

Quorum



AVS

Australian Vacuum Services

PRODUCT PORTFOLIO

25 μ m

SPECIALISTS IN EM SAMPLE PREPARATION

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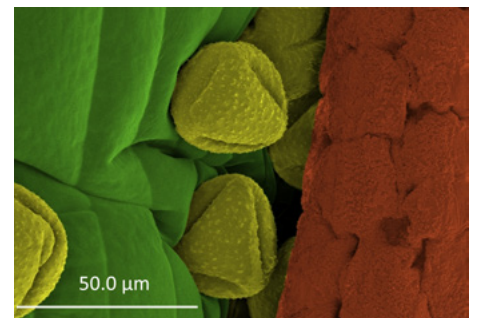
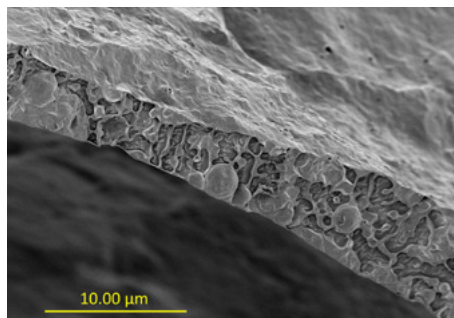
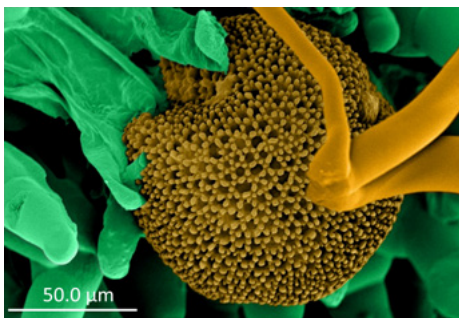
PP3010

Cryo Preparation System



Typical applications

- ◆ Material science such as Lithium battery and Semiconductors
- ◆ Biological and life sciences
- ◆ Food science
- ◆ Earth and planetary science
- ◆ Characterisation of samples with high moisture content including hydrogels, oleogels and bi-gels
- ◆ Beauty and Cosmetics research
- ◆ Characterisation of pre-frozen samples





QuickLok

PP3004 QuickLok

Sample transfer system for SEM, FIB-SEM, beamline and vacuum platforms

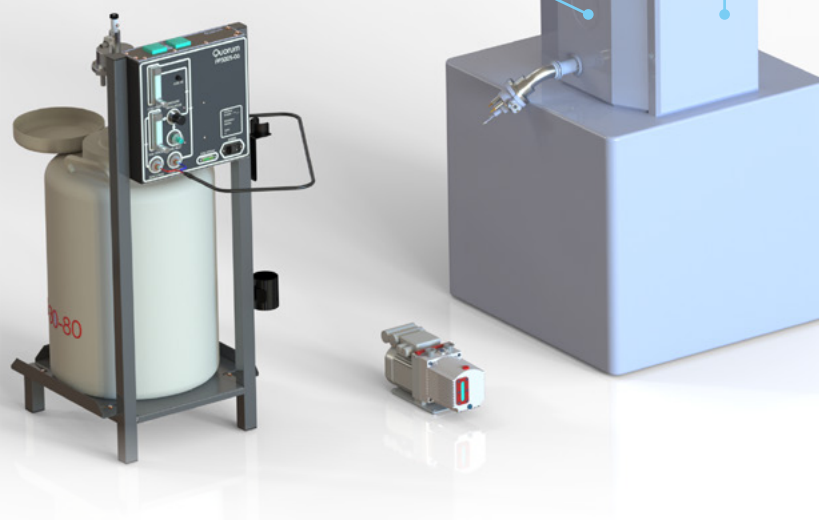
- ◆ Rapid specimen exchange
- ◆ Atmosphere/inert gas to vacuum transfer
- ◆ Upgrade path to PP3006 CoolLok

SEMCool

PP3005 SEMCool

Gas cooling system for sample stage in SEM, FIB-SEM, beamline and vacuum platforms

- ◆ Nitrogen gas cooled cold stage and anti-contaminator, ambient to -190 °C
- ◆ Temperature stability: +/- 0.5 °C
- ◆ Off-column cooling
- ◆ Independent cooling of cold stage and anti-contaminator
- ◆ Upgrade path to PP3006 CoolLok



