

ELVESYS

MICROFLUIDICS INNOVATION CENTER

**ELVE
FLOW**

an **ELVESYS** brand

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ELVESYS 2011-2021

The Elvesys group develops a range of state-of-the-art microfluidic instruments, for all kinds of microfluidic applications.

ELVESYS' VISION and MISSION

“ Because cutting-edge scientific instruments lead to great discoveries”

Our vision in one equation:

**Great researchers + great instruments
= great discoveries**

Microfluidics is one of the most important pillars of the ongoing biotech revolution, probably the biggest scientific revolution ever faced by humanity. If we look at Nobel Prize winners and science history, it shows us that most of the greatest discoveries were made by great researchers using state of the art scientific instruments.

Our mission:

To develop state of the art microfluidic instruments for demanding researchers and engineers

As a scientist, you are shaping the future. You can make scientific breakthroughs. Accelerate companies. Be certain of one thing: you can rely on us.

We want you to take microfluidics further than it has ever been, and while you do, we commit to be there for you every step of the way.



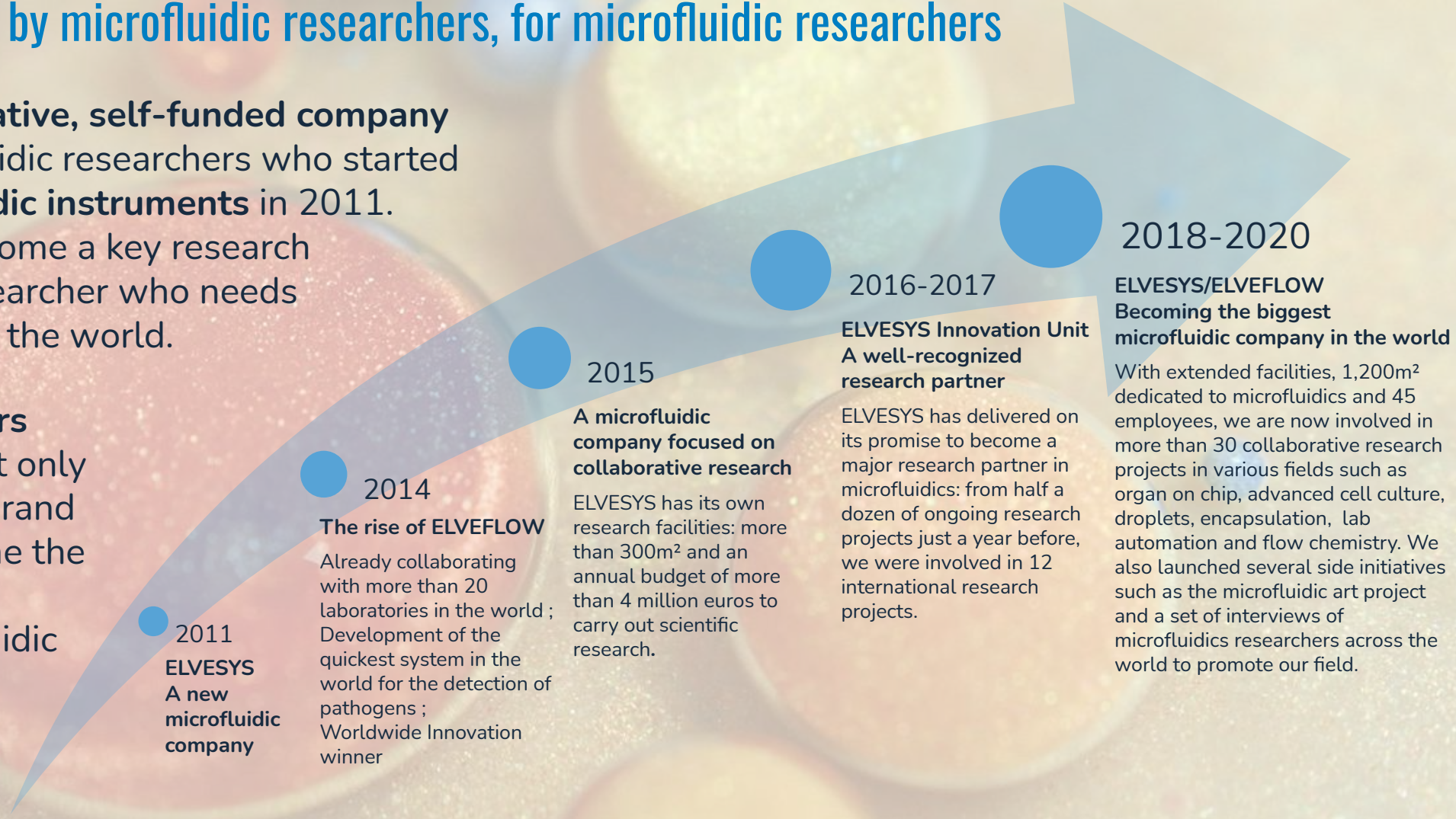
Guilhem VELVÉ CASQUILLAS
CEO of ELVESYS

ELVESYS & ITS ELVEFLOW BRAND STORY

A company founded by microfluidic researchers, for microfluidic researchers

ELVESYS is an **innovative, self-funded company** created by 3 microfluidic researchers who started to **develop microfluidic instruments** in 2011. ELVESYS aims to become a key research partner for every researcher who needs microfluidics, all over the world.

Thanks to researchers who believed in us, it only took 4 years for our brand **ELVEFLOW** to become the world leader of high performance microfluidic flow control.



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PRODUCTS

A microfluidic product line that goes
beyond the state of the art

FLOW CONTROL SYSTEMS



FLOW CONTROLLER

Our Flow control systems are based on patented piezoelectric technology inspired from aeronautics, for a flow control that is 20 times more precise and 10 times faster than the leading flow controllers on the market.

We offer 4 different compact Valves Matrix solutions enhancing performances thanks to PEEK rockers valves. Use from 4 to 256 valves, perfectly synchronized.



