Electronic Supplementary Information (ESI)

Foil assisted replica molding for fabrication of microfluidic devices and their application *in vitro*

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Material and Chemicals:

All the chemicals and media used for the cell culture experiments were procured from Sigma Aldrich and GIBCO®. In current work we have used both fiber tip and metal tip pens such as Staedtler Lumocolor[®] non-permanent ink pen (311S, tip size 0.4 mm) and Lumocolor[®] non-permanent ink pen (316F, tip size 0.6 mm) were purchased from a local stationary shop. While Graphtech oil-based (tip size 0.5 mm) and water-based fibre tip pens (tip size 0.7mm) were obtained from Graphtech Corporation Itd., Japan. All other metal tip pens used in this study such as Pilot V5 pen (0.5 mm tip), Pilot V7 (0.7 mm tip), Rotring Rapidography pen (0.3 mm tip), Parker ultrafine navigator (0.5 mm tip), Cello Techo Tip pen (0.6 mm tip) were purchased from local stationary stores.

1. Different Pen Tips used in current work.



Figure S1: Pen tips used: (A) Fibre tips of different sizes (B) Metal tips of different size make.

2. Various devices fabricated using FARM method



Figure S2: Images of: (A) various aluminum foil molds; (B) PDMS device corresponding to molds shown in (A); (C) PDMS devices with various geometries

Height units:	μm
(A) Number of inte	ivals: 100
Roughness resu	ults:
RMS roughness	ss: 0.423
Minimum value	e: -1.154
Maximum valu	ie: 1.0425
Peak to peak:	2.1965
Roughness av	erage: 0.345
Average heigh	ıt: O
Surface skewn	iess: 0.004
Surface kurtosi	is: 2.5319
Plane offset:	-1028.82
Ironed surface	(µm²): 1676.1874
Limits:	
Min: -1.154	Max: 1.0425
• Auto	Customize
Height units:	pm
(B) Number of inter	rvals: 100
Roughness resu	ilts:
RMS roughness	s: 90.8478
Minimum vaide	-159.9608
Maximum value	-159.9608 e: 426.4811
Maximum value Peak to peak:	e: -159.9608 e: 426.4811 586.4419
Minimum value Maximum value Peak to peak: Roughness ave	2: -159.9608 e: 426.4811 586.4419 Prage: 69.2095
Minimum value Maximum value Peak to peak: Roughness ave Average height	e: -159.9608 e: 426.4811 586.4419 erage: 69.2095 t: 0
Minimum value Maximum value Peak to peak: Roughness ave Average height Surface skewne	e: -159.9608 e: 426.4811 586.4419 erage: 69.2095 1: 0 ess: 1.1365
Minimum value Maximum value Peak to peak: Roughness ave Average height Surface skewne Surface kurtosis	2: -159.9608 e: 426.4811 586.4419 erage: 69.2095 t: 0 ess: 1.1365 5: 4.8088
Minimum value Maximum value Peak to peak: Roughness ave Average height Surface skewne Surface kurtosis Plane offset:	e: -159.9608 e: 426.4811 586.4419 erage: 69.2095 t: 0 ess: 1.1365 s: 4.8088 -153.575
Minimum value Maximum value Peak to peak: Roughness ave Average height Surface skewne Surface kurtosis Plane offset: Ironed surface	t: -159.9608 e: 426.4811 586.4419 erage: 69.2095 t: 0 ess: 1.1365 s: 4.8088 -153.575 (µm*): 401.9562
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3. AFM image of non shiny side and shiny side of aluminum foil

Figure S3: (A) Roughness data and 3D AFM image showing RMS roughness of about 423 nm of non-shiny side of aluminum foil. (b) Roughness data and 3D AFM image showing line-like patterns on shiny side of aluminum foil with a RMS roughness of about 90 nm.

4. Pen holder-aligner



Figure S4: Images of Graptech PHP 32 pen holder and aligner used for proper alignment of different tips.