

FluidFM[®]

NANO PRECISION.
DIVERSE APPLICATIONS.

200 nm



POWERFUL UPGRADE SOLUTION FOR YOUR AFM.

FluidFM® ADD-ON

The FluidFM ADD-ON extends the application scope of classical atomic force microscopes (AFMs) way beyond imaging and force spectroscopy. Take advantage of more than 12 applications, now accessible thanks to the FluidFM ADD-ON.

The FluidFM ADD-ON is tailored to many AFM scan heads and brings you the highest flexibility by enabling all FluidFM applications – from single cell adhesion, through injection into single cells and colloidal studies, to nanolithography and beyond.

You can even go a step further and leverage FluidFM using the custom-developed solutions of our Premium Partners enabling a seamless user experience, or even develop your own applications.

With the FluidFM ADD-ON, your AFM has never been more powerful.



FluidFM ADD-ON. Empower your AFM.



SPOTTING. One of many applications made possible by the FluidFM ADD-ON.

12+

APPLICATIONS

TAILORED

AFM SOLUTION

100%

AFM CAPABILITIES MAINTAINED

CUSTOMIZED

SOLUTIONS POSSIBLE

INJECTION INTO SINGLE CELLS REINVENTED.

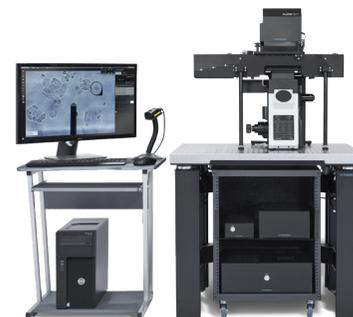
FluidFM[®] BOT

With the FluidFM BOT, you can perform nanoinjection of a vast variety of materials of your choice selectively into either cytoplasm or nuclei of adherent cells. Inject into hundreds of cells per hour in a cell-context preserving, non-destructive and measurable manner.

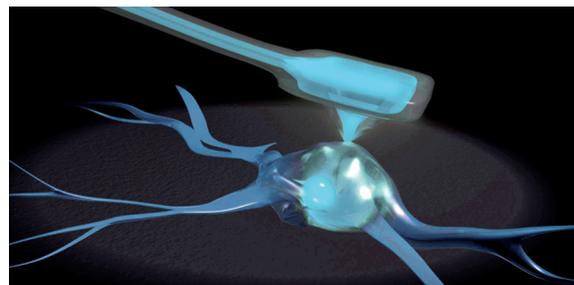
From nanoparticles to proteins, CRISPR RNA and plasmids, you can inject virtually any kind of liquid-based solutions containing particles below 500 nm in diameter. Success of microinjection using the FluidFM BOT has already been demonstrated in various kinds of cell types such as human cervical cancer cells (HeLa), human embryonic kidney cells (HEK) or human induced pluripotent stem cells (hiPS).

The FluidFM BOT is a revolutionary tool for gene engineering, epigenetics, pharmaceutical drug development, toxicology, stem and cancer cell research, cell line development and many other cell and bio science research areas.

As a stand-alone system and with a high level of automation and intuitive instrument operation, the FluidFM BOT is a remarkably powerful tool for single cell biology.



FluidFM BOT. Stand-alone system for microinjection (incubator not shown).



GENTLE MICROINJECTION. Repeatedly inject into the same living cell.

PRECISE

CYTOPLASM OR NUCLEUS

FAST

100+ CELLS / HOUR

GENTLE

95%+ CELL VIABILITY

MEASURABLE

FEMTOLITER INJECTED VOLUMES

3D METAL PRINTING AT MICROMETER SCALE.

FluidFM[®] μ 3Dprinter

The FluidFM μ 3Dprinter offers truly new capabilities in manufacturing complex microscopic and submicroscopic metal structures. Micrometer-accurate 3D printing revolutionizes micro-manufacturing by combining additive manufacturing with traditional microfabrication methods.

