

Supplementary Materials: A One-Square-Millimeter Compact Hollow Structure for Microfluidic Pumping on an All-Glass Chip

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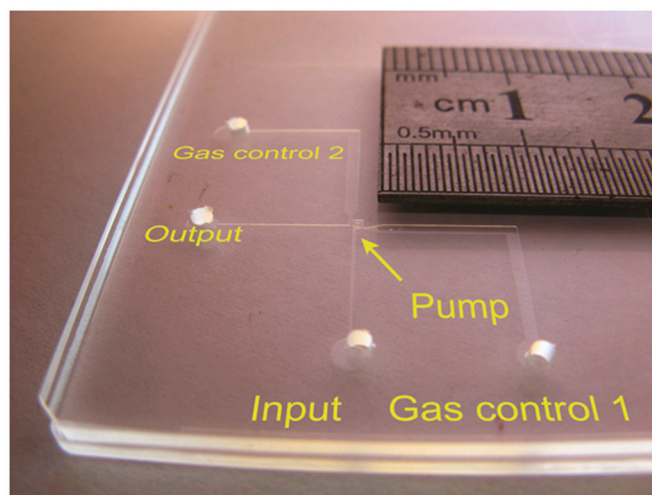


Figure S1. A one-square-millimeter, built-in, all-glass, active microfluidic pump. The pump controlled by digital gas pressure (gas control 1 and gas control 2) pushes liquid from the input channel into the output channel.

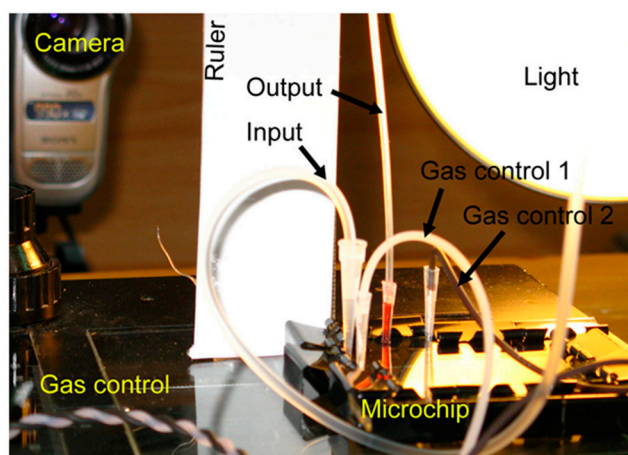


Figure S2. The pump test platform. The digital gas pressure command sequence is conducted to the microchip (on a microscopic platform) using two plastic tubes (white tube for gas control 1 and black tube for gas control 2). Water from a bottle (fixed water level of 26.5 mm's high, see Video S6) is conducted to the input channel of the microchip. The pump output is conducted to a plastic tube upright beside a ruler. The water level in the output tube is labelled by red ink and recorded by a video camera for post pump output measurements.

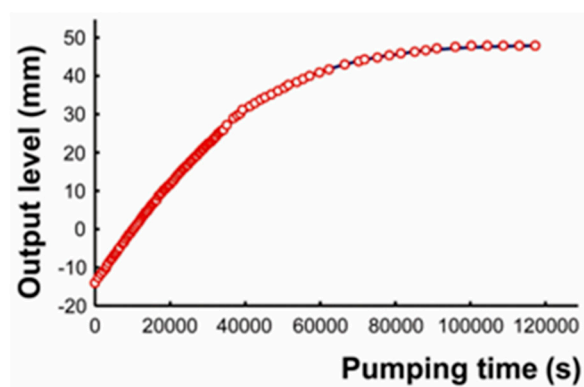


Figure S3. Data collected in the experiments shown in Figure S2. The pump's head pressure and its volumetric pump output in Figure 4 is calculated by the differential output level with time.