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Basler, Inc. - Global manufacturer of digital cameras

Tel: +1 610 717 0171
Email: sales.usa@baslerweb.com
www.baslerweb.com

Basler MED ace

APPLICATIONS: Light microscopy • Fluorescence microscopy • Surgical microscopy • Automated microscopy • Medical and biological research • Diagnostics • Pharmaceutical testing • Material sciences

FEATURES: Baslers MED ace camera provides unique microscopy feature sets: Low Light Imaging, Perfect Color, Brilliant Image. It offers CMOS technology at its best and ISO13485:2016 compliance.

www.baslerweb.com/MEDace

Bruker Nano Surfaces

Tel: 520-741-1044, ext. 1075
Email: Productinfo@bruker.com
www.bruker.com/nano

Hysitron PI 88 SEM PicoIndenter

APPLICATIONS: In-Situ Mechanical Experiments for SEM • Targeted Nanoindentation with EBSD • Heating up to 800°C • Nanoscratch • Data-Video Correlation

FEATURES: Hysitron PI 88 is Bruker's comprehensive in-situ nanomechanical test instrument for SEM and FIB-SEM, enabling nanoindentation, compression, tension, bending, and scratch tests in your SEM.

www.bruker.com/nanomechanical-testing

Hysitron PI 95 TEM PicoIndenter

APPLICATIONS: In-Situ Mechanical Experiments for TEM • Tensile Testing of Nanowires, Films, 2D Materials • Nanoscratch, Fatigue, Electrical, Heating • Data-Video Correlation

FEATURES: The only quantitative nanomechanical testing holder for TEM, enabling compression, tension, bending, scratch, and fatigue testing with simultaneous TEM observation of deformation behavior.

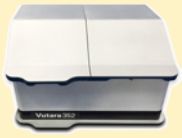
www.bruker.com/nanomechanical-testing

JPK NanoWizard 4 BioScience AFM

APPLICATIONS: BioAFM • Cell and Tissue Dynamics • Time-Lapse Studies on Molecules or Cells • Correlation with Optical Microscopy

FEATURES: NanoWizard 4 combines atomic resolution and fast scanning with rates up to 100 lines/sec and a large scan range of 100μm, all in one system.

www.jpk.com



Vutara 352 Super-Resolution Microscope

APPLICATIONS: Video-Rate, Single-Molecule Localization • Quantitative Super-Resolution Analysis • Correlative, High-Speed Confocal Imaging • Developmental Biology • Cardiology

FEATURES: Vutara 352's speed, imaging depth, and resolution deliver significant advantages over competing approaches, adding real-time quantitative analyses and including pair-correlation, co-location, cluster, and live-cell analysis.

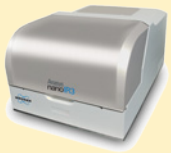
www.bruker.com/vutara

Dimension XR SPM

APPLICATIONS: Quantitative Nanomechanical Analysis • Multi-Dimensional Nanoelectrical Characterization • Highest Resolution Scanning Electrochemical Imaging • Nanoscale Viscoelastic Analysis of Polymers

FEATURES: Packaged solutions for advanced, quantitative nanomechanical, nanoelectrical, and nanoelectrochemical research of materials and active nanoscale systems in air, fluid, electrical or chemically reactive environments.

www.bruker.com/DimensionXR



Anasys nanoIR3 Spectrometer

APPLICATIONS: Hyperspectral NanoIR Spectroscopy Correlated to FTIR • Nanoscale Chemical Imaging • Complementary Tapping AFM-IR and s-SNOM 2D Materials Characterization • Semiconductor Failure Analysis

FEATURES: The nanoIR3 provides IR-based chemical imaging and mapping of chemical variations of sample. Point spectroscopy capabilities enable both spectroscopy and chemical imaging with a single source.

www.bruker.com/nanoIR

Ultima 2Pplus Multiphoton Microscope

APPLICATIONS: Neuroscience • Intravital Imaging • Optogenetics • Photoactivation and Photostimulation Experiments • In Vivo Imaging

FEATURES: Ultima 2Pplus delivers an ideal combination of flexibility, resolution, imaging depth and speed, allowing simultaneous imaging, stimulation and electrophysiology protocols with greater efficiency and effectivity.

www.bruker.com/ultima

ContourGT 3D Optical Microscope

APPLICATIONS: MEMS Characterization • Precision Machined Component Metrology • Tribology and Corrosion Analysis • High-Brightness LED Measurements • Ophthalmic Characterization

FEATURES: The ContourGT utilizes over three decades of white light interferometric (WLI) innovation to deliver production-ready automation, measurement-angle flexibility, outstanding imaging, and proven gauge-capable surface metrology.

www.bruker.com/ContourGT

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

Bruker Nano Analytics

Tel: 1-800-234-3028
Email: info.bna@bruker.com
www.bruker.com/nano-analysis

Electron Microscope Analyzers

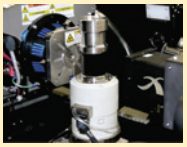
APPLICATIONS: • Energy-Dispersive X-ray Spectrometry (EDS) • Wavelength Dispersive X-ray Spectrometry (WDS) • Electron Backscatter Diffraction (EBSD) • Micro X-ray Fluorescence (Micro-XRF) on SEM • XFlash® Silicon Drift Detectors (SDD) for SEM and TEM

FEATURES: Bruker Nano Analytic's electron microscope analyzers QUANTAX EDS, QUANTAX WDS, QUANTAX EBSD and QUANTAX Micro-XRF on SEM offer unmatched comprehensive compositional and structural materials analysis.

www.bruker.com/nano-analysis

Deben

Tel: +44 (0) 1359 244 970 & +1 (201) 962 7222
Email: paulg@deben.co.uk
www.deben.co.uk



In-situ testing for microscopy

APPLICATIONS: • Microtest tensile and compression stages • Micro CT tensile, compression and torsion stages • STEM & BSE detectors for SEM • Centaurus scintillator CL and backscattered electron (BSE) detectors • SEM heating and cooling Peltier stages

FEATURES: Deben manufactures in-situ testing stages as well as innovative accessories for SEM, Optical, AFM, XRD and X-ray tomography.

DECTRIS Ltd.

+41.56.500.2100
info@dectris.com

APPLICATIONS: • Electron Diffraction, incl. MicroED • Ptychography • 4D-STEM • Strain Mapping • Fast *in-situ* imaging

FEATURES: The QUADRO is a direct electron detector mostly suited for Materials Sciences applications, where sensitivity, speed and accuracy can be achieved simultaneously without compromising any other features.

