

CYTOSURGE®



**FluidFM® BOT**  
SINGLE CELL EXPERIMENTS  
REINVENTED.

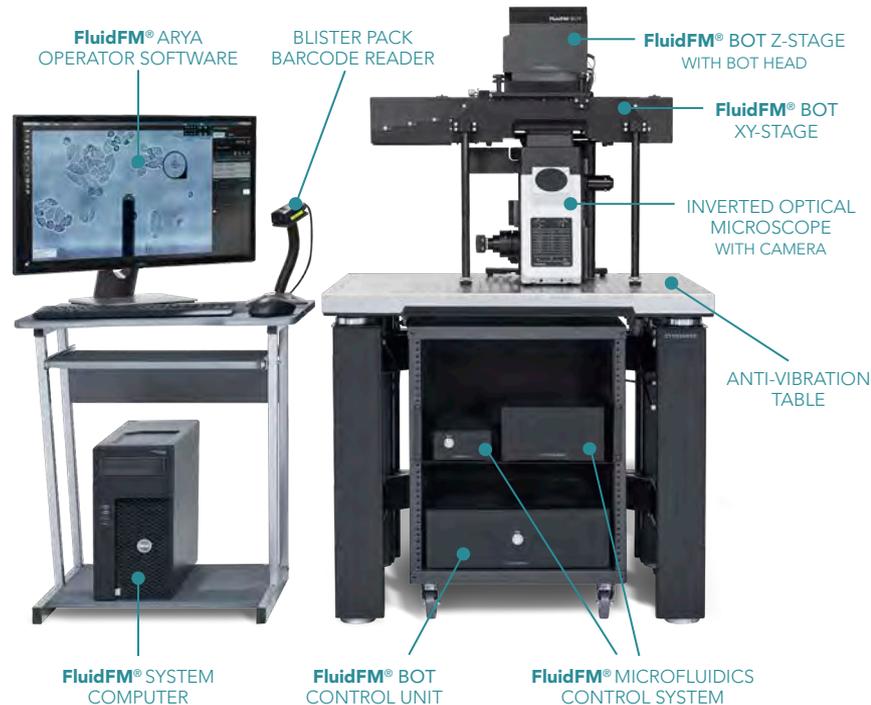
# FULLY INTEGRATED SYSTEM FOR SINGLE CELL BIOLOGY.

## FluidFM® BOT

The FluidFM BOT is a revolutionary highly automated stand-alone system for various applications in gene engineering, epigenetics, pharmaceutical drug development, toxicology, stem and cancer cell research, cell line development and many other life science research areas.

Perform FluidFM nano-injection with a vast variety of compounds selectively into either cytoplasm or nuclei of adherent cells. Combined with other FluidFM applications such as FluidFM nano-extraction and/or cell isolation, you can take research beyond boundaries of current technology limitations.

The FluidFM BOT is an unrivalled tool: To target a cell, simply point and click on the cytoplasm or nucleus of a specific cell and press "OK". It is as straightforward as that.



**FluidFM® BOT SYSTEM.** The tailor-made incubator is not shown.

**STATE-OF-THE-ART**

EXTENSIVE AUTOMATION

**COMPLETE**

STAND-ALONE SYSTEM

**SIMPLE**

INTUITIVE SOFTWARE & WORKFLOWS

**ARYA**

FULL EXPERIMENTAL CONTROL

CUTTING EDGE & UNIQUE.

# FluidFM<sup>®</sup> TECHNOLOGY

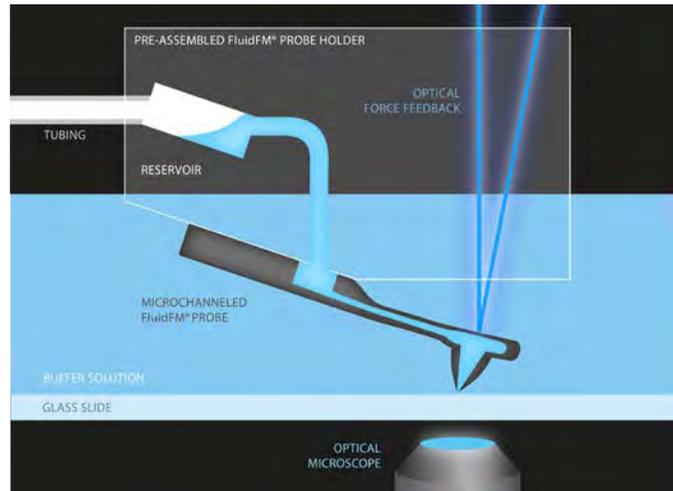
**FluidFM technology unites the best features of microfluidics and force microscopy by introducing a microscopic channel into force sensitive probes. The result is the FluidFM probe, the heart of our patented FluidFM technology.**

Through the microfluidic channel inside the FluidFM probes, 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 (for FluidFM nanopipettes) enabling the handling of femtoliter volumes by precisely controlling positive and negative pressures with sub-mbar precision.

