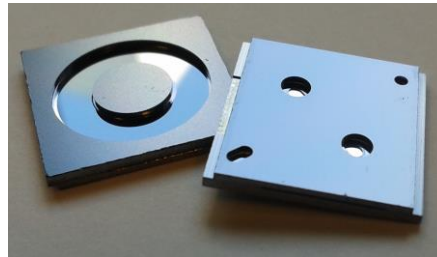


## **Eveon and Leti Mark Milestone in Fabrication Of Smart Bolus-type Micro-pump for Drug Delivery**

GRENOBLE, France – April 2, 2014 – Eveon and CEA-Leti today announced the demonstration of liquid-pumping for smart drug delivery in the bolus mode using a silicon-based micro-pump fabricated with a standard MEMS process.

The milestone is the first functional micro-pump integration using MEMS standard process on Leti's 200mm line. It is a result of FluMin3, Eveon and Leti's three-year joint-development project to produce an automatic drug-delivery system integrating a MEMS micro-pump that reduces patient discomfort by delivering medicine with very high accuracy, minimal loss and high flow rates.



FluMin3 is a major R&D program supported by the Rhone-Alpes competitive cluster MINALOGIC in collaboration with Cedrat Technologies and IMEP-LAHC, the Institute of Microelectronics Electromagnetism and Photonics, and Microwave and Characterization Laboratory.

The micro-pump is based on core technology initiated by Eveon and IMEP-LAHC. The pump demonstrator is made from silicon wafers, which include a thin deformable membrane sealed over a fluidic cavity and fluidic valves determining inlet and outlet. A dedicated electromagnetic actuator developed by Cedrat Technologies deforms the membrane.

First fluidic characterization of this device showed very promising pumping results with typical water-flow rates of 12 ml/min without any counter-pressure, and up to 6 ml/min under 1 bar counter-pressure. These results surpass the performance of state-of-the-art commercial micro-pumps whose typical water-flow rate capacity today is 6 ml/min without any counter-pressure and 2 ml/min under 0.5 bar counter-pressure.

These encouraging results already match bolus-mode injection requirements. In addition, new designs under development are expected to improve fluidic performances. At the same time, MEMS flow sensors designed to be integrated in the micro-pump have been fabricated and used to achieve an accurate liquid dosing using micro-diaphragm pumps with a dosing relative error below 5 percent for different counter-pressures.

Eveon, which coordinated this project and Leti are continuing their work to stabilize relevant MEMS processes before industrialization and to integrate MEMS sensors inside the micro-pump to demonstrate an automatically controlled smart drug-delivery device.

\* \* \*

### **About CEA-Leti**

By creating innovation and transferring it to industry, Leti is the bridge between basic research and production of micro- and nanotechnologies that improve the lives of people around the world. Backed by its portfolio of 2,200 patents, Leti partners with large industrials, SMEs and startups to tailor advanced solutions that strengthen their competitive positions. It has launched more than 50 startups. Its 8,000m<sup>2</sup> of new-generation cleanroom space feature 200mm and 300mm wafer processing of micro and nano solutions for applications ranging from space to smart devices. Leti's staff of more than 1,700 includes 200 assignees from partner companies. Leti is based in Grenoble, France, and has offices in Silicon Valley, Calif., and Tokyo. Visit [www.leti.fr](http://www.leti.fr) for more information.

### **Press contacts**

CEA-Leti	+33 4 38 78 02 26	<a href="mailto:pierre-damien.berger@cea.fr">pierre-damien.berger@cea.fr</a>
Agency	+33 6 64 52 81 10	<a href="mailto:aravier@mahoneylyle.com">aravier@mahoneylyle.com</a>

### **About Eveon**

Eveon develops and manufactures medical devices for the preparation and/or administration of complex drugs. Eveon is located in France & the US and participates each year in important international conferences like Bio US. Eveon was named a winner in the national competitive examination by the Ministry of Higher Education and Research, in the Emergence and Creation/Development categories. It also has received the "Trophée Jeune Entreprise Innovante" (Start-up Trophy) awarded by Usine Nouvelle Magazine in the Innovative Products category. Eveon is also the first company of the world-class cluster Minalogic to receive the label "Entreprise Innovante de Pôle (EIP)".

### **Press contacts**

Vincent TEMPELAERE, CEO  
[vte@eveon.eu](mailto:vte@eveon.eu)  
+33 4 76 41 43 92  
[www.eveon.eu](http://www.eveon.eu)  
345 rue Lavoisier, Montbonnot Saint-Martin FRANCE