Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Formation of liquid rope coils in a coaxial microfluidic device

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Table S1. Amplitude of coiled inner liquid threads.

	Flow Rate	Sodium Citrate 200 mM	Sodium Citrate 0 mM
$CaCl_2$ 100 mM	Q_1 = 10 µL/min, Q_2 = 100 µL/min	326 ± 3 µm	543 ± 6 µm
	Q_1 = 10 µL/min, Q_2 = 50 µL/min	366 ± 10 µm	709 ± 4 µm
$CaCl_2$ 0 mM	Q_1 = 10 µL/min, Q_2 = 100 µL/min	320 ± 7 µm	N/A
	Q_1 = 10 µL/min, Q_2 = 50 µL/min	370 ± 3 µm	N/A

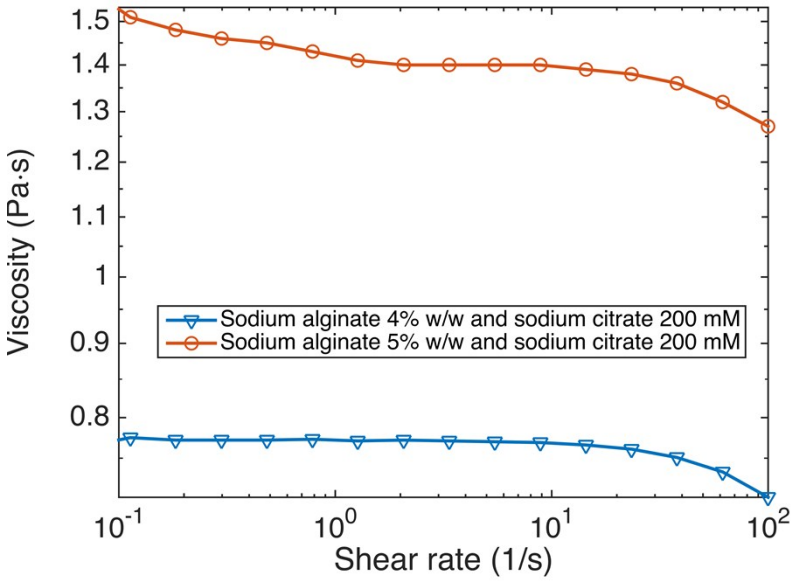

Fig. S1 Viscosity (Pa·s) of aqueous solution of sodium alginate (4, 5% w/w) and sodium citrate (200 mM) as a function of shear rate (1/s).

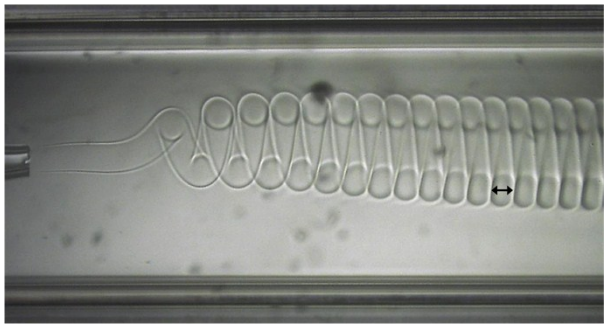

Fig. S2 Short axis of the cross section of the liquid thread.

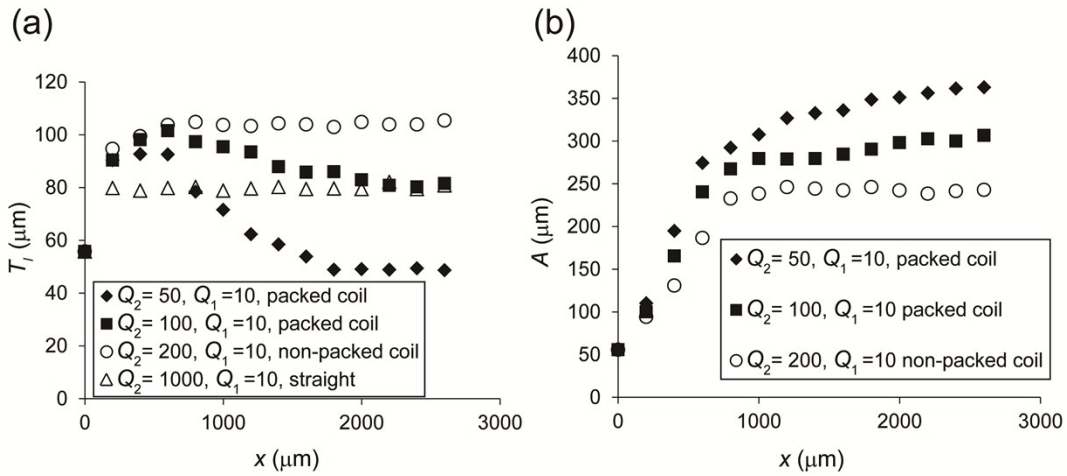

Fig. S3 Geometric measurements of the liquid threads. (a) The thickness of the liquid thread (inner flow width) and (b) amplitude of the inner viscous threads. The diameter of the inner capillary used is 56 μm.

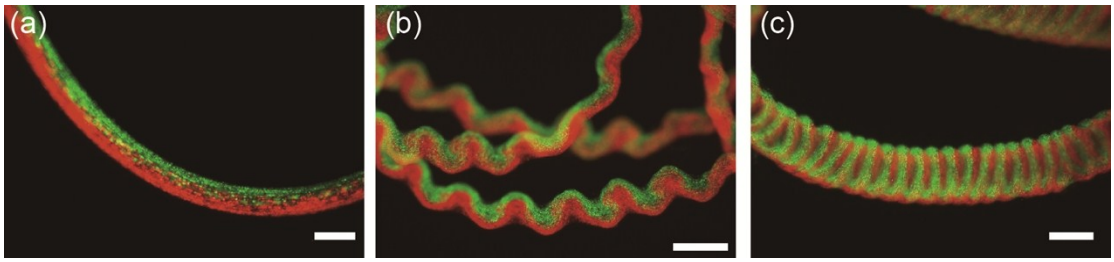

Fig. S4 Janus hydrogel microfibers. (a) Straight, (b) folded, and (d) packed coiled tubular microfibers. Scale bars are 200 μm.