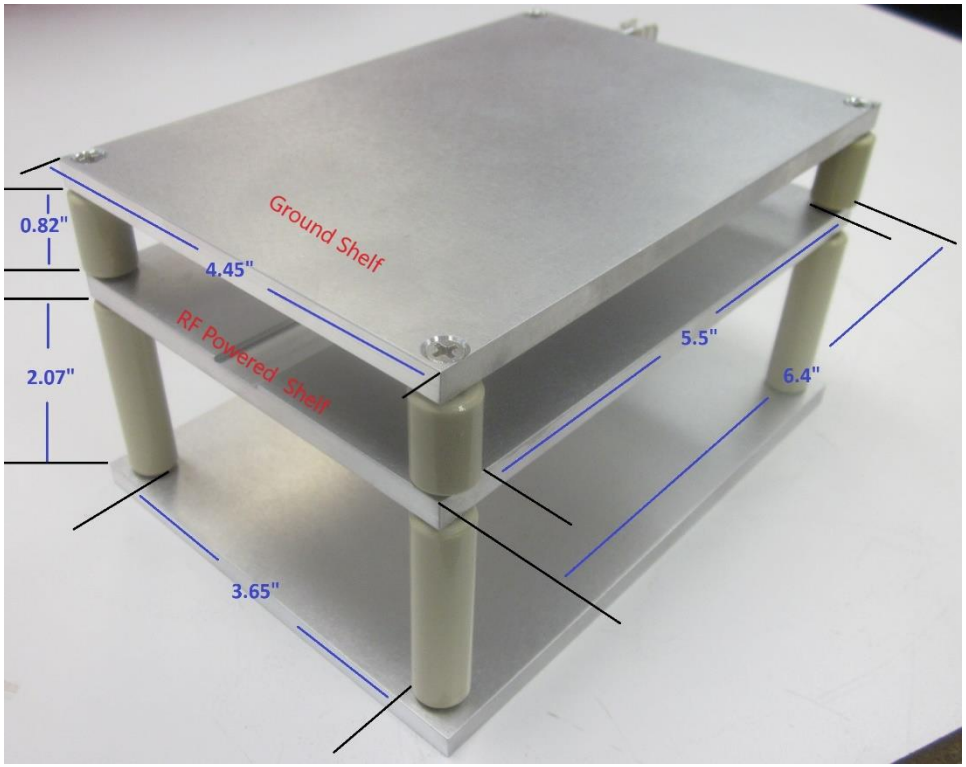


- Sample carriers can be designed for a specific need
- The carrier to the right has a tweezers slot to help load/unload wafers
- Up to 100mm or 4’ wafers can be processed in the Glow system

GLOW Sample Carriers

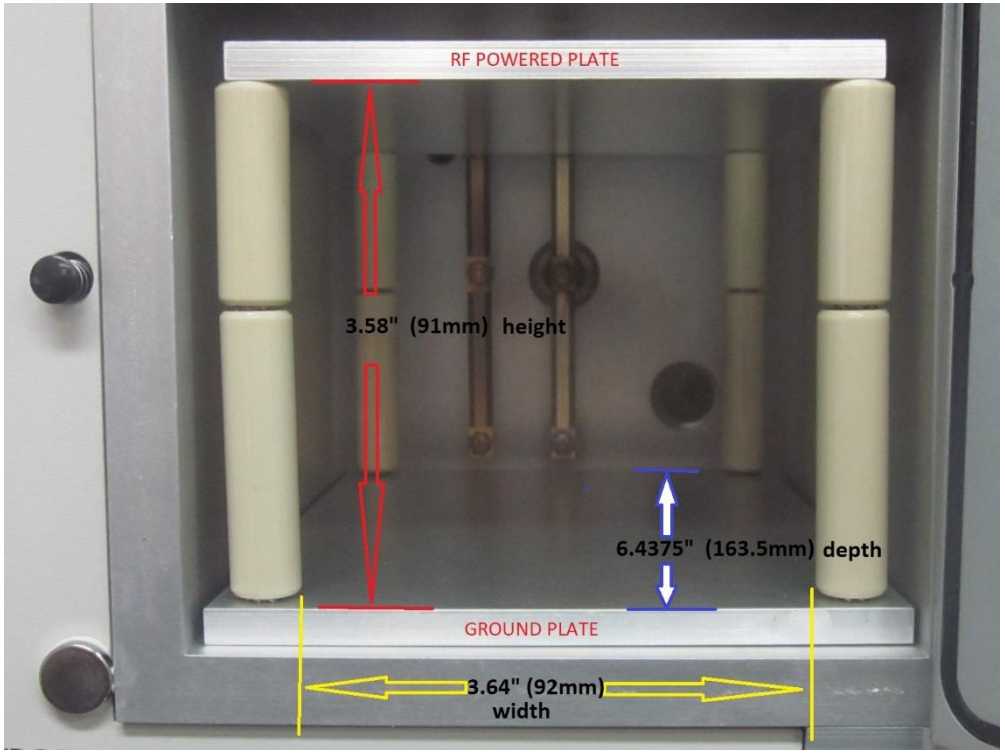
•The carrier above has a larger working space—the top electrode is ground and the lower middle shelf is powered for RIE type of processing

