QCoat

Quorum

DuoQ

Multilayer Thin Film Deposition System



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DuoQ

The high vacuum DuoQ offers superior quality coatings to support with a wide range of applications, the instrument offers the following benefits:

Benefits

- Fine-grained thin films recommended for high resolution electron microscopy imaging and analysis
- Controlled deposition for streamlining material fabrication processes
- Highly automated functions providing increased sample throughput and reproducibility
- Enhanced coating uniformity for a range of sample morphologies, up to 6" diameter in size
- Improved coating durability through deposition of adhesion layers

Applications Areas

Electron Microscopy

- High resolution imaging for detailed surface and structural analysis
- Enhanced surface conductivity for improved imaging performance
- Uniform fine-grained coatings for superior sample preparation
- Reduced charging effects and improved analytical accuracy

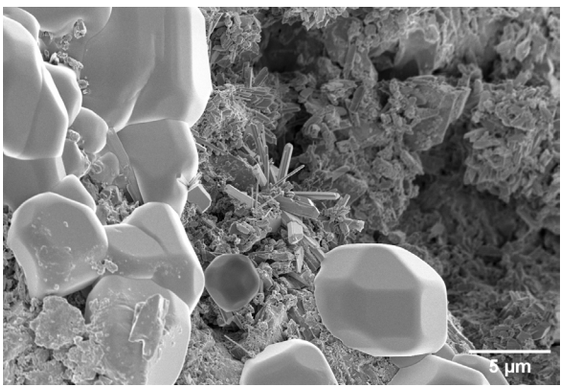
Materials Research

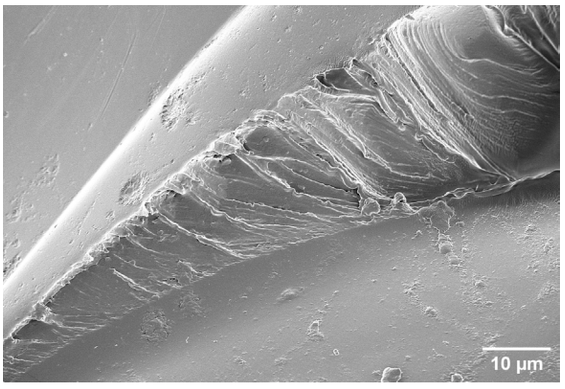
- Precision thin film deposition for advanced applications
- Controlled materials fabrication with consistent results
- Capability to process large-area substrates efficiently
- Support for research, development, and prototype production

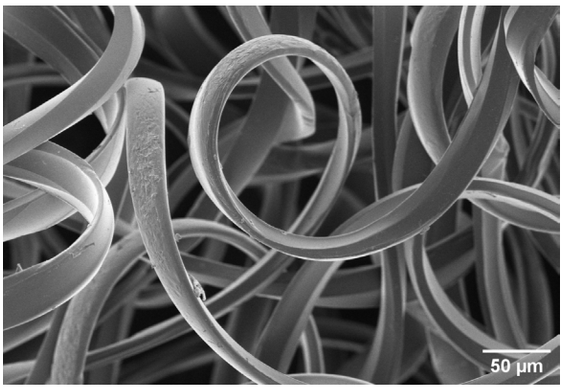
Advanced Materials

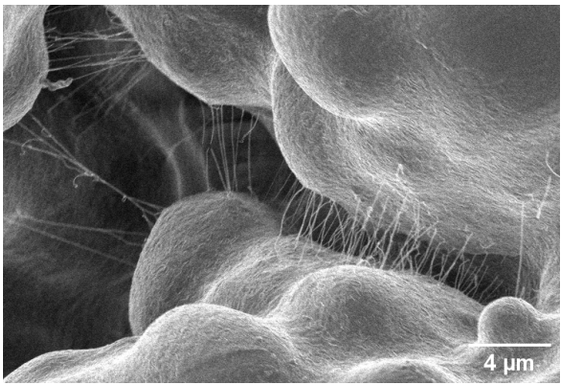
- Novel batteries and fuel cells
- Development and study of quantum materials
- Semiconductor materials for electronics and microdevices
- Photonic materials for optical and communication systems

Quorum offers personalised in-person and online demonstrations tailored to your application requirements.
Contact our team at sales@quorumtech.com
to book your demo today.









