



# Channel Narrowing Technique for 3D Printed Microfluidics

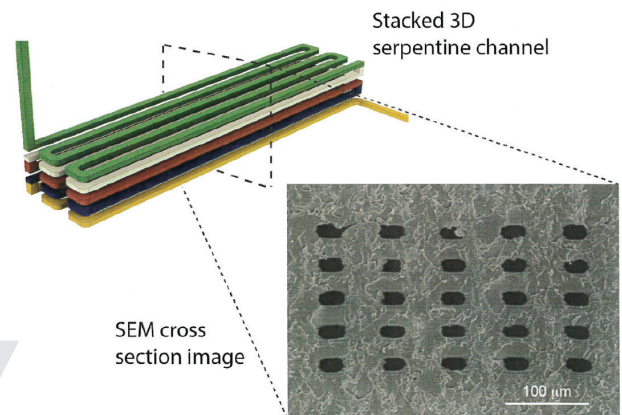
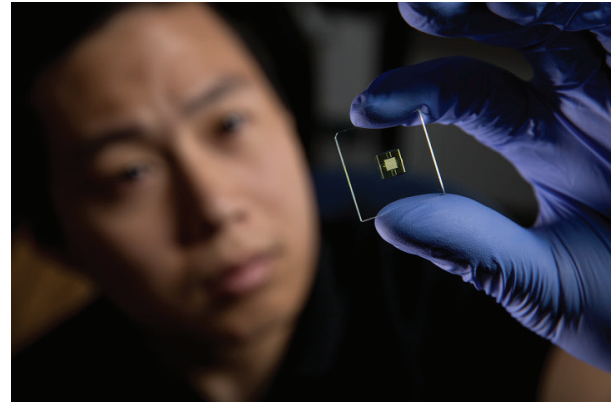
BYU #2017-050

## DESCRIPTION

This technology is a method of producing microfluidic channels by means of an innovative 3D printing process and a novel channel narrowing technique. Researchers at BYU have been able to demonstrate that a custom digital light processor stereolithographic (DLP-SLA) 3D printer and a specifically-designed, low cost, custom resin can readily achieve flow channel cross sections as small as  $18 \mu\text{m} \times 20 \mu\text{m}$ .

## PROBLEM SOLVED

Microfluidic devices are minuscule chips that can sort out disease biomarkers, cells and other small structures in samples like blood by using microscopic channels incorporated into the devices. These chips are expensive and difficult to fabricate, and other 3D printers have not been able to create features smaller than  $100 \mu\text{m}$ . This invention enables microfluidic structures to be created at dimensions of more than 5 times smaller than current alternatives, which will allow for making complex microfluidics more easily and inexpensively.



## KEY ADVANTAGES

- » *Enables small flow channel fabrication*
- » *Relatively inexpensive*

## APPLICATIONS

The invention will benefit companies that manufacture stereolithographic 3D printers who want to access the microfluidics market. Applications include single-cell studies, separations and biomarker analysis.

**Offer:**  
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**IP Status:**  
*Patent Pending*



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