DiATOME U.S.

Tel: 215-412-8390
Email: sgkcck@aol.com
www.emsdiasum.com

Cryo Immuno

APPLICATIONS: The first cryo knife with a diamond platform, guarantees the best possible sectioning for sucrose infiltrated samples (Tokuyasu).

FEATURES: The diamond platform guarantees an easy and gentle section pick-up. The sections are collected directly from the diamond surface using a loop and a sucrose/methyl-cellulose droplet.

EDAX Inc.

Tel: 201-529-4880
Email: info.edax@ametek.com
https://www.edax.com

Octane Elite EDS System

APPLICATIONS: Scanning Electron Microscopes (SEMs) • Silicon Drift Detectors (SDDs) • Energy Dispersive Spectroscope (EDS) • Light Element Detection • Low kV Microanalysis

FEATURES: The system has the highest throughput and best resolution stability available. The SDDs include Silicon Nitride windows to improve low energy sensitivity, light element detection, and low kV microanalysis.

https://www.edax.com/products/eds/octane-elite-eds-system

Electron Microscopy Sciences

Tel: 215-412-8400
E-mail: stacie@ems-secure.com
www.emsdiasum.com

EMS-002 Cryo Workstation

The EMS-002 Cryo Workstation is a complete ultra rapid freezing system that captures rapid events and labile structures that are not seen in chemically fixed materials.

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

Energetiq Technology

Tel: +1 (781)-939-0763
Email: info@energetiq.com
www.energetiq.com

EQ-77 Laser-Driven Light Source (LDLS™)

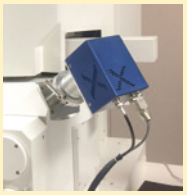
APPLICATIONS: • Monochromator Source • Advanced Imaging • Photoemission Electron Microscopy (PEEM) • UV-Vis-NIR Spectroscopy • Semiconductor Metrology

FEATURES: The EQ-77 generates extremely high brightness broadband light from 170nm to 2µm with high stability and long operating life in a compact package.

For details: www.energetiq.com/EQ77

Evactron by XEI Scientific, Inc.

Tel: 650-369-0133
Email: sales@evactron.com
www.evactron.com

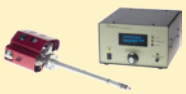


Evactron® E50 Plasma De-Contaminator

APPLICATIONS: • In-situ hydrocarbon removal • SEM/FIB large chamber cleaning • TKD/EBSD sample optimization • SEM sample and TEM holder cleaning • Accurate nanostructure characterization

FEATURES: 50 watt maximum power from new external hollow cathode plasma source gives fast cleaning/pumpdown of large chambers, "POP™" ignition at high vacuum – no venting needed.

https://evactron.com/evactron-e50/



Evactron® TEM Wand

APPLICATIONS: • Atomically thin 2D materials • Nanoparticles and 1D materials • Atomic resolution imaging and chemical mapping • In-situ microscopy • Microstructure and mechanics deformation

FEATURES: Remove hydrocarbon contamination from JEOL TEM/STEM columns, 12 watt maximum power to clean sensitive objective lens surfaces, uses air to generate energy-efficient plasma.

Excelitas Technologies

Tel: 905-821-2600
Email: x-cite@excelitas.com
www.excelitas.com

X-Cite® Fluorescence Illumination Solutions

APPLICATIONS: Digital Pathology or Virtual Microscopy • Fluorescence in Situ Hybridization (FISH) • Fluorescence Resonance Energy Transfer (FRET) • Live Cell Imaging • Optogenetics • Photoactivation

FEATURES: X-Cite offers innovative and reliable fluorescence illumination solutions for researchers and OEM integrators, with high power, control and stability required for their applications.

www.excelitas.com/x-cite

Optem Micro-Inspection Lens Systems

APPLICATIONS: Machine vision • Variable magnification imaging • Non-contact optical dimensional metrology • OEM integrated microscopy • Automated Optical Inspection

FEATURES: Optem Lenses feature interchangeable Mounting, Camera Tube, Optomechanical Function and Lower Magnification modules to enable users to configure their exact form, function and performance requirements.

http://www.qioptiq.com/optem-micro-inspection-lenses.html

Qioptiq mag.x System 125

APPLICATIONS: Technical microscopy • Flat-panel display inspection • Semiconductor inspection & processing • Widefield biomedical imaging • Micro measurement & metrology • Scientifc R&D

FEATURES: Ideal for micro-inspection with large-sensors, Mag.x 125 combines precision engineering with innovative optical design to deliver exceptional resolution across broad fields-of-view (up to 12.5mm Ø).

http://www.qioptiq.com/mag-x-125

iFLEX Diode Lasers

APPLICATIONS: Confocal microscopy • Optogenetics • Flow cytometry • Test & measurement • Biomedical imaging & instrumentation

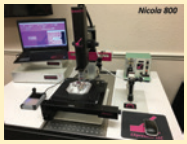
FEATURES: iFLEX Lasers deliver exceptional power stability with low amplitude noise. kineFLEX™ fiber delivery options ensure stable intensity with sub-micron positional accuracy and streamlined system integration.

http://www.qioptiq.com/diode-lasers.html

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

EXpressLO LLC

Tel: +1-321-663-3806
Email: info@EXpressLO.com
www.EXpressLO.com

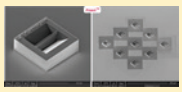


Nicola *ex situ* lift out and micromanipulator system

APPLICATIONS: • *ex situ* lift out • micromanipulation • particles, fibers, thin films • backside or plan view manipulation • FIB/SEM/TEM specimen preparation

FEATURES: EXpressLO™ grids and methods allow fast, easy, and flexible manipulation of FIB lift out specimens, fibers, particles, thin films, CNTs, and more.

http://www.expresslo.com/ex-situ-lift-out-systems.html



Praxis™ 3D Printed Samples

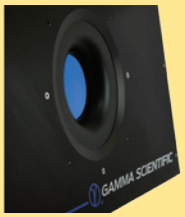
APPLICATIONS: • *ex situ* lift out • *in situ* lift out • manipulation practice and training • reduce FIB costs for sample preparation • access to many samples • easier and faster for more repetition

FEATURES: The patent pending *Praxis*™ 3D Printed specimens can be used for EXLO, *EXpressLO*™ or INLO methods, for training, practice, and educational purposes.

http://www.expresslo.com/praxis-.html

Gamma Scientific

Tel: +1 858-279-8034
www.gamma-sci.com

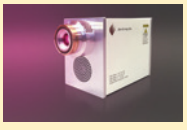


APPLICATIONS: • Fluorescence Excitation • Spectrum/Illuminant Simulation • Camera and Image Sensor Calibration • Photodiode Detector Responsivity • Diagnostic Medical Imaging

FEATURES: The latest in tunable LED light sources, SpectralLED® products incorporate up to 35 discrete wavelengths for synthesis of unlimited spectral profiles from 380-1000 nm.

ibss Group, Inc.