DISTRIBUTION VALVE



RECIRCULATION VALVE



VALVE & VALVES CONTROLLER



QUAKE VALVE CONTROLLER



FLOW SWITCH MATRICE



VALVE & VALVES CONTROLLER



PUMP



MULTIPLEXER FLOW MATRIX

FLOW CONTROL SYSTEMS

OB1 : Cutting-edge Microfluidic Flow Controller

Best performance & affordable: Piezoelectric Technology

The OB1 MK3+ by Elveflow is the only microfluidic flow control system in the world to use piezoelectric regulators, enabling a flow control that is 20 times more precise and 10 times faster than the other flow controllers on the market.

Customizable & upgradable: 1 Module, up to four channels, 5 ranges available

The OB1 MK3+ can be configured, and upgraded at a later date, in any way you want, with up to 4 pressure and/or vacuum channels (and more as custom) on one piece of equipment.

Fastest flow rate control when paired with a flow sensor

You can connect a [flow rate sensor](#) to your OB1 MK3+ to control directly the flow rate in your chip. The system continuously calculates the pressure to apply in order to maintain the desired flow rate.

Full control software & SDK

A single and intuitive software to get started in a few clicks and further automate the most complex and long lasting experiments. The SDK libraries to control the OB1 MK3+ with your own code and involve third parties instrument are also available.

OEM version available

The OB1 MK3+ can be used on a bench setup and also embedded in your own product. Elveflow has a solution for every step of your research & development.



Don't be limited by instrumentation for your microfluidic experiments!

Designed by scientists for scientists, the versatile and powerful OB1 MK3+ pressure controller allows perfect flow control for all kinds of applications.

Whether you need pressure or vacuum, low flow rate or high flow rate, short experiments or week-long processes, the OB1 MK3+ is the perfect companion for your microfluidic research.

MEASUREMENT AND DETECTION



FLOW SENSOR - MFS



CORIOLIS FLOW SENSOR

Our modules can either be **used with our pressure controllers or as a standalone instrument** when plugged into our Flow reader. Design the monitoring solution that best fits your needs and control it on a computer through our Software.

