

From Eye to Insight

Leica
MICROSYSTEMS



LEICA EM AFS2

Automatic
Freeze Substitution System



LEICA EM AFS2

AUTOMATIC FREEZE SUBSTITUTION SYSTEM

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

The Leica EM FSP (freeze substitution processor), an automatic reagent handling system combined with the Leica 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 substitution and resin infiltration of chemically fixed specimens.

Finally, the sample is polymerized under UV light in the EM AFS2 and can be cut and immuno labelled.

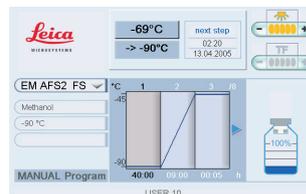
LEICA EM FSP

The Leica EM FSP ("Freeze Substitution Processor") is an automatic reagent handling system. Mounted on the Leica EM AFS2, it dispenses reagents for both FS and PLT. It automatically dilutes FS media and resins from 100% reagent containers. An integrated LED UV lamp allows 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 memory stick

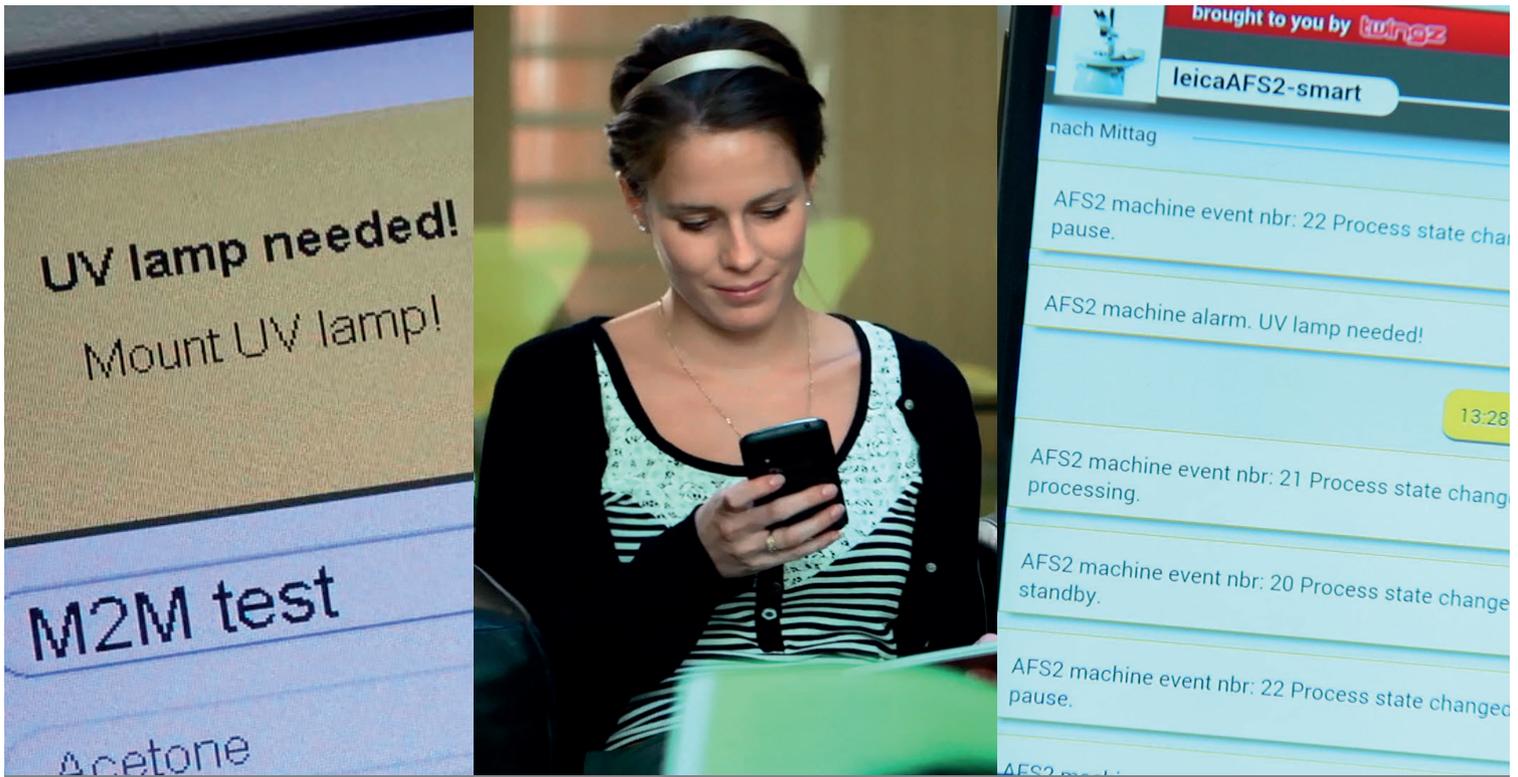
Perfect results

- > Fast UV polymerisation with LED UV lamp



DISCOVER LEICA 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 range from -140°C to $+70^{\circ}\text{C}$
- > Deep freeze allows 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 Leica EM FSP)
- > Operator safety due to fume exhaust system and minimalization of operator contact with toxic media
- > Automatic process reduces workload and increases reproducibility in a one step preparation (Leica EM FSP)



BE SMART – STAY CONNECTED

LEICA EM AFS2 – SMART SOLUTION

Access your Leica EM AFS2 system at any time from any location with the ALL-IN-ONE smart solution.

With your unique ID and QR-code you can follow your experiments on your computer, iPad or smart phone.

User-defined access to the status information allows perfect time management for your team and optimized usage of the Leica EM AFS2.

Check the web, not the lab!

- > Access to the status information at any time
- > Perfect time management for your team
- > Optimized usage of the Leica EM AFS2

See the video of the Leica EM AFS2 Smart Solution on Youtube!



Important information

for Leica EM AFS2 users:

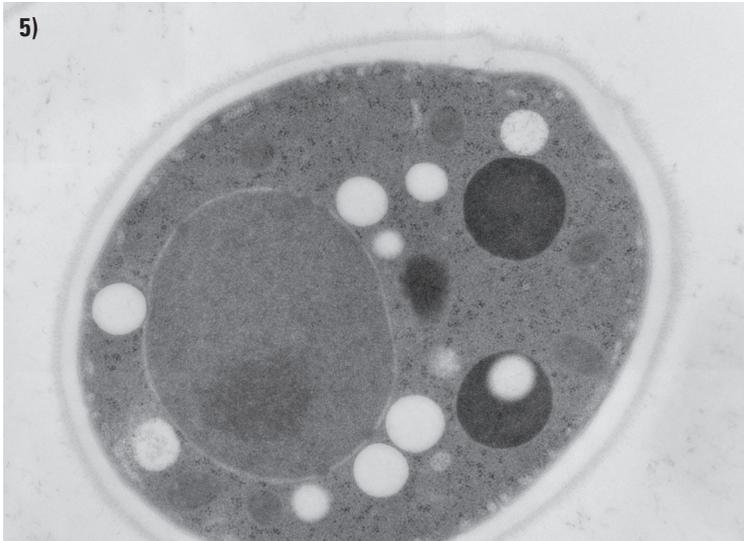
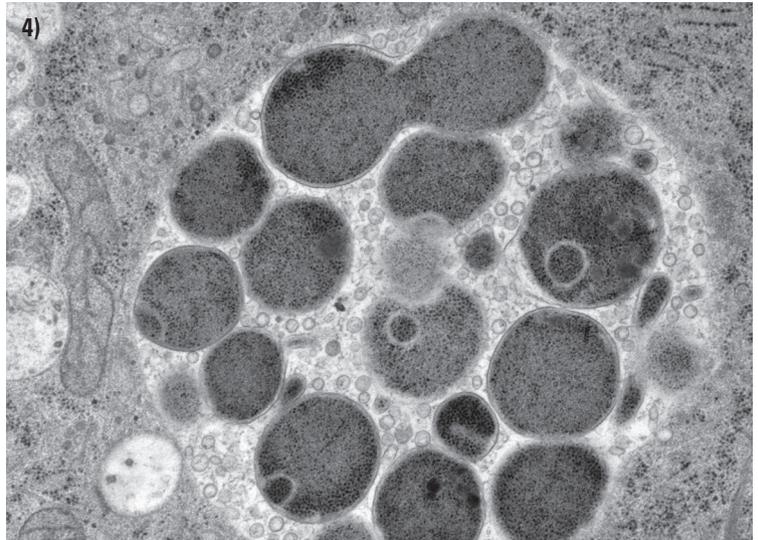
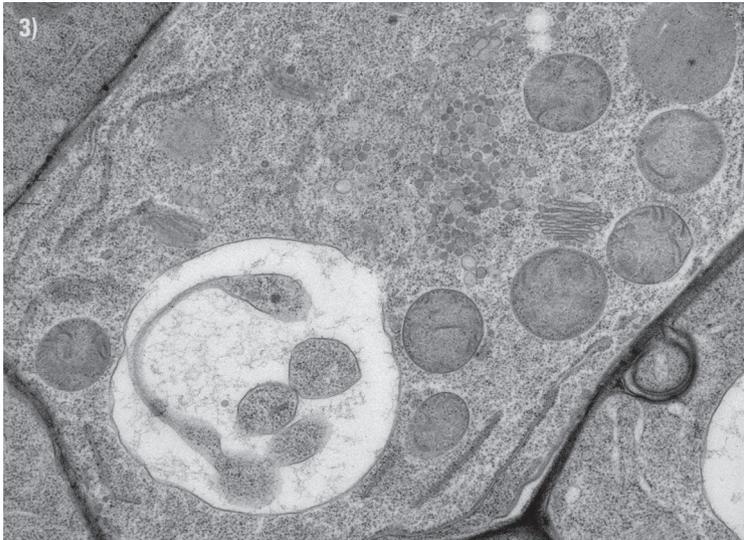
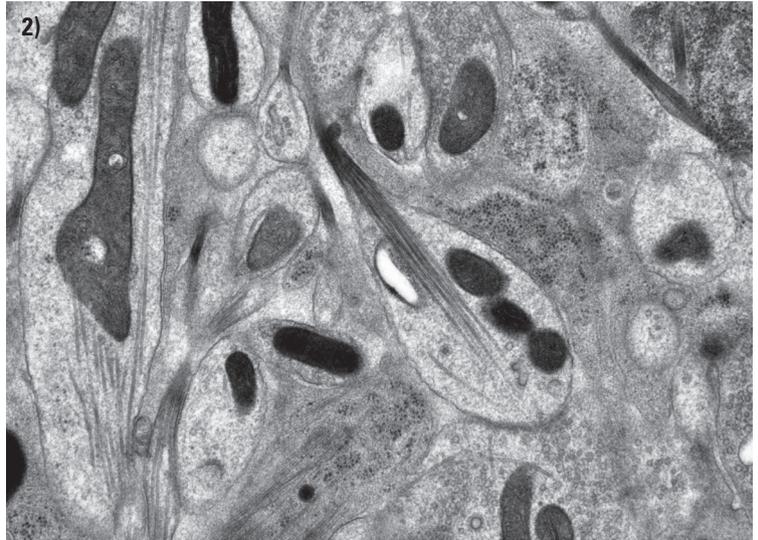
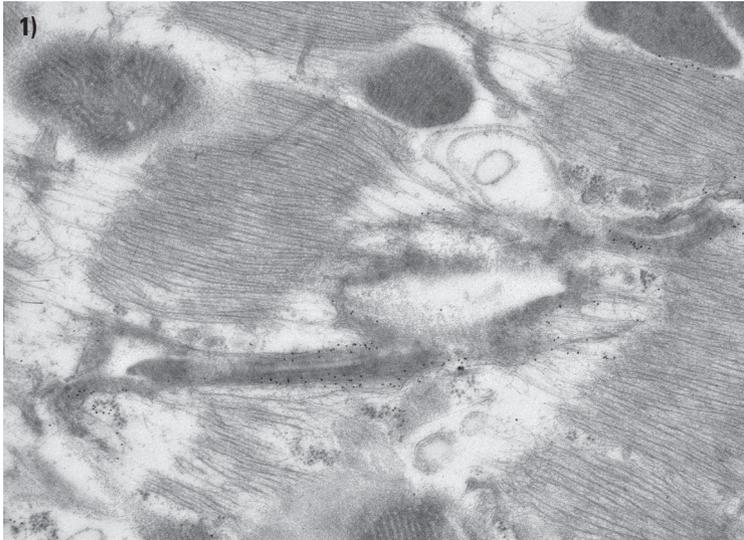
Your instrument is retrofitable – installation and activation of the smart solution only takes one hour.



APPLICATION IMAGES

- 1) Mouse heart
- 2) Mouse brain
- 3) Arabidopsis root tips cells
- 4) Hep-2 cells infected with Chlamydia
- 5) Yeast
- 6) Detail from *C. elegans*

- ^{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 Microscopy Facility, University of Lausanne
- ⁶⁾ Courtesy of Thomas Müller-Reichert, Max-Planck-Institute, Dresden





SYSTEM CERTIFIED

ISO 9001:2008
ISO 14001:2004

No.00805/0
No.02783/0

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CONNECT
WITH US!

