Supplementary Materials

Figure S1. (a) Experimental setup showing the microfluidic chip mounted under the microscope; (b) world-to-chip interface: Bonded port connectors (Labsmith CapTite, Virum, Denmark) glued onto the backside of the silicon device, screwed-in one-piece fittings (Labsmith CapTite) connect the PEEK tubing with bonded port connector and Luer-Lock™ adapter (Labsmith CapTite).
Figure S2. Comparison of fluorescent particle streamline micrographs at (a,b) 100 μL/min, (c,d) 200 μL/min, (e,f) 300 μL/min. The left column shows a plain backward-facing step channel (step height $h = 400 \, \mu m$), whereas the right column shows a sudden expansion channel featuring the optimized corner structure (step height $h = 400 \, \mu m$, $\alpha = -30^\circ$).