Tel: +1-650-513-1488
Email: admin@ibssgroup.com
www.ibssgroup.com

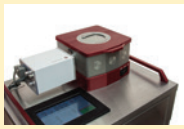


GV10x Downstream Asher

APPLICATIONS: • In-situ contamination control • Long MFP plasma cleaning • FIB/SEM, SIMS, XPS, TEM, CDSEMs, Review SEMs •

FEATURES: High to low power pressure (<5e^{-3} Torr, 6.7e^{-3} mBar, 6.7e^{-1} Pascal), long mean free path plasma for cleaning chambers and specimens in-situ. User operation via ibss Controller and/or Windows PC

http://ibssgroup.com/products/gv10x/



Mobile Cubic Asher

APPLICATIONS: • In-situ contamination control • SEM/FIB/TEM/SIMS/XPS • Sample Cleaning & Storage

FEATURES: Mobile downstream plasma cleaning center for specimen & in-situ EM cleaning, employs ibss signature GV10x Qwk-Switch source operated via touchscreen panel, fitted into one convenient enclosure.

http://ibssgroup.com/products/mca/

International Centre for Diffraction Data

Tel: 610-325-9814
Email: info@icdd.com
www.icdd.com

Powder Diffraction File

APPLICATIONS: • X-ray Powder Diffraction • Database • Software • Electron Diffraction • Education

FEATURES: The Powder Diffraction File™ (PDF®) is a collection of single-phase X-ray powder diffraction patterns for rapid phase identification designed to support automated quantitative analyses.

http://www.icdd.com/assets/files/2018-2019-SalesCatalog.pdf

IXRF Systems, Inc

Tel: 512-386-6100
Email: info@ixrfsystems.com
ixrfsystems.com

EDS System

APPLICATIONS: • SEM • Microanalysis • Trace Elements • Feature Analysis • EDS/XRF

FEATURES: Our EDS Microanalysis for the SEM is the most flexible EDS system you will ever use. Iridium Ultra will change the way you analyze data.

www.ixrfsystems.com/microanalaysis/

ATLAS Micro-XRF

APPLICATIONS: • Microanalysis • Trace Elements • Thin Film • Large Area Stage Mapping • Micro-XRF

FEATURES: The ATLAS Micro-XRF spectrometer boasts the largest chamber volume and SDD detection area as well as the smallest XRF spot size available on the market.

www.ixrfsystems.com/edxrf/

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

Linkam Scientific Instruments

Tel: +44 (0) 1737 363476
Email: Duncanstacey@linkam.co.uk
www.linkam.co.uk

CMS196M LED Cryo CLEM Stage

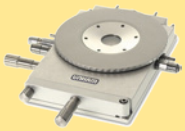
APPLICATIONS: • Cryo Correlative system (Cryo-CLEM) keeping the sample vitrified at -196 °C ensuring no contamination with automated liquid nitrogen filling for long term use. • High precision encoded motorized XY stage for high speed automated grid mapping • Short start up time with high long-term stability and low drift suitable for super resolution applications • Self-aligning magnetic sample cassette system for up to three EM grids • Integrated LED illumination for transmitted brightfield - Fluorescence and brightfield observation with high resolution objective with NA of up to 0.9

FEATURES: The Linkam Cryo-CLEM stage allows fluorescence and brightfield imaging of vitrified samples without contamination. Grids can be mapped to provide high resolution correlative information.

Optical DSC450 Stage

APPLICATIONS: • Differential Scanning Calorimetry between -150 °C to +450 °C, with optional liquid nitrogen cooling. • Optimized for simultaneous high-quality image capture and recording • Heating and cooling rates from 0.1 °C/min to 30 °C/min • Ideal for measuring glass transitions and melting peaks • Highly sensitive at low heating rates and small samples

FEATURES: The Optical DSC450 system is optimized to measure transition temperatures and enthalpy changes while simultaneously being able to image the sample providing correlative information of physical changes such as morphology and colour.



THMS 600 Heating and Cooling Stage

APPLICATIONS: • -196 °C to +600 °C temperature range with optional liquid nitrogen controller • Heating rates up to 150 °C/min; cooling rates to 100 °C/min • Better than 0.01 °C temperature accuracy and resolution • Options for gas control, humidity, pressure, vacuum and electrical measurements • Versions available compatible with FT-IR and Raman microscopes and spectrometers as well as X-ray systems.

FEATURES: The most versatile heating and cooling stage available. Precise and accurate temperature control ideal for use with light microscopy, FT-IR, UV, Raman, X-Ray, SAXS/WAXS and Synchrotron.

RH95 Humidity Generator

APPLICATIONS: • Fully self-contained humidity control from 5% to 90%RH, no dry air supply required • Highly stable +/-0.5% making it ideal for long term material testing • Compatible with a range of Linkam stages and other sealed chambers up to 2 litres • Optional accessory for use of Nitrogen or other inert carrier gas •Optional calibration kit including chamber and salt ampoules

FEATURES: The RH95 Humidity Generator provides precise control of RH% for a range of Linkam stages. Ideal for sample characterization under changing environmental conditions.

Malvern Panalytical

+1 508-768-6450
www.malvernpanalytical.com
ask@malvernpanalytical.com

Morphologi 4 ID Automated Imaging for Advanced Particle Characterization

APPLICATIONS: • Pharmaceuticals: API and excipient size, shape and chemical ID by Raman • Batteries: correlate electrode powder attributes with battery performance • Forensics: evidence particles size, shape and chemical ID by Raman • Spray drying: process control for correct granule size and shape • Additive manufacturing: powder metal size and shape for quality control

FEATURES: Morphologi 4-ID combines automated particle imaging with Raman spectroscopy in a single platform, to rapidly analyze thousands of particles unattended to unlock complex particle problems.

Mad City Labs, Inc.

