



Applied™

LABORATORY & ENGINEERING SOLUTIONS

**CONSUMABLES FOR
OPTICAL AND SCANNING
ELECTRON MICROSCOPY**

**ΑΝΑΛΩΣΙΜΑ ΟΠΤΙΚΗΣ ΚΑΙ
ΗΛΕΚΤΡΟΝΙΚΗΣ ΜΙΚΡΟΣΚΟΠΙΑΣ**

catalogue

**SEM, TEM &
Microscopy
Consumables**

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SEM Stubs:

// SEM Sample Stubs: SEM sample stubs for all leading brands of SEMs. Each of the type of SEM sample stubs has a wide selection of platform size to accommodate different sample sizes and is available with 45°, 45/90° and even double 90° pre-tilt.

- Standard pin stubs: with 3.15mm dia. and 8mm or 9.5mm pin length.
- Short pin Zeiss stubs: with 3.15mm dia. and 6mm length.
- JEOL cylinder stubs for JEOL SEMs
- Hitachi M4 cylinder stubs with an M4 threaded hole in the base

// Dish Type SEM sample stubs for working in Solutions or fluids: To prepare solution or fluids directly on the SEM stub there are dish type SEM sample stubs.

- Standard pins stub SEMs such as FEI, Tescan, Phenom, etc
- JEOL SEMs
- Hitachi SEMs

// Less Common Brands or on Special SEM Stages: There is also a selection of specialty SEM sample stubs which are used in less common brands or on special SEM stages.

- ISI/ABT/Topcon cylinder stubs
- Hitachi In Lens Stubs
- Hitachi pin stubs with M6 thread
- Gatan 3View pin stubs
- TFS/FEI VolumeScope pin stubs



SEM Stub Adapters:

// SEM sample stub adapters: Enable the use of all common types of SEM stubs or mounts in all types of SEM:

- Standard pin stubs with standard 8mm and 9.5mm long pin used on TFS, FEI, Philips, Tescan, Phenom, Aspex, RJ Lee, Cambridge Instruments, Leica and CamScan SEMs and SEM/FIB systems
- Zeiss pin stubs with short 6mm pin for Zeiss and LEO SEMs, CrossBeams and SEM/FIB systems
- Plain cylinder stubs for JEOL SEMs and SEM/FIB systems
- Hitachi cylinder stubs with M4 threaded base for Hitachi SEMs and FIBs
- Plain cylinder stubs for ISI, ABT, Topcon SEMs

// Stub adapters for SEC tabletop SEMs: Adapters are drop-in replacements for the flat head SEC stubs.



SEM Stage Adapters:

// Versatile stage adapters: Versatile SEM stage adapters are fully compatible with FEI, Philips, Zeiss, LEO, JEOL, Hitachi, Tescan, Pemtron SEMs, FESEMs or tabletop SEMs. All SEM versatile stage adapters comprise an M4 screw which is compatible with the M4 threaded hole in the EM-Tec sample holders.

- SEM stage adapters for JEOL SEMs, FESEMs and FIB-SEM systems
- SEM stage adapters for Hitachi SEMs, FESEMs, FIB and FIB-SEM systems
- SEM stage adapter for Tescan XM/GM SEM and FIB-SEM
- Pin stub adapters to M4 thread
- SEM stage adapter for Pemtron SEMs
- SEM stage adapters for TFS / FEI / Philips SEMs, FESEM, FIBs, DualBeam and FIB-SEM systems
- SEM stage adapters for Zeiss / LEO SEMs, FESEMS and CrossBeam systems



SEM Holders:

// Sample holders: Comprises a wide variety of holders to make it easier and quicker to mount your samples directly in the SEM. Samples are held by clamping between jaws or secured with screws. When samples are secured correctly, the sample won't move which increases spatial resolution both for imaging and analysis.

// SEM stub based compact sample holders:

- Standard pin stub based compact sample holders: Designed for Ø3.15mm pin size and 9.5mm pin length.
- JEOL cylinder stub-based sample holders: Available for Ø12.2x10mm or Ø25x10mm JEOL cylinder stubs.
- Hitachi M4 stub-based sample holders: Designed for Ø15mm or Ø25mm Hitachi M4 sample stubs.

// Vise Clamp Sample Holders:

Accommodates large or multiple samples with two sets of screws (10mm and 16mm in length).

// Variable Tilt and Pre-Tilt Angle Holders: Allows tilting at pre-set angles; specific angles not provided.

// S-Clip SEM Sample Holders: Fits 1" (25.4mm), 2" (51mm), and 3" (76mm) wafers.



SEM Holders:

- // **Low Profile S-Clip SEM Sample Holders:** Fits thin samples up to 1mm thickness.
- // **Large Centering Vise SEM Sample Holders:** Suitable for samples up to 110mm in size.
- // **EBSD & t-EBSD Pre-Tilt Sample Holders:** EBSD holders have a 70° pre-tilt angle; t-EBSD accommodates FIB/TEM grids with 2mm openings.
- // **Multiple Metallographic Mount Holders:** Accommodates mounts in 25mm, 30mm, 40mm, 50mm diameters (metric) or 1", 1-1/4", 1-1/2", 2" diameters (SAE).
- // **Filter Disc Holders for SEM / EDS Analysis:** Fits filter discs of 13mm, 25mm, 35mm, 47mm, 76mm, and 90mm.
- // **C-Square Multi-SEM Pin Stub Holders:** Holds Ø12.7mm and/or Ø25.4mm pin stubs.
- // **Spring-loaded SEM Sample Holders:** For quick sample loading, dimensions not provided.
- // **Compact and Universal Vise Sample Holders:** Accommodates a range of sample sizes, no specific dimensions listed.
 - Versatile 360° / 90° Off-set Sample Holder Kit:
 - Overall size: 36x25x12.7mm.
 - Off-set strip size: 36x12.7x5mm.
 - 90° sample holder post: 12.7x12.7x20mm.
 - Maximum sample diameter for needle-type samples: 3.2mm.
- // **90° Quick-Flip SEM Sample Holder Kits:**
 - Mini vise clamp: For samples up to 4mm thickness.
 - Mini split mount vise clamp: For samples up to 8mm thickness.
 - Stub vise clamp: For samples up to 16mm thickness.
- // **Geological Thin Section and Slide Holders:**
 - Petrographic slides: 28x48mm, 27x46mm, 26x46mm, 25x45mm.
 - Larger slides: Up to 50x75mm.
- // **Gold Series SEM Sample Holders and Pin Stub Adapters:**
 - Tube/Needle Holder: For needles up to Ø2mm.
 - Swivel Vise: Swivel head size 16x16x14mm.
 - Rectangular Bulk Sample Holder: For samples up to 16mm.
 - Round Bulk Sample Holder: For samples up to Ø20mm.
 - Pin Stub Adapter: For Ø3.2mm diameter and 9.5mm long.
 - Compact Zeiss Pin Stub Adapter: For Ø3.2mm diameter and 6mm long.
- // **Top Reference Holders for Metallographic Mounts:**
 - Ø25mm / Ø1" mount.
 - Ø30mm / Ø1-1/4" mount.
 - Ø40mm / Ø1-1/2" mount.
 - Ø50mm / Ø2" mount.
 - 49x89mm large rectangular block mount.
- // **Bulk SEM Sample Holders:**
 - Rectangular holders: Samples up to 120mm.
 - Round holders: Samples up to 117mm.



SEM Holders:

// **Multiple Stub Holders:** Holds up to 7 samples of Ø12.5mm.

// **Metallographic Mount Holders:** Compatible with mounts ranging from 25mm to 50mm diameter (1" to 2").

// **Phenom Desktop SEMs:**

- Phenom ProX, Pro, and Pure: Various holders and sample stubs, compatible with JEOL and Hitachi stubs.
- Phenom XL: Supports pin stubs up to 100mm in diameter and sample holders up to 100x100x65mm.

// **Aquarius Liquid Sample Chamber for SEM:** Liquid film thickness: 500nm or 2µm, depending on the chips used.

// **Sample Holders and Stubs for JEOL NeoScope and Hitachi Tabletop SEMs:**

- JEOL NeoScope: X/Y movements of 35mm and maximum height of 50mm.
- Hitachi Tabletop SEMs: X/Y stage movement of 35mm, Z-axis adjustment,



and maximum height of 55mm.

// **Wafer Holders for SEM:** Compatible with wafers: 51mm, 76mm, 100mm, 150mm, and 200mm (2 inch, 3 inch, 4 inch, 6 inch, and 8 inch).

// **SEM Multi Holder for 4 Large Stubs or 4 Sample Holders:**

- Holds up to 4 stubs or sample holders with diameters up to 53mm.
- Suitable for SEM stages with an X-Y travel range of 100x100mm or more.

// **Universal SEM Sample Holder and SEM Stubs Adapter Kit:** Holds samples up to 42mm in size.

// **Versa-Plate Adaptable SEM Sample Holders:** Customizable for various sample sizes, including large and non-symmetrical samples.

// **SEM Stage Travel Extender Strips:** Extends sample coverage up to 100x100mm.

// **SampleClamp SEM Holders:** Standard screws accommodate a maximum thickness of 3mm, with extra-long screws extending to 7mm.

// **Compact Smart-Clip Metallographic Mount Holders for SEM:** Compatible with Ø25mm (1") or Ø30mm (1-1/4") metallographic mounts with a minimum height of 10mm.

// **EBS-3D Sample Holder for FEI/ThermoDualBeam SEM-FIB Systems:** Designed for 3D EBSD mapping; specific sample size not provided but suited for FIB/EBS systems.

TEM Supplies

// TEM SupportGrids:

- Electroforming: Thickness: 25µm for copper, copper/rhodium, nickel, and gold grids.
- Electroetching: Thickness: 25µm for molybdenum, aluminum, and titanium grids, 15µm for titanium, and 12µm for stainless steel.

// TEM Grids in Copper, Nickel, and Gold:

- Mesh sizes up to 2000 mesh.
- Rim size: 0.5mm for increased stability.

// FIB Lift-Out Grids: Compatible with 3mm TEM grid holders.

// TEM SupportFilms:

- Available in mesh sizes: 10, 20, 30, 50, 75, 100, 150, 200, 300, 400, and 2000 mesh.
- Formvar films: Thickness of 5-7nm.
- Carbon films: Thickness of 15-20nm.
- Ultra-thin carbon films: 5nm thickness.
- Pioloformfilms: 5-7nm thickness.

// TEM Support Films on Finder Grids: 200 Mesh Finder Grids and 400 Mesh Finder Grids: Coated with Holey or Lacey Carbon support films.

