

Acoustofluidic Micro-Pipette for single cell Trajectory Control: Supplementary Information (SI)

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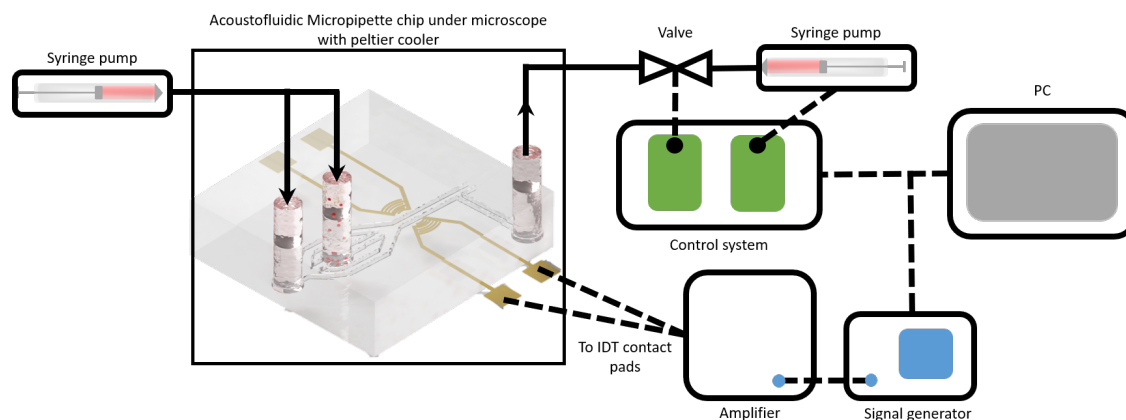


Fig. S1 Schematic diagram depicting the components external to the acoustofluidic micropipette chip. A control system is used to trigger the FIDT actuation, the extraction syringe pump and the corresponding valve.

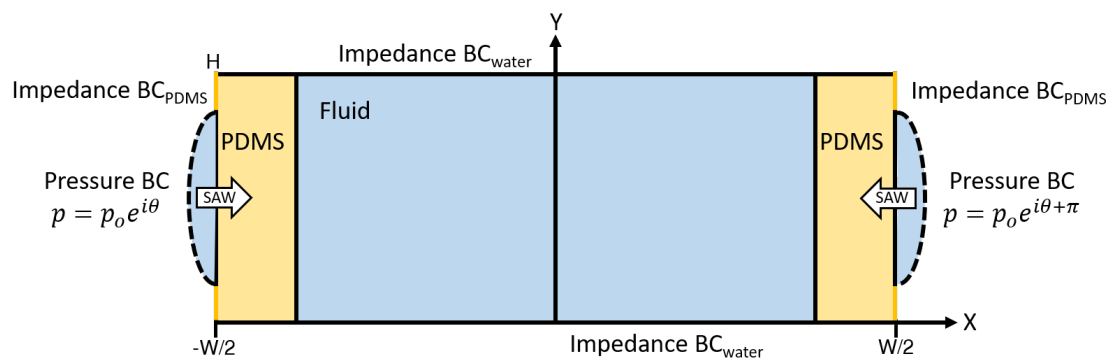


Fig. S2 Schematic of the computational domain with the relevant boundary conditions.

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† ESI Supplementary Information.

