Supporting Information

Drag Controlled Formation of Polymeric Colloids with Optical Traps

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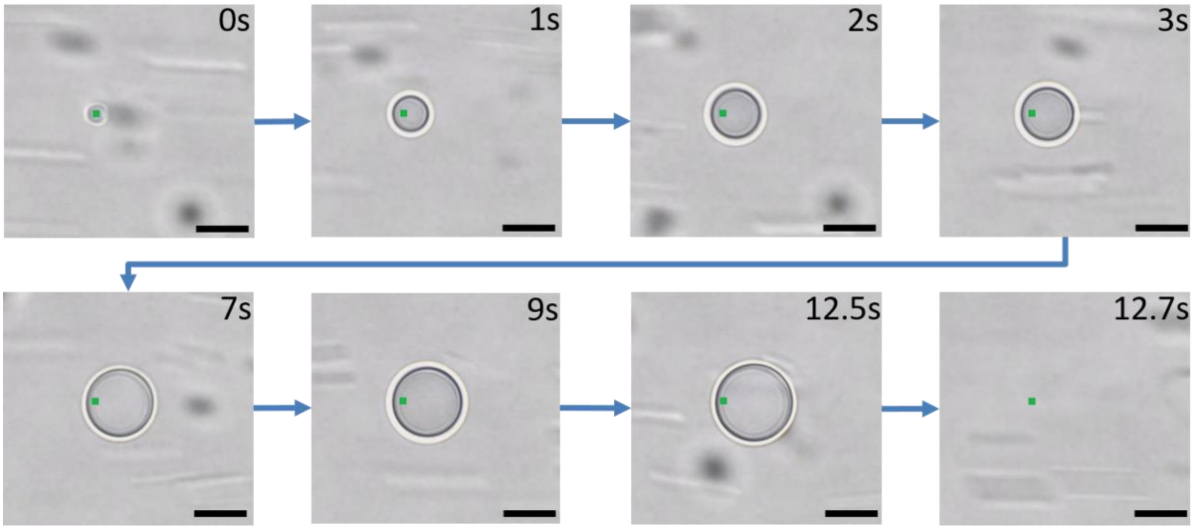

Fig. S1*: A series of bright field micrographs showing the growth and release of a colloid while streaming the solution at 1370 ± 50 μm/s with a laser intensity of 154 mW. We define t=0 seconds as the first sign of trapping. The green dot represents the center of the optical trap. Scale bars are 5 μm.*

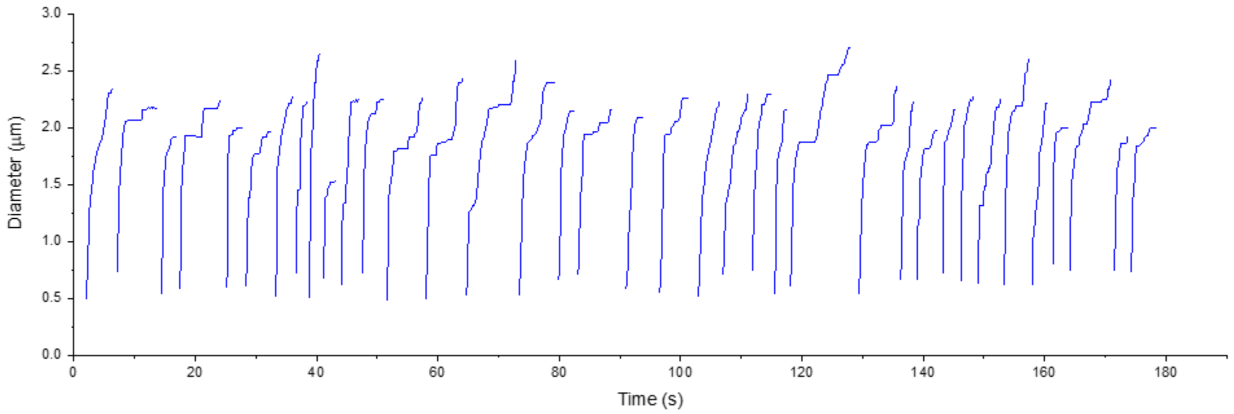

***Fig. S2**: Diameter of PDMS colloids in a single trap as a function of time, while streaming the solution at 1370 ± 50 µm/s with laser power of 76 mW. Once the drag force overcomes the optical gradient force, the colloid is released, and the process starts over.*

In order to calculate the trapping force, we followed the work of Nieminen et al. ("Optical tweezers computational toolbox." J. Opt. Pure Appl. Opt. 9, S196–S203, 2007). We considered the most extreme case were the flow is the highest we reported (1530µm/s) and the laser power was the lowest reported (35mW). Even in this case, the smallest particle that we report trapping (300nm radius) has a trapping force in the X direction significantly larger than the drag force (16.9 pN trapping force vs. 7.8 pN drag force).

Video SV1 - Growth and release of a colloids while streaming the solution at 1530±50 µm/s with laser power of 94 mW. The laser is focused to the center of the capillary – 50 µm from the bottom and top glasses.