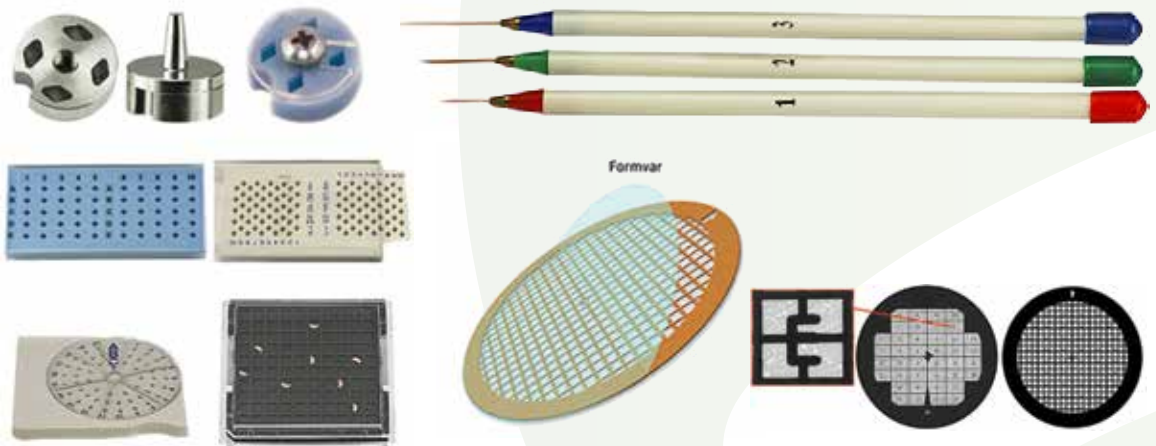
// TEM Staining Alternative for Uranyl Acetate: Non-radioactive, lanthanide-based staining solution for ultra-fine sections.

// TEM Grid Storage Boxes: Capacity: 100, 50, and 25 TEM grids.

// Ø3mm Embedding Tubes for TEM Sample Preparation: Inner diameters: 2mm or 1.5mm.

// Acrylic Eyelash Manipulator Sets for Ultramicrotomy: Designed for handling ultra-thin sections and small tissue samples.

// Tungsten EM Filaments: Essential for SEM/TEM applications, sizes not specified.



K-Kit Liquid TEM Holder

// K-kit wet cell liquid TEM sample holder chamber: This chamber is designed for imaging nanoparticles suspended in aqueous solutions for TEM and FESEM applications.

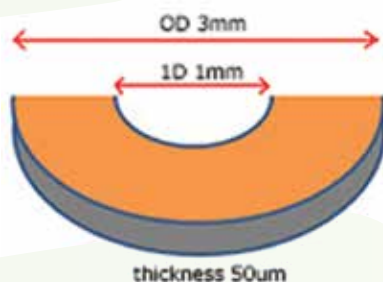
- Silicon Nitride Windows: 300µm x 25µm (rectangular).
- Channel Heights: 0.1µm, 0.2µm, 0.5µm, 1µm, 2µm, and 5µm.



FIB Supplies

// **FIB lift-out grids:** Are designed for use with FIB (Focused Ion Beam) or SEM/FIB systems, providing a secure method for attaching TEM lamellas to grid posts. These grids are optimized for accessibility and allow easy imaging of the lamellas in SEM, FIB, TEM, or for EBSD (Electron Backscatter Diffraction) analysis.

- Copper FIB Lift- Out Grids: Thickness, 30-40 μ m, providing more rigidity than standard TEM grids.
- Molybdenum FIB Lift-Out Grids: Thickness, 45-55 μ m, providing increased rigidity.



AFM / SPM Supplies

// **Magnetic Metal Specimen Support Discs for AFM and SPM:**

- Bright Stainless Steel Discs: Available in sizes 6mm, 10mm, 12mm, 15mm, and 20mm.
- Gold Plated Discs: Available in sizes 10mm, 12mm, 15mm, and 20mm.

// **90 Degrees Sample Mount and Sample Holders for AFM and SPM:** Dimensions: \varnothing 12mm x 4.5mm.

// **Muscovite Ruby Mica Discs and Sheets:**

- Standard thickness: 0.15mm to 0.21mm.
- Can cleave thinner sheets down to 0.02mm.

// **Non-Conductive Double-Sided Adhesive Tabs:** Diameter: 12.5mm.



Cryo Supplies

// **Cryo Grid Storage Boxes:** Compatible with TFS/FEI Vitrobot, Gatan CP3/3500/626, and Leica EM GP cryo plunge systems (specific dimensions not provided).

// **Sample Cryo Pin for Cryo Ultramicrotomes:**

- Diameter: 2mm
- Length: 10mm
- Tapered head diameter: 3.5mm.

// **Cryo Tissue Embedding Compound:** Designed for tissue sectioning at temperatures between -10°C and -40°C (no specific size given).

// **PTFE Beakers:** No specific dimensions provided. They are made from solid, non-porous PTFE with a smooth finish and flat base.



Light Microscopy Supplies

// **Quartz microscope slides and coverslips:** Are designed for applications requiring enhanced UV transparency, improved optical performance, and high chemical and temperature stability.

// **Glass microscope slides:** Are made from optically clear and corrosion-resistant select quality soda-lime glass, offering precision and high clarity for microscopy applications

// **Glass coverslips:** Made from optically clear, specially formulated borosilicate glass. Thickness: 0.13-0.17mm, offering excellent optical clarity and durability.

// **Correlative Microscopy Coverslips:** Are specially designed for seamless integration between light microscopy (brightfield or fluorescence) and electron microscopy, allowing for precise identification and location of areas of interest for further analysis.

// **Borosilicate glass petri dishes:** Are designed for a variety of sample preparation and microscopy applications. Made from high-quality borosilicate glass, these petri dishes offer excellent resistance to chemicals, heat, and thermal shock.

