



Method of Concentrating a Sample in a Microfluidic Device

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a simple system for concentrating a sample in a microfluidic device.

Overview

Microfluidic devices are being used in an increasing number of applications, including traditional laboratory tasks. To detect molecules in a small amount of solution, it's often advantageous to first concentrate the sample; however, current methods of concentrating samples require complex microfabrication processing. In addition, the fluid sample often must carry an appropriate charge or the molecules in the fluid must be able to bind to a specific molecule.

The Invention

UW-Madison researchers have developed a simple system, based on evaporation, to concentrate a sample in a microfluidic device. The system is composed of a channel within a microfluidic device, which includes a reservoir port and a collection port. The reservoir port can be any type of liquid/gas interface. The channel is filled with the solution that needs to be concentrated. As the solution evaporates from the collection port, the solution in the channel flows from the reservoir port to the collection port. The particles in the fluid concentrate at the collection port and are collected to obtain the concentrated sample.

Applications

- Concentrating a sample to detect molecules in a small amount of solution

Key Benefits

- Inexpensive to implement
- Works with any type of sample
- Does not damage the particles in the solution to be sampled
- Does not require surface treatment
- Does not require complex system designs
- Simple to incorporate into any microfluidic device design

Additional Information

For More Information About the Inventors

- [David Beebe](#)

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- [Analytical Instrumentation, Methods & Materials : Microfluidics](#)

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