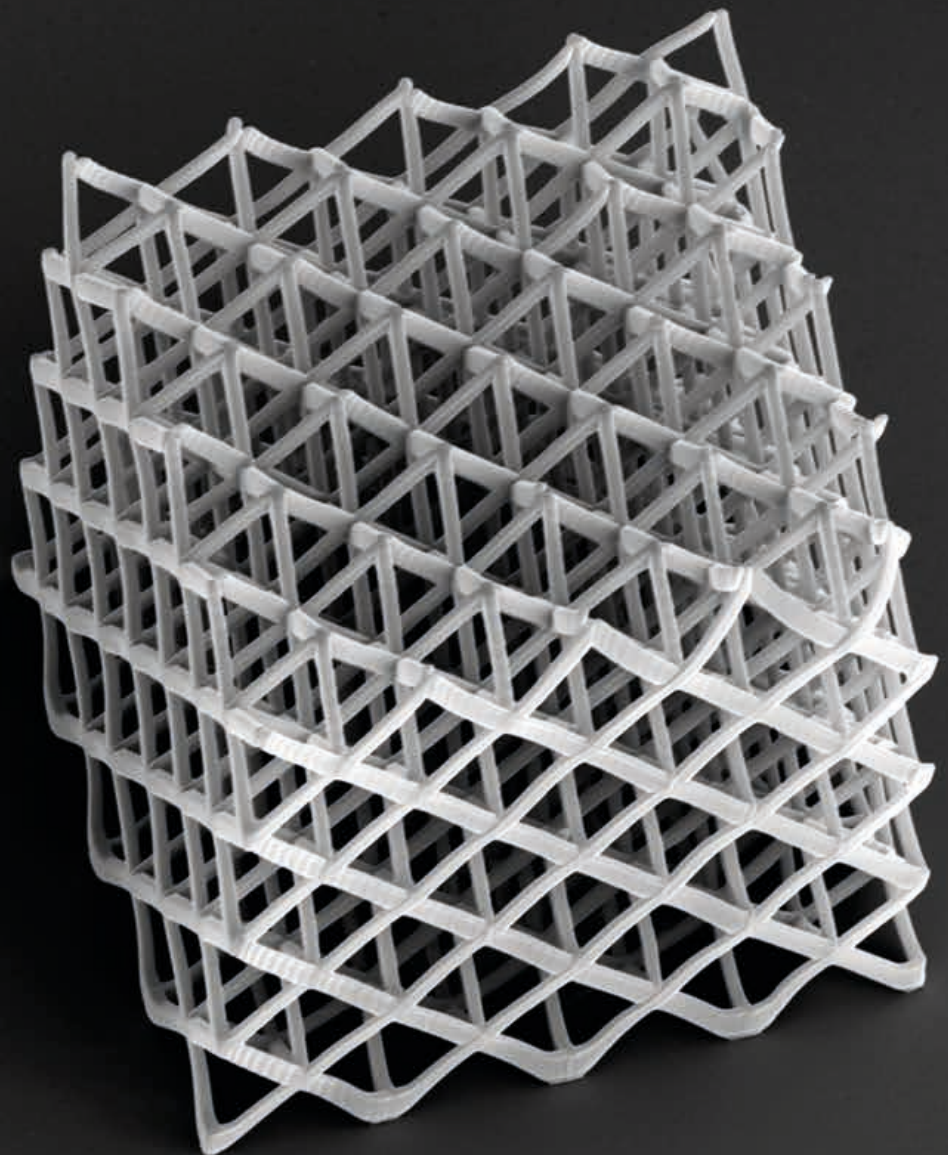
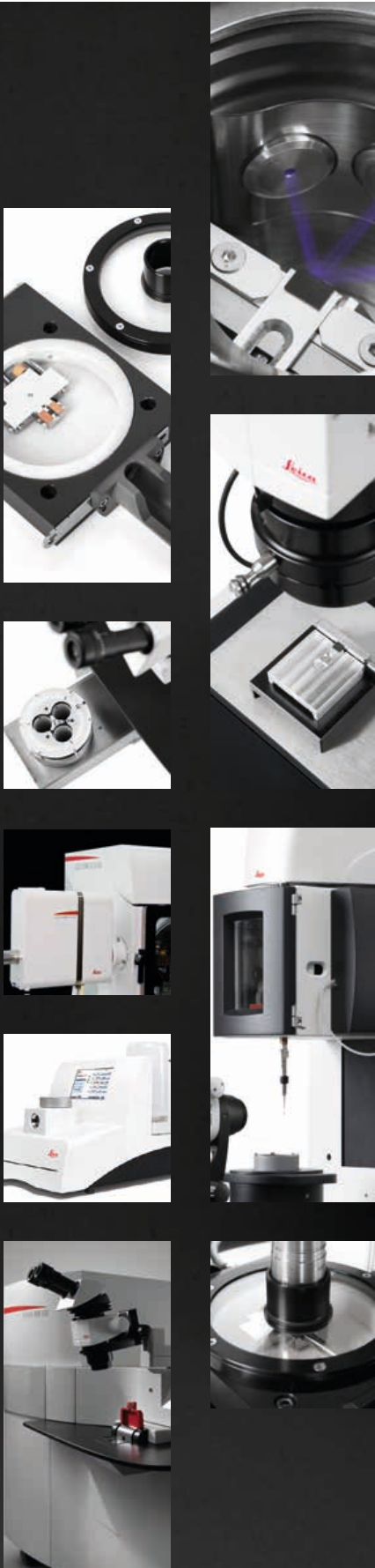