Tel: + 1 608 298-0855
Email: sales@madcitylabs.com
www.madcitylabs.com

Nanopositioners, Microscope stages, AFM/NSOM, Single Molecule Microscopes

APPLICATIONS: Piezo Nanopositioners for Sample Scanning and Objective Lenses, Super Resolution Microscopy, Atomic Force Microscopy (AFM), Near Field Scanning Optical Microscopy (NSOM), Single Molecule Microscopy

FEATURES: Closed Loop Nanopositioners, Designed for nanoscopy and microscopy applications, High stability PicoQ® sensors, Unique Single Molecule MicroMirror TIRF Microscope, Low cost AFM/NSOM.

www.madcitylabs.com

Microtome Service Company

Tel: 315-451-1404
Email: Microtome.Svc.Co@verizon.net
http://www.microtomeserviceco.com

Microtome Sales, Service and Parts

APPLICATIONS: • Sorvall Microtomes and Ultramicrotomes • Rotory Microtome Repair • KnifeMaker Repairs • AO 820 & AO 860 Repairs • Fabricate & Modify Lab Equipment

FEATURES: Sales & Service of Sorvall, RMC, AO:820, 860 and Rotary Microtomes and GKM Knife Makers. Microtome & Lab accessories, fabrication and modifications to meet your specific needs. Microtome Rentals.

http://microtomeserviceco.com/index.php?route=information/information&information_id=7

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

Minitool Inc.

Tel: (408) 395-1585
Email: rschaller@minitoolinc.com
www.minitoolinc.com

Microtools and Instruments

APPLICATIONS: • Microscopy • Microbiology • Specimen Manipulation & Placement • Medical Research • Spectroscopy

FEATURES: Efficient, precise and realistically proportioned instruments in tip diameters from .025mm (.001″) to 1.0mm (.040″) are ideal for microscopists. Our line of micro-tools includes needles, gravers, chisels, knives, mirrors, probers, spatulas, hooks, scribes and microrulers. Also featured are micro-manipulators, micro-sharpeners and micro-forceps. Tools are offered singly or in sets of eight tools with one handle to 32 tools with six handles.

www.minitoolinc.com

Navitar

Tel: 585-359-4000
Email: info@navitar.com
navitar.com

High Quality Optical Solutions

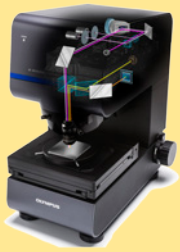
APPLICATIONS: Life Science • Industrial Imaging • Microscopy • Metrology • Defense & Security

FEATURES: We have experience designing high N.A. microscope objectives, custom tube lenses and integrated systems for customers in the microscopy sector. Our high N.A. microscope objectives are used for Multi-photon microscopy, Confocal microscopy, STED, Super-resolution, Live cell fluorescent microscopy and Digital pathology / Live Remote Microscopy.

https://navitar.com/products/imaging-optics/

Olympus Scientific Solutions

Tel: (281) 922-9300
Email: info@olympus-ossa.com
www.olympus-ims.com



LEXT® OLS5000 3D Laser Confocal Scanning Microscope

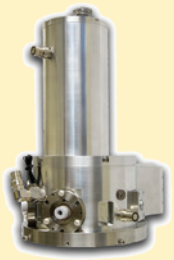
APPLICATIONS: • Non-contact 3D surface metrology • 3D Imaging • Nanofabrication • MEMS • Failure Analysis

FEATURES: Olympus' LEXT OLS5000 laser scanning confocal microscope features 4K scanning and dedicated objectives for measurements on 210 mm samples and concavities up to 25 mm.

www.olympus-ims.com/ols5000

Oregon Physics

Tel: +1 503 601 0041
Email: info@oregon-physics.com
www.oregon-physics.com



Hyperion II Dual Polarity Ion Source

APPLICATIONS: Negative and positive ion extraction • Bolt-on to existing optical system • utilizes variety of gas species • Supports surface analysis (SIMS) applications • Supports high current micro-machining (PFIB) applications

FEATURES: Integrates on existing ion optical systems to deliver the highest brightness, best imaging resolution and longest source lifetime for SIMS applications or high current FIB.

http://www.oregon-physics.com/hyperion2.php

FIB Consumable Parts

APPLICATIONS: For FEI FIB columns • Suppressors • Extractors • Custom aperture strips • Standard aperture strips

FEATURES: High quality FIB replacement parts for FEI brand DualBeam and FIB systems at substantial cost savings. We offer fast delivery and discounts for large orders.

http://www.oregon-physics.com/supressors-extractors.php

Oxford Instruments NanoAnalysis

Tel: +44 (0) 1494 442255
Email: Nano@oxinst.com
https://nano.oxinst.com

Symmetry® EBSD

APPLICATIONS: Large Area Mapping • 3D EBSD • *In Situ* analysis • HR EBSD for strain determination • TKD

FEATURES: The world's first EBSD detector based on CMOS sensor technology. Designed for operational simplicity, with unprecedented speed and sensitivity this detector can master all applications.

bit.ly/SymMT

Ultim® Max X-ray Detector

APPLICATIONS: Quantitative analysis • Real-time chemical imaging • Large Area Mapping • Particle Analysis • Auto-phase analysis

FEATURES: Latest generation Silicon Drift Detector combines speed and sensitivity to allow accurate compositional analysis and an unparalleled count rate even under demanding analytical conditions.

bit.ly/UltimMT

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

Park Systems

Tel: 408-986-1110
Email: inquiry@parksystems.com
www.parksystems.com

Park NX 12- Park NX12 features a versatile Inverted Optical Microscope (IOM) based SPM platform for SICM, SECM, and SECCM, in addition to Atomic Force Microscopy for research on a broad range of materials from organic to inorganic, transparent to opaque, soft to hard.

FEATURES: • Atomic Force Microscopy (AFM) for nanometer resolution imaging with electrical, magnetic, thermal, and mechanical property measurement capabilities • Pipette-based scanning system for high resolution Scanning Ion Conductance Microscopy (SICM), Scanning Electrochemical Microscopy (SECM), and Scanning Electrochemical Cell Microscopy (SECCM) • Inverted Optical Microscopy (IOM) for transparent material research and fluorescence microscopy integration

APPLICATIONS: Park NX12- Park NX12 was built from the ground up to accommodate the needs of multi-user facilities. Other AFM solutions lack the required versatility to address the diverse needs of users in these facilities, making it difficult to justify the equipment cost. The Park NX12, however, is built to accommodate standard ambient AFM, in-liquid SPM and optical imaging making it one of the most flexible AFMs available.

https://www.parksystems.com/index.php/products/small-sample-afm/park-nx12/technical-info

Psylotech

Tel: 1.847.328.7100
Email: info@psylotech.com
www.psylotech.com

xTS - X-ray tomography in situ test system

APPLICATIONS: • Micro CT mechanical testing • Rotating load train • Tension, compression & torsion • 100N to 45kN capacity • Materials testing

FEATURES: Specimen rotates within frame, so posts never interfere with X-rays and sample insertion simplified; Tension/Compression; Available torsion.

