Living up to Life

Leica
MICROSYSTEMS

Leica EM CPD300

Automated Critical Point Dryer

Controlled Specimen Drying for Biological and Industrial Applications

Leica EM CPD300 Critical Point Dryer

The New Leica EM CPD300 dries biological specimens such as pollen, tissue, plants, insects, etc. as well as industrial samples, for example Micro Electro Mechanical Systems (MEMS) or Micro fluids in a fully automated and controlled process. This automated, controlled technique leads to perfect, reproducible results and ensures the same high sample quality from every run.

Trusted reliability

- Fully reproducible processes through full automation
- Highly reproducible sample preparation

Time saving

- Reduced process times through new Leica filler concept
- Minimal user interaction time through automation and intuitive software
- Efficient synergy with Leica pre-treatment instrument EM TP Tissue Processor

Ease of use

- Ease of use by intuitive software and integrated touch screen
- Store and recall drying programs
- Expected process time calculated
- Timer function
- Flexibility in sample size with large variety of sample holders

Cost saving

- Minimized CO_2 consumption through new Leica filler concept
- Minimal user interaction time

CRITICAL POINT DRYING

The procedure of critical point drying is an efficient method for drying delicate samples for SEM applications. It preserves the surface structure of a specimen which could otherwise be damaged due to surface tension when changing from the liquid to gaseous state. In the past, critical point drying was a time consuming process with low sample reproducibility due to the many manual operations required. Before drying, many biological samples are commonly prepared through fixation and dehydration steps and coated after drying with metals such as gold, platinum or palladium to make their surfaces electrically conductive for SEM analysis.

The New Leica Filler Concept – Reduced CO_2 Consumption and Process Time

The Leica Filler Concept was developed to meet customer demands to reduce CO_2 consumption and process time. With the ability to adjust the chamber volume to the sample size, the exchange volume is reduced, thus minimizing process time and CO_2 consumption.

Sample holders with appropriate filler setting can reduce volume by up to 25 ml.

Process chamber with sample container and sample holder.
Empty process chamber has a volume of 175 ml.

Sample container with quick release pin. Sample container allows location independent sample assembly.

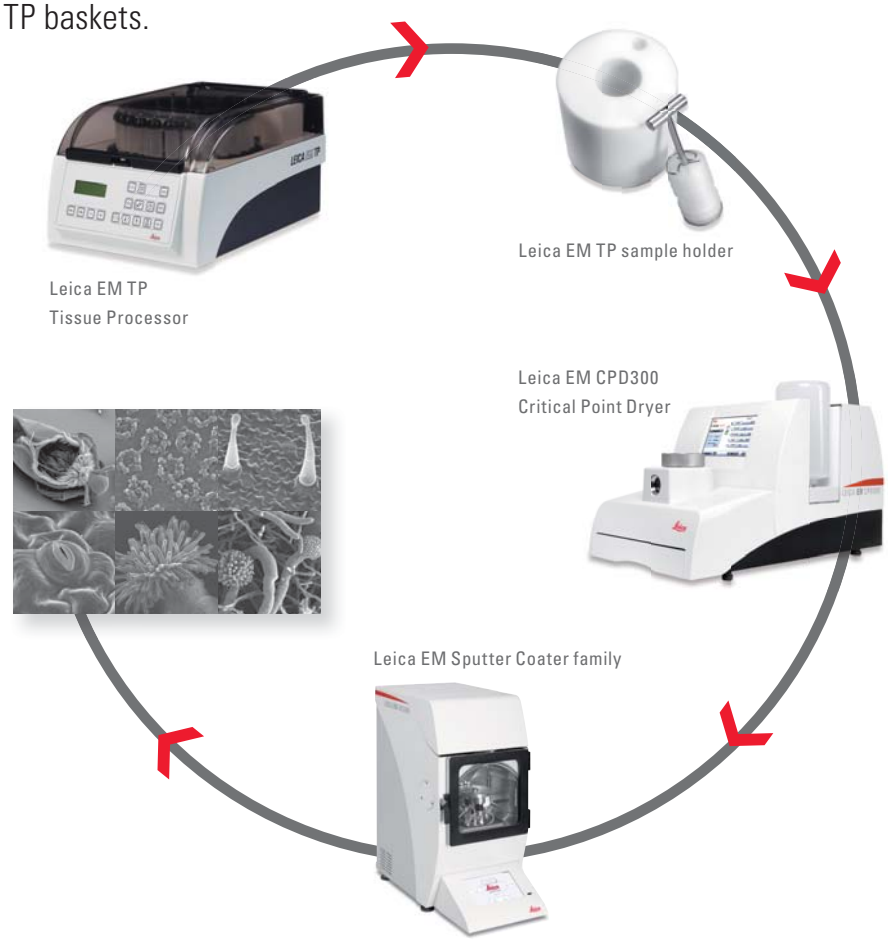
Filter Disc and Porous Pot Holder
With 4 numbered wells