From Eye to Insight

Leica
MICROSYSTEMS

MEETING THE CHALLENGES OF EM SAMPLE PREPARATION

THE LEICA NANOTECHNOLOGY
PRODUCT PORTFOLIO





Leica

PERFECT PREPARATION MAKES
THE DIFFERENCE BETWEEN
ORDINARY RESULTS AND GREAT
RESULTS, BETWEEN TRYING
AND ACHIEVING, BETWEEN
FAILURE AND SUCCESS ...

Leica
MICROSYSTEMS

Carbon thread

Leica thread 2

Flash

Pulse

3 nm

0 nm

Start

Leica

SAMPLE PREPARATION WITH LEICA MICROSYSTEMS – THE PORTFOLIO THAT GIVES YOU SUCCESS FOR EVERY APPLICATION

ION BEAM MILLING	Leica EM TXP, Leica EM TIC 3X, Leica EM RES102
CRYO PREPARATION	Leica EM ICE, Leica EM GP, Leica EM AFS2, Leica EM CTD
TRIMMING	Leica EM RAPID, Leica EM TRIM2
ULTRAMICROTOMY & CRYOULTRAMICROTOMY	Leica EM UC7, Leica EM FC7, Leica EM KMR3
CONTRASTING	Leica EM AC20
COATING / ETCHING / FRACTURING	Leica EM ACE200, Leica EM ACE600, Leica EM ACE900
SAMPLE TRANSFER	Leica EM VCT500, Leica EM VCM
TISSUE PROCESSING	Leica EM AMW, Leica EM TP
CRITICAL POINT DRYING	Leica EM CPD300
CRYO CLEM	Leica EM Cryo CLEM

THE COMPLETE PORTFOLIO FOR EM SAMPLE

ION BEAM MILLING



Leica EM TXP

Target preparation device for milling, sawing, drilling, grinding and polishing samples prior to examination by SEM, TEM and LM techniques.

- > Accurate location and preparation of microtargets
- > In-situ stereomicroscope observation
- > Automatic process control to produce a mirror-like surface quality
- > Perfect instrument for pre-preparation of a sample prior to ultramicrotomy and ion beam milling technique



Leica EM TIC 3X

Ion beam milling produces high quality surface finishes of hard, soft, porous, heat sensitive, brittle and/ or heterogeneous material, for SEM microstructure analysis (EDS, WDS, Auger, EBSD) and AFM investigations.

- > Various sample holders for almost every sample size
- > Broad and deep cross sections at high speed
- > Individual configurations possible using interchangeable stages – Standard stage, Multiple sample stage, Cooling stage, Rotary stage, or VCT docking port for environmentally sensitive and/ or cryogenic sample transfer
- > Cooling Stage – High quality, low temperature processing of heat sensitive samples such as rubber and water-soluble polymer fibers can be prepared by cooling down the sample holder and mask to -160°C



Leica EM RES102

Unique ion beam milling device with two modified saddlefield ion sources of variable ion energy for optimum results. It combines the preparation of TEM, SEM, and LM samples in a single benchtop unit. In addition to high-energy milling, it can also be used for very gentle sample processing using low ion energy.