µTS - miniature universal test system

APPLICATIONS: • Under-microscope universal load frame •Optical, SEM, AFM, confocal compatible •Digital Image Correlation measures local strain •Biological samples from bone to soft tissue • -100 to 250C temperature chamber

FEATURES: Lowest out-of-plane motion in it's class; Quality high magnification image capture; Fast ballscrew actuator; Ultra High Resolution Sensors

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PInano® Nanopositioning Solutions for Light-Sheet & Super-Resolution Microscopy

APPLICATIONS: Super Resolution Microscopy • Microscopy Stages • Atomic Force Microscopes (AFMs) • Positioning Stages & Controllers • Nanopositioners & Stages

FEATURES: 2nd Gen System • Two Versions: High Precision / High Precision and Stability • Cost-effective Piezoresistive Feedback Version Available • Extremely Fast Step & Settle, From 5msec • Low Profile: 20mm (0.8″) • 200µm Travel Ranges

www.pi-usa.us/microscopy

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Email: usa@renishaw.com
www.renishaw.com/raman

inVia™ Qontor® confocal Raman microscope

APPLICATIONS: • Biological- tissue diagnostics • Failure analysis • Quality control • Chemical ID • Chemical imaging

FEATURES: The inVia Qontor confocal Raman microscope's cutting-edge technology reduces overall experiment times and makes analyzing even the most complex samples easy.

www.renishaw.com/invia

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Rigaku
Leading With Innovation

Rigaku nano3DX

APPLICATIONS: X-ray microscope • computed tomography (CT) • XRM • High Resolution

FEATURES: nano3DX is a X-ray microscope (XRM) with the ability to measure relatively large samples at high resolution using a high powered rotating anode X-ray source and a CCD imager.

Rigaku CT Lab GX series

APPLICATIONS: Ultra-high-speed CT scan and image reconstruction • High-resolution wide field-of-view measurement • Uses "Sample-Stationary Method" • Low running cost

FEATURES: CT Lab GX series, for ultra-high-speed, high-resolution 3D X-ray micro CT. Using the Sample-Stationary Method, devices can perform CT scans in 8 seconds at top speed, with a minimum resolution of 4.5 μm.

For X-ray imaging products from Rigaku, visit https://www.rigaku.com/products/imaging

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KL Light Sources & Accessories for Microscopy Applications

APPLICATIONS: Stereo Microscopy • Laboratory Equipment • Industrial Applications • Life Science Applications • Microscopy Applications

FEATURES: Light is a key element in stereo microscopy. Using the correct illumination can make hidden details visible and enhance the contrast to distinguish the feature.

http://www.us.schott.com/lightingimaging/english/microscopy/products.html

Cold Vision Series Halogen and LED Light Sources & Accessories

APPLICATIONS: Stereo Microscopy • Laboratory Equipment • Industrial Applications • Life Science Applications • Microscopy Applications

FEATURES: The ColdVision series provides extensive offerings of light sources, fiber optic light guides, and accessories to meet every illumination need for Machine Vision and Microscopy illumination.

https://www.us.schott.com/lightingimaging/english/sensors/products/coldvision/index.html

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Email: info@specialoptics.com
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SPECIAL OPTICS
A NAVITAR COMPANY

Custom Microscope Objectives

APPLICATIONS: Laser Micro-machining • Physical Science Research • Microscopy • Long Range Surveillance • Defense & Security

FEATURES: Special Optics designs, develops and manufactures precision optical components and offers a wide range of optical fabrication and opto-mechanical assembly capabilities. We have experience designing high N.A. microscope objectives, custom tube lenses and integrated systems for customers in the microscopy sector. Our high N.A. microscope objectives are used for Multi-photon microscopy, Confocal microscopy, STED, Super-resolution, Live cell fluorescent microscopy and Digital pathology / Live Remote Microscopy.

http://specialoptics.com/custom-solutions/

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spi SUPPLIES

UV Prep

APPLICATIONS: Materials Science • Life Science • Semiconductor • Low Voltage Imaging • High Resolution SEM

FEATURES: The UV Prep is designed to remove hydrocarbon contamination from a sample surface prior to FE-SEM examination. The result is enhanced imaging and resolution at low accelerating voltages.

Plasma Prep™ III

APPLICATIONS: Materials Science • Life Science • Semiconductor • Asbestos • Failure Analysis

FEATURES: Solid state RF generator capable of 1 to 100W operations; Low Temperature asher/etcher; small footprint; 4″ diameter x 6″ depth Pyrex or Quartz Chamber; Optional Process Controller; Optional system for cleaning TEM Specimen Holders.

Wet Cell II

APPLICATIONS: Life Science • Mass Spectrometers • Materials Science • Microfluidic Analytical Techniques • SEM

FEATURES: The next generation device for the examination of liquids in SEM/EDS and TOF-SIMS instruments. The self-contained high vacuum compatible device enables the analyst to characterize a fluid in its natural state.

Sputter/Carbon Coaters for SEM

APPLICATIONS: Materials Science • Semiconductor • Imaging • Failure Analysis

FEATURES: The SPI-Module line of modular sputter coaters and carbon coaters are optimized for precious metal coating and/or carbon coating for all SEM/EDS applications.

https://doi.org/10.1017/S1551929519000233 Published online by Cambridge University Press

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www.tedpella.com

High Resolution FE-SEM Sputter and Carbon Coaters

APPLICATIONS: • Life Sciences • Materials Science • Semiconductors • SEM

FEATURES: • Fine-grained, ultra-thin uniform and conformal coating • Wide choice of operating parameters to accommodate all sample types • Purpose designed with optimized vacuum pumping system • Rotary-Planetary-Tilting stage and high resolution thickness controller • Easy to operate with fast cycle times

www.tedpella.com/cressington.htm

NEW PELCO BioWave® Pro+

APPLICATIONS: • Microwave Tissue Processing for EM • Light Microscopy • Immunolabeling and Decalcification