Sample Preparation

Image 1: Sodium chloride and calcium sulfate dihydrate crystals on a sand particle, coated with 6 nm Pd using the DuoQ.
Image 2: 3D printed polyethylene terephalate glycol (PETG) coated with 2 nm Cr followed by 8 nm Au using the DuoQ.
Image 3: Wound dressing fibres coated with 10 nm Cr using the DuoQ.
Image 4: Surface of a porous alumina specimen pot used for critical point drying, coated with 10 nm Cr using the DuoQ.

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DuoQ

High Vacuum Coating System

The DuoQ is an automated and versatile large chamber dual sputter coater offering unparalleled ease of use and flexibility based on your application needs.

Recommended for controlled thin film deposition for electron microscopy sample preparation and material fabrication.

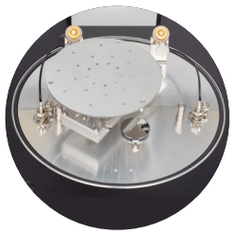
Features

- Turbomolecular pumped system with ultimate vacuum of $1x10^{-6}$ mbar, enabling high quality coatings
- Dual head design offering sequential deposition of thin film coatings under high vacuum conditions
- Optimised stages for uniform deposition across 4" and 6" diameter samples
- Integrated Film Thickness Monitor (FTM) to control deposition of coating
- Intuitive and responsive touchscreen colour panel design
- Multi-colour LED visual status indicator offering process updates
- Pre-set recipes for standard protocols resulting in sample reproducibility
- Customisable recipes enabling users to tailor process parameters to their specific requirements
- Compatible with a range of target materials





Dual head for sequential sputter coating



4" and 6" wafer stage for deposition across large samples



Dual FTM for controlled deposition

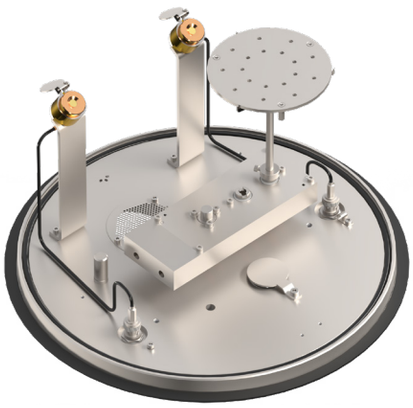
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DuoQ

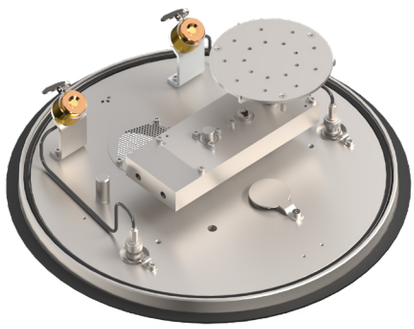
Quorum provides a comprehensive selection of sample stages designed to meet a range of application needs. The adaptable stage configurations enable precise control, ideal for coating the most delicate specimens with accuracy and care.

Standard Stages

4" Wafer Stage
Adjustable stage for 2", 3" and 4" wafers, supplied with a 4" diameter stub holder accommodating up to 18 × 1/8" pin stubs.

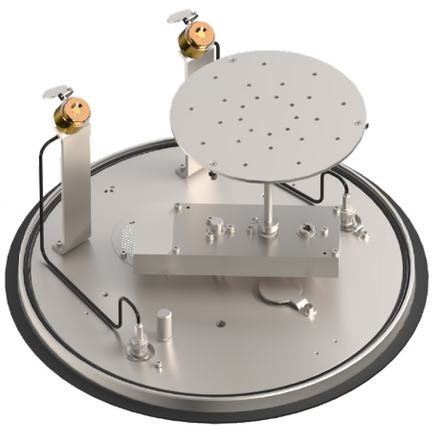


4" Wafer Stage (Extended)

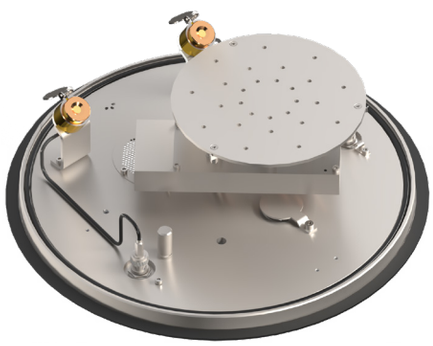


4" Wafer Stage (Short)

6" Wafer Stage
Adjustable stage for 4" and 6" wafers, supplied with a 6" diameter stub holder accommodating up to 27 × 1/8" pin stubs.



