

# Supporting Information for: Embedding liquid lasers within or around aqueous microfluidic droplets

*Lu Zheng<sup>1</sup>, Min Zhi<sup>2</sup>, Yinthai Chan<sup>2</sup> and Saif A. Khan<sup>1\*</sup>*

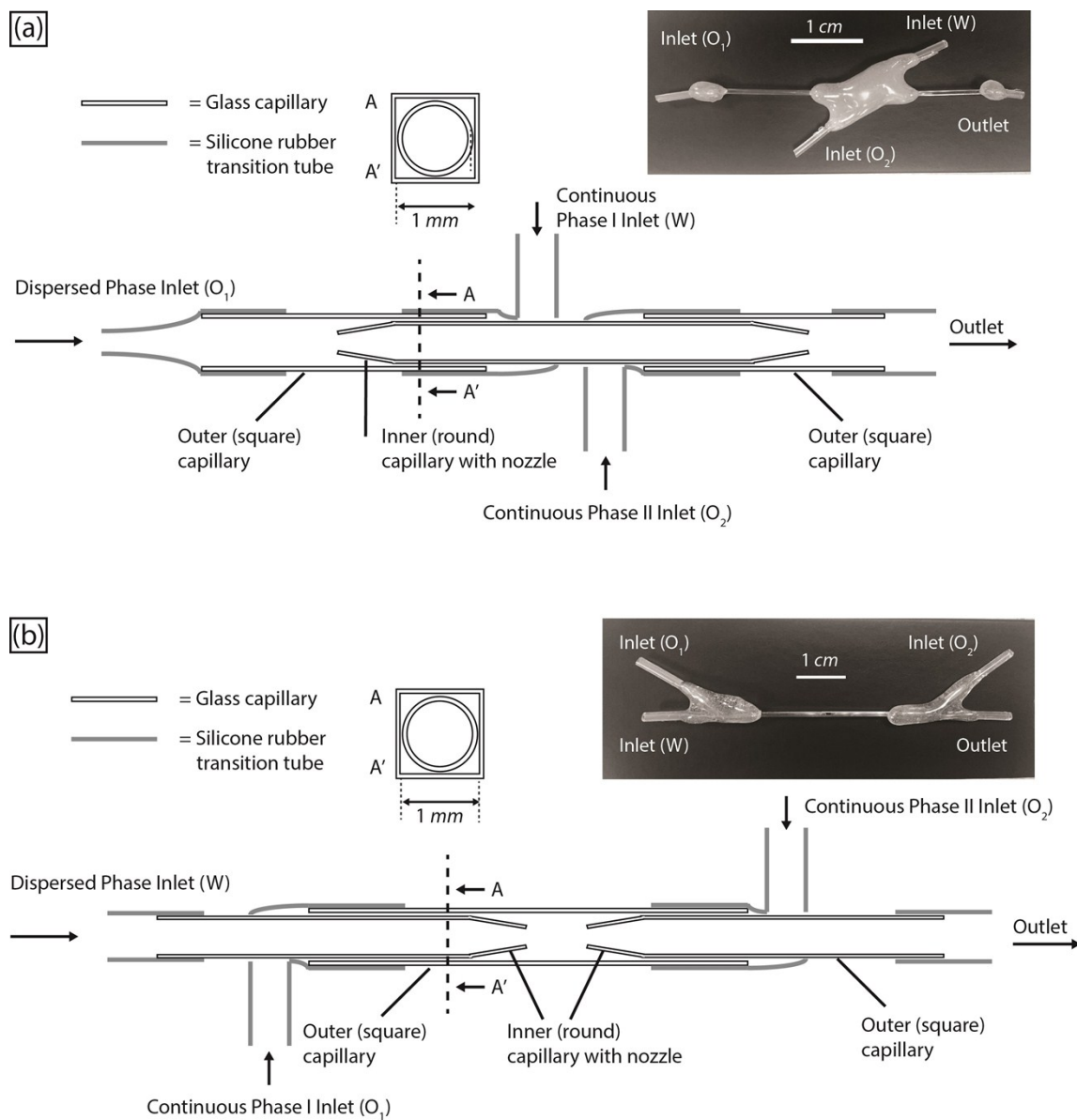
<sup>1</sup>Department of Chemical and Biomolecular Engineering, 3 Engineering Drive 3, National  
University of Singapore, Singapore 117582, Singapore

<sup>2</sup>Department of Chemistry, 3 Science Drive 3, National University of Singapore, Singapore  
117543, Singapore

\*Corresponding Author. Email: saifkhan@nus.edu.sg

KEYWORDS: Droplet lasers, Droplet microfluidics, Whispering Gallery Mode, Optical  
resonances, Biological/chemical sensing

***Fabrication of Capillary Microfluidic Devices.*** A schematic of the assembly and photographs of the capillary microfluidic devices used in our experiments is provided in Figure S1. VitroCom Inc. Square (ID=1 mm) and round (ID=0.7 mm, OD=0.87 mm) borosilicate capillaries were purchased from Arte glass associates Co. Ltd., Japan. A micropipette puller (Sutter Instruments P-97) was used to pull the round capillaries. Pulled capillaries were broken manually to produce tapered capillaries with different nozzle diameters. Teflon tubing (VICI, OD=1/16 in, ID=0.1 in) was used to connect the capillary device to the syringes containing the continuous and dispersed phases (CP and DP, respectively). The same were used as outlets. Silicone rubber transition tubes (Saint Gobain, ID=1 mm, OD=3 mm) were used to connect the inlets to the square capillaries. Fittings were purchased from Upchurch Scientific. DEVCON 5 min Epoxy was used to seal the connection between the square capillaries and the transition tubes.



**Figure S1.** Schematics and photographs of the capillary microfluidic devices used in our experiments; (a) embedded laser droplets and (b) wrapped laser shells.