- > External control of the milling process via LAN
- > Preparation of samples up to 25 mm diameter
- > Fully computer-controlled milling parameters

CRYO PREPARATION



Leica EM ICE

High pressure system for freezing aqueous samples delivers optimal sample preservation. Offers the highest flexibility to meet multiple application demands.

- > Programmable sequential freezing of nine (3×3) samples
- > Automated LN_2 re-filling of the sample storage dewar
- > Integrated work bench with temperature control
- > One move fully automated loading
- > Recovery time between freezing cycles 1 minute
- > Stereomicroscope (user defined Leica M80 or S6 E)
- > Ready to use within 20 minutes (cooling time)
- > Low consumption of LN_2 (app. 30 liter per day)
- > Retrofitable light stimulation mode

Leica EM ICE Light Stimulation (LS)

All the features of Leica EM ICE standard, in addition offers fully integrated light stimulation.

- > Software integrated programming for LS
- > Automatic recondition of the specific light module
- > Modules with different LEDs (wave lengths): UV, blue, red, green, amber
- > Detailed log file of each experiment
- > Light stimulation precision of 1 millisecond



Leica EM GP

Automatic plunge freezer for the bare grid technique.

- > Programming allows reproducible processes in a controlled sample environment
- > Filling the secondary cryogen is fast, easy, and safe, with the unique liquifying head
- > Single sided parallel blotting gives an even film thickness
- > Sensor-blotting



Leica EM CTD

Cryo tool dryer

- > Combines heated air flow and heating plate for reliable de-icing
- > Maximum temperature $+50^{\circ}\text{C}$

CRYO PREPARATION (CONTINUED)



Leica EM AFS2 Smart

Freeze substitution and low temperature embedding for light and electron microscopy.

- > -140 °C to +70 °C working range
- > Transfer function – LN₂ gas regulation in the chamber to minimize contamination
- > Integrated screen display
- > Intuitive programming and user hints
- > LED UV polymerization
- > Stereomicroscope viewing
- > AFS smart-remote observation of the process and delivery of critical information via SMS



Leica EM FSP

Automatic reagent handling / dispensing system for freeze substitution and PLT.

- > One step preparation
- > Safer, convenient handling
- > Flexible built-in UV light for polymerization
- > Up to 20 samples per run

TISSUE PROCESSING



Leica EM AMW

Automatic microwave tissue processor for electron microscopy.

- > Fast processing
- > Minimized user interaction
- > From fresh tissue to TEM within a day



Leica EM TP

Automated routine tissue processor.

- > Safe operation
- > Time saving
- > Reproducible results
- > Pre-heating and pre-cooling of the reagents
- > Versatile: EM, EM high throughput, and LM

TRIMMING



Leica EM RAPID

Advanced specimen trimming device for TEM, SEM, LM.

- > 0.5, 1, 10, 100 µm step advance
- > Adjustable cutting speed 300–20,000 rpm
- > Advance indication on LCD display
- > Unique system for preparation of tablets for pharma industry as well as for advanced specimen trimming



Leica EM TRIM2

Specimen trimming device for TEM, SEM, LM.

- > 1 µm step advance
- > Perpendicular viewing of the sample
- > LED illumination
- > Cutting speed 20,000 rpm

ULTRAMICROTOMY & CRYO-ULTRAMICROTOMY



Leica EM UC7

Ultramicrotome for ultrathin sectioning of biological and industrial samples.

- > Up to 100 different user/ specimen/ knife profiles can be set
- > Electronic data transfer for reporting user, specimen, knife and storage parameters
- > Knife usage monitoring
- > Optimized ionizer
- > Fully motorized knife stage and AutoTrim function
- > Brightness-controlled multi-LED illumination and LED spot illumination
- > Vibration-free gravity stroke



Leica EM FC7

Low temperature ultrathin cryosectioning of biological and industrial samples.

- > Ergonomic design for fatigue-free operation
- > Internal chamber illumination
- > Temperature range from -185°C to -15°C
- > Individual temperature for specimen, knife, and gas
- > Setting of temperature difference up to 130°C (between knife and specimen)
- > GN2 gap between chamber and arm rest ensures a warm surface for the user contact
- > Heated chamber walls prevent icing over a prolonged working time
- > Easy section collection using micromanipulator and EM CRION ionizer
- > Sample transfer option (Leica EM VCT)



Leica EM KMR3

Balanced-break glass knife maker for producing 45° glass knives from 6.4 mm, 8 mm, and 10 mm glass.

