

VACUUM BATTERY SYSTEM FOR PORTABLE MICROFLUIDIC PUMPING

Tech ID: 24429 / UC Case 2015-034-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	10,864,517	12/15/2020	2015-034
United States Of America	Issued Patent	9,970,423	05/15/2018	2015-034

BRIEF DESCRIPTION

The invention introduces a fluidic chip that utilizes a vacuum void to store vacuum potential. This stored vacuum potential is harnessed for controlled microfluidic pumping, mimicking the function of biological vacuum lungs. The system is designed to be portable, making it suitable for various applications where precise fluid control is essential.

SUGGESTED USES

- **Medical Diagnostics:** The system can be used in portable diagnostic devices for precise fluid handling, enhancing the accuracy and reliability of tests.
- **Biological Research:** Ideal for laboratory settings, the system can facilitate controlled experiments involving microfluidics.
- **Environmental Monitoring:** Portable sensors equipped with this system can accurately sample and analyze fluids from various environments.
- **Drug Delivery:** The system can be integrated into devices for controlled drug administration, ensuring precise dosages.

ADVANTAGES

- **Portability:** The compact design allows for easy transportation and use in various settings.
- **Precision:** The vacuum-based pumping mechanism ensures accurate control of fluid movement.
- **Biomimetic Design:** Mimicking natural vacuum lungs enhances the efficiency and reliability of the system.
- **Versatility:** Suitable for a wide range of applications, from medical to environmental fields.
- **Energy Efficiency:** The vacuum storage mechanism reduces the need for external power sources, making the system more sustainable.

RELATED MATERIALS

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ [Portable Fluidic Actuation](#)
- ▶ [Digital Separation For One-Step Hiv Viral Load Monitoring](#)

CONTACT

Laleh Shayesteh
lalehs@berkeley.edu
tel: 510-642-4537.



INVENTORS

» Lee, Luke P.

OTHER INFORMATION

CATEGORIZED AS

- » **Environment**
- » Sensing
- » **Medical**
- » Disease: Respiratory and Pulmonary System
- » Vaccines
- » **Research Tools**
- » Other
- » **Sensors & Instrumentation**
- » Environmental Sensors

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University of California, Berkeley Office of Technology Licensing

2150 Shattuck Avenue, Suite 510, Berkeley, CA 94704

Tel: 510.643.7201 | Fax: 510.642.4566

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