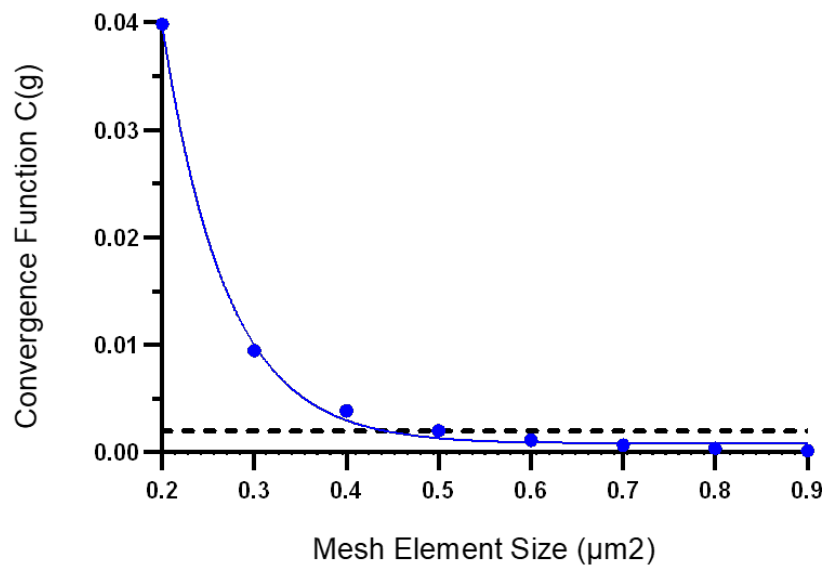


Fig. S3 Mesh convergence analysis carried out to satisfy the convergence $C(g) = 0.002$ (depicted by the dashed black line). A maximum mesh size of $0.5 \mu\text{m}$ is required here, a mesh size of $0.6 \mu\text{m}$ was used.

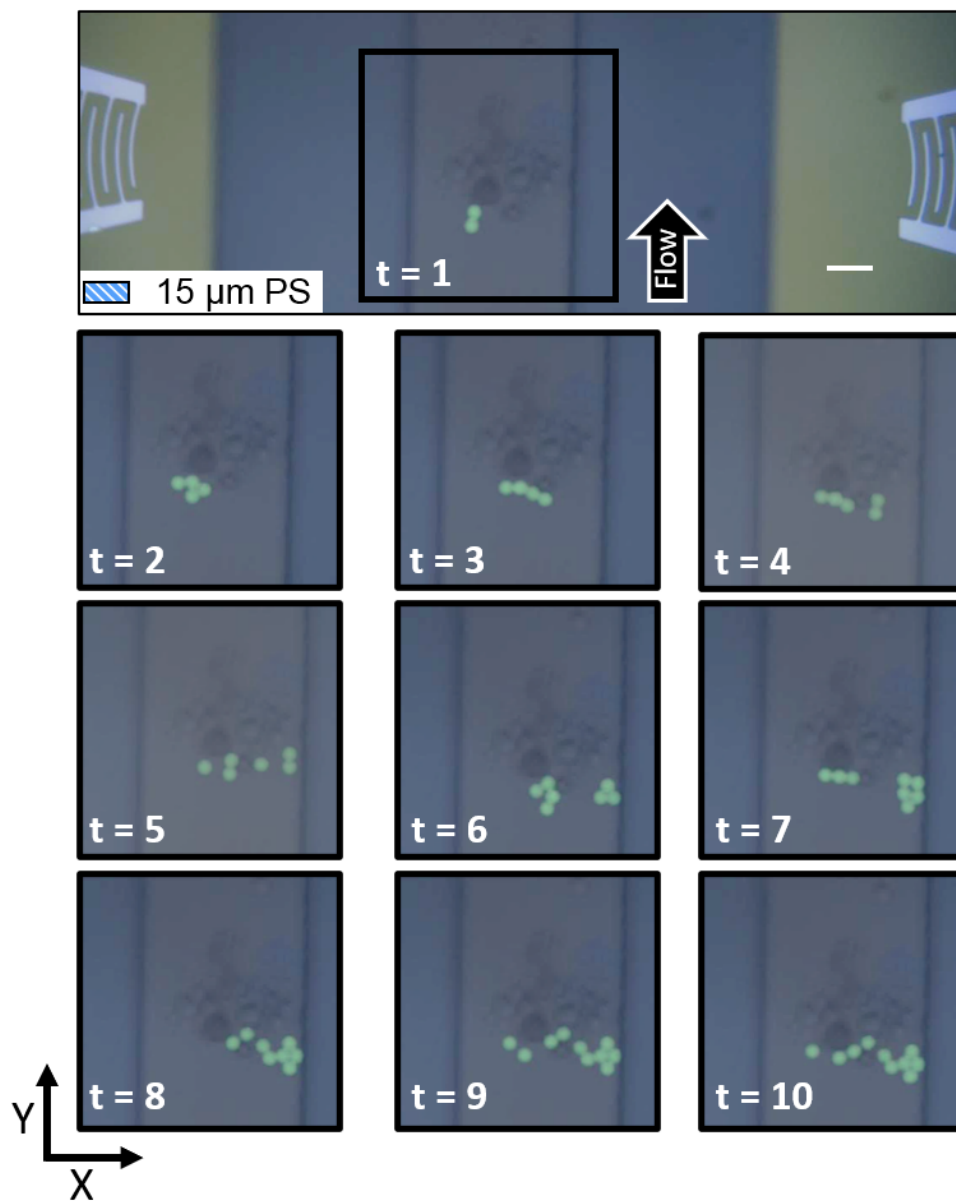


Fig. S4 Time-lapsed images of 15 μm particles approaching and becoming trapped, within the trapping region with the optimum flow rates of $1 \mu\text{l min}^{-1}$ for the particles and $2 \mu\text{l min}^{-1}$ for the sheath flow at the optimum power of 70 mW. The scale bar is 50 μm .

