From Eye to Insight

Leica
MICROSYSTEMS

EM AFS2

Automatic
Freeze Substitution System

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AUTOMATIC FREEZE SUBSTITUTION SYSTEM

The EM AFS2 performs freeze substitution and progressive lowering of temperature (PLT) techniques and allows low temperature embedding and polymerization of resins.

The EM FSP (freeze substitution processor), an automatic reagent handling system combined with the EM AFS2, dispenses reagents for both freeze substitution and PLT applications.

The LED illumination from within the chamber and the attached stereomicroscope for viewing and positioning of samples ensures ease of use.

WHY FREEZE SUBSTITUTION?

Freeze Substitution (FS) of specimens in methanol, acetone, or any other FS media at low temperatures is the follow-on procedure to high pressure freezing and other cryo fixation methods.

Progressive Lowering of Temperature (PLT) allows for substitution and resin infiltration of chemically fixed specimens.

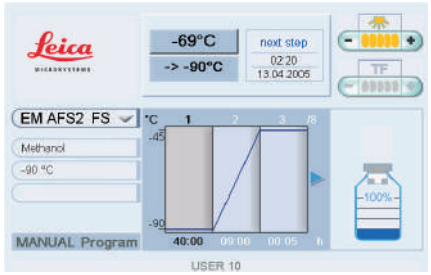
Polymerization under UV light prepares the sample for ultramicrotomy and labelling.

EM FSP

The EM FSP ("Freeze Substitution Processor") is an automatic reagent handling system. Mounted on the EM AFS2, it dispenses reagents for both FS and PLT. EM FSP automatically dilutes freeze substitution media and resins from 100% concentration. An integrated LED UV lamp allows for immediate polymerization of the samples.

Focus on your sample

> FS chamber with cryotube insert (right)
> FS chamber with FSP accessories (left)

