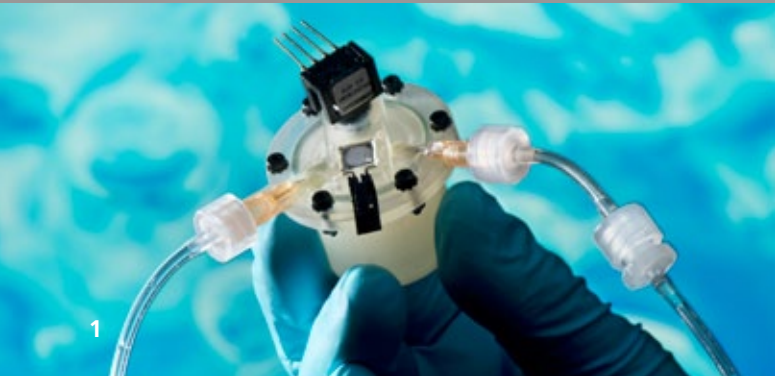




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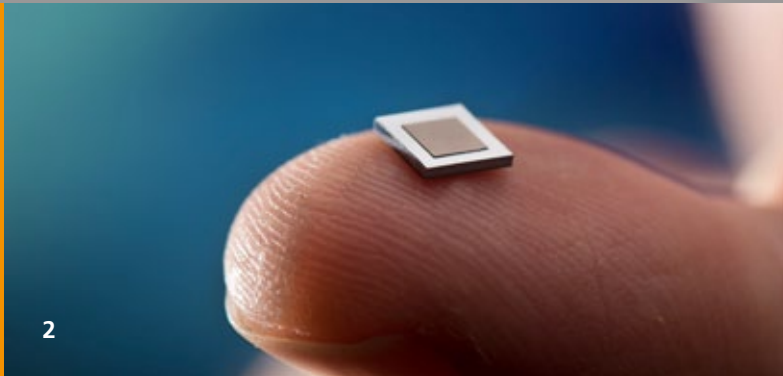
FRAUNHOFER RESEARCH INSTITUTION FOR MICROSYSTEMS AND SOLID STATE TECHNOLOGIES EMFT



1

1 *Open degasser system*

2 *The smallest micropump in the world*



2

SELF-SUFFICIENT DEGASSER FOR MICRO DOSING PROCESSES

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Applications

Gas bubbles in liquids can cause serious problems for a fluidic system, such as falsified measurement values of the sensors or lower performance of the system, and in worst case lead to a total failure of the whole system.

The scientists at Fraunhofer EMFT have developed a micro degasser for applications requiring processing of minute amounts of liquids. The degasser is capable of removing gas bubbles and dissolved gas from the liquid. An extremely small and energy-efficient micropump is integrated into the system, enabling first-time mobile, battery-driven efficient degassing of liquids. Potential applications include

- HPLC
- Lab-on-chip
- Medical technology
- Biotechnology
- Industrial applications (oils, lubricants)

Technical Innovation

The heart of the system is a silicon micro-pump developed at the Fraunhofer EMFT, capable of producing negative pressures of up to -55 kPa, which makes an additional vacuum interface obsolete. A further benefit: an integrated pressure sensor enables the activation of the pump at need, when the defined pressure limit is exceeded. This saves energy and prolongs the lifetime of the micropump. The traditional degasser pumps, by contrast, have to be kept operating at all times.

Technical Data

A functional demonstrator of the micro degasser already exists, exhibiting a degassing efficiency of 50% air at the flow rate of 50-200µl/min in the tests so far.

Fraunhofer EMFT is participant in the



Forschungsfabrik
Mikroelektronik
Deutschland