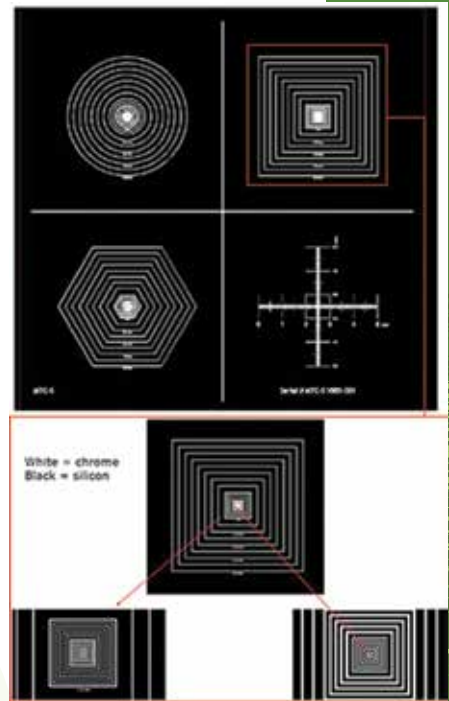
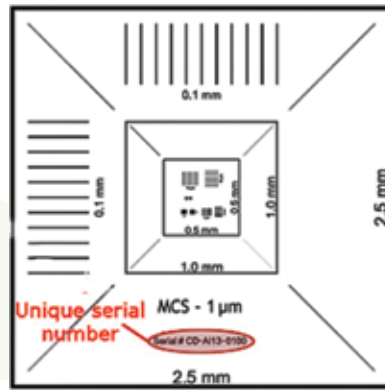
// **Black metal microscope slides:** Are designed for use in metallographic, petrographic, and geological applications, particularly when working with reflective light microscopy. Size: 76.2 x 25.4 x 1.6mm.

// **Microscope slide storage boxes:** are practical solutions for the shipping, storing, and archiving of microscope slides.

// **Optical lens tissues:** is a premium quality, lint-free, acid-free tissue designed for cleaning and protecting sensitive optical surfaces and components.



Calibration



// SEM - FIB - FESEM - Table top SEM:

- MCS series magnification calibration standards:

- MCS-1: Scale: 2.5mm to 1 μ m
- MCS-0.1: Scale: 2.5mm down to 100nm

- MCS X-Y series SEM magnification calibration standards:

- MCS-1-XY: X-Y scale: 2.5mm to 1 μ m
- MCS-0.1-XY: X-Y scale: 2.5mm down to 100nm

- **MTC-5 Multiple Target Graticule Calibration Standards:** are designed for low magnification SEM imaging and optical quality control, offering the following features and size ranges

- Circle patterns: 5 μ m to 5mm diameter
- Square patterns: 5 x 5 μ m to 5 x 5mm
- Hexagon patterns: 5 μ m to 5mm across
- Cross scale pattern: 5x5mm with 0.002mm divisions

- **LAMC-15 large area magnification calibration standards:** Designed for large area and low magnification calibration.

- M-1 and M-10 Grid Pattern Calibration Standards:

- M-1: Grid pitch: 1 μ m, Magnification range: 100x to 10,000x, Pattern sizes: Lines at 1 μ m, 10 μ m, and 100 μ m
- M-10: Grid pitch: 10 μ m, Magnification range: 100x to 1000x, Pattern sizes: Lines at 10 μ m and 100 μ m

- **Checkerboard Calibration Standard for SEM imaging:** Feature sizes: 1 μ m, 10 μ m, 100 μ m, 1mm.

- **SEM Resolution Test Standard:** are essential tools for testing resolution, beam size, and astigmatism correction across various electron microscopy systems, including SEM, FESEM, FIB, and SIMS.

- Gold on Carbon Resolution
- Tin on Carbon Resolution

// SEM / EDS / WDS:

- **CXS and RSX Calibration and Reference Standards:** Available in \varnothing 12.7mm pin stubs and \varnothing 25.4mm discs.

- **EDX-Checker for EDX Systems and BSE Detectors:** Tool for calibration and resolution testing.

- **B100 Faraday Cup for Beam Current Measurements:** Dimensions: 2.5mm diameter and 2mm high, with an internal cavity of approximately \varnothing 1.4x1.5mm.

// TEM - TEM / EDS:

- **TEM Resolution, Calibration and Test Standards:** These standards use copper or gold square mesh grids, but specific sizes are not mentioned.

- **Traceable TEM Calibration Standard:** Consists of 5 SiGe layers (~10nm) and pure silicon layers (~13nm), with ~1.2 μ m spacing between sets of layers.

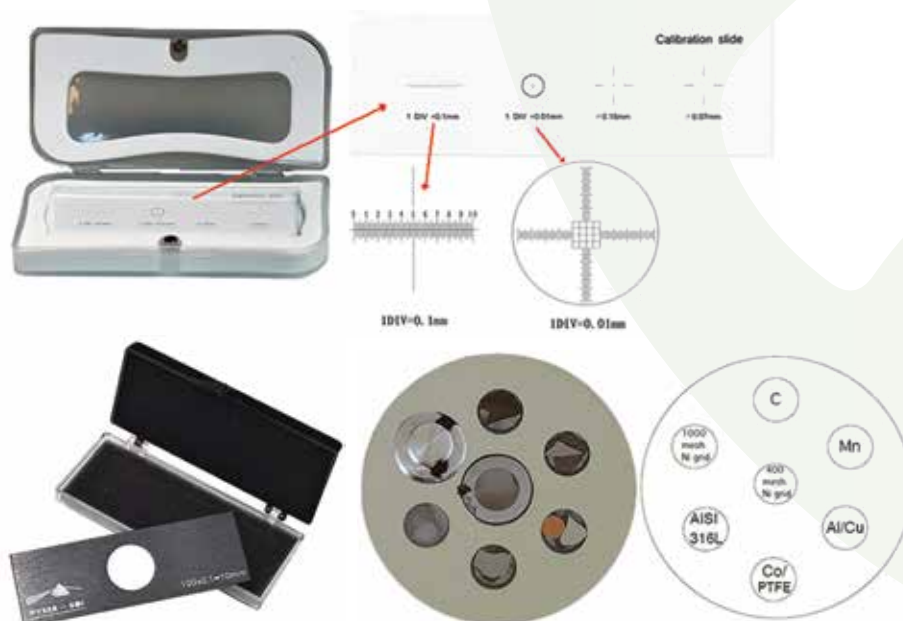
Calibration

// AFM-SPM:

- **Sample for checking AFM tips:** Is a specialized tool designed for quick and convenient assessment of AFM (Atomic Force Microscope) tip condition.
- **AFM / SPM Calibration Standards and Test Gratings:** These standards are used for accurate Z-axis and X-Y-axis measurements in Atomic Force Microscopy (AFM), but specific sizes are not mentioned in the description.
- **HOPG Substrates - Highly Ordered Pyrolytic Graphite (HOPG):** Crystals range from 1-10 μ m.
- **KPFM and EFM Test Sample:** Includes line arrays with alternating aluminium and gold, with pitches: 4 μ m, 8 μ m, 20 μ m, and 40 μ m.

