

Supporting Information

An acoustofluidic micromixer via bubble inception and cavitation from microchannel sidewalls

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Mixing performance in the x-z plane

We characterize mixing performance of the acoustofluidic micromixer along the z-direction. For these experiments, the PEG solution with a viscosity 65.3 mPa.s was injected from inlet 2, and the PEG solution with a viscosity of 34.2 mPa.s was injected from inlet 1. Snapshots from the bottom, middle, and top planes were captured before and after the cavitation mixing started. The intensity profiles were plotted to prove homogenous mixing along the z-direction in the channel (Fig. S-1).

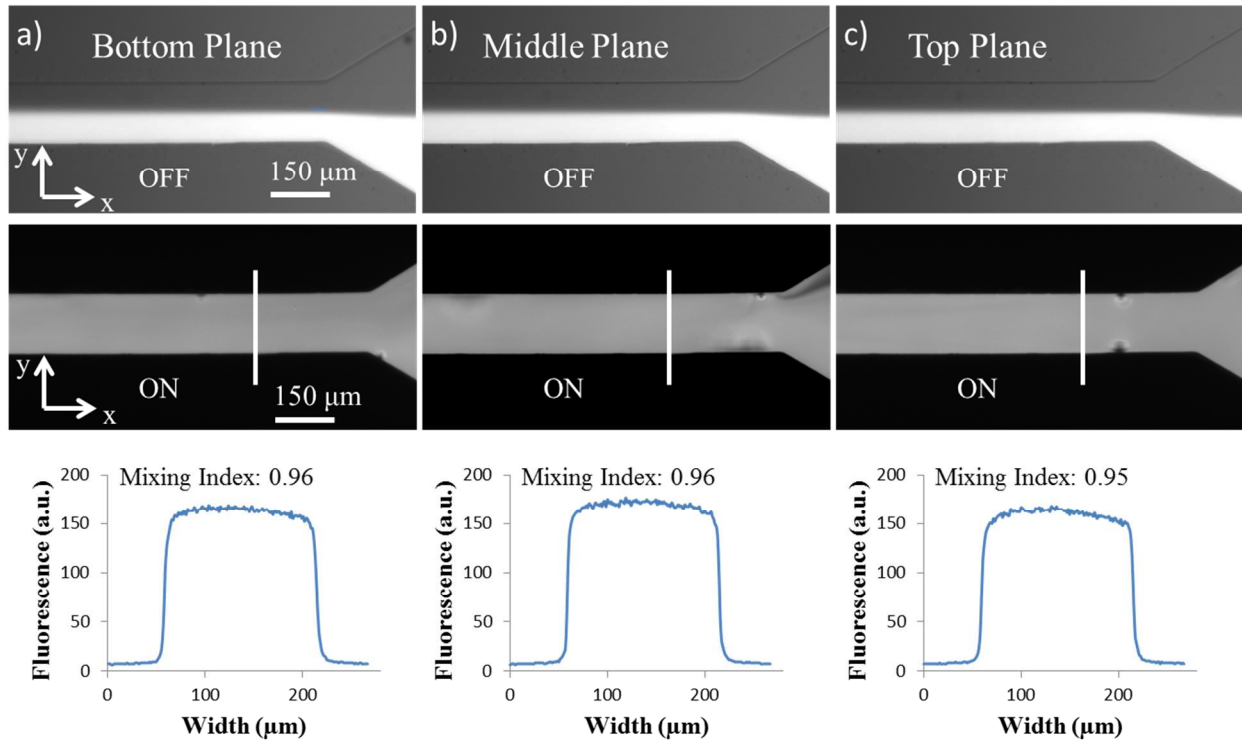


Figure S-1. Mixing homogeneity along the z-axis. PEG solution with a viscosity 65.3 mPa.s was injected from inlet 2, and the PEG solution with a viscosity of 34.2 mPa.s was injected from inlet 1. The top panel shows the laminar flow of the fluids in the a) bottom, b) middle, and c) top planes of the microfluidic channel (when the piezoelectric transducer was off). The middle panel shows the mixed state of the fluids with the bubble inception and cavitations from the sidewall (when the piezoelectric transducer was on). The bottom panel shows the fluorescent intensity profiles along the white line in the middle panel along with the calculated mixing indexes.