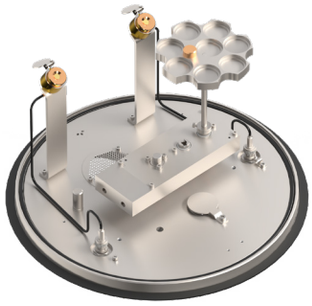
6" Wafer Stage (Extended)



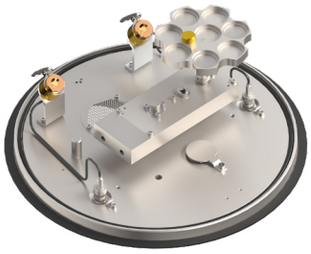
6" Wafer Stage (Short)

Optional Stages

8 Place Stub Stage
Designed for 8 x 25 mm or 30 mm stubs or resin embedded samples. Includes a polished brass tally for film thickness monitoring.

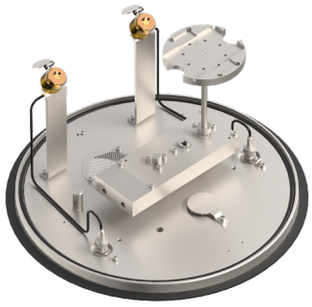


8 Place Stub Stage (Extended)

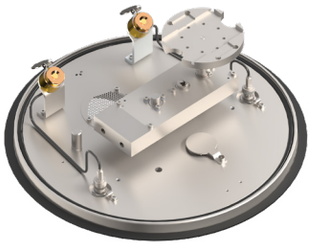


8 Place Stub Stage (Short)

Slide Stage
Microscope slide stage for up to two 75 mm x 25 mm slides or 8 x 1/8" pin stubs.

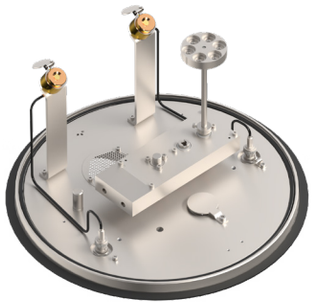


Slide Stage (Extended)

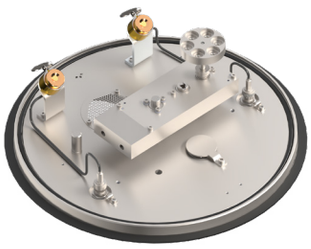


Slide Stage (Short)

Tilt Stage
Rotate-tilt stage with six stub positions for 15 mm, 6.5 mm or 1/8" pin stubs. Tilts up to 90° from horizontal plane.



Tilt Stage (Extended)

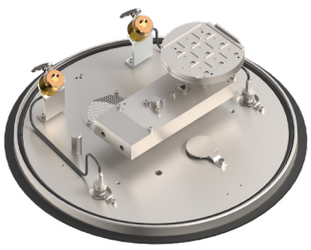


Tilt Stage (Short)

9 Place Coverslip Stage
The 9 Place Coverslip Stage is designed to accept nine standard coverslips 20 mm x 20 mm. The stage features a mechanism to lift the coverslips for easy removal.