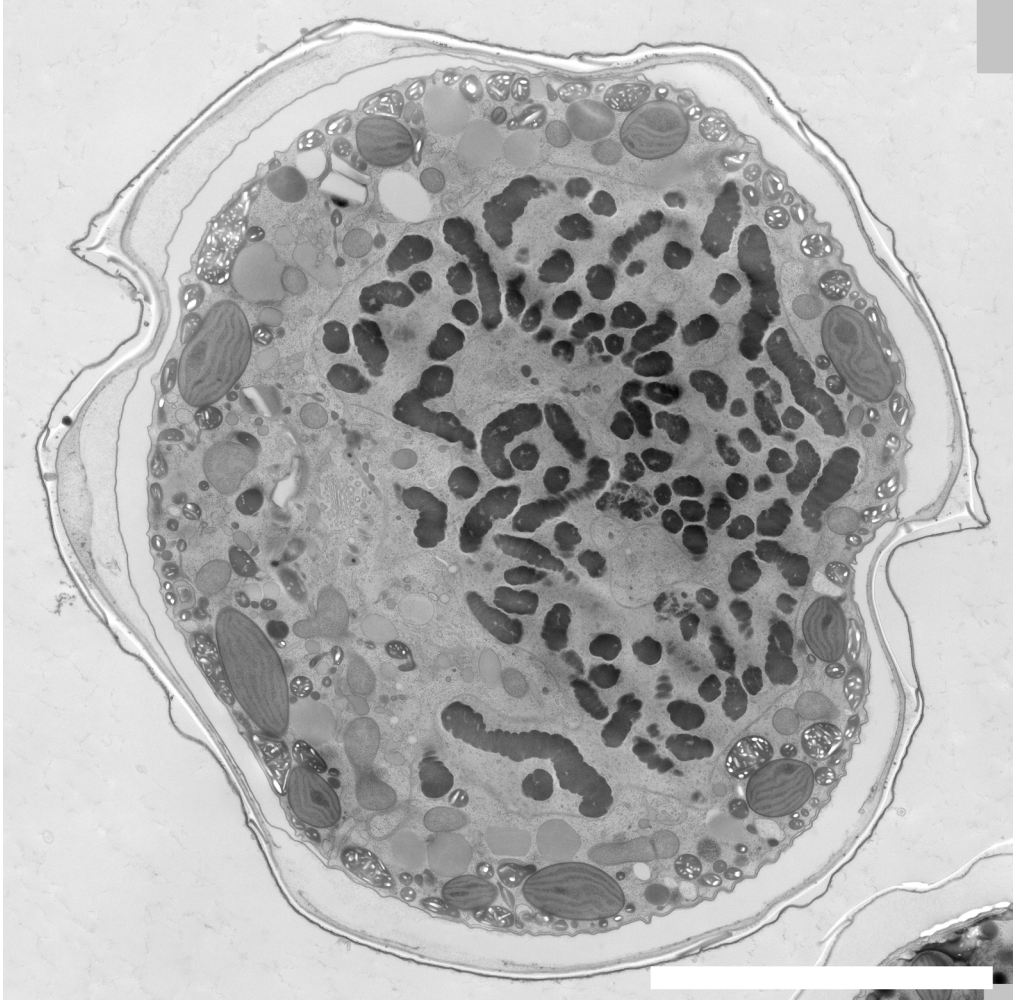


Ease of use

> Intuitive programming
> Mouse controlled color screen
> Memory stick to transfer programs
> Log file download on USB drive

One-step preparation

> Polymerisation with LED UV lamp



Micrograph of a dinoflagellate. Courtesy of Karel Mocaer and Yannick Schwab, European Molecular Biology Laboratory, Heidelberg, Germany.

DISCOVER EM AFS2 AND EM FSP UNIQUE FEATURES

> Any choice of substitution system, e.g. Substitution-Capsule and Flat Embedding System, Microtube Embedding System, and more

> Working temperature range from –140 °C to +70 °C

> Deep freeze allows for sample transfer at temperatures below –140 °C

> Transfer function "TF" excludes humidity and oxygen

> 35l Dewar, LN_2 filling from outside the specimen chamber, LN_2 consumption enough for 5 day protocols

> FS and PLT; Choice between Flat Embedding or Flow Through Ring System (with the EM FSP)

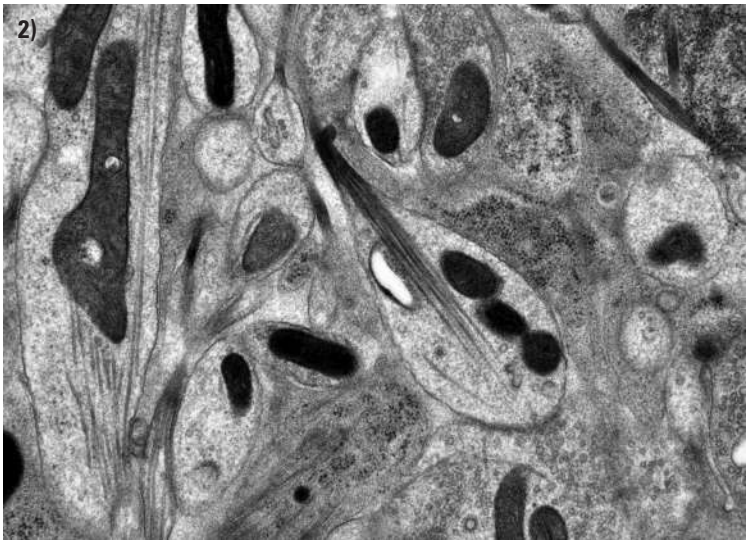
> Operator safety thanks to fume exhaust system which minimizes contact with toxic media

