

PlasmaPro 80

RIE, ICP & PECVD process solutions

80



OXFORD
INSTRUMENTS



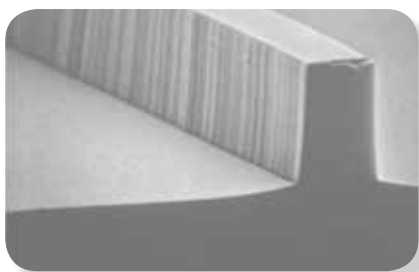
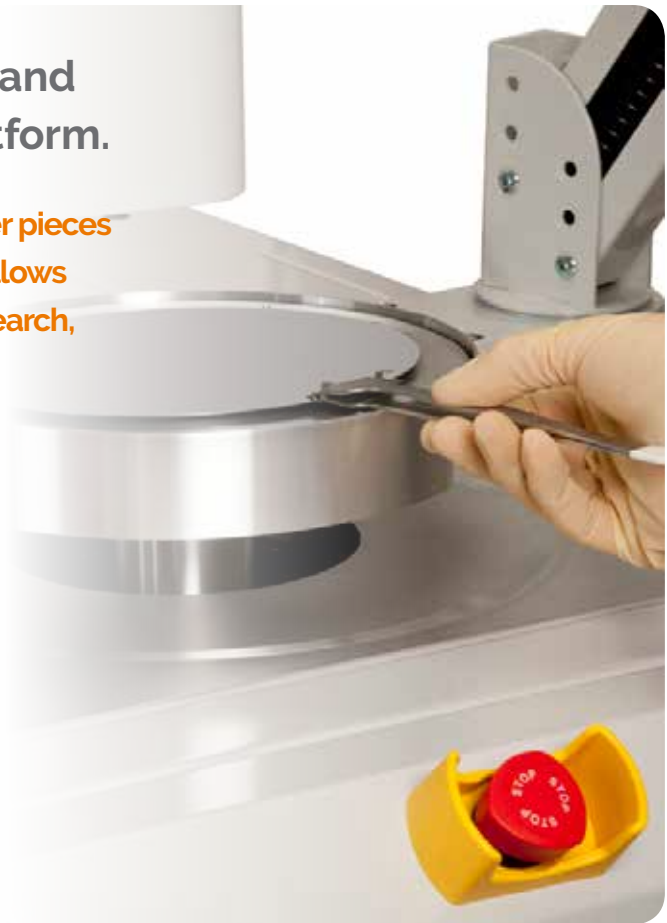
Process solutions

The **PlasmaPro 80** range offers compact, versatile plasma etch and deposition solutions on one platform.

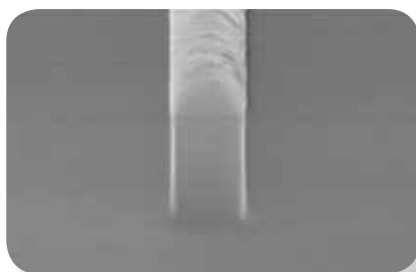
It can process samples from the smallest wafer pieces to 200mm wafers, and the open load design allows fast wafer loading and unloading, ideal for research, prototyping and low-volume production.

Wide range of applications

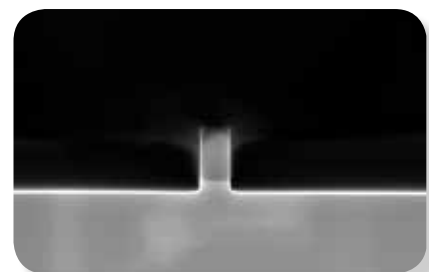
- Deep Si etch - Bosch Process
- Diamond Like Carbon (DLC) deposition
- SiO₂ and quartz etch
- Failure analysis dry etch de-processing
- High quality PECVD of SiN and SiO₂



