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Contamination Mitigation and Runtime System for Programmable Lab on a Chip

A new runtime system for programmable lab on a chip devices streamlines instruction set creation, works across many LoC types, and includes built-in contamination mitigation.

Microfluidic lab on a chip (LoC) devices are used in medicine, chemistry, and biological sciences to test laboratory samples at the microscopic level. These chips require specific programming instructions for every experiment. It can be time consuming and expensive to construct instruction sets for every new chip design. Fluid contamination is also a factor that must be minimized.

Purdue University researchers have developed a new runtime system for programmable lab on a chip devices that also incorporates contamination mitigation. Their approach allows the runtime system to work like an assembler in a personal computer, translating from a programming language to a set of requests for the chip. Included in this system are instructions to prevent contamination in various types of LoCs.

Advantages:

- Less time spent writing instruction sets

- Works with many types of LoC devices

- Instruction sets for contamination mitigation

TRL: 6

Intellectual Property:

Provisional-Patent, 2011-03-10, United States | Provisional-Patent, 2012-03-08, United States | Utility Patent, 2013-03-08, United States

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Authors
Ahmed Amin
Mithuna S Thottethodi
Terani N Vijaykumar

Further information
Clayton Houck
CJHouck@prf.org

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