// LM - Digital Imaging:

- **Stage micrometers and graticules for light microscopy:** are designed for precise calibration of standard light microscopes, digital microscopes, stereo microscopes, and eyepiece reticules.
- **Individual Graticule Calibration Standards:** come in various sizes to suit different calibration needs:
 - CCS-1: 1mm cross scale pattern with 0.01mm divisions
 - CCS-5: 5mm cross scale pattern with 0.01mm divisions
 - CCS-10: 10mm cross scale pattern with 0.01mm divisions
 - LCS-10: 10mm compound linear scale with 1.0mm, 0.1mm, and 0.01mm divisions
 - CCS-2.5: 1 inch cross scale pattern with 0.001 inch divisions
- **Multiple Target Graticule Calibration Standards:** feature four distinct patterns for various calibration and measurement purposes. The sizes of these patterns are:
 - Circle patterns: Ranging from 5 μ m to 5mm in diameter.
 - Square patterns: Ranging from 5 x 5 μ m to 5 x 5mm.
 - Hexagon patterns: Ranging from 5 μ m to 5mm across.
 - Cross scale pattern: 5 x 5mm with 0.002mm divisions.
- **M-series glass calibration slides:** Are designed for quick calibration of transmitted light microscopes, digital microscopes, and stereo microscopes. The following types and their sizes are available:
 - MS1: 10mm scale with 0.1mm divisions.
 - MS21: 1mm scale with 0.01mm divisions and 10mm scale with 0.1mm divisions.
 - MS33: 10mm scale with 0.1mm divisions, cross scale 1x1mm with 0.01mm divisions, and \varnothing 0.15mm and \varnothing 0.07mm solid dots.



Filaments / Cathodes / Emitters

for TEM & SEM

// **Tungsten EM Filaments:** Tungsten filaments (also known as cathodes or electron emitters) are used in scanning and transmission electron microscopes (SEM/TEM) across all major brands. These high-quality filaments provide superior performance with increased stability, maximum brightness, and a longer lifetime.

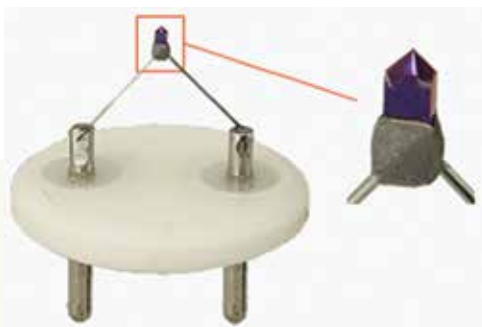
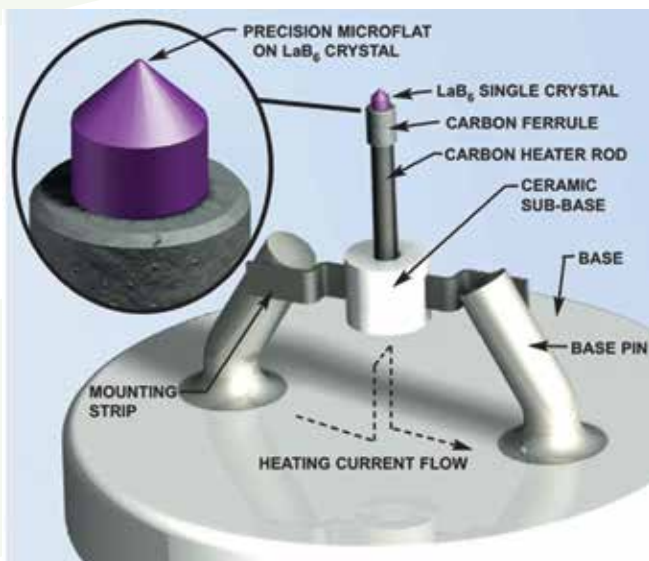
// **Cathodes for SEM and TEM:** are high-performance electron sources, suitable for various electron microscopy applications such as SEM, TEM, microprobes, and e-beam lithography. Key features include:

- Standard Tip: 90° angle, 15µm flat, used for standard SEM and TEM.
- Long Life, High Stability Tip: 90° angle, 20µm flat, ideal for analytical SEM and microprobe applications.
- High Brightness, Sharp Tip: 60° angle, 6µm flat, optimized for high-resolution TEM.