9 Place Coverslip Stage (Extended)

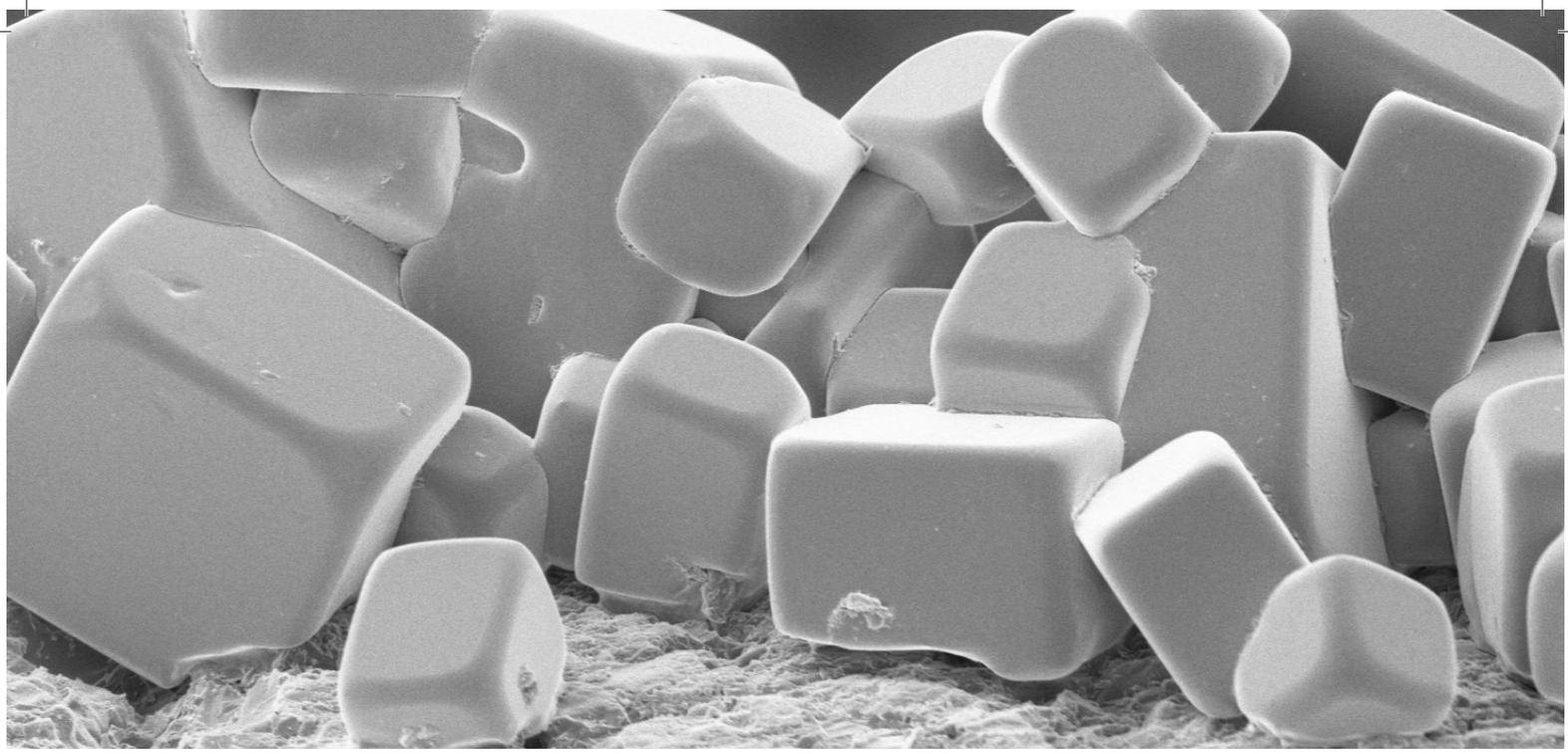


9 Place Coverslip Stage (Short)

DuoQ

Specifications	
Instrument Specifications	
Unit weight	40 Kg
Packed weight (approximately)	52 Kg
Instrument size	440 mm (W) x 562 mm (H) x 551 mm (D)
Instrument size with chamber open	440 mm (W) x 912 mm (H) x 551 mm (D)
Chamber size	300 mm Ø diameter, 220 mm (H)
Specimen stage	80 mm (H) from chamber base (short stage required for sputtering tall samples), 100 mm and 150 mm Ø diameter substrate. 145 mm (H) from chamber base (extended stage required for sputtering short samples), 100 mm and 150 mm Ø diameter substrate.
Performance	
Ultimate vacuum	$1x10^{-6}$ mbar
Operational vacuum	$5x10^{-6}$ mbar
Vacuum gauge range	1000 mbar to $6.7x10^{-9}$ mbar
User interface	Touch screen colour display
Power Supply	
Supply voltage	100-240 V, 50-60 Hz
Power consumption (Incl. rotary pump)	1400 VA
Sputter Parameters	
Deposition current	1 - 150 mA
Deposition rate	0.1 – 20 nm/min (e.g. for gold)
Sputter timer	0 - 480 min
Sputter target	Target disc style, 57 mm Ø diameter x 0.3 mm thickness (gold and chromium supplied as standard)
Film Thickness Monitor (FTM)	
Quartz crystal	Gold, 12 mm Ø diameter, 5 MHz RC quartz crystals
Thickness range	1 – 2000 nm
Site Requirements	
General	Indoor use only
Temperature	15°C to 25°C
Maximum humidity	<75% non-condensing
Maximum altitude	2000 m
Venting gas (preferred)	Nitrogen or argon
Process gas (preferred)	Argon

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With over 40 years of expertise in electron microscopy sample preparation, we are proud to support leading institutions worldwide in pioneering scientific discovery and technological advancement.

