

Electronic supplementary information

Active porous valves for plug actuation and plug flow manipulation in open channel fluidic

N. Vourdas, K. Dalamagkidis and V.N. Stathopoulos

School of Technological Applications, Technological Educational Institute of Sterea Ellada, Psahna, Greece.

Two plugs moved simultaneously on the same fluidic

In Fig.S1 we provide a sequence of snapshots demonstrating the ability of our tool to actuate and manipulate two (or multiple) plugs simultaneously.

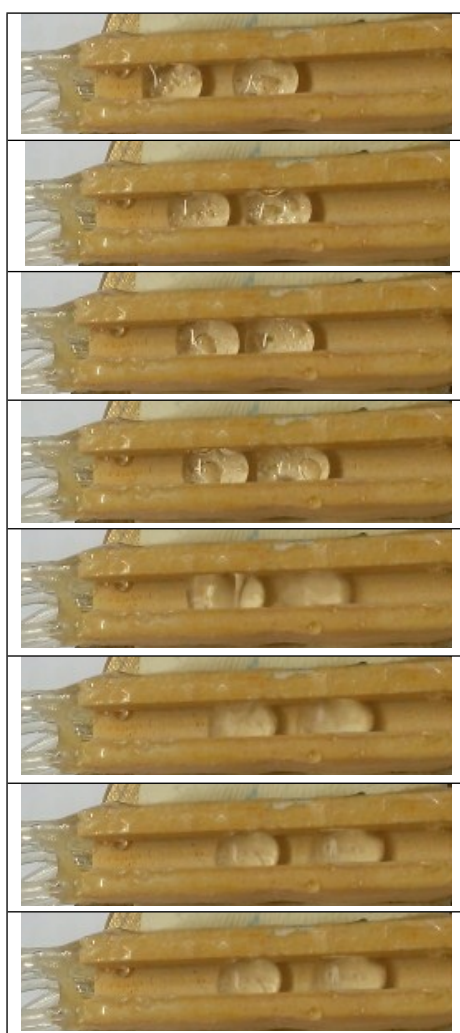


Fig. S1. Snapshots of two plugs actuating and moving simultaneously on the same fluidic.

Details on the surface functionalization may be found in Refs ¹⁻³.

References

1. N. Vourdas, C. Ranos and V. N. Stathopoulos, *RSC Advances*, 2015, **5**, 33666-33673.
2. N. Vourdas, A. Tserepi, A. Boudouvis and E. Gogolides, *Microelectronic Engineering*, 2008, **85**, 1124-1127.
3. N. Vourdas, A. Tserepi and E. Gogolides, *Nanotechnology*, 2007, **18**, 125304.

Videos

Video 1 (File name: Open-channel fluidic-Valving_1.avi)

A video demonstrating the actuation of a plug inside an open-channel fluidic (Moderate cross section)

Video 3: (File name: Open-channel fluidic-Valving_2.avi)

A video demonstrating the actuation of a plug inside an open-channel fluidic (Large cross section)

Video 3 (File name: Open-channel fluidic-Valving_3.avi)

A video demonstrating the mobility state of a plug on a fluidic without backpressure

Video 4 (File name: Open-channel fluidic-Valving_4.avi)

A video demonstrating the manipulation of multiple successive plugs introduced manually on the fluidic

Video 5 (File name: Open-channel fluidic-Valving_5.avi)

A video demonstrating the reversible switching between the “on” and the “off” state

Video 6 (File name: Open-channel fluidic-Valving_6.avi)

A video demonstrating the ability to merge/fuse plugs in the channel