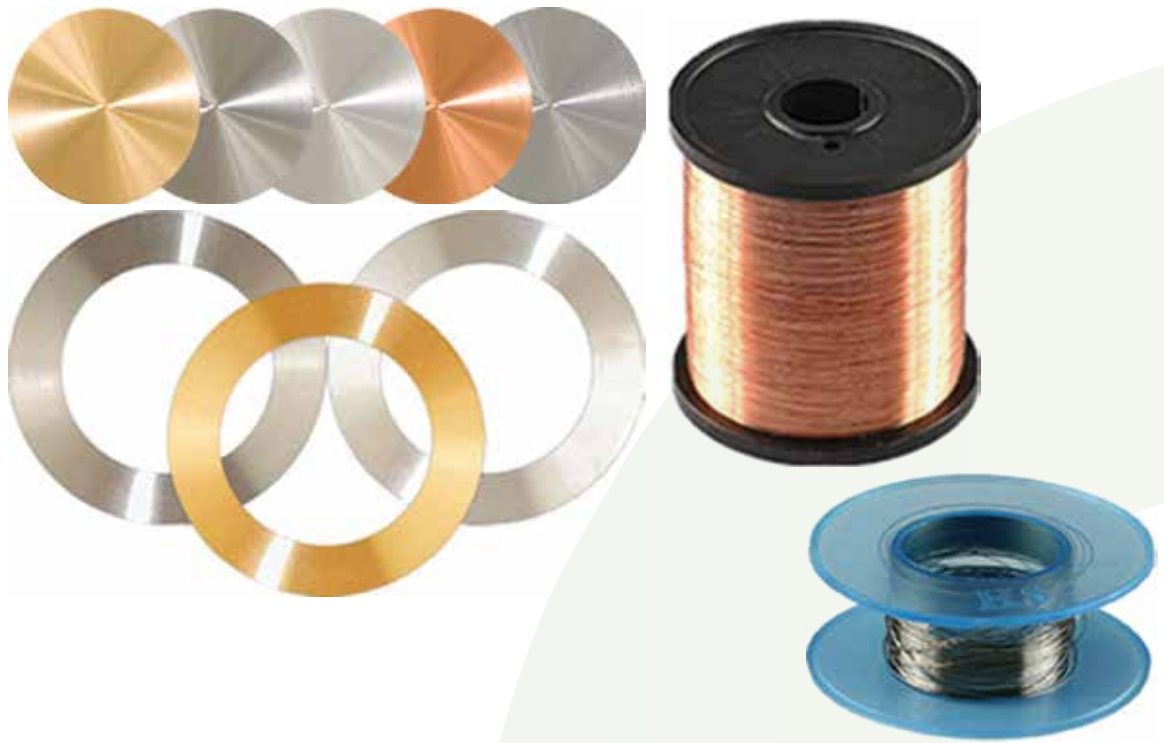
// **EM cathodes:** are high-performance electron sources, designed for SEM, TEM, and other electron microscopy applications. Here's a summary focusing on key specifications and features:

- Standard Tip: 90° angle, 15µm round tip, providing a high brightness source for general use.
- Special Version: 60° tip angle, with 5µm or 10µm round tips, optimized for high-resolution TEM applications.

// **Thermal Field Emission Sources:** are designed to replace used TFE sources in various electron beam systems, such as FESEM, FETEM, EPMA, and CD-SEM systems. They offer excellent stability, long operating times, and are drop-in replacements for FEI and Denka style Schottky emitters.



Sample Coating Supplies



// Disc or Annular Sputter Targets for EM Sputter Coaters: Targets are made from metals with a purity of 99.99% to avoid imaging artifacts and ensure accuracy in EDX analysis.

- Disc Type Targets:

- Sizes Available: 62mm, 60mm, 58mm, 57mm, 54mm, 50mm, 24mm, and 19mm diameters.
- Commonly used across many sputter coaters; modern systems use clamping rings to hold targets.
- Specific sizes are compatible with brands like Emitech, EMS, Hitachi, Cressington, Gatan, and others.

- Annular Type Targets:

- Sizes: Ø82mm OD x Ø60mm ID, Ø3inch OD x Ø2inch ID.
- Used in older systems like Polaron and Anatech/Technics Hummer sputter coaters.
- Available in various metals such as gold, platinum, and silver.

// High purity carbon rods for EM sample preparation: are used primarily for carbon evaporation in electron microscopy (EM) applications, such as coating non-conductive samples or creating support films for TEM samples. These rods are made from high-purity graphite, with impurity levels of 2ppm or less, ensuring minimal interference in SEM/EDS, EBSD, WDS, and EPMA applications.

// Carbon fiber threads for carbon evaporation: are specifically designed for use in carbon evaporators or coating attachments. These fibers undergo a heat treatment to ensure they are 99.99% pure with 5-10 ppm of impurities, making them suitable for high-precision applications in electron microscopy.

// Quartz Crystals for Thickness Monitors / Controllers: are used for thickness monitoring in SEM sputter coaters, carbon evaporation systems, and vacuum deposition systems. These crystals are particularly suited for use with thickness monitors, thickness controllers, and quartz crystal microbalances (QCM).

// Conductive SEM Coating Fluid: is a cost-effective alternative for coating non-conductive samples with a conductive layer for SEM analysis.

Sample Coating Supplies

// **Metal wires and materials for vacuum evaporation:** are ideal for vacuum coating applications in electron microscopy (EM) samples. These wires can be easily cut to size and used in evaporation coils, boats, or filaments.

// **Alumina coated evaporation sources:** are designed for efficient, low-power evaporation, combining the benefits of an evaporation basket with the properties of an alumina crucible. These baskets are particularly useful for thin film research, optical coatings, and manufacturing applications.

// **Consumables for the Cressington Coaters, MTM systems and Vacuum Pumps:** a full range of consumables and maintenance replacement parts for their various models, ensuring optimal performance and longevity.

// **Cressington Rotary-Tilting and Rotary-Planetary-Tilting sample stages:** enhance uniformity and improve conformal coating, particularly for larger, high topography, or multiple samples.



Thermal Evaporation Sources

// **RD Mathis Tungsten point source loop filaments:** are used in thermal vacuum evaporation systems for evaporating small amounts of metal wire. These filaments are made from tungsten wires and are available in various thicknesses. They come as single strand sources or with 3 or 4 strands.

// **RD Mathis Micro-Electronic evaporation sources:** are compact and efficient thermal evaporation sources, designed for smaller thermal vacuum evaporation systems. These sources have an overall length of less than 50mm, making them suitable for systems with smaller vacuum chambers and lower power setups.