At Quorum, we recognise that our customers' applications are the driving force behind everything we do. Whether it's enabling protein research in diseases such as Alzheimer's, advancing ion conductivity for energy materials, or supporting the characterisation of nanostructured surfaces, our mission is to facilitate and enhance your workflows with precision and reliability.

We believe that every product we develop begins and ends with the application in mind. This principle underpins our entire approach - from design and engineering to delivery and long-term support.

We work collaboratively with researchers to understand the nuances of their work, ensuring our solutions align not only with technical specifications but also with the broader objectives they aim to achieve.

Why Choose Quorum for Coating Solutions

The Quorum Team is with you every step of the way - from initial enquiry to purchase and ongoing aftercare. We're committed to helping you select the most suitable products tailored to your individual application needs, working in partnership with our customers.

Our Team has extensive experience in electron microscopy sample preparation and can provide the highest quality support and guidance including:

- Commitment to high standards of quality, from design to manufacturing
- Detailed consultation with customers to define requirements and tailor solutions
- Comprehensive applications and technical support, both before and after installation
- Reliable and responsive aftercare, with personalised support beyond purchase

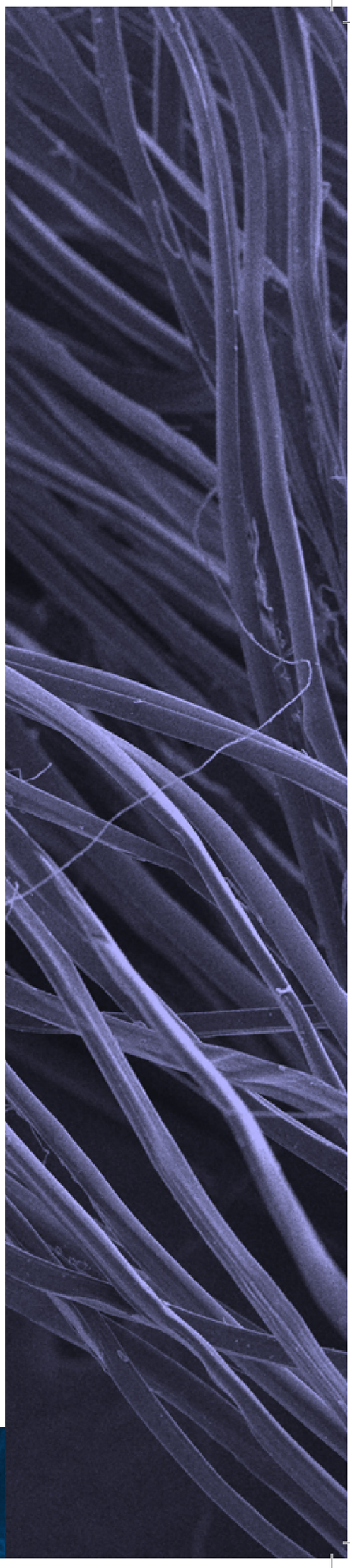
We are Quorum

High quality products

Experienced team

Trusted for over 40 years

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