GLOW Sample Carriers



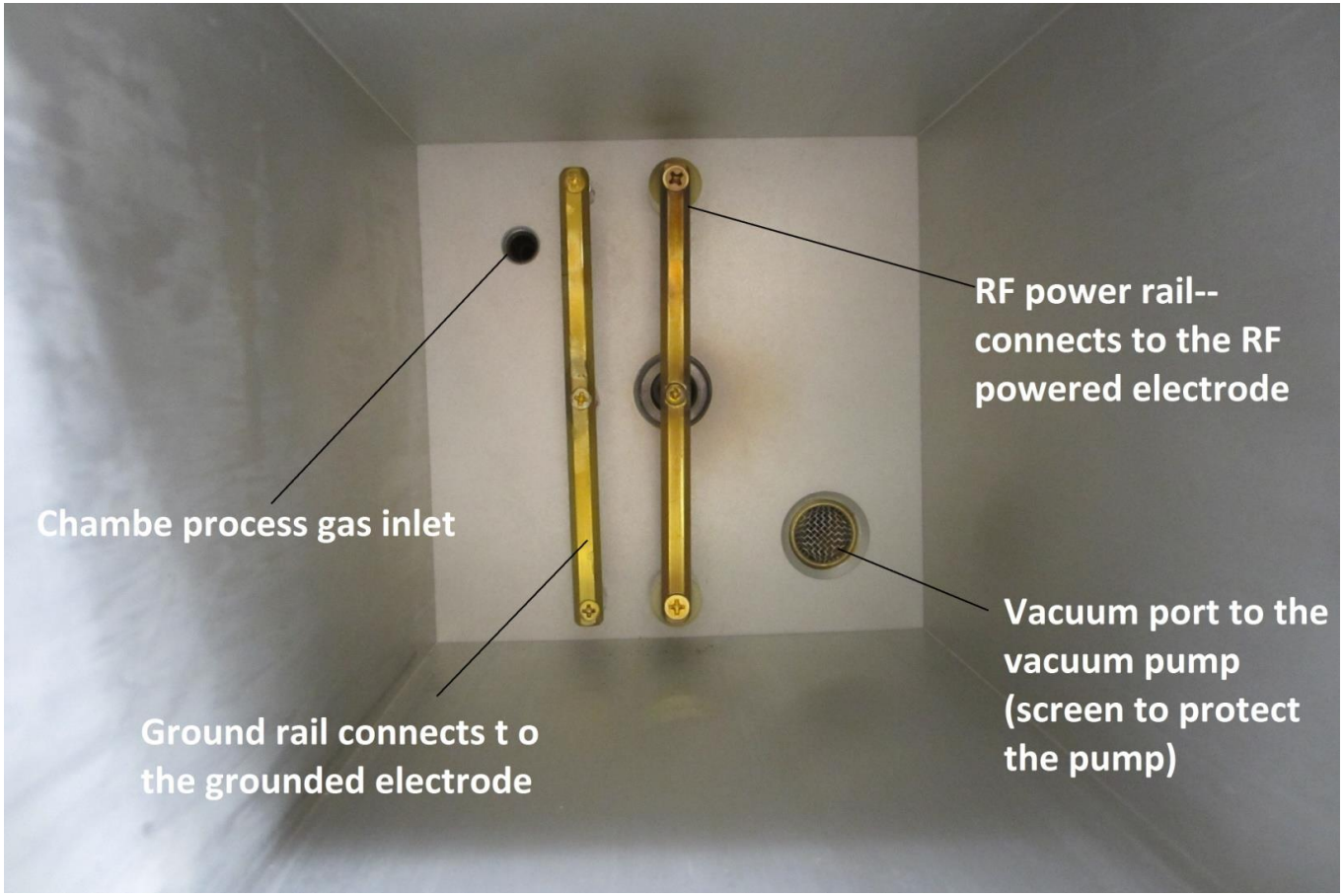
- Picture above in the standard sample carrier—the top electrode is RF ground and middle shelf is RF powered
- Contact Glow Research to discuss your individual sample requirement

