

# NineScrolls LLC

Leading Innovation in Scientific Research Equipment

## About NineScrolls LLC

NineScrolls LLC is a dynamic start-up company dedicated to advancing innovation and integration in the scientific research equipment industry. Our primary focus is on establishing a comprehensive platform that connects manufacturers, researchers, and industry professionals across the United States.

By fostering collaboration and streamlining access to cutting-edge laboratory equipment, we aim to empower scientific discovery and drive technological advancements. At NineScrolls LLC, we are committed to delivering tailored solutions and creating value for our partners and clients through expertise, efficiency, and innovation.

### **Integration**

We create seamless connections between manufacturers, researchers, and industry professionals to advance scientific discovery.

### **Innovation**

We drive advancement in the scientific equipment industry through innovative solutions and platforms.

### **Collaboration**

We foster partnerships and facilitate connections across the scientific community to accelerate progress.

### **Expertise**

We leverage deep industry knowledge to deliver tailored solutions that create value for our partners and clients.



# Our Trusted Manufacturer Partner

We are proud to partner with Tyloong, a leading manufacturer of semiconductor processing equipment with over 30 years of experience in the industry. Their commitment to innovation and quality aligns perfectly with our mission to provide cutting-edge research equipment solutions.

**30+**

Years of Experience

**1000+**

Global Installations

**300+**

Research Institutions Served

## Industry-leading R&D

State-of-the-art research and development capabilities driving innovation in semiconductor processing.

## Global Support Network

Comprehensive technical support network ensuring reliable service worldwide.

## Proven Track Record

Decades of experience and success in semiconductor manufacturing equipment.

## Comprehensive Training

Detailed training programs and documentation for optimal equipment operation.

## Customizable Solutions

Flexible equipment configurations tailored to specific research requirements.

# RIE Etcher Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*1.0m)

## Uniform Chamber Center Pump-down

Better process performance

## Showerhead Gas Feed-in

Tuned as a preset parameter dependently

## Configurable Plasma Discharge Gap

Tuned as a preset parameter dependently

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Etching Materials	Si-Based (Si/SiO <sub>2</sub> /SiN <sub>x</sub> /SiC/Quartz etc.), Compounds (InP/GaN/GaAs/Ga <sub>2</sub> O <sub>3</sub> /ZnS etc.), 1D&2D Materials (MoS <sub>2</sub> /BN/Graphene etc.), Metals (Au/Pt/W/Ta/Mo etc.), Failure Analysis, etc.
Vacuum	TMP&Mechanical Pump
RF Power	Full Range 300-1000W, optional
Gas System	4 lines(Standard) or customized
Wafer Cooling	Water Cooling or He Backside Cooling optional
Wafer Stage Temperature Range	From -70°C to 200°C, optional
Non-Uniformity	Less than ±5% (Edge Exclusion)



# ICP Etcher Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*1.5m)

## Process Design Kits

Better process performance

## Chamber Control

Chamber liner, electrode temperature control suitable for different process application

## Configurable Plasma Discharge Gap

Tuned as a parameter dependently

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Plasma Specialization

Low power plasma technology, ion damage-free optional

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Etching Materials	Si-Based (Si/SiO <sub>2</sub> /SiN <sub>x</sub> /SiC/Quartz etc.), Compounds (InP/GaN/GaAs/Ga <sub>2</sub> O <sub>3</sub> etc.), 2D Materials (MoS <sub>2</sub> /BN/Graphene etc.), Metals (W/Ta/Mo etc.), Diamond, Failure Analysis, etc.
Vacuum	TMP&Mechanical Pump
RF Power	Source 1000-3000W, Bias 300-1000W, optional
Gas System	5 lines(Standard) and He backside cooling, or customized
Wafer Stage Temperature Range	From -70°C to 200°C, optional
Non-Uniformity	Less than ±5% (Edge Exclusion)

# Stripper Series

## Uni-body Design Concept

Foot-print outstanding (ref 0.8m\*0.8m)

