

Rapid Production of PDMS Microdevices for Electrodriven Separations and Microfluidics by 3D-Printed Scaffold Removal

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1. Description of supporting files

video.mp4: production of droplets in the “monolithic” device

box.stl: box for the production “monolithic” devices

channel1M.stl: straight channel for production of “monolithic” devices

channel2M.stl: T-channel for production of “monolithic” devices

channel3M.stl: cross channel for production of “monolithic” devices

channel1B.stl: straight channel for production of “bonded” devices

channel2B.stl: T-channel for production of “bonded” devices

channel3B.stl: cross channel for production of “bonded” devices

2. Supporting figures

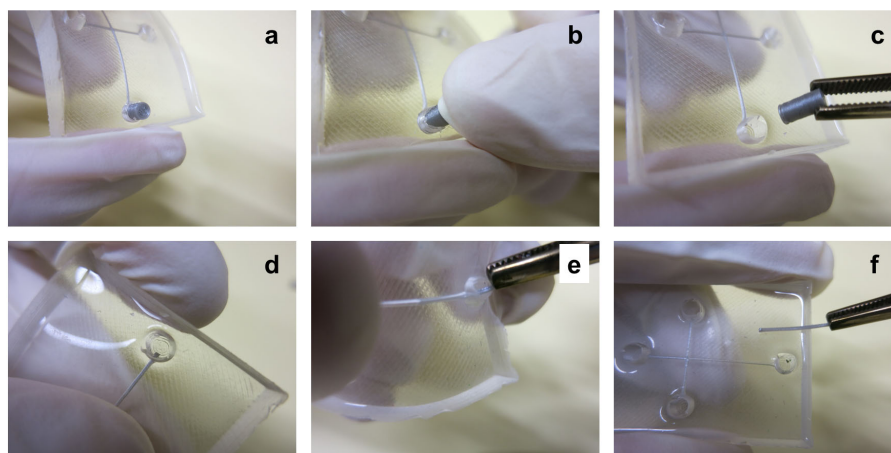


Figure S1. Removal of 3D printed structures in “monolithic” PDMS-microdevice. The time sequence is in the alphabetical order.

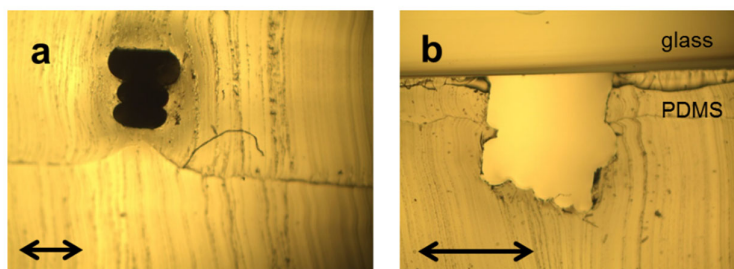
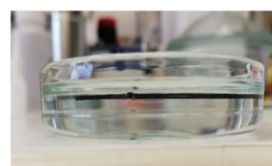
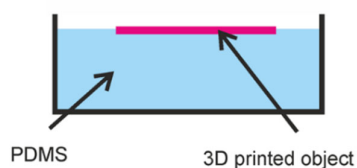


Figure S2. Cross-section of PDMS-based microdevices channels formed by 3D-printed scaffolds removal; (a) “monolithic” microdevices; (b) “bonded” microdevices; size of the arrow is 1.0 mm.

Floating method



Adhesion method

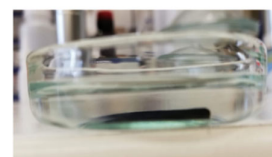
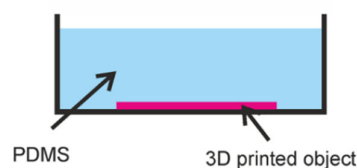


Figure S3. “Stamping” the 3D-printed scaffolds in PDMS.

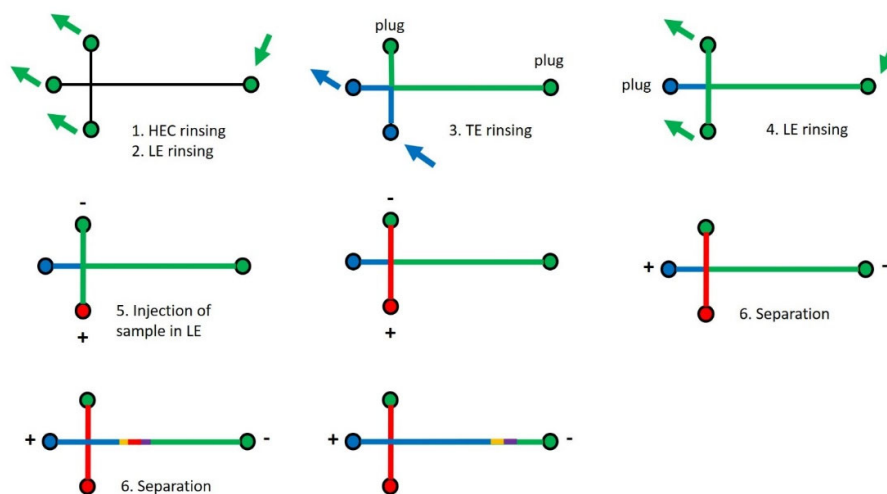


Figure S4. Procedure of the isotachopheresis separation on the microdevices; the time sequence is in the alphabetical order; HEC represents 1 mg.mL^{-1} 2-hydroxyethylcellulose in deionized water; LE was 10 mmol.L^{-1} HCl titrated by histidine to pH 6.0; TE was 10 mmol.L^{-1} MES titrated by histidine to pH 6.0; voltage of 200 V was used.

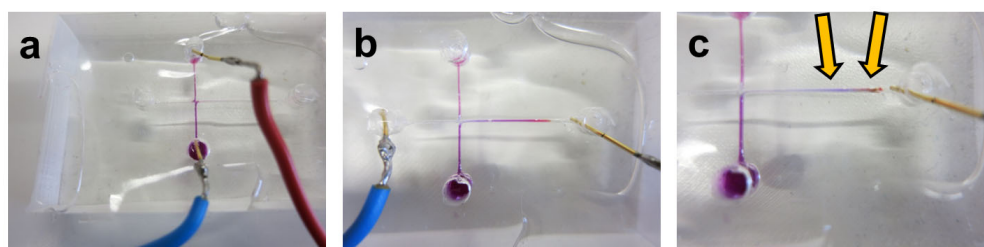


Figure 5. Example of isotachopheresis on “monolithic” PDMS-microdevice; (a) Injection; (b) Separation; (c) Final separation of the dyes; the separated dyes are marked by arrows.