

Supporting Information

Microfluidic Systems For Manufacturing of Microparticle-Based Drug Delivery Systems: Design, Construction and Operation

Nihan Yonet-Tanyeri¹, Maher Amer², Stephen C. Balmert², Emrullah Korkmaz^{2,3}, Louis D. Falot Jr^{2,3,4,5}, Steven R. Little^{1,3,5,6,7,8,}*

¹Department of Chemical Engineering, University of Pittsburgh, 940 Benedum Hall, 3700 O'Hara Street, Pittsburgh, Pennsylvania 15261, United States

²Department of Dermatology, University of Pittsburgh School of Medicine, W1150 Biomedical Science Tower, 200 Lothrop Street, Pittsburgh, Pennsylvania 15213, United States

³Department of Bioengineering, University of Pittsburgh, Pittsburgh, Pennsylvania 15261, United States

⁴Clinical and Translational Science Institute, University of Pittsburgh, Pittsburgh, Pennsylvania 15213, United States

⁵The McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, Pennsylvania 15219, United States

⁶Department of Immunology, University of Pittsburgh, Pittsburgh, Pennsylvania 15213, United States

⁷Department of Ophthalmology, University of Pittsburgh, Pittsburgh, Pennsylvania 15213, United States

⁸Department of Pharmaceutical Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania 15261, United States

* Corresponding author: srlittle@pitt.edu

Video SI 1: 2% PLGA solution forms droplets in the dripping flow regime. Droplet generation parameters: continuous phase flow rate of 50 $\mu\text{L}/\text{min}$ and dispersed phase flow rate of 8 $\mu\text{L}/\text{min}$.

Video SI 2: 2% PLGA solution forms jetting flow regime. Droplet generation parameters: continuous phase flow rate of 100 $\mu\text{L}/\text{min}$ and dispersed phase flow rate of 8 $\mu\text{L}/\text{min}$.

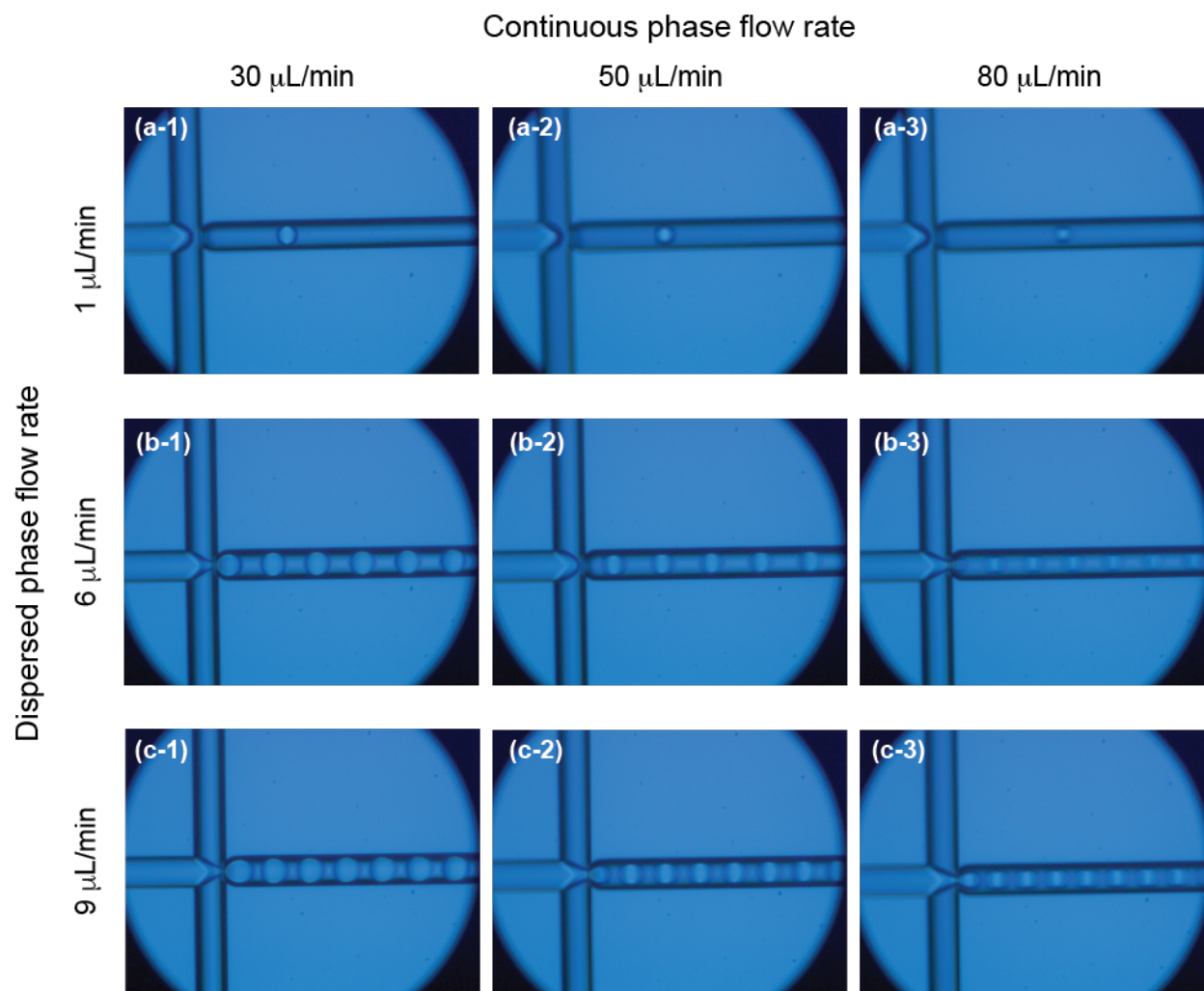


Figure SI 1: PLGA droplet size and frequency change as the flow rates changes. Droplet generation parameters: 2% PLGA solution with flow rates of 1 $\mu\text{L}/\text{min}$ (**a-1, a-2, a-3**), 6 $\mu\text{L}/\text{min}$ (**b-1, b-2, b-3**), or 9 $\mu\text{L}/\text{min}$ (**c-1, c-2, c-3**) and continuous phase flow rates of 30 $\mu\text{L}/\text{min}$ (**a-1, b-1, c-1**), 50 $\mu\text{L}/\text{min}$ (**a-2, b-2, c-2**), or 80 $\mu\text{L}/\text{min}$ (**a-3, b-3, c-3**). Width of the channel is 100 μm .