GLOW Sample Carriers



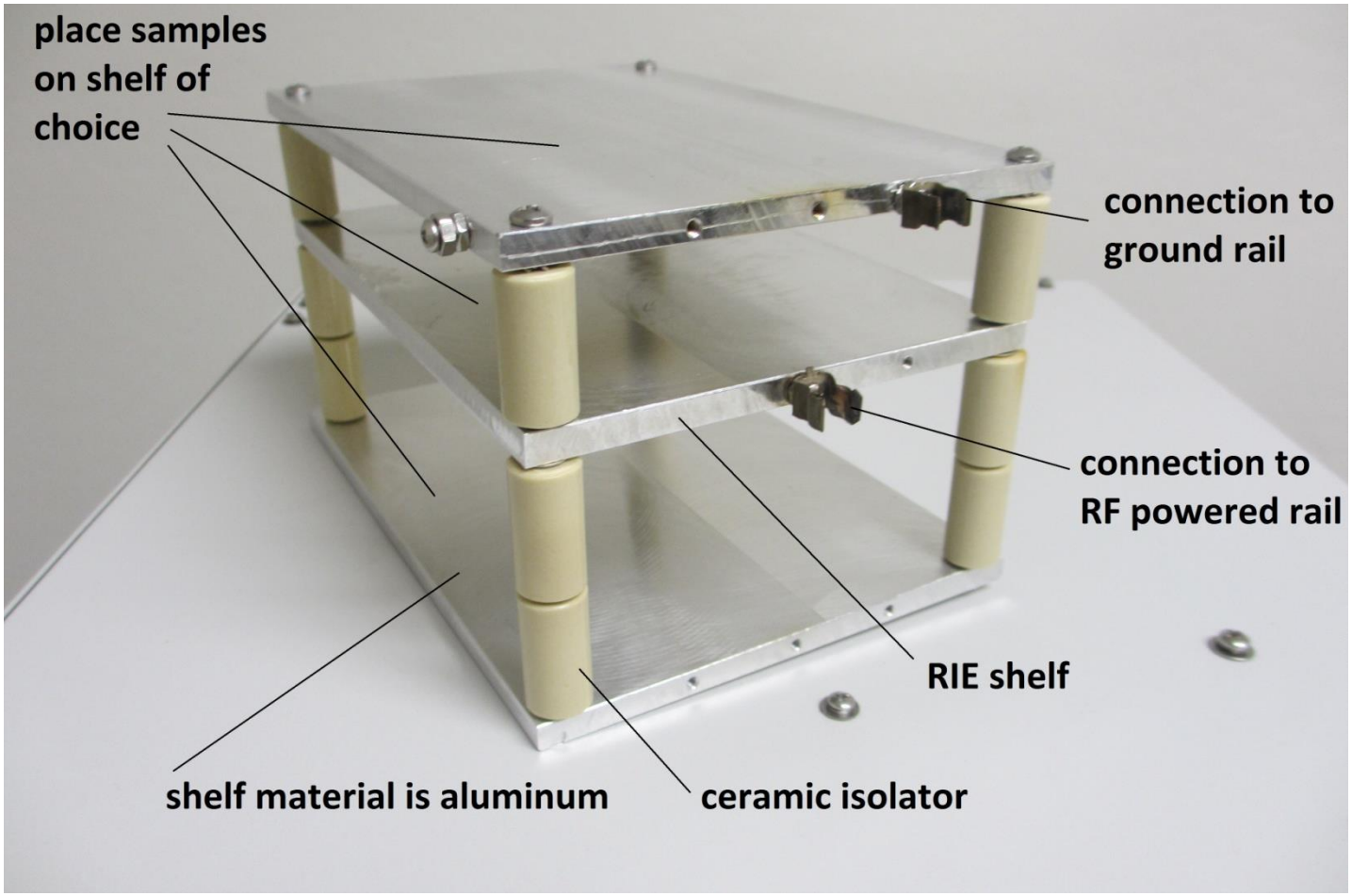
- The carrier above has a large working space—the top electrode is RF powered and bottom is ground…for plasma type processing
- Contact Glow Research to discuss your individual sample requirement

