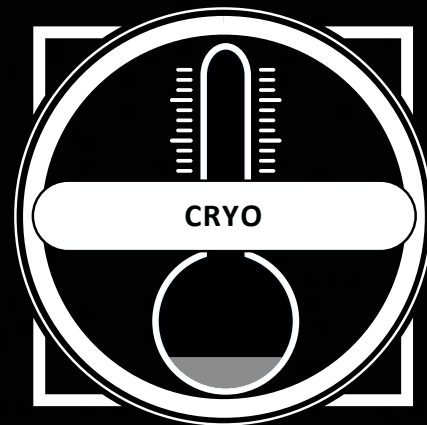
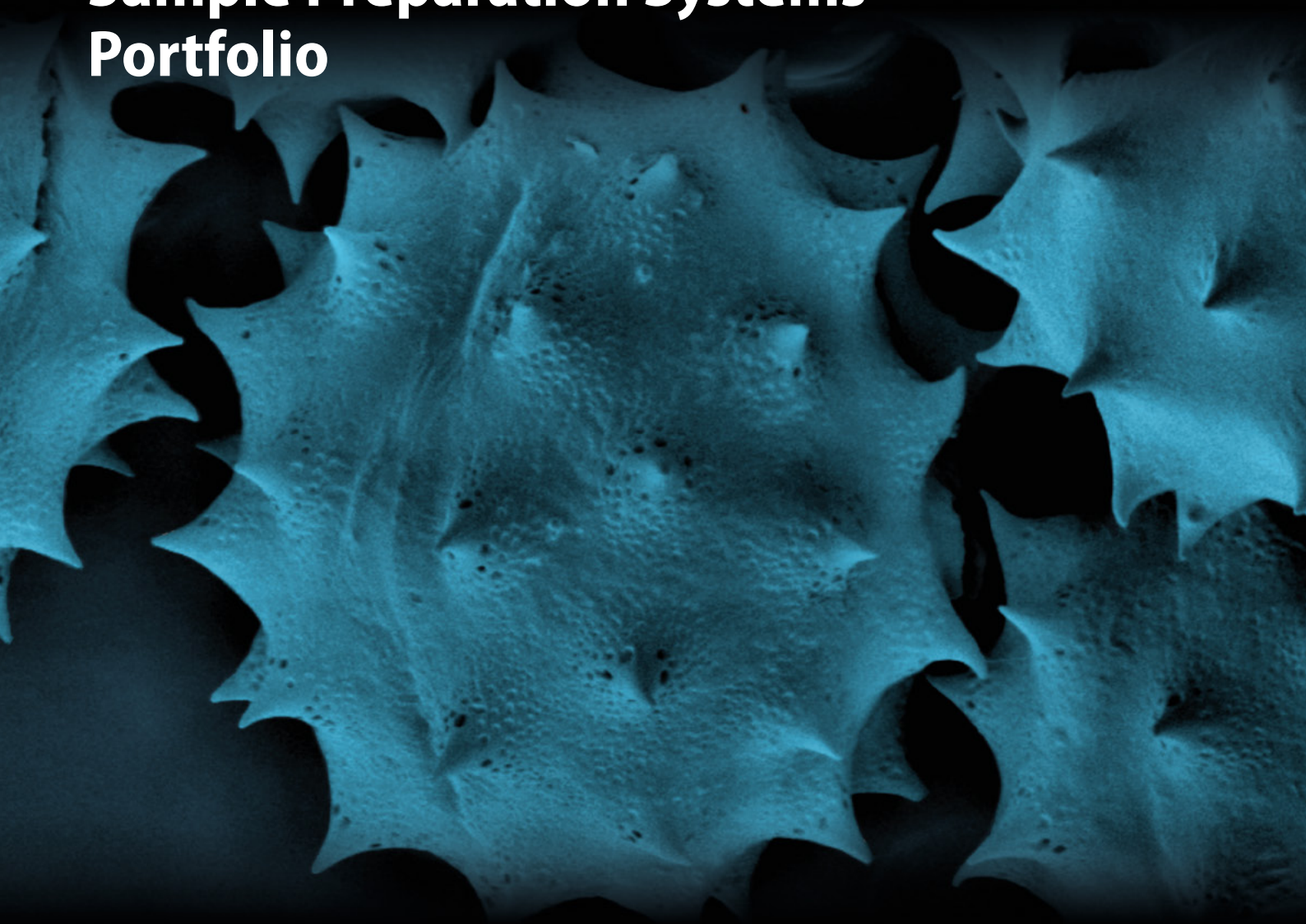


# Quorum

## CryoEM



## Cryo SEM and Cryo FIB-SEM Sample Preparation Systems Portfolio



10  $\mu\text{m}$

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Quorum Technologies' PP3010 Cryo Sample Preparation System is compatible with most makes and models of SEM and FIB-SEM; the off-column gas-cooled system allows for a rapid thermal response. The preparation chamber design offers excellent visibility. The PP3010 gives users the ability to plunge freeze, fracture, sublime and coat samples in one easy to use system allowing for sample observation close to its native state.