CoolLok



Anti-Contaminator

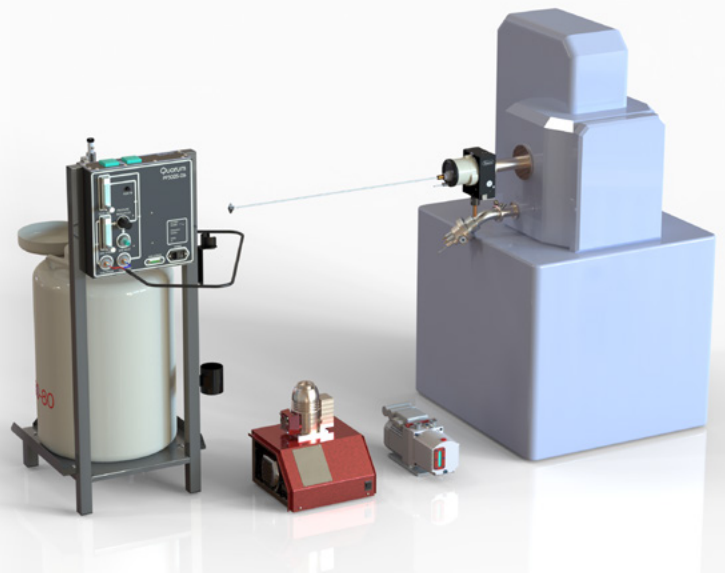


Cold Stage

PP3006 CoolLok

Sample transfer and gas cooling system for SEM, FIB-SEM, beamline and vacuum platforms

- ◆ Nitrogen gas cooled cold stage and anti-contaminator, ambient to -190 °C
- ◆ Temperature stability: +/- 0.5 °C
- ◆ Off column cooling with 24 hour run times before fills
- ◆ Independent cooling of the cold stage and anti-contaminator
- ◆ Atmosphere/inert gas to vacuum transfer



PP3004 / PP3005 / PP3006 Options

- | | |
|----------------------|--|
| ◆ Glovebox Interface | ◆ Pressurised liquid nitrogen dewar |
| ◆ Specimen Shuttles | ◆ LN ₂ Slushing Station |
| ◆ Specimen Stubs | ◆ TEM Prep Slusher (Slushing Station required) |



The **Actively Cooled Transfer (ACT)** is specifically designed for transferring delicate samples under both cryogenic conditions & high vacuum or at ambient temperatures under inert atmosphere. Its unique features include a built-in cold stage and an anti-contaminator, ensuring that sample integrity is maintained during the transfer process. The ACT is equipped with a solid Magdrive transfer rod and an attached cooling dewar, offering a highly accessible and portable solution for your needs.

Features

- Compatible with most makes and models of SEM and FIB-SEM
- Can be interfaced with other devices, such as Ion Mills
- Cold stage cooled to -160 °C
- Anti-contaminator cooled to -180 °C
- Glovebox interfacing required for inert gas transfer
- Transferring materials sensitive to atmosphere, such as Battery and Fuel Cells
- Operates in conjunction with the PP3010 and PP3006
- Transfer in high vacuum in the region of 10^{-6} mbar

Recommended Workflows

- Glovebox to PP3006
- Glovebox to PP3010 Prep Chamber
- Glovebox to Ion Mill with Cryogenic Stage
- Ion Mill with Cryogenic Stage to PP3006
- Ion Mill with Cryogenic Stage to PP3010 Prep Chamber
- All workflows can transfer in both directions

Specifications

Weight	5 kg approx
Overall dimensions	W= 300 mm, L=881 mm, D= 303 mm
Stage temperature	$\leq -160^{\circ}\text{C}$ (in 30 mins)
Vacuum level	Transfer in high vacuum in the region of 10^{-6} mbar
Operating pressure when interfacing with Glovebox	≤ 1 bar.
Warranty	1-year warranty, with an extended warranty offer upon request
Further Information	The chart of Pressure vs Time (pump down time), the chart of Temperature (Stage and Anti-contaminator) vs Time and EDS results of Oxygen reduction using ACT for sample transfer are upon request.
Configuration	Interfacing required, please contact sales@quorumtech.com for more information

ACT

CryoPrep

CoolLok

1. ACT configuration with the CoolLok PP3006



PP3010

2. ACT configuration with the PP3010 Cryo Preparation System



For more information, please contact the Quorum sales team at sales@quorumtech.com

GloQube Plus

Glow discharge for TEM grid preparation



MiniQ

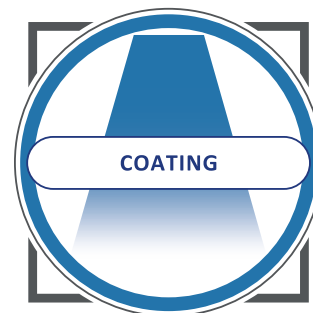
The MiniQ GD is an easy-to-use Glow Discharge system which allows for surface modification of TEM grids



The MiniQS is an Entry-level coater designed for use with a Table-top SEM



QPlusSeries



With unparalleled ease of use, the QPlus Series produces reliable and reproducible coatings of a variety of materials. Coming in two chamber sizes, the QPlus series can accommodate a variety of applications for SEM and FIB-SEM.