Perform both pressure & flow control with the same instrument thanks to our 5 different Flow Sensors. Monitor pressure at a given point of your setup thanks to our 5 different Pressure Sensors.



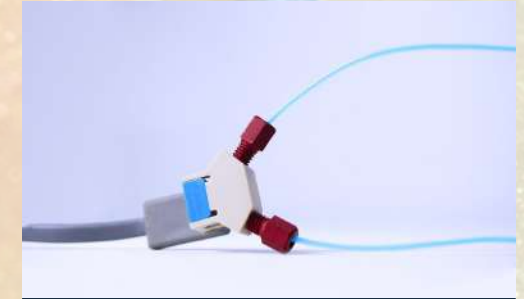
SENSOR READER



INLINE PRESSURE SENSOR



BUBBLE DETECTOR



PRESSURE SENSOR

SOFTWARE

Powerful, modular and versatile set-up control solution



The Elveflow Smart Interface allows an intuitive control of our microfluidic instruments in few clicks. It is thought both for basic control and complex tasks thanks to the use of the scheduler.

The ESI Microfluidic Software makes many applications easy, such as: generation of continuous fluid streams, dosing of volumes, generation of dynamic flow profiles, Optomicrofluidic control, and many more.



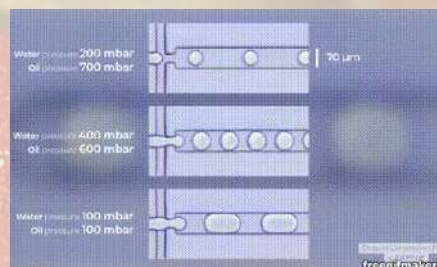
APPLICATIONS PACKS



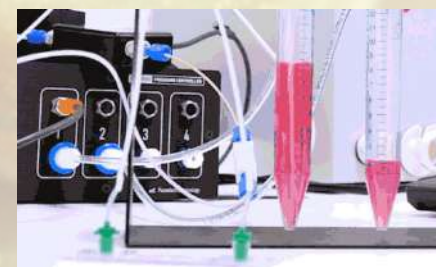
STARTER PACK

Our Applications Packs are all-in-one solutions which include everything you need to perform your microfluidic experiments successfully.

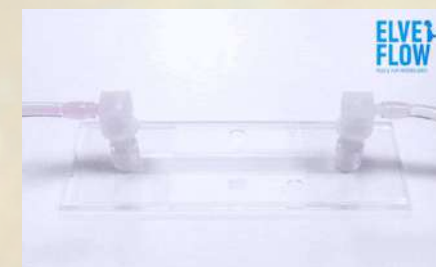
Our many configurations available ensure that you get a microfluidic setup perfectly fitted to your needs.



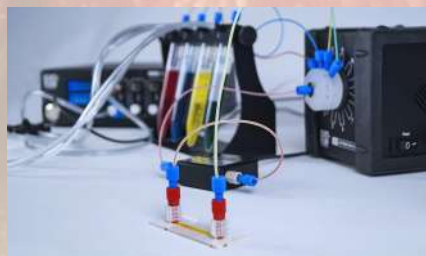
DROPLET PACK



RECIRCULATION PACK



LIVE CELL PERFUSION PACK



SEQUENTIAL INJECTION PACK



ALGINATE BEADS GENERATION



ORGAN-ON-CHIP PACK



LIPID NANOPARTICLE SYNTHESIS

The image is a composite of two panels. The left panel shows a close-up of several microfluidic chips with a textured surface, containing bright red droplets. The right panel shows a similar scene but with a light beige overlay and a blurred background, featuring a large white droplet and a smaller blue droplet.

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Why Elveflow is the ideal partner?