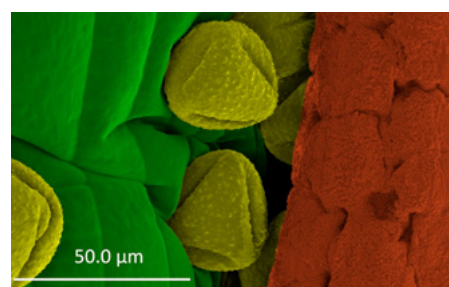
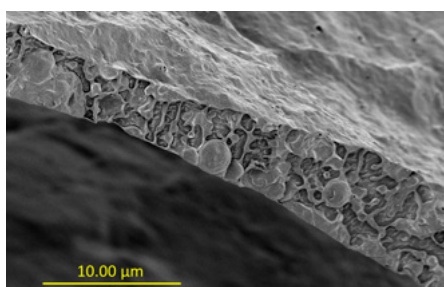
# CryoEM

## 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



## Product Features

- ◆ The PP3010 Cryo Preparation System can be used as part of a workflow solution for maintaining lamella preparation and reverse vitreous transfer
- ◆ Gas-cooled for rapid thermal response
- ◆ Easy transfer between prep chamber and host instrument
- ◆ Ability to transfer vitreous frozen samples under vacuum
- ◆ Remote dewar for gas cooling
- ◆ Clear visibility of chamber
- ◆ Controlled automatic sublimation
- ◆ Automated sputter coating
- ◆ Turbo-molecular pumped cryo preparation chamber

## Specifications

### SEM Cold Stage:

- ◆ Nitrogen gas cooled cold stage, operating temperature, ambient to -190 °C
- ◆ Temperature stability: + /- 0.5 °C

### Column mounted Cryo preparation chamber with:

- ◆ Nitrogen gas cooled cold stage and anti-contaminator operating temperature, ambient to -190 °C
- ◆ Temperature stability: + /- 0.5 °C
- ◆ Multiple LED illumination and CCD camera
- ◆ Actively cooled fracturing tool
- ◆ Large front window (150 mm x 76 mm) plus two top viewing ports
- ◆ Automated, fine grain sputtering with Platinum (Pt) standard target
- ◆ Automated sublimation

### Cryo Heat Exchange:

- ◆ Off-column Cryo Heat Exchanger (CHE) when used with 30 litre LN2 dewar allows for maximum 24-hour operation (two gas lines) of the SEM stage (- 140 °C) and SEM anti-contaminator (- 175 °C)

### Preparation Chamber Pumping System:

- ◆ Floor-mounted turbo pumping with flexible stainless steel vacuum connection to the preparation chamber
- ◆ Base vacuum:
  - Ambient:  $8 \times 10^{-5}$  mbar
  - Cold:  $8 \times 10^{-7}$  mbar
  - Single 5 m<sup>3</sup>/hr or equivalent vacuum pump required

### Prep-dek® Sample Preparation Station

- ◆ Slushed nitrogen freezing and sample handling system
- ◆ Compatible for handling pre-frozen samples
- ◆ Includes work area for sample preparation
- ◆ Flexible LED lighting
- ◆ Vacuum storage for sample transfer device and sample mounting fixture

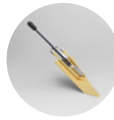
### aQuilo® Software control via 15" touch-screen panel PC

- ◆ User definable sublimation and coating recipes can be stored
- ◆ Remote factory support via TeamViewer subject to internet connection
- ◆ On-screen data logging, diagnostics and support video

### PP3010 Options

- ◆ Pressurised liquid nitrogen dewar
- ◆ Film Thickness Monitor (FTM)
- ◆ Carbon Fibre Evaporation Attachment
- ◆ Micrometer Controlled Knife
- ◆ TEM Prep Slusher, required for lamella preparation for TEM.
- ◆ Binocular microscope
- ◆ Specimen Stubs
- ◆ Specimen Shuttle
- ◆ Cryo Rotate Stage

Quorum Technologies products are covered under a standard 1-year warranty. Extended warranty is available upon product registration subject to eligibility. Please contact [service@quorumtech.com](mailto:service@quorumtech.com) for more information.



Anti-Contaminator



Cold Stage



# SEMCool

## PP3005 SEMCool

**Cryo stage for SEM, FIB-SEM, beamline and vacuum platforms**

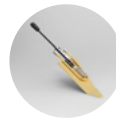
- ◆ Nitrogen gas cooled cold stage and anti-contaminator, ambient to -190 °C
- ◆ Temperature stability: +/- 0.5 °C
- ◆ Off-column cooling
- ◆ Independent cooling of cold stage and anti-contaminator
- ◆ Upgrade path to PP3006 CoolLok

# QuickLok

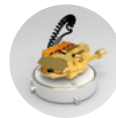
## PP3004 QuickLok

**Ambient temperature airlock for SEM, FIB-SEM, beamline and vacuum platforms**

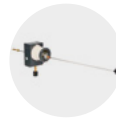
- ◆ Rapid specimen exchange
- ◆ Vacuum or inert gas transfer
- ◆ Upgrade path to PP3006 CoolLok



Anti-Contaminator



Cold Stage



QuickLok

# CoolLok

## PP3006 CoolLok

**Cryo transfer systems 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
- ◆ Vacuum or inert gas transfer

### PP3004 / PP3005 / PP3006 Options

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

Products are for Research Only

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