Supporting Information for Lab On a Chip

Controllable Gas/Liquid/Liquid Double Emulsions in a dual-coaxial Microfluidic Device†

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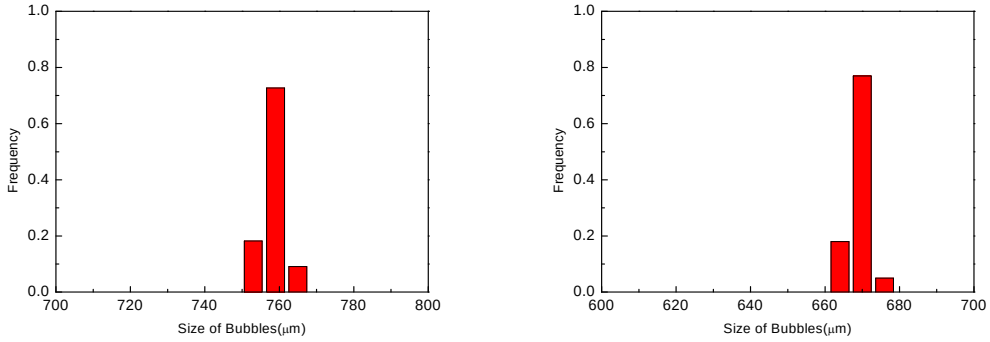

Fig. S1. Size distribution of encapsulated bubbles: (a) Q_i=80 μL/min ,Q_m= 240 μL/min, Q_o= 400 μL/min. (b) Q_i=80 μL/min ,Q_m= 300 μL/min, Q_o= 400 μL/min.

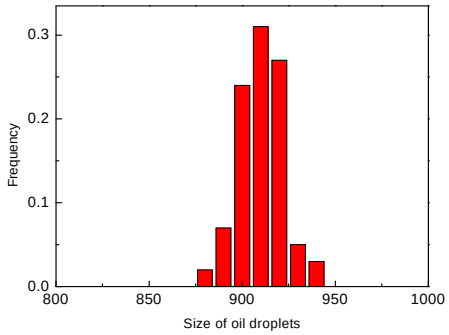

Fig. S2. Size distribution of oil droplets at Q_i=80 μL/min ,Q_m= 300 μL/min, Q_o= 600 μL/min.

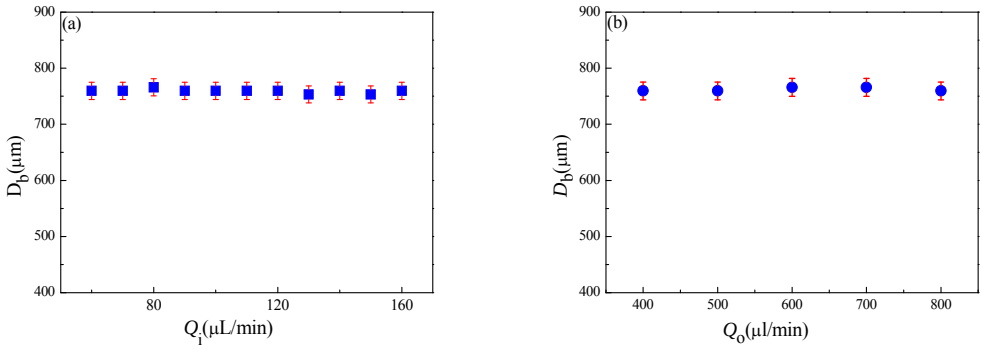

Fig. S3. The effects of the flow rates of the inner, outer phases on the size of microbubbles. (a) The effect of inner phase flow rate on microbubble size. Q_m= 240 μL/min, Q_o= 400 μL/min. (b) The effect of outer phase flow rate on microbubble size. Q_i=80 μL/min, Q_m= 240 μL/min.

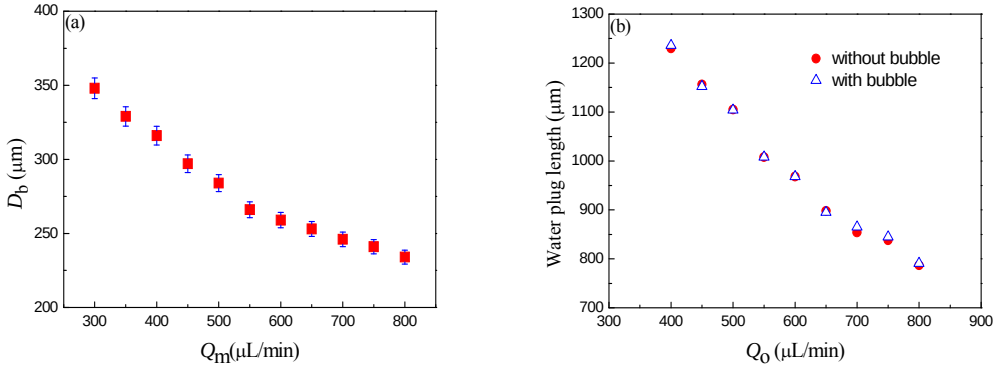

Fig. S4 The effects of the flow rates of the middle and outer phases on the microbubbles and plug size. (a) The effect of inner phase flow rate on microbubble size. Q_m= 400 μL/min, Q_o= 400 μL/min. (b) The effect of outer phase flow rate on the aqueous plug length. (Q_i+Q_m) = 400 μL/min.