// **RD Mathis folded boats evaporation sources:** are made by folding molybdenum (Mo) or tantalum (Ta) foil into an evaporation boat, offering a larger capacity compared to traditional pressed dimple or trough boats. Foil Thicknesses: 0.13mm, 0.25mm, and 0.38mm.

// **RD Mathis metal evaporation boat sources:** are widely used in thermal evaporation systems for depositing various metals, alloys, and materials. These sources are suitable for medium and high-rated power sources and offer several advantages such as ease of use, repeatability, low cost, long life, and high evaporation rates with larger amounts of material.



Sample Coating Supplies

// **RD Mathis Chromium plated tungsten rod evaporation sources:** are designed for thermally evaporating chromium in high vacuum thin film coating systems, providing an efficient and user-friendly alternative to evaporating chromium from chrome chips.

// **R D Mathis folded baffled box evaporation sources:** are designed for higher volumes of materials and are used for upwards evaporation. These sources are particularly useful for materials that tend to spit or release particles during the evaporation process, preventing contamination on the substrate.

// **RD Mathis special tantalum evaporation boat sources:** are designed to offer higher material capacity than standard tantalum evaporation boats.

// **RD Mathis Alumina coated evaporation sources:** are designed as an alternative to alumina crucibles for specific applications.

// **RD Mathis Tungsten heater filaments:** are used in high vacuum thin film deposition systems for heating small crucibles or substrate discs, influencing the properties of the deposited film.

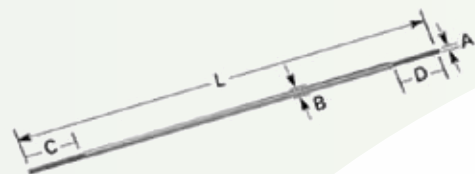
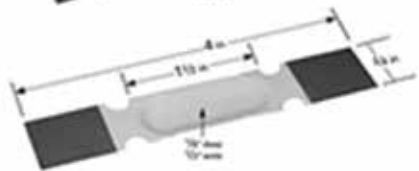
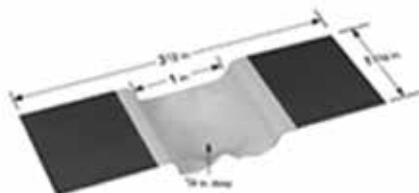
// **RD Mathis heat shielded crucible heaters:** provide uniform heating for crucibles, allowing high deposition rates and achieving temperatures up to 1600°C.

// **RD Mathis Tungsten basket crucible heaters:** are designed for heating small crucibles in thin film deposition systems, used to evaporate materials molten in the crucible.

// **RD Mathis Evaporation crucibles:** are designed to work with R.D. Mathis basket heaters and heat-shielded crucible heaters.

// **RD Mathis Tungsten evaporation baskets:** are used in thin film deposition for a variety of metals and alloys, offering numerous benefits for evaporation processes.

// **RD Mathis Tungsten rod evaporation sources:** are used to effectively and efficiently evaporate tungsten for thin film deposition in high vacuum coating systems.



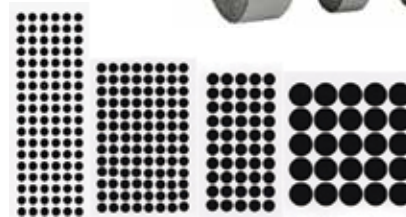
// Paints & tape

- **Conductive Adhesives for SEM, FIB and Lab applications**

- Carbon paint, water based
- Carbon paints & cement solvent based
- Nickel paint, cement solvent based
- Silver cement, strong, highly conductive
- Silver paint, solvent based
- Silver paint, water based
- High temperature carbon paste
- Silver filled epoxies
- Silver micro-tip pen
- Carbon tapes & tabs, double sided
- Super smooth, conductive tapes
- Copper SEM tapes
- Aluminium SEM tapes

- **Non-conductive adhesive for EM and Lab applications**

- Polyimide (Kapton) tapes, UHV compatible, single & double sided
- PET-Mylar Tape, single sided, HV compatible
- Single sided blue transparent PVC surface protection tape
- Brown PTFE coated fiberglass fabric high temperature tape
- Adhesive SEM tabs, double sided, non conductive
- Loctite 1C Hysol, Torr-Seal vacuum sealant epoxy kit
- EM-Tec temporary mounting waxes



Substrates

// EM Supports & Substrates

- **SEM - FIB - FESEM - Table top SEM & Experimental substrates**

- Vitreous carbon discs
- Graphite carbon discs
- Silicon chips & wafers
- Silicon finder grid
- Mica discs & sheets
- Quartz discs
- Gold coated glass slides & coverslips
- Gold coated silicon wafers & chips
- Silver coated microscope slides & coverslips
- Silver coated silicon wafers
- Platinum coated silicon chips & wafer + glass slide & coverslips
- Aluminium coated silicon chips & wafer + glass slide & coverslips
- Palladium coated silicon wafer and glass slide
- Iridium coated silicon wafer and glass slide
- TiN coated silicon wafer and glass slide



Storage

// Storage for stubs, slides, TEM grids, wafers etc

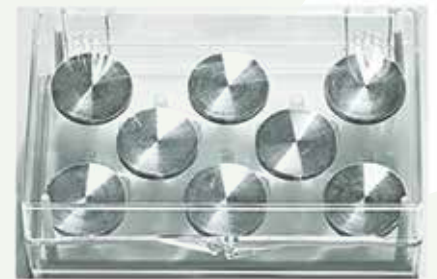
- Sample storage for SEM/TEM/FIB Applications

- Pin stub storage boxes
- JEOL SEM stub storage box
- Hitachi SEM stub storage boxes
- TEM grid storage boxes
- FIB lift-out grid boxes
- Cryo grid boxes
- EM-Storr vacuum desiccator
- EM-Tec Save-Storr inert gas sample storage
- Gatan 3View pin sample storage
- Vacu-Storr vacuum containers
- field and lab sampler kits
- Vacuum Desiccators