The force-sensing capability of FluidFM probes provides a reliable feedback about physical interactions enabling the precise and gentle manipulation of cells, microscopic objects and micro-structured surfaces.

The seamless control of the hollow FluidFM probes through our in-house designed FluidFM microfluidics

control system and the nanometer-precision XY- and Z-stages via our intuitive FluidFM ARYA operator software makes the FluidFM BOT system so unique.



**THE UNIQUE FluidFM<sup>®</sup> TECHNOLOGY.** Synergy between microfluidics and force microscopy.

**HIGH QUALITY**  
MICROFABRICATION

**PRECISE**  
FEMTOLITER LIQUID VOLUMES

**DIVERSE**  
12+ APPLICATIONS

## A POWERFUL TOOL FOR SINGLE CELL BIOLOGY

The FluidFM BOT system opens the door to single cell experiments that have not been possible with conventional methods. Thus, a new world opens for biologists interested in single cell research, drug development or cell line development.

The FluidFM BOT system unleashes the full potential of FluidFM applications, in particular regarding throughput and ease of use. It also enables the combination of several FluidFM applications, paving the way for the design of new experimental and scientific approaches.



### SINGLE CELL NANO-INJECTION

Perform FluidFM nano-injection with a vast variety of compounds into either cytoplasm or nuclei of adherent cells, in a cell-context preserving, non-destructive (cell viability ~95%), measurable (fl volumes) and fast (inject 100+ cells/hour) manner.



### SINGLE CELL NANO-EXTRACTION

Extract the content of individual cells directly in their native environment while preserving the cellular context and without affecting cell viability.



### CELL ISOLATION

Isolate single adherent or suspended cells in a cell-context-preserving and non-destructive manner.



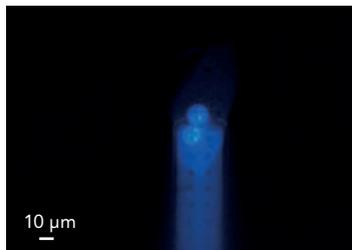
### SPOTTING

Print spots and high-density arrays with nanometer precision, useful for example in biosensing to create protein or DNA arrays.



### NANOLITHOGRAPHY

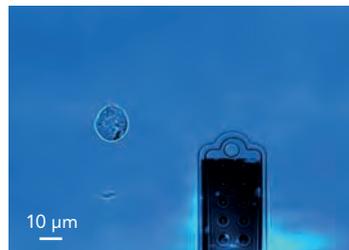
Print complex patterns with many types of biological particles at the nanometer scale.



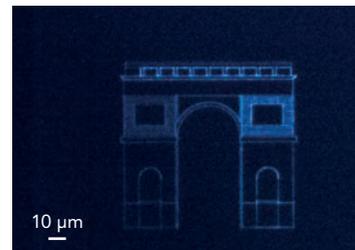
NANO-INJECTION INTO  
HEPATOCYTES



NANO-EXTRACTION FROM  
HeLa CELL



ISOLATION OF CHO CELLS



NANOLITHOGRAPHY OF DAPI ON  
DNA COATED GLASS SURFACE



## GO BEYOND.

We provide you the tool to create unprecedented experimental approaches: With the FluidFM BOT system, you can combine nano-injection, nano-extraction and cell isolation, amongst other applications, to reinvent your research procedures and change dimensions.

From drug characterization to cell line development, the FluidFM BOT system is perfectly adapted to a diverse range of life science applications.

**FluidFM®** – GO BEYOND.

# CONTACT US.

We offer complete application and technical support. Please contact us with your specific requests or application ideas. We will be delighted to support you and help you make your vision come true.



# VISIT US.

Our BioLab (BSL-2) is fully equipped for a wide range of FluidFM cell experiments. Request a live on-site demo of your application and take away the results of what you have achieved. We also offer live remote demos around the globe via Skype.



**CYTOSURGE®**

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**FluidFM®**  
EMPOWERED

CYTOSURGE SWISS  
INNOVATION 

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