The QPlus series offers a range of coaters with options for:

- ◆ Metal Sputter Coating
- ◆ Metal Evaporation
- ◆ Carbon Evaporation
- ◆ Glow Discharge

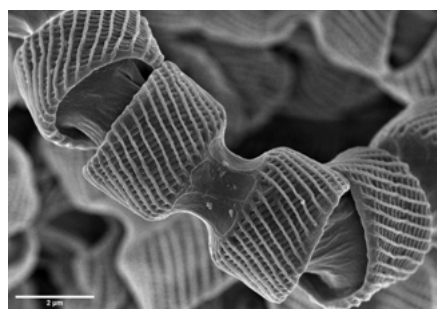
Q150 Plus

**Q150 Plus Standard Size 150 mm
Diameter Chamber**



Recommended applications

- ◆ Sample preparation for SEM/FIB-SEM
- ◆ Low to medium magnification SEM
- ◆ High to Ultra High magnification SEM
- ◆ Carbon Coating for elemental analysis - replicas



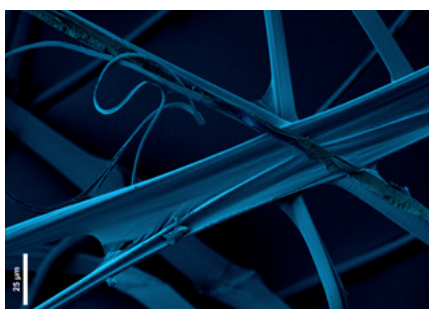
Q300 Plus

**Q300 Plus Large Size 300 mm
Diameter Chamber**



Recommended applications

- ◆ Large samples such as 8 inch wafers
- ◆ Sequential coating of two target materials
- ◆ Thin film applications - Material science



QplusSeries

Market-leading Sputter and Carbon Coaters



Q150RPlus

Rotary pumped coater



Q150TPlus

Turbomolecular pumped coater



Q150VPlus

Turbo pumped coater to achieve high quality, ultra-thin coatings

The Q150 series are available in three configurations:

S - Sputter coater. An automatic sputter coater for noble metals and/or oxidizing metals

E - Carbon Evaporation Coater. An automatic carbon coater (rod/cord) for SEM applications

ES - Sputter and Carbon Evaporation Coater. A combined system capable of both sputtering and carbon coating

Large Chamber Coaters



Q300T ES Plus

Single head sputter with a large chamber
Turbomolecular pump system



Q300T D Plus

Dual target system for multi-layer
sequential sputtering of two materials



Q300T T Plus

Triple head sputter coater for coating large
specimens with a single target material

Q150GB

The Q150GB features:

- ⇒ Modular system for mounting in glove boxes
- ⇒ Integral glovebox pressure monitoring
- ⇒ Metal sputtering, carbon evaporation – or both
- ⇒ Remote operation from touchscreen control panel
- ⇒ Fine grain sputtering
- ⇒ High vacuum turbo pumping
- ⇒ Thickness control using film thickness monitor



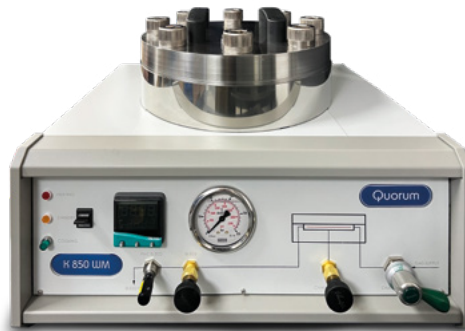
K850

The K850 combines versatility and ease of operation. The vertical pressure chamber allows for a clear view of the liquid meniscus during processing.



K850 WM

The K850 WM is a compact, bench-top instrument designed to critical point dry a complete 6"/152 mm wafer.



E3100

The E3100 can be used for the controlled drying of MEMS and aerogels.



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