## Uniform Chamber Center Pump-down

Better process performance

## Uniform Gas Feed-in

Tuned as a preset parameter dependently

## Configurable Plasma Discharge Gap

Tuned as a preset parameter dependently

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling

Open-Load



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Etching Materials	Organics (PR/PMMA/PS nanosphere etc.), 2D Materials (MoS2/BN/Graphene etc.), Failure Analysis, etc.
Vacuum	Mechanical pump
RF Power	Full range 300-1000W, optional
Gas System	2 lines(Standard) or customized
Wafer Cooling	Water cooling
Wafer Stage Temperature Range	From 5°C to 200°C, optional
Non-Uniformity	Less than ±5%(Edge Exclusion)



# IBE/RIBE Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*0.8m)

## Maintenance and Sample-handling Friendly

Sample holder and ion source design for easy-to use

## Flexible Ion Source Design

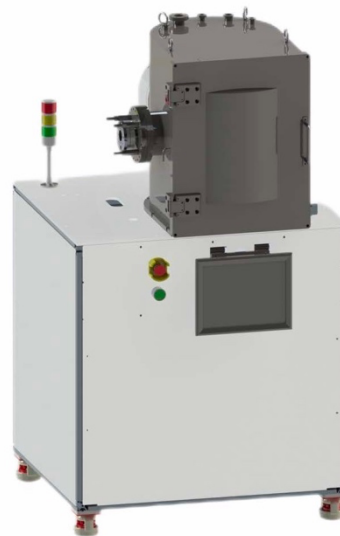
Different kinds of ion source easy-to swap design, depending on customer requirements

## Cost or Performance Orientation

Ion Source, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Kaufman ion source	RF ion Source
Wafer Size Range	up to 6 inch	up to 12 inch
Gas System	1 line(standard) or customized	3 line(standard) or customized
Wafer Stage Motion	Tilt from 0° to 90°, Rotation from 1-10 rpm/min	
Wafer Stage Cooling	From 5 to 20°C, Water cooling; He backside cooling optional	
Vacuum	TMP&Mechanical Pump	
Base Vacuum	Better than 7E-7Torr	
Non-Uniformity	Less than ±5%(Edge Exclusion)	



# ALD Series

## Uni-body Design Concept

Foot-print outstanding (ref 0.8m\*1m)

## Box-in-Box Process Chamber

Better process performance

## Configurable Gas Feed-in

Showerhead gas feed-in, tuned as a preset parameter independently

## High-AR Step Coverage

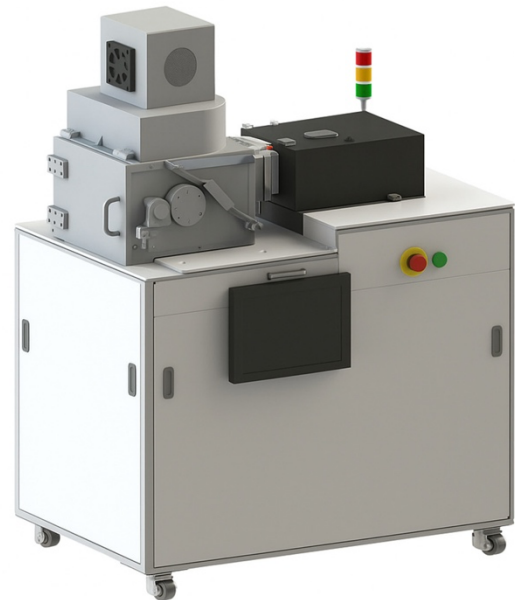
Excellent high-AR step covering capability with multiple gas inlets and vertical precursor though

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or Supersize optional
Growth Materials	Oxides (Al <sub>2</sub> O <sub>3</sub> /HfO <sub>2</sub> /SiO <sub>2</sub> /TiO <sub>2</sub> /Ga <sub>2</sub> O <sub>3</sub> /ZnO etc.), Nitrides (TiN/TaN/SiN <sub>x</sub> /AlN/GaN etc.), Metals (Pt/Pd/W etc.), etc.
Vacuum	TMP&Mechanical Pump
Base Vacuum	Better than 5E-5Torr
RF Power	Remote Plasma 300-1000W, optional
Number of Precursor	2-6 lines or customized
Temperature of Source	From 20°C to 150°C (Standard), 200°C optional
Wafer Temperature Range	From 20°C to 400°C, higher temperature optional
Non-Uniformity	Less than ±1%(Al <sub>2</sub> O <sub>3</sub> )

