

# Supporting Information

## Directional liquid wicking in regular arrays of triangular posts

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This supporting information comprises two pages, and contains one figure and one table. Figure S1 provides microscopy images of wicking experiments in a micro-fluidic cross. Table S1 summarizes the measured micro-pattern geometries of all samples used in our experiments.

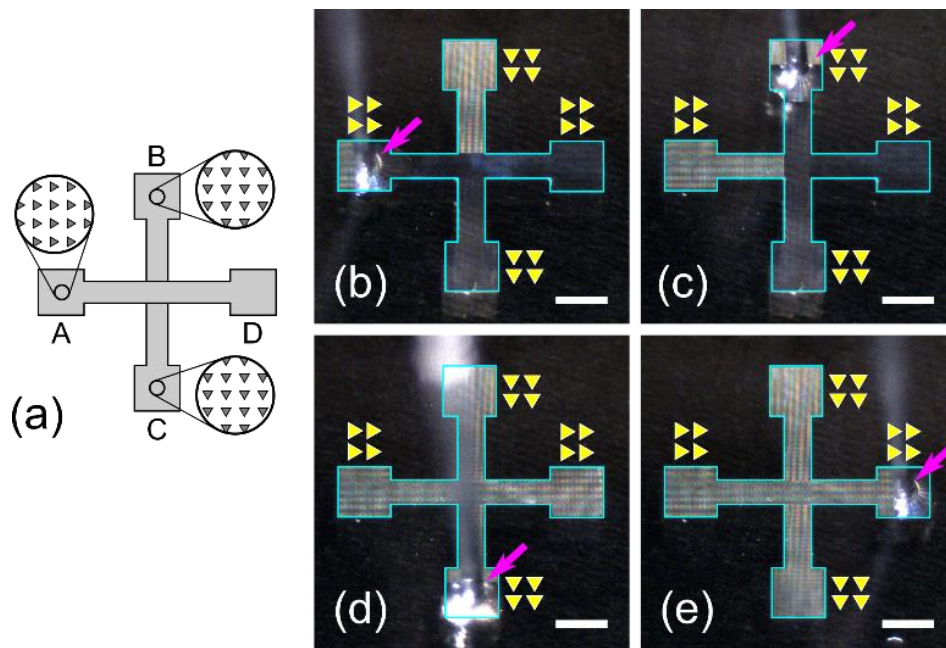


Figure S1. (a): Schematic illustration of two crossing channels with different tip orientations. The tip orientation of the triangular posts right in the junction is identical to that of position A. (b): Liquid deposited on patch A will be wicked to patch C and D but at the same time does not reach to patch B. (c): Liquid deposited on patch B will be wicked to patch C and D but at the same time does not reach to patch A. (d): Liquid deposited on patch C, the liquid forms a sessile drop and no wicking is observed. (e): Liquid deposited on patch D, the liquid forms a sessile drop and no wicking is observed. The scale bar represents 1.0 mm.

Table S1: Geometry parameters of micro-pattern and the observed directional wicking displayed in Figures of the main text and in Fig. S1 of this supporting information.

Figure	Note	w ( $\mu\text{m}$ )	c ( $\mu\text{m}$ )	r ( $\mu\text{m}$ )	h ( $\mu\text{m}$ )	LLF	VLF	AR
<b>1 (a)</b>	Confocal	18.2	39.9	34.7	47.5	0.456	0.459	2.61
<b>1 (b)</b>	Directional wicking (Tip & Side)	18.4	33.2	28.8	35.3	0.553	0.578	1.92
<b>3 (b)</b>	Non-wicking	18.7	50.8	44.0	13.2	0.367	0.377	0.71
<b>3 (d)</b>	All-directional wicking	18.6	49.8	43.3	51.7	0.374	0.379	2.78
<b>11</b>	Y-shape channel	16.4	28.6	24.7	27.1	0.575	0.606	1.65
<b>12 (a)</b>	Directional wicking (Tip)	17.4	50.9	19.6	20.7	0.342	0.840	1.19
<b>12 (b)</b>	Directional wicking (Tip and Base)	19.0	50.8	25.2	32.3	0.373	0.671	1.70
<b>S1</b>	X-shape channel	17.2	28.5	24.7	27.8	0.605	0.614	1.62