MICROPOMPE

Ultra compact micro-pump for micrometric volumes

Keywords

- Micro pump
- Membrane
- Electromagnetic
- Flow reversibility
- MEMS Technology

Intellectual Property

1st filing date 24/10/2013 number FR1360387, issued in Europe (France, Germany, Switzerland,United-Kingdom, Sweden,Netherlands,Denmark ,Austria, Belgium, Spain and Italy), issued in the USA and in proceedings in Canada

Development Status

Prototype made

Laboratory level validation

Ongoing technical development

Partnership

Industrial to adapt technology for licensing.

Technology

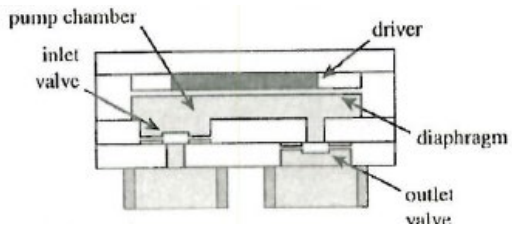
The innovation

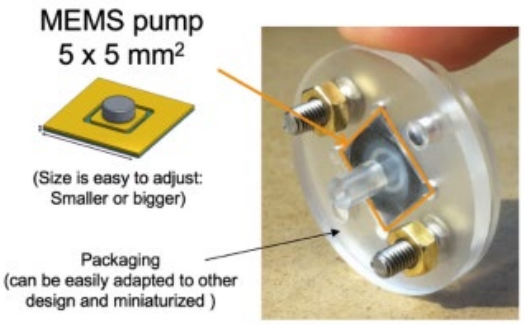
Ultra compact MEMS micro pump:

. The fluid is activated by the oscillations of a flexible polymer membrane.

. Membrane oscillations are generated by an electronically controlled electromagnetic device.

This technology will generate flow rates in the order of µl/min for electricity consumption in the order of mW.





Benefits

- Compactness: the system has a total volume of 1 cm3
- Very low energy consumption: 150 – 800 mW
- Flow rate in the order of µl/min
- Operation with different types of fluids and in several possible modes: suction or dosing
- No friction, low vibration, low noise
- Low cost and ease of integration

Applications

- Industry: sprayer, blender, fluid dispenser, etc.
- Energy: fuel cell, heat exchanger, etc.
- Electronics: cooling, printing, etc.
- Environment: sampling, testing, etc.
- Medical: implantable pump (insulin, analgesic), Lab On a Chip, …

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Reference projet et date

Reference