# PECVD Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*1.0m)

## Process Design Kits

Better process performance

## Variable Plasma Discharge Gap

Better process performance

## Temperature Control

Chamber liner, electrode temperature control  
suitable for different process application

## Advanced RF System

Electrode RF driven (13.56MHz and/or 400KHz)  
for better process tuned and controlled, low stress

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Deposition Materials	Si-Based ( $\alpha$ -Si:H/SiO <sub>2</sub> /SiN <sub>x</sub> /SiC etc.), etc.
Vacuum	Roots & Mechanical Pump
RF Power	Full Range 500-2000W, optional
Gas System	6 lines(Standard) or customized
Wafer Stage Temperature Range	From 20°C to 400°C, higher temperature optional
Non-Uniformity	Less than $\pm 5\%$ (Edge Exclusion)



# HDP-CVD Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*1.5m)

## Process Design Kits

Better process performance

## Temperature Control

Chamber liner, electrode temperature control suitable for different process application

## Step Coverage

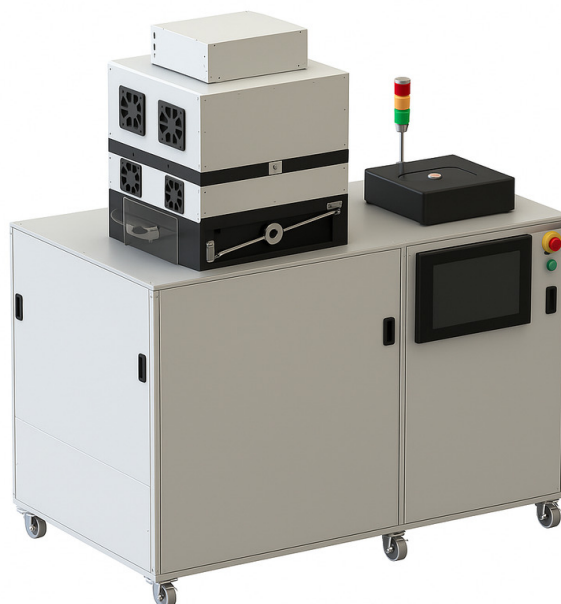
Excellent step covering capability, tuned as a parameter dependently

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Deposition Materials	Si/SiO <sub>2</sub> /SiN <sub>x</sub> /SiON/SiC, etc
Vacuum	TMP&Mechanical Pump
RF Power	Full Range: Source 1000-3000W, Bias 300-1000W, optional
Gas System	6 lines(Standard) or customized
Wafer Stage Temperature Range	From 20°C to 200°C
Non-Uniformity	Less than ±5%(Edge Exclusion)

# Sputter Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*1.7m)

## Creative Magnetron Design

Magnetron target structure self-designed creatively, designed and modified base on customer depending

## Flexible Target Configuration

Magnetron target face-down or face-up optional, also angle tiltable and deposition distance tunable

## Advanced Electrode Control

Electrode rotational, and temperature controllable suitable for different process application

## RF Bias Capability

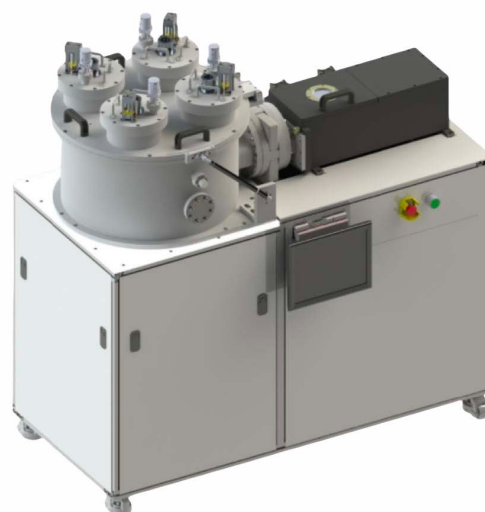
Substrate can be RF biased for in-situ clean, also better process tuned and controlled