OEM & custom solutions

ELVEFLOW & INDUSTRIAL PROJECTS



illumina



Alphabet

BIO-RAD

1,000+ equipments sold
to companies

10+ OEM & integration projects
handled since 2018



Company: TOTAL SA (FR)

Key fonction: Pressure control at high viscosity and extreme physical conditions

Company: Johnson & Johnson

Key fonction: Automated membrane filtration system

Company: Nuclera Nucleics Ltd

Key fonction: Liquid perfusion and switching modules for production system

Field: Biotech

Type: off-the shelf OEM

Need: Scale-up of molecule testing assays for drug discovery

Solution: multiple (9) liquid sequential injection

Field: Healthcare instruments

Type: integration

Need: liquid handling integration in a fully automated system

Solution: multiple (45+) liquid sequential injection & software control

Field: Animal breeding industry

Type: on-the shelf OEM

Need: Robust cell sorting with low biological sample consumption

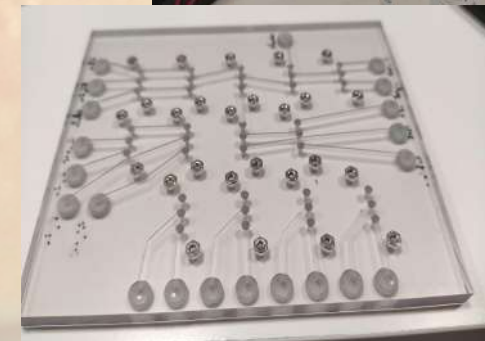
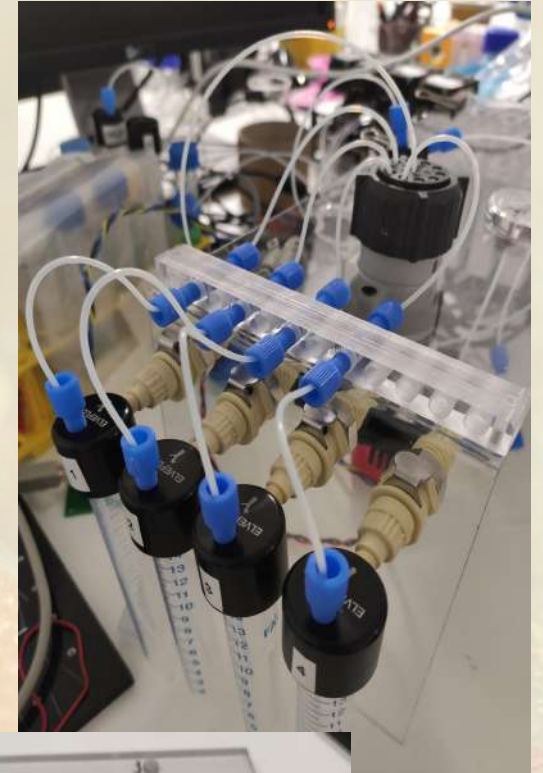
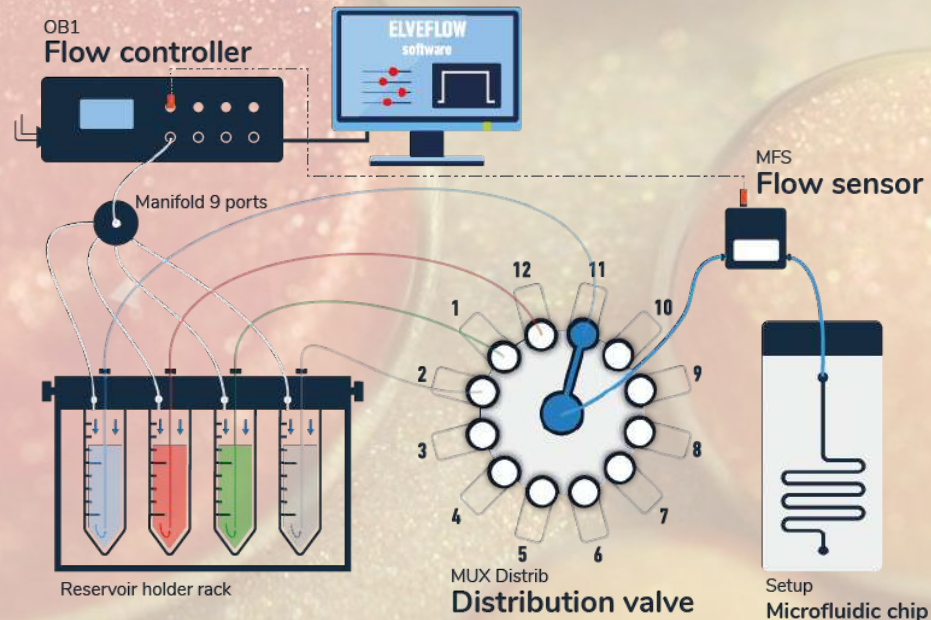
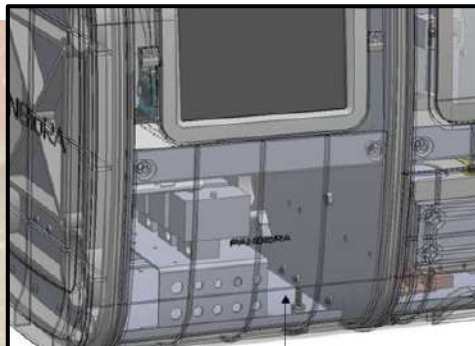
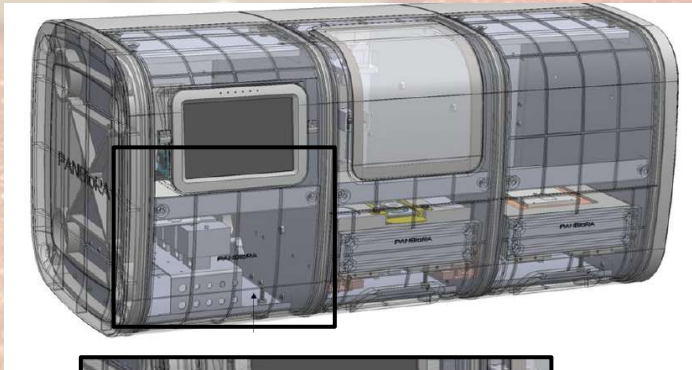
Solution: Precise liquid flow control and cell sorting module