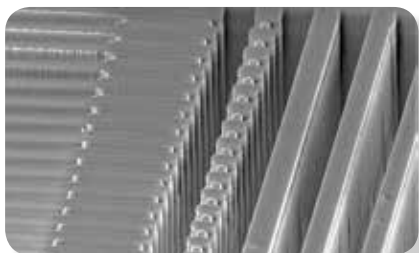
RIE of InP waveguide



7 µm polyimide feature RIE



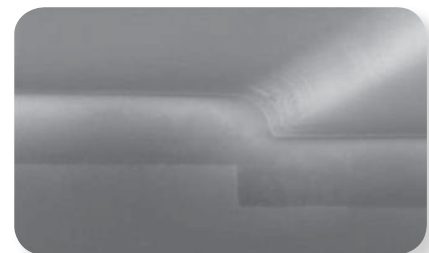
Sub µm Si mesa etch



Deep Si feature etch by ICP-RIE cryo process



Failure analysis - fast metal layer exposure in the **PlasmaPro** FA ICP

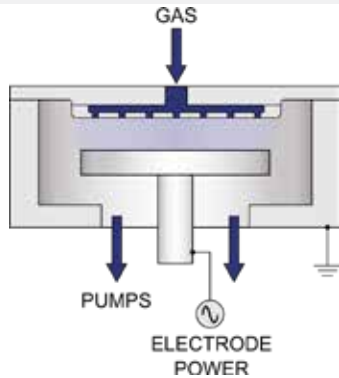


0.5µm SiO₂ deposited over a step with excellent step coverage

Multiple process technologies

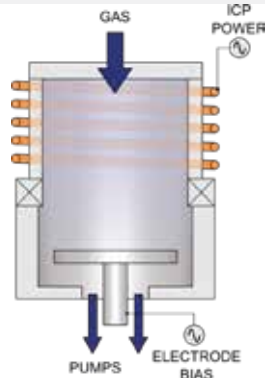
All the different plasma processing technologies are available on a common platform. Common spare parts means system maintenance is simple and effective.

RIE



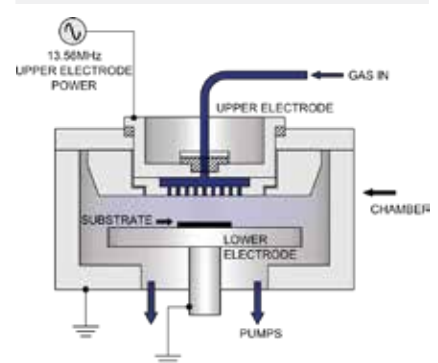
Reactive Ion Etch (RIE) is proven dry etch technology used successfully throughout the industry on a wide range of applications. Can also be run in plasma enhanced (PE) mode.

ICP



Inductively coupled plasma (ICP) etch creates high density plasma for high rate etching. Allowing low damage & highly selective processing.

PECVD



Plasma enhanced chemical vapour deposition (PECVD) produces high quality uniform dielectric films. Stress control is tuned for tensile, compressive or low stress.



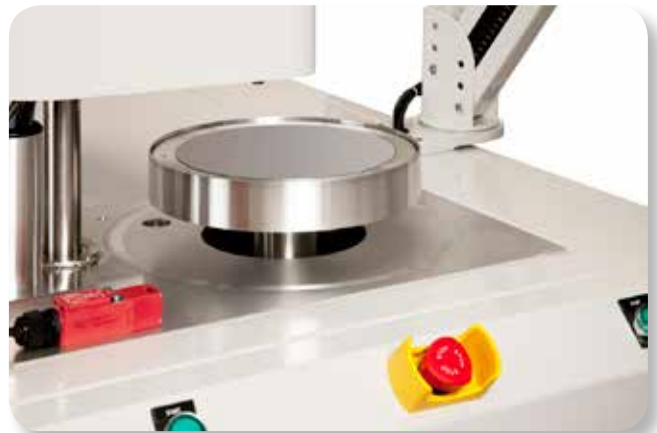
Hardware

The **PlasmaPro 80** is the tool of choice for open load plasma etch and deposition

Reliable hardware

- Uniform wafer temperature enables excellent process uniformity
- Small footprint
- Integrated gas pod for non toxic gases
- Simple and reliable hardware
- Production level software control system
- Advanced recipes and process monitoring

The electrode accommodates wafers up to 200mm in size for all system configurations



Easy open access

The pneumatic hoist mechanism is designed to allow clear access to the lower electrode.



Hardware

Substrate temperature control

- Substrate temperature control is provided by a range of fluid-cooled and/or electrically-heated electrodes with a temperature range up to 400°C.
- Options are available for helium-assisted substrate backside cooling for optimum wafer temperature control during processes.

Advanced Auto Matching Unit (AMU)

Digital AMU allows easy set up, fast matching over a wide range. This results in effective process repeatability & fast response time. AMU control is managed through the front end software.

Plasma Accelerator for Advanced Die Processing

Innovative processes developed for fast de-processing of packaged devices using focussed plasma.

