

Confinement of monolithic stationary phases in targeted regions of 3D-printed titanium devices using thermal polymerization.

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a)



b)



Figure S1. Images of the two 3D-printed in Ti 6Al-4V devices a) the direct contact (DC) device, b) the heating/cooling jacket (HCJ) device.

Table S1. Batch-to-batch (3 batches, 8 capillaries in total) and intra-batch ($n = 3$) variation of conductivity (C_h^*), dip (ΔC_0), and steepness (S_L) of monolithic stationary phases prepared in capillaries inserted in the DC device with $T_c = 19^\circ\text{C}$.

	C_h^*	ΔC_0	S_L (1/mm)
Inter-batch	0.29 ± 0.07	0.17 ± 0.08	0.19 ± 0.06
Intra-batch	0.34 ± 0.03	0.14 ± 0.09	0.20 ± 0.05

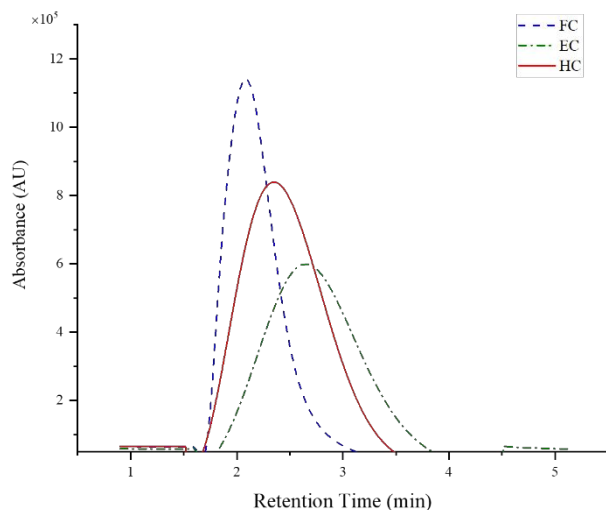
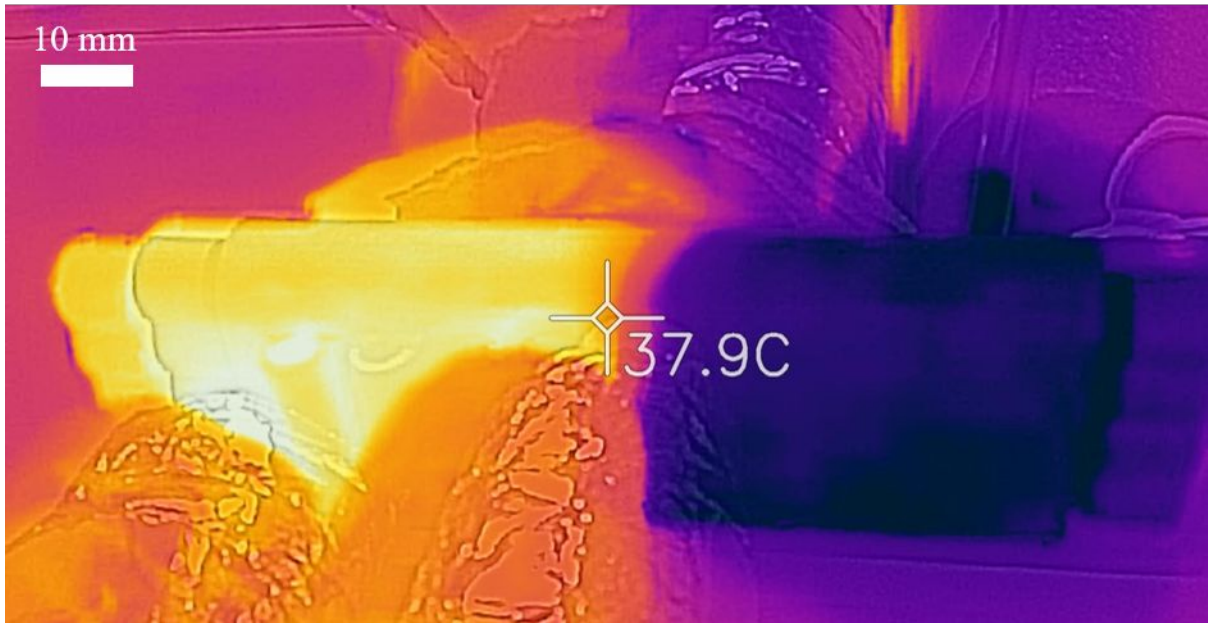


