ELECTRONIC SUPPLEMENTARY INFORMATION

Microscale separation of immiscible liquids using a porous capillary

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Tabulated data for Figures 3a and 3b

For each set of flow rates, measurements were repeated three times in sequence. Eluent was collected from the separator into pre-weighed vials for five minutes (unless otherwise stated) and then reweighed to determine the mass of eluent. Measured masses were accurate to ± 10 mg. The expected mass of eluent (for 100 % recovery) was determined by multiplying the volumetric injection rate of water by the collection time, taking the density of water to be 1 gcm^{-3}. Photographs of the eluent vials from each set of experiments are shown below. No PFPE is visible in any of the images, indicating full depletion of the carrier fluid in all cases.

Table SI 1 *Influence of total flow rate on recovery efficiency at a constant PFPE:Water ratio of 1:1 (see Figure 3a)*

Expt.	F_{total} (F_{PFPE}:F_{water}) / µL min^{-1}	Repeat No.	Mass of Vial / g	Mass of Vial + Eluent / g	Mass of Eluent / g	Expected Mass of Eluent / g	Recovery Efficiency / %
A	1600 (800:800)	1	6.61	10.60	3.99	4.00	99.8
		2	6.67	10.66	3.99		99.8
		3	6.44	10.43	3.99		99.8
B	800 (400:400)	1	6.62	8.62	2.00	2.00	100
		2	6.62	8.62	2.00		100
		3	6.37	8.37	2.00		100
C	400 (200:200)	1	6.43	7.43	1.00	1.00	100
		2	6.42	7.42	1.00		100
		3	6.43	7.43	1.00		100
D	200 (100:100)	1	6.53	7.03	0.50	0.50	100
		2	6.39	6.89	0.50		100
		3	6.37	6.87	0.50		100
E	100 (50:50)	1	6.37	6.62	0.25	0.25	100
		2	6.58	6.83	0.25		100
		3	6.60	6.85	0.25		100

Table SI 2 *Influence of PFPE:water flow ratio on the recovery efficiency at a constant total flow rate of 200 µL min^{-1} (see Figure 3b)*

Expt. Code	F_{total} (F_{PFPE}:F_{water}) / µL min^{-1}	Repeat #	Vial / g	Vial + Eluent / g	Eluent / g	Expected Mass of Eluent / g	Recovery Efficiency / %
F	166.7:33.3	1	6.39	7.22	0.83	0.83	100
		2	6.45	7.28	0.83		100
		3	6.35	7.18	0.83		100
G	133.3:66.7	1	6.37	7.04	0.67	0.67	100
		2	6.40	7.06	0.66		99
		3	6.35	7.01	0.66		99
H	67.7:133.3	1	6.39	6.72	0.33	0.33	100
		2	6.39	6.72	0.33		100
		3	6.36	6.69	0.33		100
I*	33.3:166.7	1	6.38	7.04	0.66	0.67	99
		2	6.28	6.94	0.66		99
		3	6.36	7.02	0.66		99
J*	18.2:181.8	1	6.39	6.75	0.36	0.36	100
		2	6.42	6.78	0.36		100
		3	6.56	6.92	0.36		100
K (water only)	0:200	1	6.47	7.47	1.00	1.00	100
		2	6.44	7.44	1.00		100
		3	6.57	7.57	1.00		100
L (PFPE only)	200:0	1	6.64	6.64	0.00	0.00	n/a
		2	6.66	6.66	0.00		n/a
		3	6.45	6.45	0.00		n/a

* due to the low volumetric injection rates of water used in these experiments, the collection time was increased to 20 minutes.