FEATURES: User-friendly run screens with live run-time graph • Simplified protocol selection • Report Protocol Manager App and two USB ports for simplified data transfer and custom protocol upload

www.tedpella.com/microwave_html/pelco-biowave-pro-plus-microwave-system.htm

PELCO® Dimpler™

APPLICATIONS: Materials Science • Semiconductor Failure Analysis • TEM

FEATURES: Precision specimen thinning to near electron transparency at the exact region of interest, increased productivity for thinning compared to ion milling alone, automated operation for ease of use

www.tedpella.com/Material-Sciences_html/PELCO-Dimpler.htm

PELCO® Tripod Polisher™

APPLICATIONS: Materials Science • Semiconductor Failure Analysis • TEM • SEM

FEATURES: Simple hand-held precision specimen preparation tool for thinning parallel to plane or angled to plane (wedge polishing) for thinning down to a region of interest or for electron transparency at the wedge tip, is easily used on any rotating metallographic grinder/polisher that has clear access to the platen surface.

www.tedpella.com/Material-Sciences_html/PELCO-Tripod-Polisher-590.htm

Metallographic Consumables

APPLICATIONS: Materials Science, Metallography, Petrography, Semiconductor Failure Analysis

FEATURES: Wide selection, good quality, affordable prices.

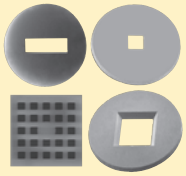
www.tedpella.com/Material-Sciences_html/metallography-overview.htm

PELCO easiGlow™

APPLICATIONS: • Life Sciences • Materials Science • TEM • Tomography

FEATURES: Precise and easy vacuum settings • Short cycle times • Consistent results • Intuitive touch screen for control and display • Supports hydrophilic/hydrophobic and negative/positive modes

www.tedpella.com/easiGlow.htm

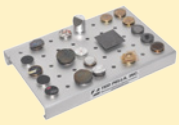


PELCO® Silicon Nitride Support Films and TEM Supplies

APPLICATIONS: • TEM • STEM • Thin Film Research • Life Sciences • Materials Science

FEATURES: Holey SiN films down to 100nm • Solid membrane thickness of 8, 15, 35, 50 and 200nm • 3mm diameter frame fits standardTEM holders • EasyGrip™ edges for improved handling • Variety of window shapes and sizes

www.tedpella.com/TEM-supplies.htm



PELCO® Modular SEM/FIB Sample Holders and Supplies

APPLICATIONS: • SEM • FE-SEM • FIB • FIB/SEM • CLEM

FEATURES: Stage adapters for all major SEM brands • Large selection of effective and practical sample holders • Correlative microscopy sample holders • Conductive adhesives • Carbon tabs • Conductive tape

www.tedpella.com/SEM-supplies.htm

Optical Light Microscopy & SEM Calibration Standards

APPLICATIONS: Calibration Specimens for SEM, TEM, AFM • SPM, FIB, EDS • WDS and Optical Microscopes

FEATURES: X-Ray References Calibration for SEM: PELCO X-CHECKER™ • Pelcotec™ CDMS-XY: Critical Dimension Magnification Standards • AFM Gold Calibration Kit • AFM TipChecker • Magnification Calibration Calculators • Pelcotec™ LMS-20 G Magnification Calibration Standard • Stage Micrometers • Fluorescence Reference Slides

www.tedpella.com/calibration_html/Calibration_Overview.htm

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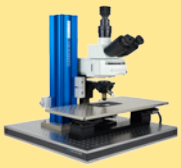

BOB - Open-Design Upright Microscope

APPLICATIONS: Fluorescence microscope • *In vivo* and *in vitro* microscopy • Life and Material Sciences • Photostimulation

FEATURES: The BOB is a compact, height-adjustable microscope that can be easily configured to different types of experiments, methods of illumination and means of signal detection.

TESCAN USA Inc.

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TESCAN S9000G

APPLICATIONS: Guaranteed high resolution over entire beam energy range • Incomparable versatility to satisfy a wide range of FIB applications • Nanofabrication with ultimate quality • Fast 3D microanalysis • Precise deprocessing

FEATURES: The TESCAN S9000G offers the most advanced capabilities in nanofabrication for ultimate quality in the most challenging sample preparation. A gallium FIB-SEM system aimed at advanced ultra-thin TEM sample preparation, and other challenging nanofabrication tasks, that demand ultimate resolution and nanomachining capabilities. New Essence™ software compatible with Windows upgrades.

https://www.tescan.com/en-us/technology/fib-sem/tescan-s9000g

TESCAN S9000X

APPLICATIONS: Failure Analysis • Ultra-fast 3D Microanalysis • Large-area cross sectioning • Damage-free polishing and nanopatterning • High throughput • Customizable Graphic User Interface (GUI) for ease-of-use

FEATURES: The TESCAN S9000X is a powerful FIB-SEM specifically designed for complex root-cause failure analysis of integrated circuits, opto-electronic devices and new nanotechnologies and nanomaterials. And, the new IFIB+T™ column provides the largest field of view (FOV) in the market of plasma FIB-SEMs.

https://www.tescan.com/en-us/technology/fib-sem/tescan-s9000x-(1)

TESCAN S8000G

APPLICATIONS: Proprietary 70° combined electrostatic-magnetic objective lens for maximum versatility • Field-free ultra high-resolution imaging • In-beam axial detector and multidetector for angle-selective and energy-selective signal collection • Beam Deceleration Technology (BDT) • World-class quality sample preparation

FEATURES: The TESCAN S8000G delivers outstanding image quality with superb contrast ideal for nano-characterization and performing complex nanoengineering tasks with extreme precision and ease. The synergy of a novel Orage™ FIB column, fitted with state-of-the-art ion optics and gas injection system, make the TESCAN S8000G a world-class instrument for sample preparation and nanopatterning. New Essence™ software compatible with Windows upgrades.

