

Flex-FPM

FlexAFM with FluidFM® add-on

Integrated solution with optical, force, and microfluidic control

Intuitive handling and operation

Opens the door to fascinating new experiments



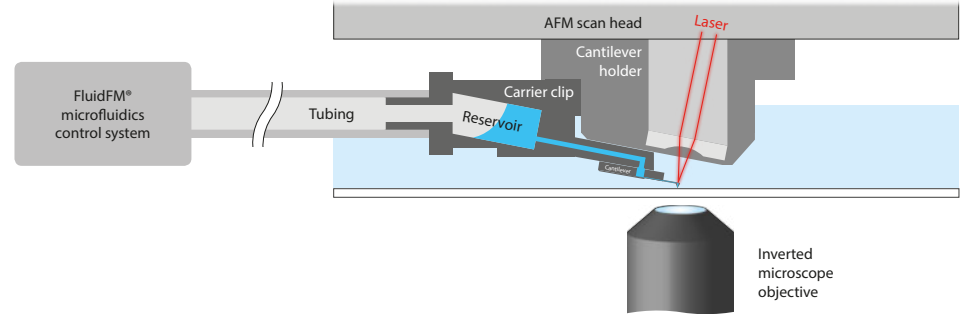
Flex-FPM: the next-generation microfluidic tool for nanomanipulation and single-cell biology

Flex-FPM (FluidFM® probe microscope) combines the force sensitivity and positional accuracy of the Nanosurf FlexAFM with FluidFM® technology by Cytosurge to allow a whole range of exciting applications in single-cell biology and nanoscience.

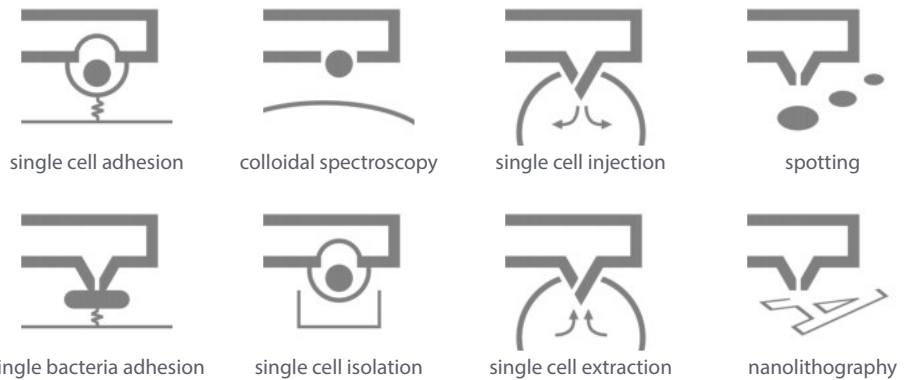
Main features

- Highly accurate pressure, force, and position control with optical sample access
Fully integrated system with user-friendly FluidFM® ARYA operator software
FluidFM® microfluidics control system
Compatible with major inverted microscope brands
- Different FluidFM® probes: hollow cantilevers designed for specific applications
FluidFM® micropipettes: tipless cantilevers with opening at the cantilever end
FluidFM® nanopipettes: cantilevers with opening at the tip apex
FluidFM® rapid prototyping probes: cantilevers with closed pyramidal tips, ready for FIB milling
- Pioneering research within reach
A tool to conduct original research at the frontiers of science

Working principle



Flex-FPM is more than AFM with hollow cantilevers. This integrated system allows higher experimental throughput and provides you with unique new possibilities in:

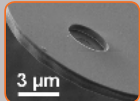


Key publications

- Bacterial adhesion force quantification by fluidic force microscopy (2015). Potthoff E *et al.*, *Nanoscale* 7, 4070-4079.
- Density gradients at hydrogel interfaces for enhanced cell penetration (2015). Simona BR *et al.*, *Biomaterials Science* 3, 586-591.
- Force-controlled patch clamp of beating cardiac cells (2015). Ossola D *et al.*, *Nano Letters* 15, 1743-1750.
- Force-controlled manipulation of single cells: from AFM to FluidFM (2014). Guillaume-Gentil O *et al.*, *Trends in Biotechnology* 32, 381-388.

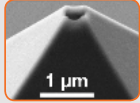
FluidFM® probes

Properties



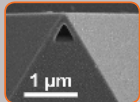
FluidFM® micropipette

Opening:
2, 4, and 8 µm
at cantilever end
Spring constant:
0.2 or 2 N/m



FluidFM® nanopipette

Opening:
300 nm
at tip apex
Spring constant:
2 N/m



FluidFM® rapid prototyping probe

Opening:
30 nm or more
user-defined
Spring constant:
0.2 or 2 N/m



FluidFM® probe on carrier clip

All FluidFM®
probes come
pre-mounted on
a plastic carrier
clip in sterile
blister packs

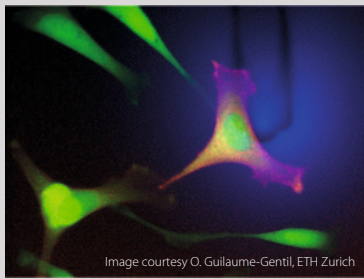


Image courtesy O. Guillaume-Gentil, ETH Zurich

Seamless inverted microscope integration



- Flex-FPM retains full FlexAFM functionality and can thus be used as a research AFM without limitations
- Existing FlexAFM systems can be easily upgraded to Flex-FPM via the FluidFM® system add-on

Flex-FPM components

- Nanosurf FlexAFM scan head
- Nanosurf C3000 controller
- Nanosurf inverted microscope stage
- FluidFM® microfluidics control system
- Blister pack barcode reader
- Dedicated PC for data acquisition and analysis
- FluidFM® ARYA operator software
- Optional 100-µm Z-actuator