MICROFLUIDIC SYSTEMS DESIGN

When it comes to **design complex microfluidic systems** that fit your needs, Elveflow is your ideal partner. Strong of a decade of experience, we can take you through OEM solutions and/or easy integration for your microfluidic dilemmas, be it **fluid handling, liquid mixing, flow measurement...**

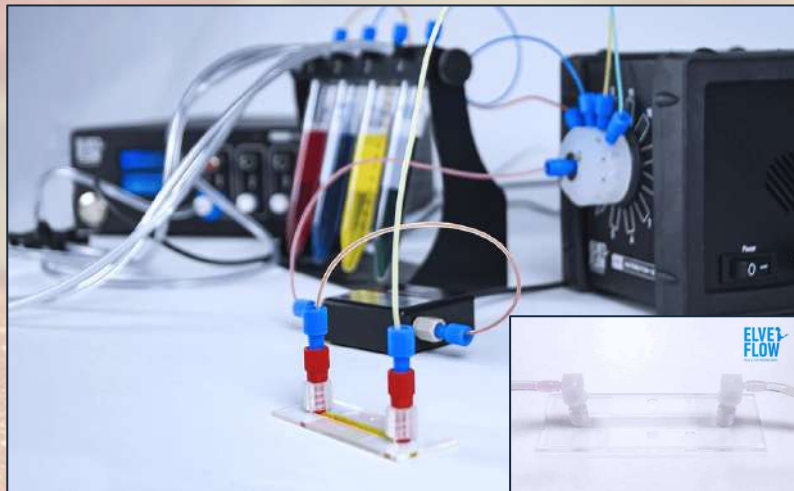
Our solutions are based on the Elveflow range of microfluidic instruments, favoured by scientists for over a decade.

