Water-Soluble Mold for Sample Analysis

A water-soluble mold to fabricate natural or artificial polymers in microfluidic devices, therefore decreasing production costs and operation times

Inventors at Georgia Tech have created a water-soluble mold used to fabricate microfluidic devices using polymers. The technology is a low-cost method in comparison to existing practices, due to the difference in materials utilized. The technology enables fabrication without the use of cleanroom facilities nor highly-skilled personnel. Its use of water-soluble testing agents eliminates the need waste treatment and the process is non-toxic. Its implication in microfluidics results in faster production times while lowering manufacturing costs.

Summary Bullets

- **Inexpensive**: difference in materials used from existing practices, lowers manufacturing costs
- **Universal adoption**: no requirement of expensive cleanrooms facilities and associated personnel
- **Environmentally**: conscious- non-toxic process eliminates need for organic solvent and waste treatment

Solution Advantages

- **Inexpensive**: difference in materials used from existing practices, lowers manufacturing costs
- **Universal adoption**: no requirement of expensive cleanrooms facilities and associated personnel
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Potential Commercial Applications

- Medical and diagnostic applications
- Drug discovery and delivery in pharmaceuticals
- Microbiology and organic synthesis
- Simplistic lab-based modules in education

Background and More Information

Microfluidics is the field of science studying the behavior of fluids by using a constrained system, such as a microchip. A microfluidic device manipulates small amounts of solutions, such as bodily fluids, and can be used to perform lab tests. These samples can contain cells or components of cells and can be used to diagnose diseases. The solutions tested contain cells or components of cells and are analyzed to diagnose diseases. Currently, the industry utilizes expensive methodology. Due to existing practices, there is also an additional cost

for organic solvent and waste treatment. Additionally, to avoid chief contaminants such as dust and bacteria, testing requiring microfluidic instruments is conducted in an isolated environment called a clean room. However, this requirement is costly and results in slower production times.

Inventors

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