- Sample storage containers for AFM/LM/Lab Applications

- Micro-Tec sticky gel carrier boxes
- AFM sample storage boxes
- Wafer carrier trays
- Membrane boxes
- Clear plastic boxes
- White cardboard boxes
- Microscope slide storage boxes
- Barrier foil ziplock bags
- Desiccant boxes



Tweezers

- Ultra-precision biology tweezers
- High precision anti-magnetic tweezers
- High precision titanium tweezers
- High precision mini tweezers
- High precision slim tweezers
- High precision super alloy tweezers
- High precision action reverse tweezers
- Wafer tweezers
- Stub tweezers/grippers
- Cryo grid box tweezers
- Gatan 3View pin tweezers
- ESD safe plastic tipped tweezers
- ESD safe replaceable ceramic tips tweezers
- Replaceable ceramic tips tweezers
- ESD safe replaceable plastic tip tweezers
- ESD safe PTFE plastic tweezers
- ESD safe PA66 plastic tweezers
- Ceramic tips tweezers
- Fine tweezers
- Fibre grip tweezers
- Industrial strong tweezers
- AFM/SPM tweezers
- AFM/SPM disc gripper tweezers
- Cutting tweezers
- Electronic tweezers
- ESD safe carbon fiber reinforced PPS (Polyphenylenesulfide) tweezers
- Disposable plastic tweezers
- White glass fiber reinforced POM (Polyoxymethylene or Polyacetal)
- Fine titanium tweezers
- Brass tweezers
- Locking ring
- Plastic tweezers guards
- Tweezers rest



Probes, Picks, Applicators, Swabs & Pipettes

- Fine stainless needle probes
- Fine black needle probes
- Needle probe holders
- Ultra-fine tungsten needle probes
- Tool steel fine needle probe
- Stainless probes
- Reinforced plastic probes
- Diamond tipped & tungsten carbide tipped precision scribers
- Acrylic eyelash manipulator set
- Applicators & swabs
- Foam tipped swabs
- Plastic transfer pipettes
- Super fine SEM marker pen
- Woven wire mesh for sorting, screening, filtration



Cutting Tools & Scissors

- Rapid-Core sampling punch + eject
- Heavy duty punches
- Heavy duty punch pliers
- Disposable scalpels
- Lab Scissors
- Scalpel blades & handles
- Single edge blades
- Razor blades
- Cutting mats, tiles & plates
- Carbide & tungsten tipped scribes
- Wafer cleaving pliers
- High precision cutting tweezers



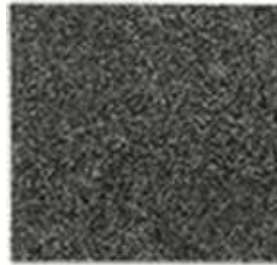
Cleaning & Gloves

- Pikal, Wenol & Bell Jarrmetal polish
- Optical lens cleaning tissue
- Sticky cleaning swabs
- Nitrile gloves
- Standard & PU coated Nylon Gloves
- Applicator sticks & cotton swabs
- Laboratory cleaning wipes
- Hand dusters & blowers
- Stainless steel cleaning basket
- Foam tipped swabs
- Kimwipes cleaning & Microfiber wipes



SEM Preparation Stands & Preparation Surfaces

- Pin stub preparation pods
- Pin stubs preparation stands
- JEOL stub preparation stands
- Hitachi stub preparation stands
- Granite prep. Tiles
- PVC cutting mats
- Clear hardened glass plates
- White HDPE prep boards



Small Hand Tools

- Wafer cleaving pliers
- Soft grip brass lined pliers
- Flat nose pliers with nylon lined jaws
- 4-prong pick-up tool
- Double loop pick-up tool
- Hand dusters & blowers
- Stainless steel cleaning basket
- Sliding collet pin vise
- Swivel head wide range pin vise, two dual sided collets
- Single collet brass pin vise
- Super fine SEM marker pen
- Screwdriver set with round aluminium base
- Screwdriver set with heavy revolving base
- Allen hex driver set
- Allen hex driver 1.5mm
- Allen hex driver 2.0mm
- Allen key set
- Stainless steel crucible tongs
- Gripper for cryo grid box with pin type lid
- Anti-static instrument
- Carbide & tungsten tipped scribes
- Vacuum pick-up tools
- Electric engraver tools
- Heavy duty punches
- Tablet Press
- Woven wire mesh for sorting, screening, filtration
- Heavy duty punch pliers
- Universal bench vise
- Sample leveling press



Vacuum Supplies

- Rotary vacuum pump oil
- KF/NW oil mist filters
- KF/NW vacuum parts
- Degassing/ Vacuum chamber
- KF/NW stainless steel vacuum bellows
- ISO vacuum flange connection parts
- KF/NW PVC and Silicon Vacuum Hoses
- KF/NW to BSPT adapters
- KF/NW to NPT adapters
- Evaporation sources
- Evaporation wires
- PC Vacuum Desiccators
- Vacuum storage
- Vacu-Storr containers
- High-vacuum grease
- Conductive silver grease
- Conductive carbon grease
- Hysol vacuum sealant
- Krytox PTFE grease
- Metal polish
- Mixing cups
- Bullseye vacuum gauges
- KF/NW Quick-check gauges



TEM Preparation Instruments Sawing, Polishing, Heating

- Temporary mounting waxes



CONSUMABLES FOR
OPTICAL AND SCANNING
ELECTRON MICROSCOPY



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Αγίων Αναργύρων 10,
Μαρούσι Αττικής, Τ.Κ. 151 24
Τ.: 210 72.43.529
Ε.: sales@apples.com.gr
www.apples.com.gr