Together, let's take your solution further to reach **efficient, precise and cost-effective setups** by using the full potential of **liquid and gas flow miniaturisation.**



YOUR CHALLENGES & OUR EXPERTISE

Microfluidics to ease, scale-up and reduce production costs



Main features of microfluidics

- High surface-to-volume ratios
- Micrometric scales (nL - mL)
- Easy parallelization & fluidic system automation

Benefit from:

Decrease reagent consumption, shorten experiments, higher system precision...

Ability to work with low (nL) & large (ml to L) volumes of reagents

Fluidic system scale up

The image is a composite of two panels. The left panel shows several circular microfluidic chips with a textured surface, containing red and blue particles. The right panel shows a similar scene but with a light beige overlay and a horizontal line.

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Research & Development

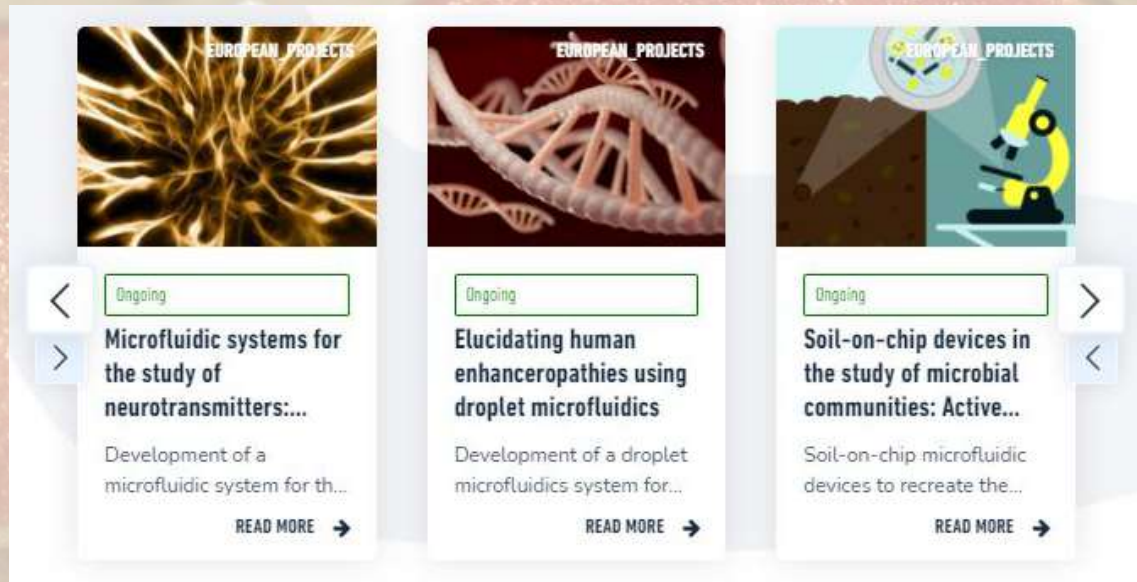
Premices & skills

INNOVATION UNIT

20+ Researchers involved in 30+ International Projects

Just imagine: faster and reliable malaria or tuberculosis detection. Better drug delivery in leukemia treatments. Selecting the right fungicides to protect crops. Generating artificial cells. Using organs on chips to understand cancer and test an exponential number of potential treatments. And why not even unveil the origins of life itself?

We are working on every single one of these projects – they are among the **30+ ongoing microfluidic research projects** at Elveflow.

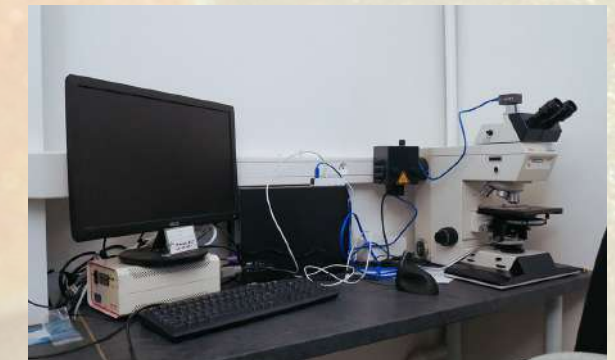


The screenshot displays three project cards under the heading "EUROPEAN PROJECTS". Each card includes a thumbnail image, a status indicator "Ongoing", a title, a brief description, and a "READ MORE" button with a right-pointing arrow.