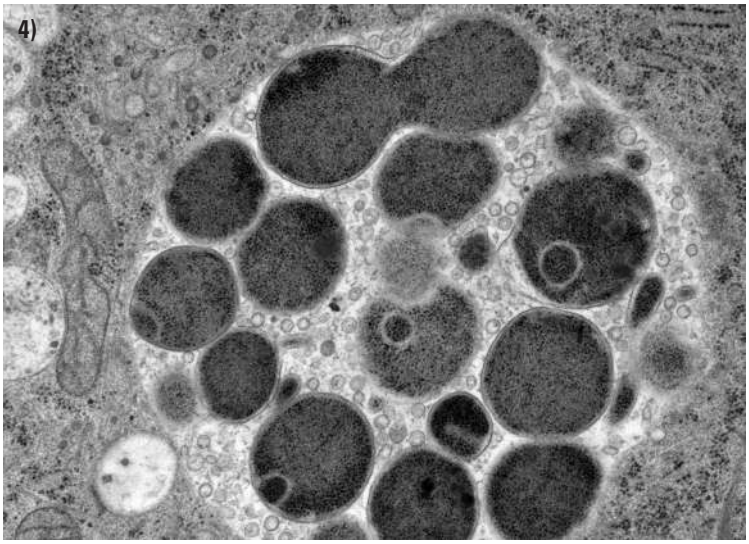
> Automatic process reduces workload and increases reproducibility in a one step preparation (EM FSP)

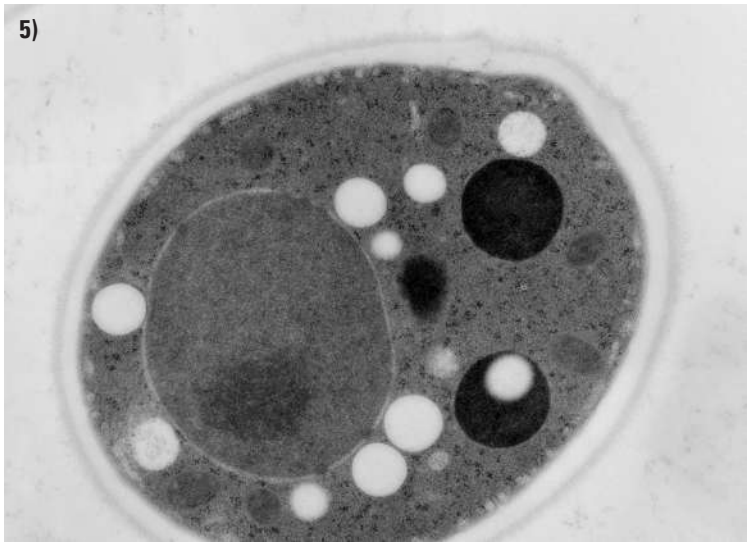
APPLICATION IMAGES

1) Mouse heart
2) Mouse brain
3) Arabidopsis root tips cells
4) Hep-2 cells infected with Chlamydia
5) Yeast
6) Micrograph of a dinoflagellate

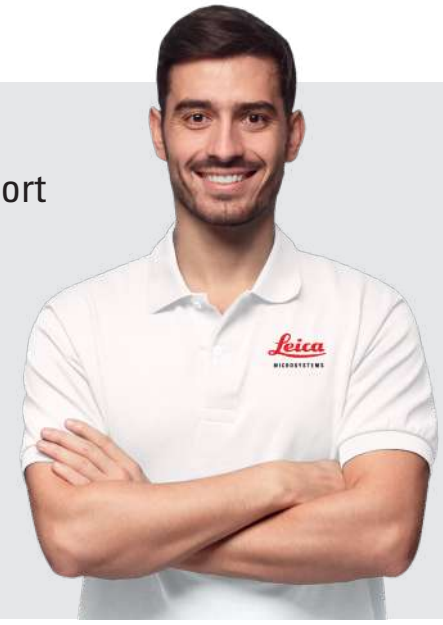
[1), 3)] Courtesy of Riet De Rycke, TEM-Core facility, 9000 Gent
[2), 4)] Courtesy of Andres Kaech, Center for Microscopy and Image Analysis, University of Zurich
[5)] Courtesy of Bruno Humbel, Electron Micrsocopy Facility, University of Lausanne
[6)] Courtesy of Karel Mocaer and Yannick Schwab, European Molecular Biology Laboratory, Heidelberg, Germany







WHY LEICA SERVICE?



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