Fine Mesh Specimen Holder
For 4 fine Mesh Specimen Baskets

Cover Slip Holders
Holders for 12 mm dia, 18 mm dia and 22 x 22 mm square

The Automated Leica SEM Workflow

Leica Microsystems offers a complete preparation package for SEM workflow.
The Leica EM TP is the ideal instrument for tissue processing. After dehydration of the samples with the EM TP, the TP sample basket stem fits directly to the Leica EM CPD300 TP stem holder without unloading the samples from the TP baskets.
Only one user interaction is neccessary to facilitate the workflow for dehydration and critical point drying.
Leica Microsystems provides a full range of high quality coating systems as a follow-on procedure to critical point drying.
This automated workflow reduces the user interaction time significantly.

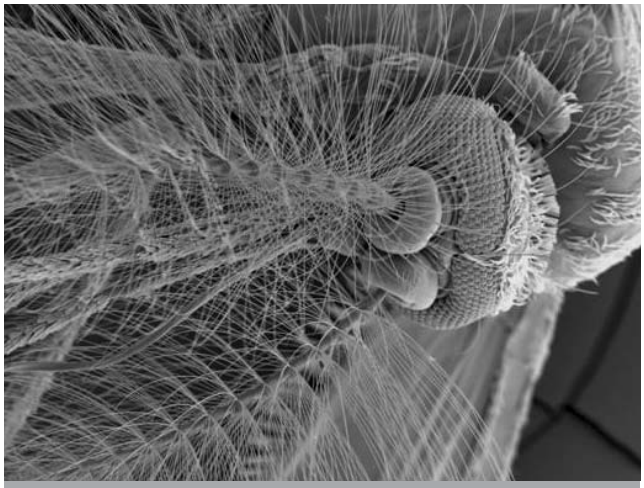


Grid Holder
With 32 numbered slots

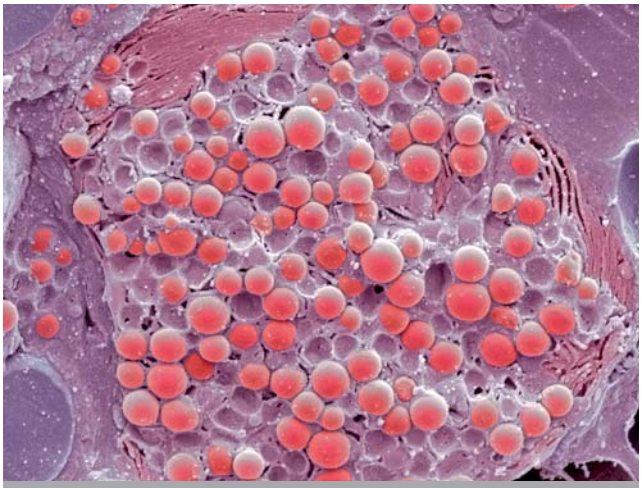
TP-Stem Holder
For TP sample basket stem

