

LIFTING GATE MICROVALVES AND PUMPS FOR MICROFLUIDIC CONTROL

Tech ID: 22337 / UC Case 2012-096-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,791,068	10/17/2017	2012-096

BRIEF DESCRIPTION

Pneumatically actuated microvalves and pumps have been widely employed for assay automation with large-scale integration because the fabrication is simple and inexpensive. However, the efficiency, portability, and reusability of pneumatically actuated microvalves and pumps can be improved.

To address this opportunity, UC Scientists have developed pneumatically actuated “lifting gate” microvalves and pumps with novel structures which enable direct integration with a broad range of substrates. The microvalves and pumps offer a higher pumping efficiency, portability, and reduce fabrication complexity.

SUGGESTED USES

- » Genomic analysis
- » High-throughput cellular analysis
- » Immunoassays
- » Automated sample processing

ADVANTAGES

- » Higher pumping efficiency
- » Easy integration of complex microfluidic control systems
- » Operable across wide range of lab-on-chip substrates
- » Reduce fabrication complexity
- » Portable

PUBLICATION

Lifting Gate Polydimethylsiloxane Microvalves and Pumps for Microfluidic Control

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INVENTORS

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OTHER INFORMATION

KEYWORDS

Microfluidics, microvalves, pumps,
lab-on-chip

CATEGORIZED AS

- » **Biotechnology**
- » Other
- » **Medical**
- » Diagnostics
- » **Research Tools**
- » Other

RELATED CASES

2012-096-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

► [High/Hypervelocity Particle Capture And Analysis Method And Apparatus](#)



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