

Unconventional lithography for nanofluidic device fabrication

Tirumala Rao Dumpala

Kiruthika S, Siddhi Vinayak Pandey, Marcos Surmani Martins, Ashok Keerthi, Boya Radha

The University of Manchester, Oxford Road, Manchester, M13 9PL, UK

tirumala.dumpala@postgrad.manchester.ac.uk

Nanofluidic devices have generated huge enthusiasm among the scientific community with their wide range of promising applications. However, fabrication of nanofluidic devices using conventional techniques has been a big hurdle in the path of unleashing their true potential owing to the high cost, time, and labour-intensive processes[1]. In our current work, we report a simple, inexpensive, and unconventional lithography technique, for nanochannel device fabrication[2]. The reported technique has very high throughput, making it highly favourable for large-scale applications. We harness the natural phenomenon of evaporation induced pattern formation on surfaces, which are processed further to make nanochannels [3]. Finally, a top layer completes the device fabrication. These channels were tested with gas flows and and ion flow measurements. These channels are transparent in nature, which makes them highly suitable for optical studies as well.

References

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 - [3] Kiruthika Shanmuga Sundaram, Chaitali Sow, Giridhar U. Kulkarni, Transparent and Flexible Supercapacitors with Networked Electrodes, Small (2017), 13, 1701906.
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Figures

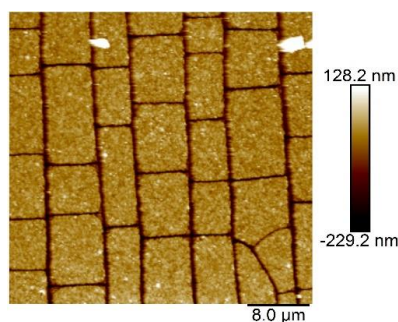


Figure 1: Atomic force microscopy image of channels obtained on polymer substrate.