## Cost or Performance Orientation

RF, Pump, Values etc. depending on requirements

## Sample Handling Options

Open-Load or Load-Lock



Specification	Parameters
Wafer Size Range	4,6,8,12 inch or multi-wafers optional
Magnetron Sputtering Source	2-6 optional
Substrate Temperature	Water-cooling, 400°C, 800°C, 1200°C, optional
Gas System	2 lines (Standard), numbers of line customized
Power	DC or RF customized, automatic switcher
Non-Uniformity	Less than $\pm 5\%$
Pre-Cleaning	Independent chamber or in-situ, RF plasma, optional
Base Pressure	Better than $5E-7$ Torr, higher vacuum customized



# Coater/Developer & Hotplate Series

## Uni-body Design Concept

Foot-print outstanding (ref 1.0m\*0.8m)

## Flexible Configuration

Numbers of coater/developer/hotplate customized

## Modular Options

Wide range of options down to module level, including dispense systems, temperature for developers etc.

## Cost or Performance Orientation

Dispense, Pump, Values etc. depending on requirements

## Sample Handling

Open-Load



Specification	Coater	Developer
Wafer Size Range	Small-piece,2,4,6,8,12 inch or Square optional	
Max. Spin Speed	8000 rpm ±1rpm	5000 rpm ±1rpm
Max. Acceleration	8000 rpm/s	5000 rpm/s
Dispense Arm	Up to 2 photeresist lines	Up to 2 developer lines and deionized water line
Interlock	Vacuum pressure, uncover etc.	
Hotplate Specifications		
Wafer Size Range	Small-piece,2,4,6,8,12 inch or Square optional	
Max. Temperature	Up to 200°C, Higher Temperature optional	
Lift-Pins	3 lift-Pins, minimum compatible 2 inch	

# Plasma Treatment / Cleaner System

## Ultra-Compact Footprint

Foot-print outstanding (ref 630 mm × 600 mm)  
One-piece integrated design for space-limited laboratories

## Maintenance and Sample-handling Friendly

Simple chamber structure with easy access  
Designed for fast loading, cleaning, and routine maintenance



## Stable and Cost-Effective Performance

Optimized RF plasma design for repeatable surface treatment  
Excellent cost-performance ratio for research and light manufacturing

## Flexible Process Capability

Supports surface cleaning, activation, and modification  
Suitable for single-wafer or multi-wafer batch processing

## Multi-Gas Plasma Processing

Compatible with O<sub>2</sub> / N<sub>2</sub> / Ar plasma processes  
Supports hydrophilic / hydrophobic surface treatments

## Tabletop / Bench-top Design

Single or multi-wafer batch processing  
Compatible with 6-inch and smaller wafers

Specification	Parameters
Wafer Size Range	≤ 6 inch, multi-wafer batch processing
RF Power	0 ~ 300 W / 500 W, automatic matching
Gas System	2 ~ 3 gas lines
Process Gases	O <sub>2</sub> , N <sub>2</sub> , Ar
Flow Control Range	0 ~ 300 sccm
Flow Control	MFC or manual control
Pump System	Mechanical pump (TMP optional)



Operation	Touchscreen control, fully automated
Footprint	630 mm × 600 mm
Compatible Materials	Photoresist (PR); PMMA; PDMS; HMDS; organic films and polymers; semiconductor materials; optical materials; biomedical materials
Main Functions	Surface cleaning; surface activation; hydrophilic / hydrophobic treatment; functional group modification (–OH / –H / –COOH); contact-free plasma processing
Typical Applications	Chemical & biological laboratories; failure analysis; optical components; biomedical and medical devices



## Office Location

12546 Cabezon Pl  
San Diego, CA 92129  
United States

## Business Hours

Monday - Friday:  
9:00 AM - 5:00 PM PST

## Contact Information

### General Inquiries:

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### Urgent Matters:

[+1 \(858\) 879-8898](tel:+18588798898)

## Technical Support

### Support Email:

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### Support Hours:

Monday - Friday:  
8:00 AM - 6:00 PM PST

### Emergency Support:

24/7 available for critical issues

INTEGRATION

INNOVATION

COLLABORATION

EXPERTISE