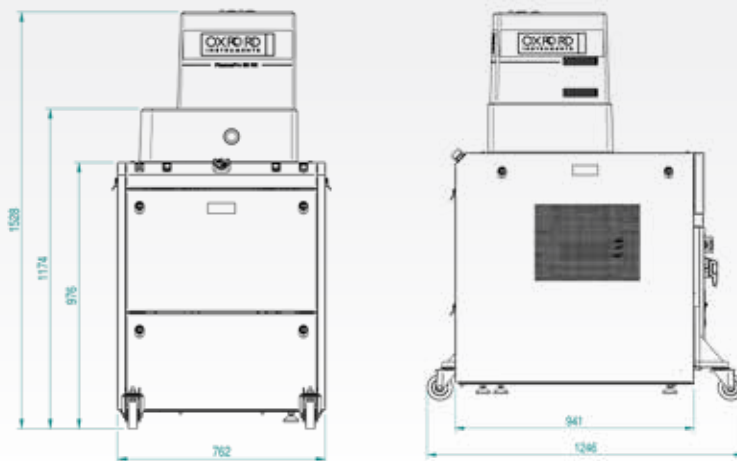


Four metal layers of a packaged device can be exposed in less than five minutes



The plasma is concentrated above the packaged device to be etched

Small footprint



Delivers up to
20 times faster
etching rates

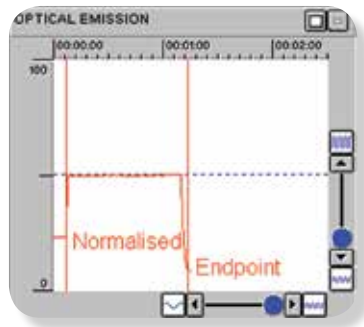
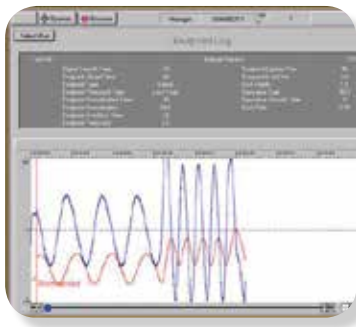


System control & diagnostics

Etch end point detection

Excellent etch control and rate determination can be provided by optional end-point detection.

- Laser end-point detection using interferometry to measure etch depth in transparent materials on reflective surfaces
- Optical emission spectrometry (OES) for detection of layer changes



High performance process control with etch end pointing



Internal Gas Pod

- Internal gas lines deliver simple, compact system installation
- Upto 4 gas lines allows flexibility of process recipes



Software & System Support

Process tool software

- The front end visual interface, which controls and monitors the process tool, is configured exactly for your system
- Process recipes are written, stored and recalled through the same software, building a library
- Password controlled user login allows different levels of user access and tasks, from 'one-button' run operation to full system functions
- Continuous system data logging (50ms) ensures effective traceability of each wafer and process run

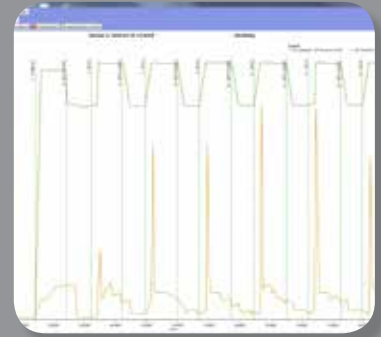
Reliability & diagnostics

Our remote support capability offers you the very latest technology, using remote access to allow online connectivity and remote diagnostics. The software allows our engineers remote access to your tools, so any problems or faults can be identified simply, quickly and easily.

- Saves you time and money
- System troubleshooting is carried out quickly
- Clear communication of complex issues
- Issues diagnosed remotely with secure, powerful software

LogViewer datalogging software

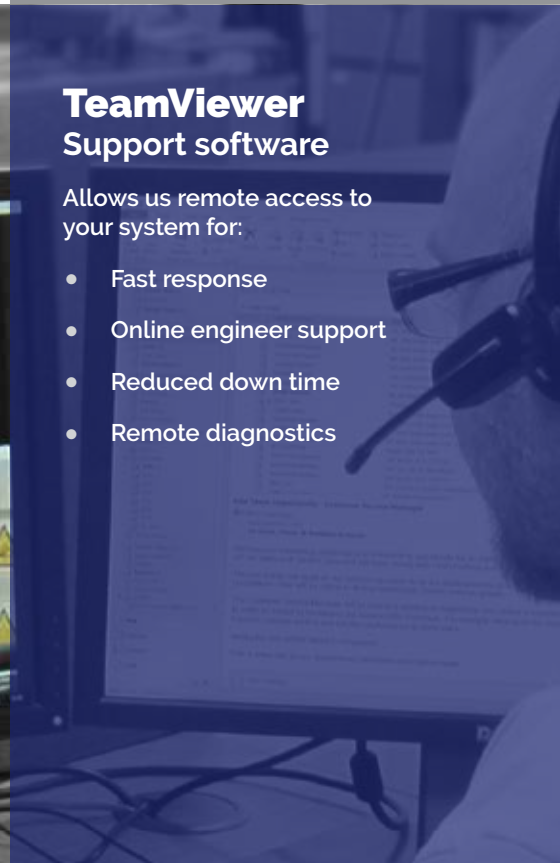
- Real-time graphing of all process parameters
- Post run analysis
- Multi-step recipes
- Visual representation of recipe performance
- Comparison with previous run database



TeamViewer Support software

Allows us remote access to your system for:

- Fast response
- Online engineer support
- Reduced down time
- Remote diagnostics



Global Service and Support

Worldwide Service and Support

Oxford Instruments is committed to supporting our customers' success. We recognise that this requires world class products complemented by world class support. Our global service force is backed by regional offices, offering rapid support wherever you are in the world.

We can provide:

- Flexible service agreements to meet your needs
- Tailored system training courses
- System upgrades and refurbishments
- Immediate access to genuine spare parts and accessories



For further information about our tools, please contact your local Oxford Instruments Plasma Technology office

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