

The fabrication of 3D microfluidic channels on glass substrate with various sizes and shapes using 2PP system.

Description

Two-photon polymerization (2PP) is a process for three-dimensional Micro- and Nano structuring based on the locally controlled curing of liquid precursors (light-sensitive resins) by photochemical triggered polymerization. 2PP enables the printing of 3D microfluidic channels in microscopic sizes, which opens up new possibilities for medical and pharmaceutical applications that are not possible with conventional 2.5D microfabrication.

This thesis deals with the fabrication of microfluidic channel with IP-Q photoresist in different shape and sizes. IP-Q photoresist is used for High-speed fabrication of millimetre-sized microfluidic chip using Nanoscribe's (Photonic Professional GT2, Nanoscribe GmbH, Eggenstein-Leopoldshafen, Germany) high-precision 3D printing technology. The 3D printing of the channel system is achieved with a 2PP system equipped with a near infrared femtosecond laser source.

Fields of activity:

- Solidwork software
- Clean room work
- Microfabrication
- 2-photon polymerization / 3D Microfluidic channel

Start: By arrangement
Contact: Ebrahim Taiedinejad
Phone.: 0531 391-65675
e.taiedinejad@tu-braunschweig.de