- Project 1:** Thumbnail shows a complex network of yellow fibers. Title: "Microfluidic systems for the study of neurotransmitters:..." Description: "Development of a microfluidic system for th..."
- Project 2:** Thumbnail shows a DNA double helix. Title: "Elucidating human enhanceropathies using droplet microfluidics" Description: "Development of a droplet microfluidics system for..."
- Project 3:** Thumbnail shows a microscope and a petri dish. Title: "Soil-on-chip devices in the study of microbial communities: Active..." Description: "Soil-on-chip microfluidic devices to recreate the..."



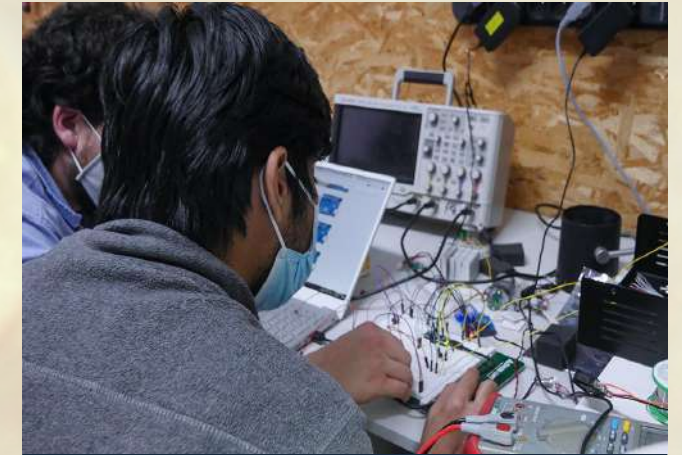
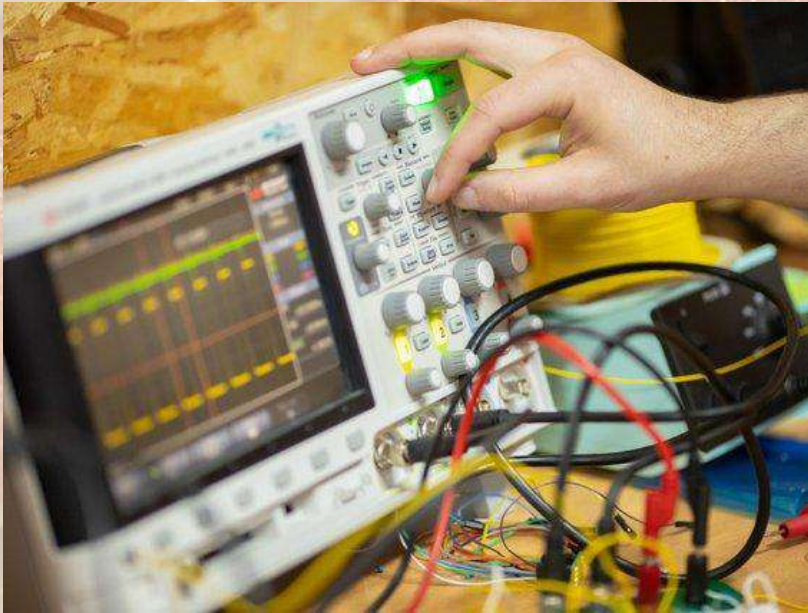
INNOVATION FACILITIES : BIOLOGY & MICROFABRICATION



RESEARCH AND DEVELOPMENT

Multidisciplinary Team / Project management

A team of 10 people (all PhDs and/or Engineers) supports legacy products and conducts the development of new ones.



Skillset

- Electronics
- Mechanics
- Pneumatics
- Software and Firmware
- Simulations

MAY THE FLOW
BE WITH YOU!

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