Glow Plasma System



- The GLOW has an anodized aluminum chamber for durability
- No welds are used to make the chamber—no leaks
- All systems are tested with a helium leak detector to ensure vacuum integrity

Glow Sample Carriers

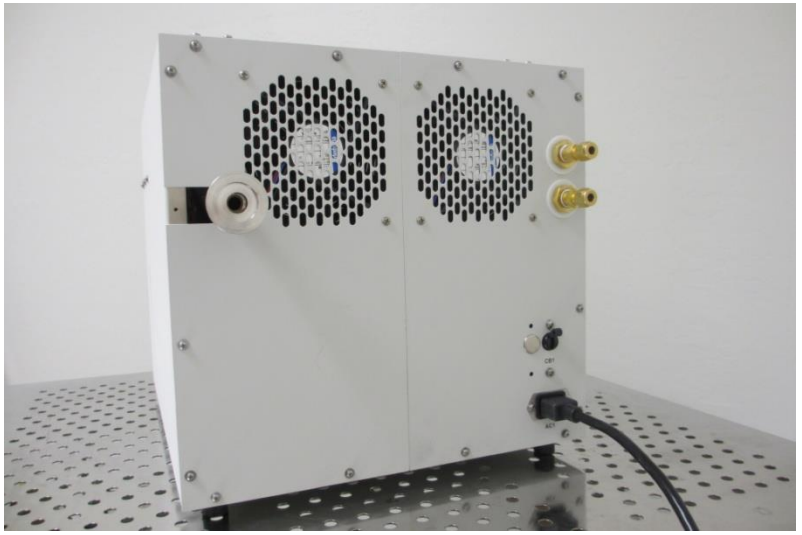


- Top shelf is grounded in this sample carrier (above)
- The middle shelf is powered—placing samples on this shelf will provide RIE type processing

Glow System

- Comes standard with one process gas flow meter
- Chamber door has a magnetic latch to keep the door closed after venting to atmosphere
- Air is drawn into the front side of the system—circulated around the chamber—over the electronics/RF generator, and out the top back of the system

- KF 25 connection to the vacuum pump
- Gas inputs on the back
- Diagnostic LED display for all modules
- Modular RF generator.
- Aluminum chamber is anodized for durability



Glow Features/Benefits

- Operates at 100 kHz and the power is set at 50 watts for easy operation
- Pressure output display using a Pirani pressure gauge—it is important to know the chamber pressure to properly process samples or wafers
- Proprietary RF network that does not require tuning forward or reflected power
- Solid state electronics and controls
- Advanced RF generator and RF match---made by Glow Research
- Sample holder has two shelves—one shelf is grounded, for plasma processing, and the other shelf is powered for RIE type processing
- CE marked and certified, safe to use
- Diagnostics LED display to confirm module function

Glow Markets

- Universities
- R&D Labs
- PDMS prebonding
- Plasma Cleaning
- Clean before bonding
- Ashing
- Etching
- 2”, 3” and 4” semiconductor applications
- High quality plasma system at our lowest price

We Ship Worldwide

- Shown above is a GLOW system with vacuum pump
- Shipping crates are certified for international shipment
- All systems are staged in a clean area, receive a IPA wipe down, and are double bagged
- Testing Certificates and Final Testing Data are attached to system
- Systems conform to all international electrical standards and can operate in any location