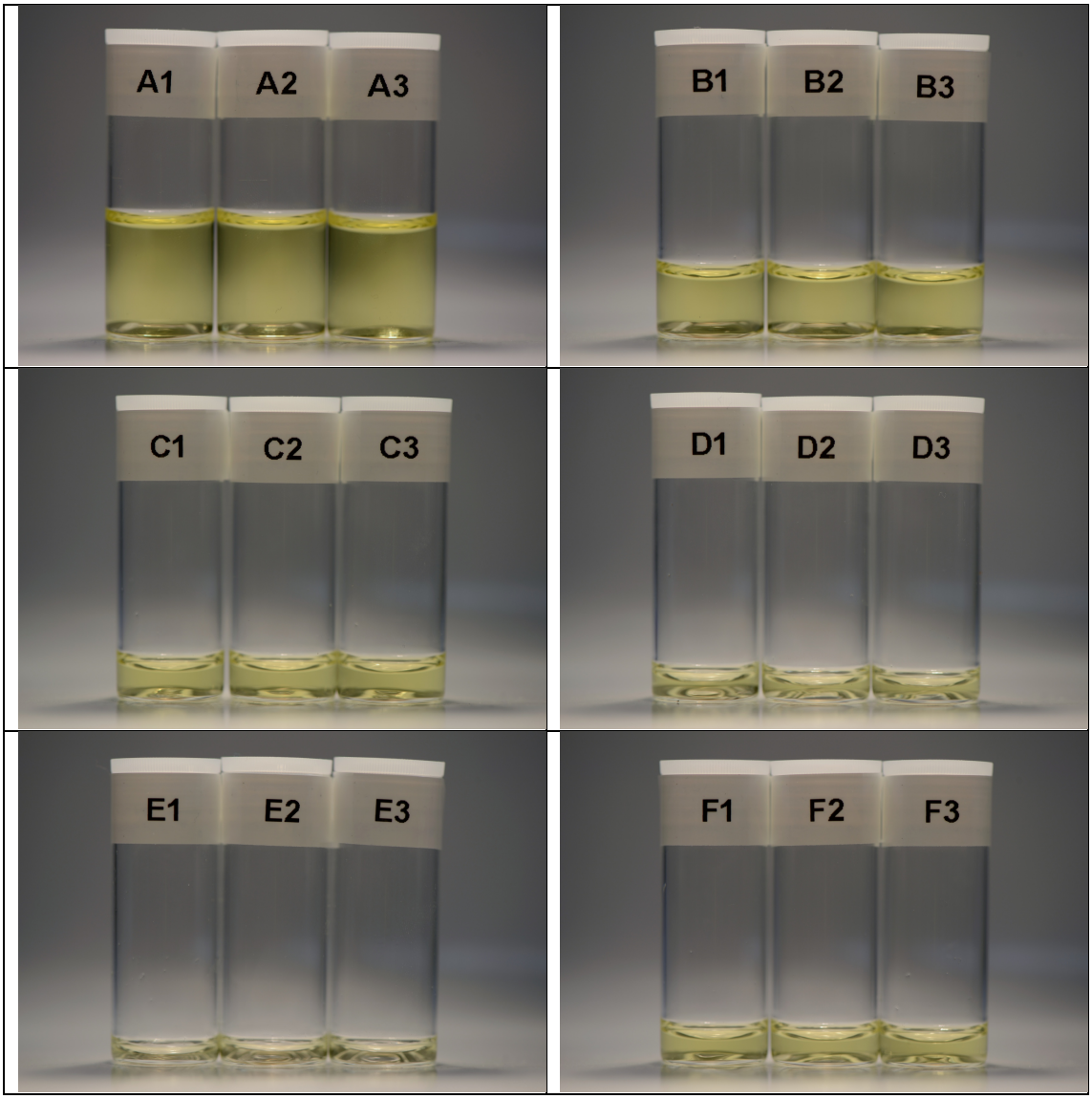

Fig. S 1 Images of the eluent for experiments A to F

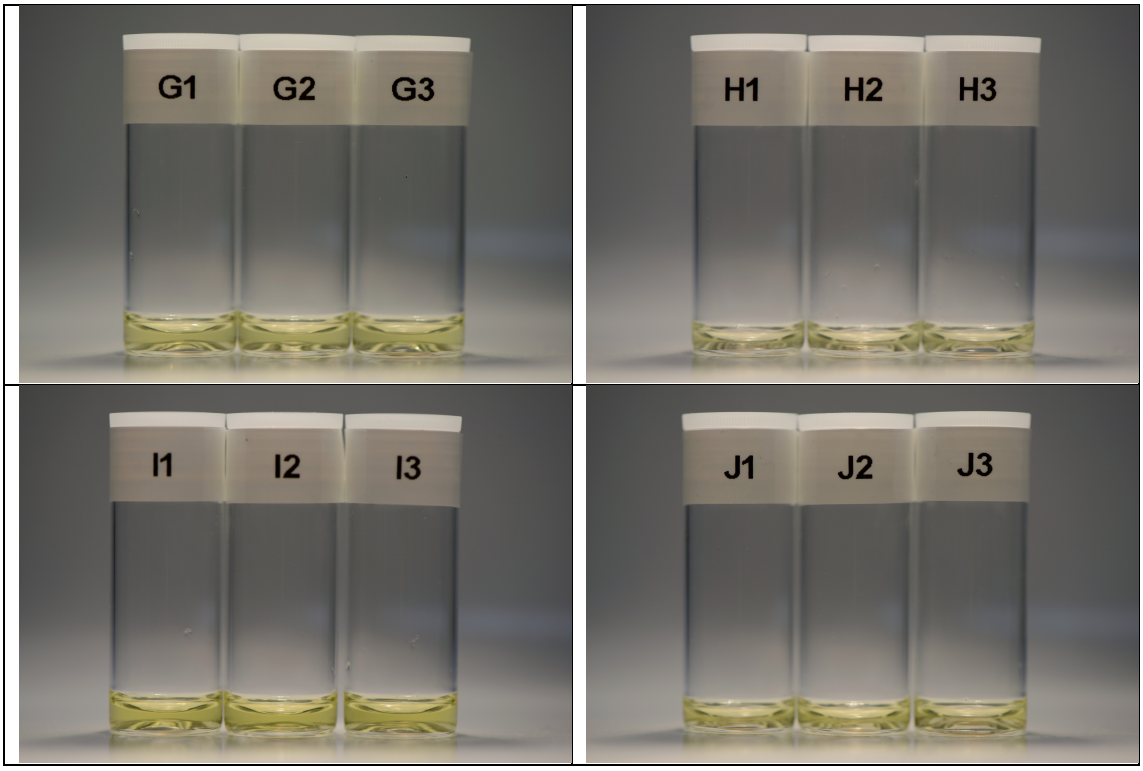

Fig. S 2 Images of the eluent for experiments G to J