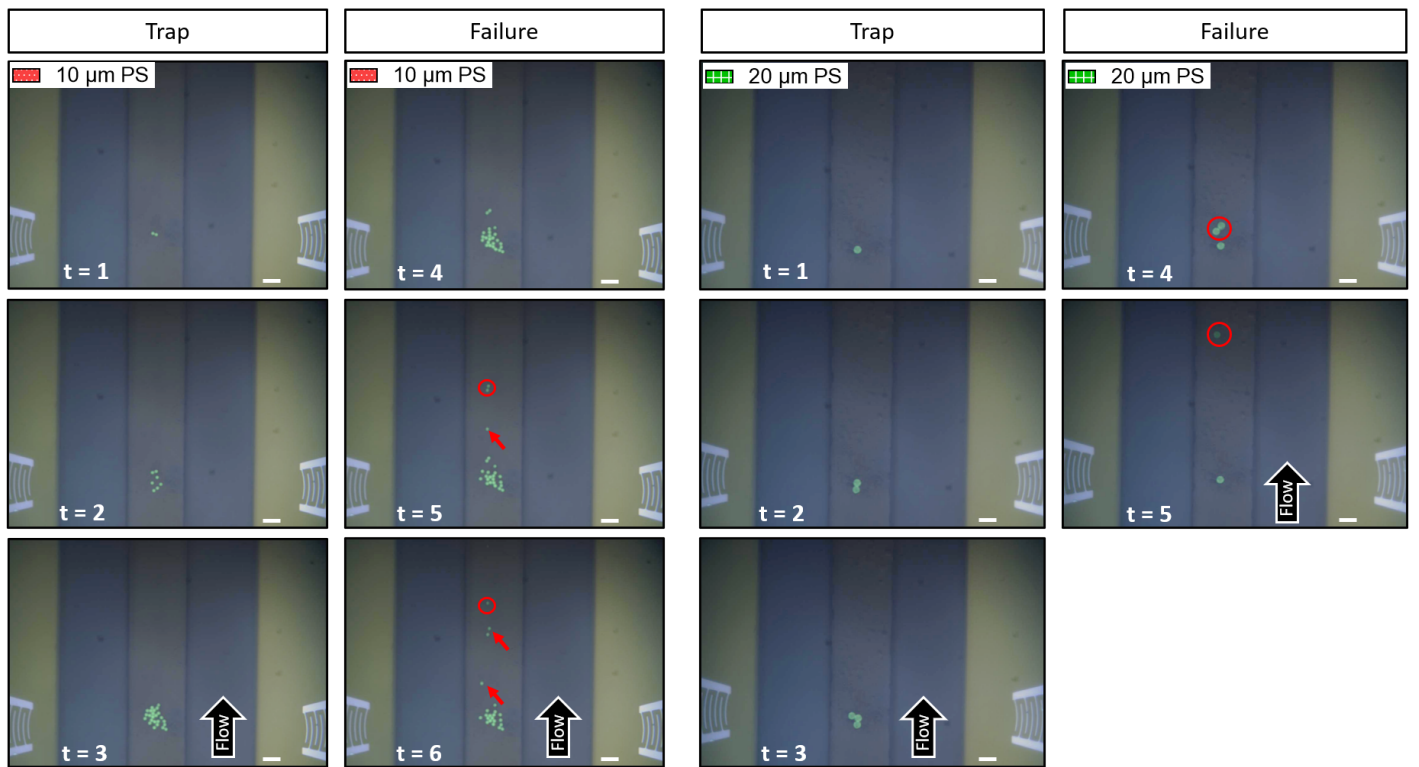


Fig. S5 Time-lapsed images of particle cluster formation and unwanted release (failure) at a low applied power of 10 mW for 10 μm and 20 μm particles. Constant flow rates of 1 μl min⁻¹ for the particles and 2 μl min⁻¹ for the sheath flow were applied. The scale bar is 50 μm.