



FLOWPAD

A GENERIC TOOLBOX FOR MICROFLUIDICS AND POINT-OF-CARE DIAGNOSTICS

+ WHAT IS FLOWPAD?

FlowPad features disposable, credit card format microfluidic cartridges with fluidic channels designed to perform a selection of tests outside of a traditional lab environment. The integrated protocol can be complex by including all sample preparation steps—concentration, lysis, purification—as well as bio-analysis and detection procedures—qPCR, RPA, LAMP, etc.

An instrument leverages a chip holder, a functional implementation system based on the microfluidic cartridge design—a valve, fluidic actuator, Peltier heater, magnet and pellet disruptor—and related software programs.

Both instrument and microfluidic cartridges are custom-designed based on clinical or manufacturing requirements.

+ APPLICATIONS

FlowPad finds applications in:

Human and veterinary medicine:

- Sample preparation at the sampling point—peptide, SiRNA isolation
- Point-of-care testing and diagnostics—bacteria, viruses, etc.
- Companion diagnostic
- Cell encapsulation—spheroids, cells, etc.
- Microfactory of radiotracing or drugs

Environment and agribusiness and other industrial process monitoring:

- Detection of bacteria and viruses
- Assessment of Chemical, Biological, Radiological and Nuclear (CBRN) risks

+ WHAT'S NEW?

CEA-Leti's FlowPad technology opens a new path to the future of testing:

- Tests in less than 2 hours: from raw biological sample to results
- Versatile, easy-to-use toolbox
- Compatible with multiple complex protocols—biological, chemical, etc.—and materials—silicon, glass, COC, polymers, etc.
- Reduces development and prototyping time
- Easily scalable for high-volume production at low-cost. Leti has perfected cartridge design and small-scale production.

FlowPad's Microfluidic cartridge:

- are user-friendly features plug-and-play fluidic connections with easy and efficient flow control
- operates with valves and a pump integrated into the cartridge
- are compatible with injection molding

KEY FACT

5 fluidic connection patents filed

+ WHAT'S NEXT?

CEA-Leti is currently working in scaling to high-volume manufacturing both the cartridge and the instrument with industrial partners.

New application: microARN detection from blood.



INTERESTED IN THIS TECHNOLOGY?

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