

Supplementary Material (ESI) for Lab on a Chip  
This journal is © The Royal Society of Chemistry 2016

## **Spontaneous Transfer of Droplets across Microfluidic Laminar Interfaces**

### **Supplementary material**

**Nan-Nan Deng,<sup>a‡</sup> Wei Wang,<sup>ab</sup> Xiao-Jie Ju,<sup>ab</sup> Rui Xie,<sup>ab</sup> and Liang-Yin Chu<sup>\*abc</sup>**

<sup>a</sup> *School of Chemical Engineering, Sichuan University, Chengdu, Sichuan, 610065, China.*  
E-mail: chuly@scu.edu.cn (L.-Y. Chu); Fax & Tel: +86 28 8546 0682

<sup>b</sup> *State Key Laboratory of Polymer Materials Engineering, Sichuan University, Chengdu, Sichuan, 610065, China*

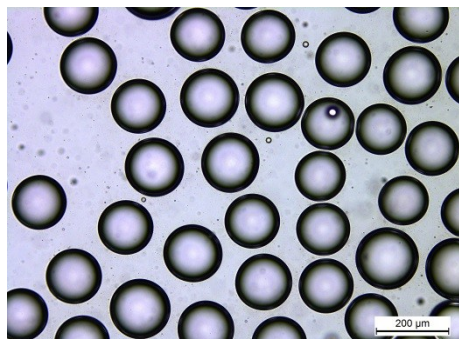
<sup>c</sup> *Jiangsu National Synergetic Innovation Center for Advanced Materials (SICAM), Nanjing, Jiangsu 211816, China.*

<sup>‡</sup>*Present address: Institute for Molecules and Materials, Radboud University, Heyendaalseweg 135, 6525AJ, Nijmegen, The Netherlands.*

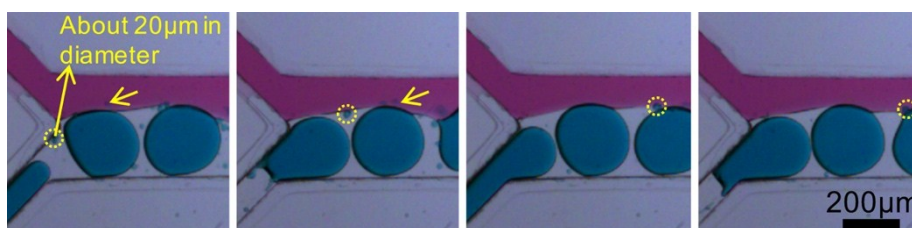
**Part I. Supplementary Figures S1-S3.**

**Part II. Supplementary Movies S1-S5.**

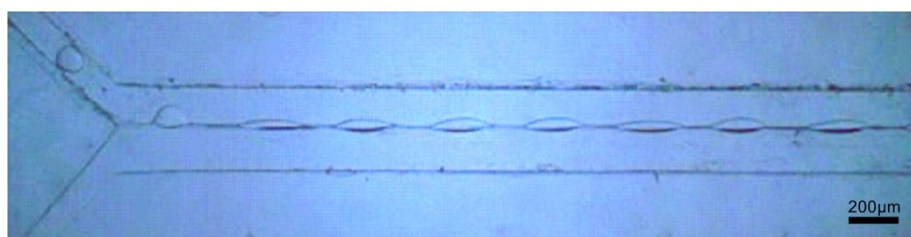
## Part I. Supplementary Figures S1-S3:



**Fig. S1.** Image of collected droplets after transfer laminar interfaces.



**Fig. S2.** Small satellite water droplets of about 20  $\mu\text{m}$  in diameter are capable of transferring the oil-oil interfaces.



**Fig. S3.** Movements of water droplets at oil/oil laminar interfaces: water drops partially wet the interfaces as fusiform drops.

## **Part II. Supplementary Movies S1-S5:**

**Supplementary Movie S1.** Transfer of water droplets across oil-oil laminar interface.

**Supplementary Movie S2.** Transfer of oil droplets across oil-water laminar interface.

**Supplementary Movie S3.** Selective transfer of water droplets across oil-oil laminar interface.

**Supplementary Movie S4.** Transfer of water droplets across oil-water interface to prepare polymersomes.

**Supplementary Movie S5.** Transfer of water droplets across oil-oil laminar interface to prepare cell-loaded microgels.