https://www.tescan.com/en-us/technology/fib-sem/s8000g

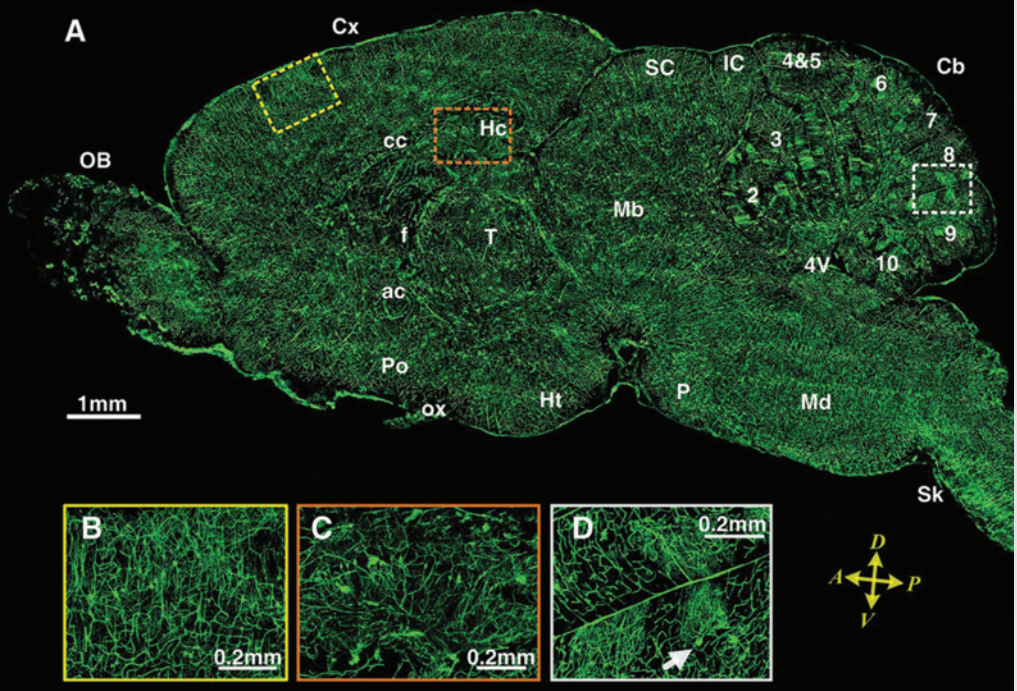
TESCAN S8000X

APPLICATIONS: Xe plasma FIB for top-down planar delayering • In-situ electrical nanoprobing • Excellent uniform planarity in windows larger than 200x200 μm^2 • Unmatched large field-of-view • Extra-large cross-sections • Ga-free sample prep to preserve sample properties

FEATURES: TESCAN S8000X is the most versatile and universal analytical Xe plasma FIB-SEM platform in the market enabling large-volume sample characterization and Ga-free sample preparation and modification. The combination of field-free UHR enabled by the BrightBeam™ SEM column and powerful yet precise milling capabilities delivered by the new iFIB+™ Xe plasma FIB column, make the TESCAN S8000X the ideal platform for planar delayering, low-kV SEM inspection, and electrical nanoprobing of sub-20 nm node technologies. New Essence™ software compatible with Windows upgrades.

https://www.tescan.com/en-us/technology/fib-sem/tescan-s8000x

YOU'LL FIND DiATOME AT THE FOREFRONT OF INNOVATION...



Creating a High Resolution Atlas of the Mouse Brain...

(A) A sagittal image reconstructed from a stack of 100 virtual sagittal sections (total thickness of 0.1 mm). These sections were transformed from the original coronal sections. The sagittal image was located in the right hemisphere about 0.4 mm lateral to the middle. Almost all major regions of the brain can be seen in this image, e.g., the Olfactory Bulb (OB), Cerebral Cortex (Cx), Hippocampus (Hc), Fornix(f), Anterior Commissure (ac), Thalamus (T), Cerebellum (Cb), Midbrain (Mb), Pons (P), Medulla (Md), Corpus Callosum (cc), Superior Colliculus (SC), Inferior Colliculus (IC), Hypothalamus (Ht), Preoptic Area (Po), Optic Chiasm (ox), 4th ventricle (4V) and nine lobules of the cerebellum (Arabic numerals, 2 to 10). The three regions inside the different colored rectangle in (A) are the positions of (B), (C) and (D), which illustrate the cerebral cortex, hippocampus and cerebellum, respectively. In the reconstruction of sagittal image, no dislocation was observed along the D-V axis, i.e., the coronal sections are inherently aligned along the A-P axis.

DiATOME QUALITY AND INNOVATION APPLIED...

Micro-Optical Sectioning Tomography to Obtain a High-Resolution Atlas of the Mouse Brain

Existing imaging tools have limitations for brainwide mapping of neural circuits at a mesoscale level. In collaboration with DiATOME, researchers developed a Micro-Optical Sectioning Tomography (MOST) system utilizing a DiATOME Diamond Knife that can provide micron tomography of a centimeter-sized whole mouse brain.

Slicing was performed by moving the specimen to generate ribbons, and each ribbon was simultaneously imaged. The illuminating beam passed through a beam splitter, mirror and objective to irradiate the ribbon. The imaging beam collected by the objective and passed through the mirror, beam splitter and tube lens was then recorded by a line-scan CCD.

A 3D structural dataset of a Golgi-stained whole mouse brain at the neurite level was obtained. The morphology and spatial locations of neurons and traces of neurites were clearly distinguished. Researchers found that neighboring Purkinje cells were sticking to each other.

Acknowledgement

Micro-Optical Sectioning Tomography to Obtain a High-Resolution Atlas of the Mouse Brain Anan Li, Hui Gong, Bin Zhang, Qingdi Wang, Cheng Yan, Jingpeng Wu, Qian Liu, Shaoqun Zeng, Qingming Luo

Britton Chance Center for Biomedical Photonics, Wuhan National Laboratory for Optoelectronics–Huazhong University of Science and Technology, Wuhan 430074, P. R. China.

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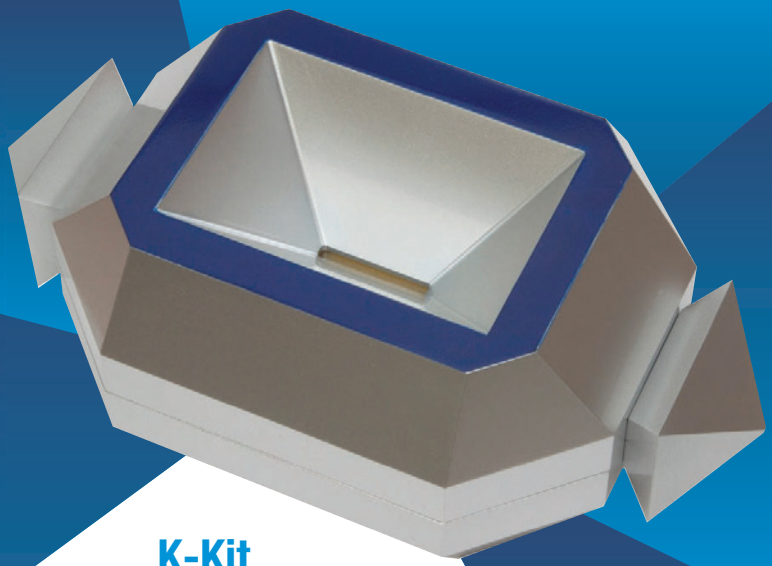
EMS has it!...