The FluidFM μ 3Dprinter is a stand-alone system for printing metal objects at micrometer scale. The printed structure size is $1 \mu\text{m}^3$ to $1'000'000 \mu\text{m}^3$, a range virtually inaccessible by other techniques. Practically any design can be printed by the system, including overhanging structures with 90 degree angles, without the need for support structures or post-processing steps.

The unique technology of the FluidFM μ 3Dprinter is capable of being industrially scalable. Additionally, the FluidFM μ 3Dprinter also allows the dispensing of various liquids and nanoparticles. These capabilities lead to new research opportunities in fields such as microelectronics, semiconductors, surface modification, material science and many more.

The FluidFM μ 3Dprinter is the ideal system for metal micro-object manufacturing and for dispensing liquids as well as nanoparticles.



FluidFM μ 3Dprinter. Stand-alone system for printing metal objects at micrometer scale.



PRINTED OBJECT. Printed in one single step and without support structures.

REAL-TIME
PROCESS CONTROL

VERSATILE
VARIOUS MATERIALS

PRECISE
MICROMETER RESOLUTION

FAST
up to 100 $\mu\text{m/s}$

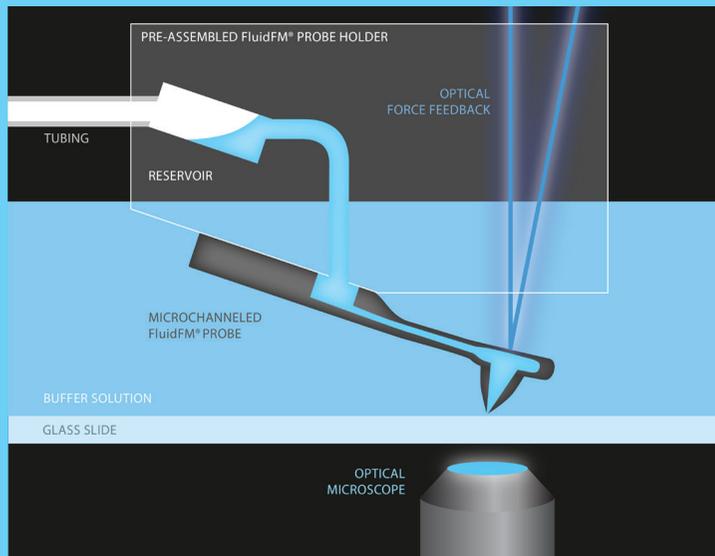
CUTTING EDGE & UNIQUE.

FluidFM[®] TECHNOLOGY

FluidFM technology unites the best features of microfluidics and force microscopy by introducing a microscopic channel into force sensitive probes. The result is the FluidFM probe, the heart of our patented FluidFM technology.

Through the microfluidic channel inside the FluidFM probe, soluble molecules and nanoparticles can be dispensed or aspirated through a sub-micrometer aperture at the tip. These apertures can be as small as 300 nm enabling the handling of femtoliter volumes by accurately controlling positive and negative pressures with sub-mBar precision.

The force-sensing capability of FluidFM probes provides a reliable feedback about physical interactions. This enables distinction between gentle contact with cell membranes and their perforation. It can equally provide active feedback signals for real-time process control during printing. Force-controlled manipulation of microscopic objects is now possible.



HIGH QUALITY
MICROFABRICATION

PRECISE
FEMTOLITER LIQUID VOLUMES

VERSATILE
12+ APPLICATIONS

GO BEYOND.

A WORLD OF APPLICATIONS



ADHESION OF
SINGLE CELLS



SPOTTING



COLLOIDAL
SPECTROSCOPY



ADHESION OF
SINGLE BACTERIA



NANOLITHOGRAPHY



INJECTION INTO
SINGLE CELLS



EXTRACTION FROM
SINGLE CELLS



ISOLATION OF
SINGLE CELLS



NANOBALANCE



SURFACE
MANIPULATION



3D PRINTING



ELECTRO-
CHEMISTRY



CONTACT US.

Please contact us with your specific request or application idea. We and our distributors will be delighted to be able to support you and help make your vision come true.

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FluidFM®
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CYTOSURGE SWISS
INNOVATION



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