- > Highly reproducible, outstanding knife quality
- > Automatic reset of the breaking and scoring mechanism
- > Ergonomic design for comfortable use
- > Easy to learn

CONTRASTING



Leica EM AC20

Automatic contrasting of ultrathin sections for electron microscopy.

- > Safe processing
- > Low reagent consumption
- > High contrast
- > Reproducible results

SAMPLE TRANSFER



Leica EM VCT500

Versatile vacuum cryo transfer system for contamination-free transfer of specimens between different preparation and analysis instruments via shuttle and load lock. Actively cooled transfer stage.

- > Workflow specimen monitoring
- > Links workflow from preparation to analysis
- > Connects to more than one SEM
- > Various specimen holders for SEM, FIB-SEM, freeze-fracture and more



Leica EM VCM

LN_2 cooled workstation for contamination-free specimen manipulation.

- > All sample transfers from loading under vacuum
- > Improved connectivity given by a movable loading sphere, adaptors to the Leica Cryo CLEM and Cryo-TEM transfer holders

COATING / ETCHING / FRACTURING



Leica EM ACE200

High quality desk-top coater produces homogeneous coatings of conductive metal or carbon for EM. The fully automated instrument can be configured either as a sputter coater or a carbon thread evaporation coater. Or, if preferred, it can combine both methods with interchangeable heads on the one instrument. Additional options include:

- > Quartz crystal measurement – for reproducible layers
- > Planetary rotation – for even distribution of coating material on fissured samples
- > Glow discharge – to make TEM grids hydrophilic
- > Exchangeable shielding – for easy cleaning



Leica EM ACE600

This versatile high vacuum film deposition system produces very thin, fine-grained, conductive metal and carbon coatings for resolution analysis, as required for FE-SEM and TEM applications. This fully automated table-top coater includes an integrated oil-free vacuum system, quartz crystal film thickness measurement, and a motorized stage (rotation, optional tilt and height). Can be configured for the following methods:

- > Sputtering
- > Carbon thread evaporation
- > Carbon rod evaporation
- > e-beam evaporation
- > Glow discharge
- > Leica EM VCT500 adaptation for cryo-coating, freeze-fracture, double-replica, and controlled environmental transfer with the VCT shuttle



The Leica EM ACE600 outfitted with a Leica EM VCT500 (cryo vacuum transfer system) is the ideal solution for contamination-free cryo-SEM sample preparation with complete environmental control.



Leica EM ACE900

High-end system for freeze fracture applications. High vacuum, a 3-axis movable microtome, and low angle e-beam coating with rotation ensure the best results for TEM replicas and together with the Leica EM VCT500, contamination-free cryo-SEM block face imaging.

- > Large closed cryo-shield
- > Rotating cryo stage
- > High resolution low angle e-beam coating of carbon / metal
- > Gate valves for e-beam sources and load lock (sample and knife exchange)
- > Leica EM VCT500 option

CRITICAL POINT DRYING



Leica EM CPD300

A critical point dryer for biological specimens (pollen, tissue, plants and insects) as well as for industrial samples (Micro Electro Mechanical Systems (MEMS), hydro or aerogels). This fully automated, controlled process leads to perfect, reproducible results and ensures reproducible sample quality.

- > Reduced process times by Leica filler / sample holder concept
- > Minimized CO² consumption and minimal user interaction time
- > Integrated waste separator avoids direct contact with chemical waste

CRYO CLEM



Leica EM Cryo CLEM

The Leica EM Cryo CLEM ensures fast, safer contamination-free sample transfer and loading from cryo sample preparation instruments to Leica fixed stage light microscopes. Maintains the sample vitrified during cryo imaging in a controlled way.

- > Cryo transfer and cryo light microscopy imaging with software connectivity to electron microscopes for mark and find function
- > Rapid screening of large areas and fast determination of regions of interest in the electron microscope under controlled cryo conditions
- > The Leica cryo objective with low working distance (0.28 mm) and with NA 0.9 for high resolution (364 nm) ensures fast and specific localization of target structures in EM



ISO 9001:2008
ISO 14001:2004

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No.02783/0

Leica Mikrosysteme GmbH · Vienna · Austria
T +43 1 486 8050-0 · F +43 1 486 8050-30

www.leica-microsystems.com/em

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WITH US!

