

Supplementary Material (ESI) for Lab on a Chip  
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## Electronic Supplementary Information for Integrated Sieving Microstructures on Microchannels for Biological Cell Trapping and Droplet Formation

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### Microsieves formation on master by varying interval distance and etching time

Identical photomask with fixed channel interval distance ( $50\ \mu\text{m}$ ) was used while different etching times were attempted from (a) 40 mins to (b) 60 mins. Microsieve structures were not formed by 40 min of etching (step profiler result shown in Fig. 2c with black line) and the corresponding PDMS replica was leak-proof (data not shown). After 60 min of etching, however, the phenolic support layer started to reveal at the interval, suggested by the different color contrast in the micrograph. PCB boards with varies interval distances from 50 to  $500\ \mu\text{m}$  (c-f) were prepared by a fixed period of etching for 80 min. For an interval distance over  $250\ \mu\text{m}$ , microsieves were not merged and no fluid connectivity was observed in PDMS replicas.

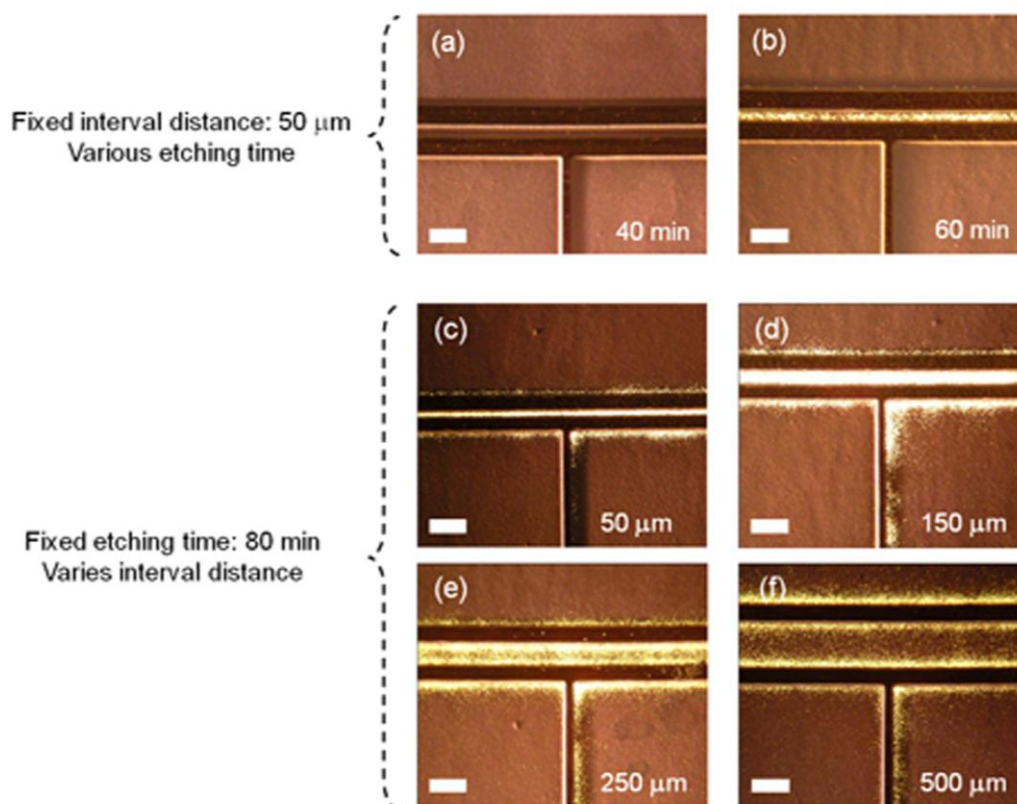


Fig. S1. Micrograph of 6 PCB boards after etching for and removal of residue photoresist. Scale bar is  $200\ \mu\text{m}$ .