Wafer Holder
For 4x 2" wafers

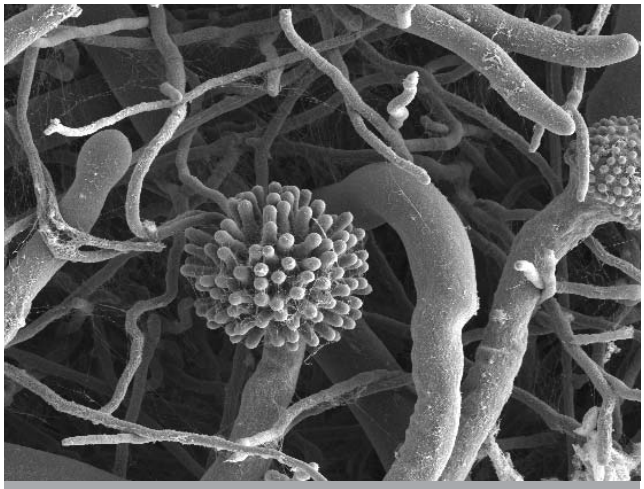
Applications



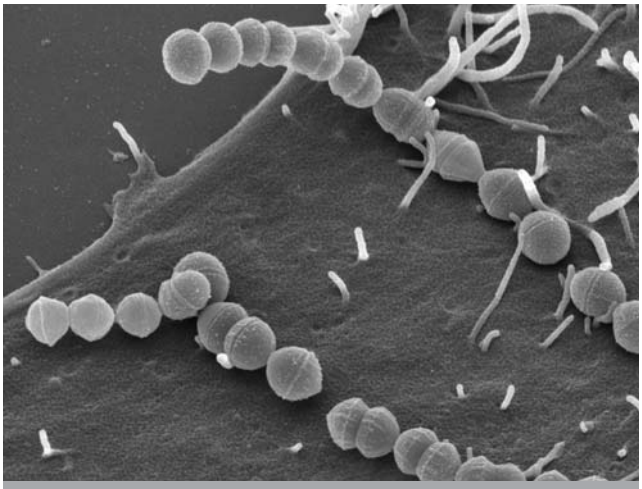
Mosquito antenna
(Courtesy of Mag. Gruber, University of Vienna, Austria)



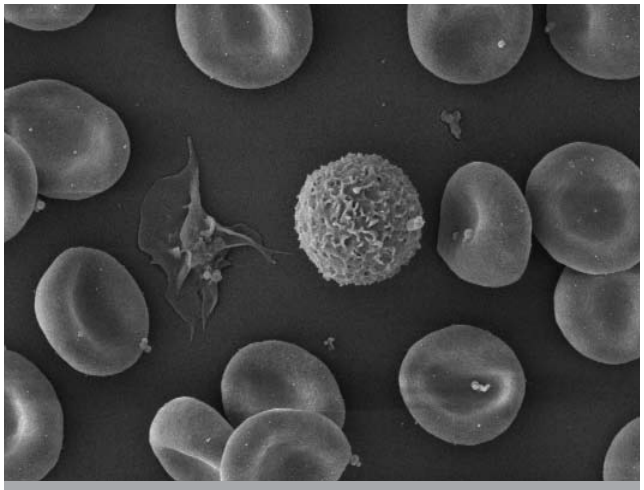
Salivary gland, mouse
(Courtesy of D. McCarthy and S. Gschmeissner, UK)