Figure S2. Chromatograms obtained from the HCJ device in the full channel (FC, blue, dashed line), empty channel (EC, green, dashed-dotted line), and half channel (HC, red, full line) by isocratic elution of KI (t_0 marker) in water at a flow rate of $35 \mu\text{L}/\text{min}$.

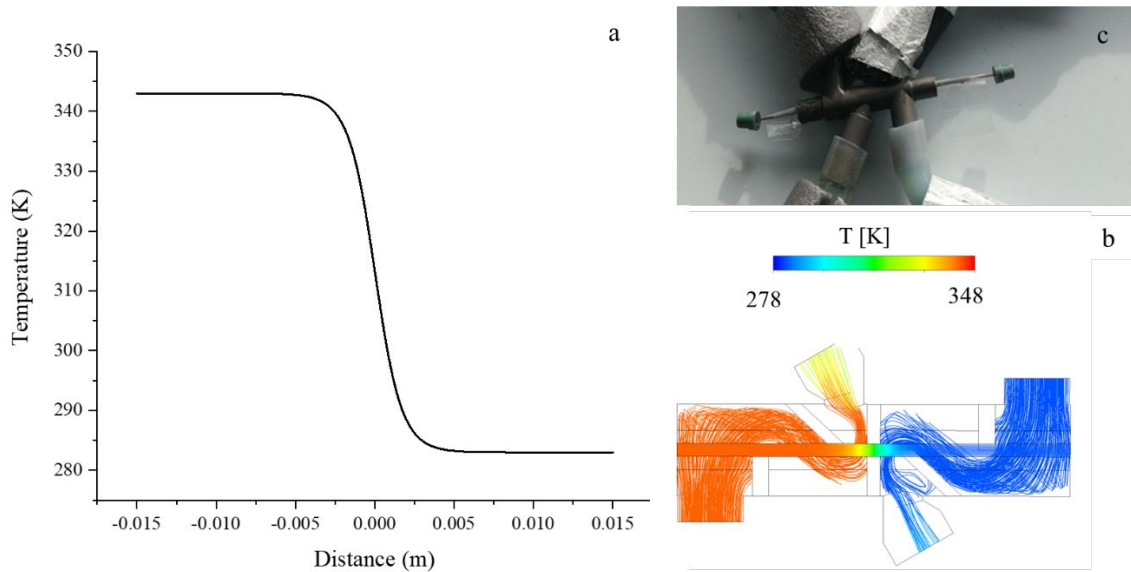
Table S2. Intra-batch variation of retention times of the four-protein mixture separated on monolithic stationary phases prepared in the HCJ device with $T_c = 10^\circ\text{C}$.

Protein	Channel (min)			Average (min)	RSD (%)
	1	2	3		
CC	7.2	6.3	6.2	6.6	6.7
Lys	8.9	8.0	7.9	8.2	5.7
Cas	11.0	10.1	10.0	10.4	4.5
CA	11.5	11.2	10.4	11.0	4.2



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Figure S3. Infrared image of the HCJ device with $T_C = 10^\circ\text{C}$ (right) and $T_H = 70^\circ\text{C}$ (left). A temperature gradient is visible between the two jackets.



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Figure S4. a) Temperature profile across the main channel's centerline of the single channel HCJ device; b) temperature profile from 70°C to 10°C obtained through computational fluid dynamic simulations (ANSYS 17.2) within a single channel prototype of the HCJ device; c) 3D-printed in titanium single channel HCJ prototype.