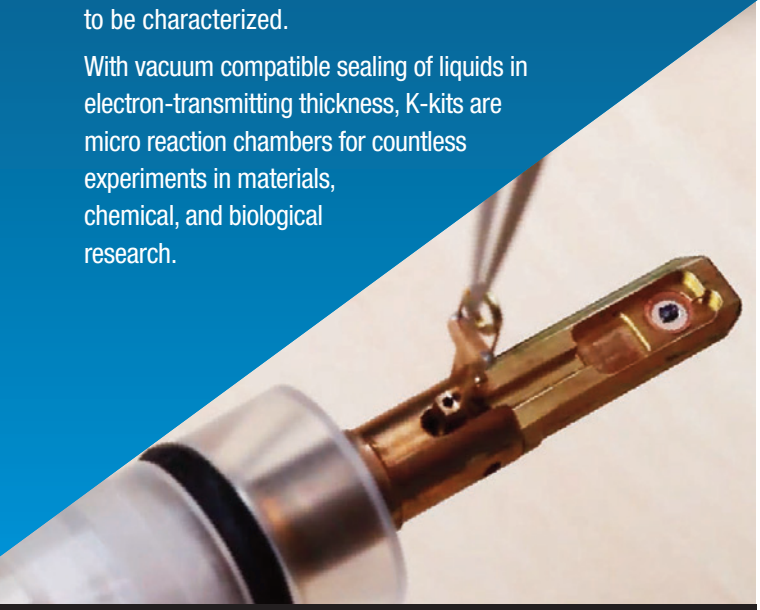
K-Kit

A Specimen Holder for Liquid Sample Analysis in TEM

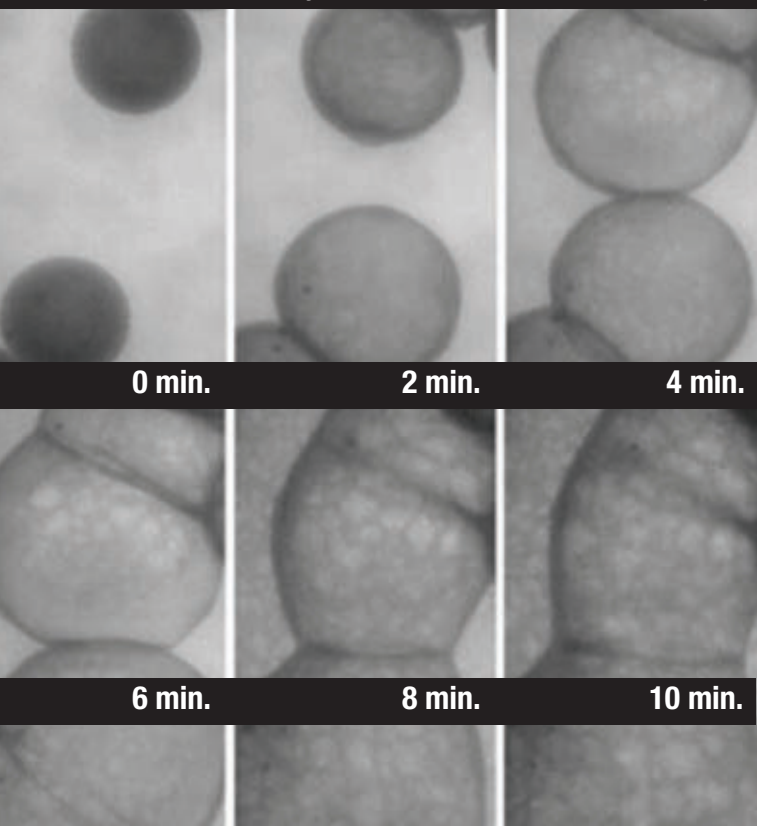


K-kits are sample holders designed to facilitate convenient TEM observation of liquid samples, allowing nano-objects, aggregates, and agglomerates (NOAAs) in liquid samples to be characterized.

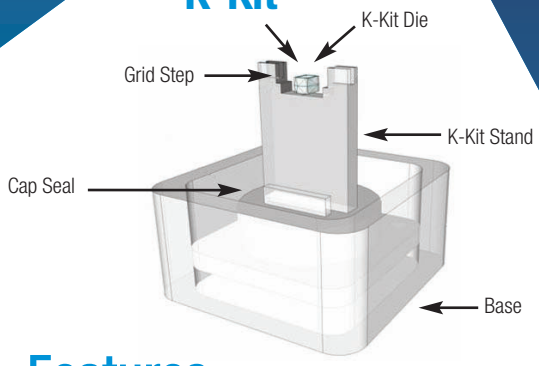
With vacuum compatible sealing of liquids in electron-transmitting thickness, K-kits are micro reaction chambers for countless experiments in materials, chemical, and biological research.



In-Situ Dynamic Observation of NOAAs in Liquid



K-Kit



Features

- **Applicable for most TEM holder brands**
- **Strong structural reliability under vacuum**
- **Sealing glue compatible to many solvents**
- **Disposable**
- **Free of cross-contamination**
- **Easy to use**

K-Kit Tool Box

please contact us for more information...

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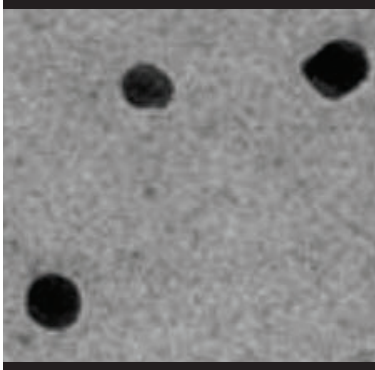
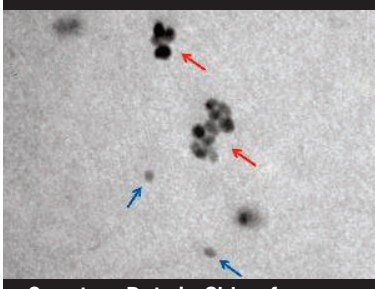
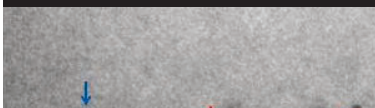




Quantum Dots in Chloroform



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