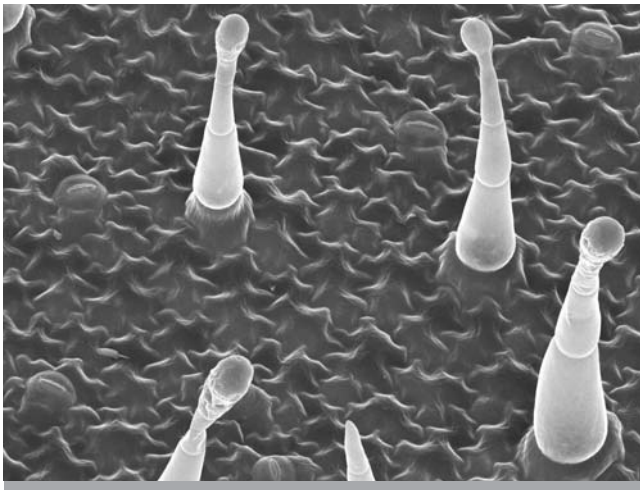
Black mould conidiospores
(Courtesy of Dr. W. Müller, University of Utrecht, Netherlands)



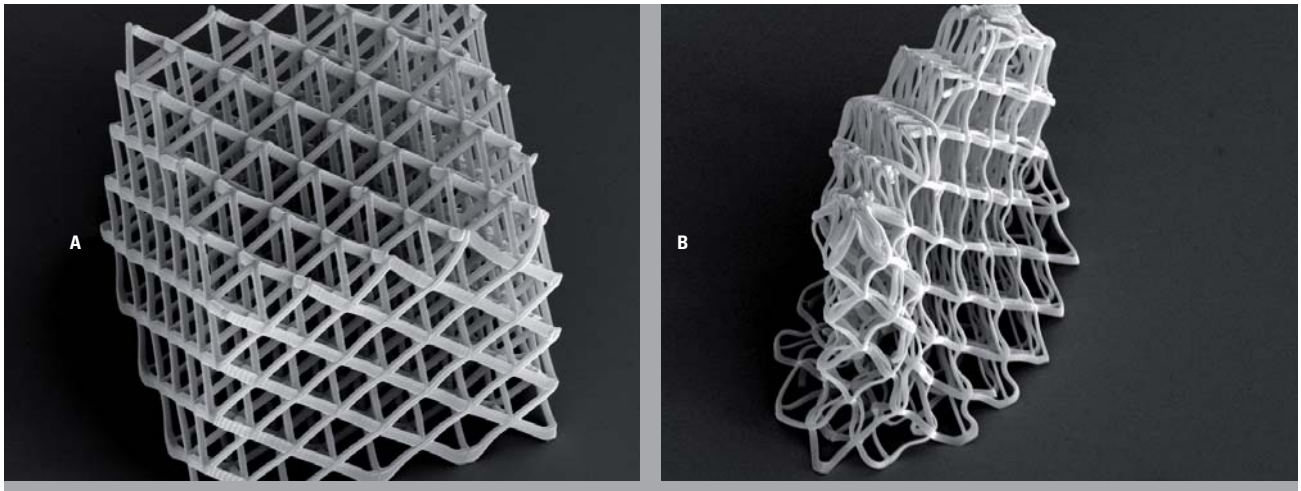
Streptococcus on human epithelial cells
(Courtesy of M. Rohde, Helmholtz-Zentrum für Infektionsforschung, Germany)



Human erythrocytes and lymphocytes
(Courtesy of Dr. W. Müller, University of Utrecht, Netherlands)



Trichomes with stomata
(Courtesy of Dr. M. Goldberg and C. Richardson, University of Durham, UK)



3D-Microstructur of a photo-sensitive material made with Laser Lithography Technique. **Picture A:** 3D structure critical point dried with Leica CPD300.
Picture B: 3D structure chemical dried. (Courtesy of J. Bauer, Karlsruhe Institute of Microstructure Technology (IMT), Germany)

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The statement by Ernst Leitz in 1907, "With the User, For the User," describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: Living up to Life.

Leica Microsystems operates globally in three divisions, where we rank with the market leaders.

LIFE SCIENCE DIVISION

The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems' customers at the leading edge of science.

INDUSTRY DIVISION

The Leica Microsystems Industry Division's focus is to support customers' pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

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The Leica Microsystems Medical Division's focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

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