

Supplementary Information

Magnetic Timing Valves for Fluid Control in Paper-Based Microfluidics

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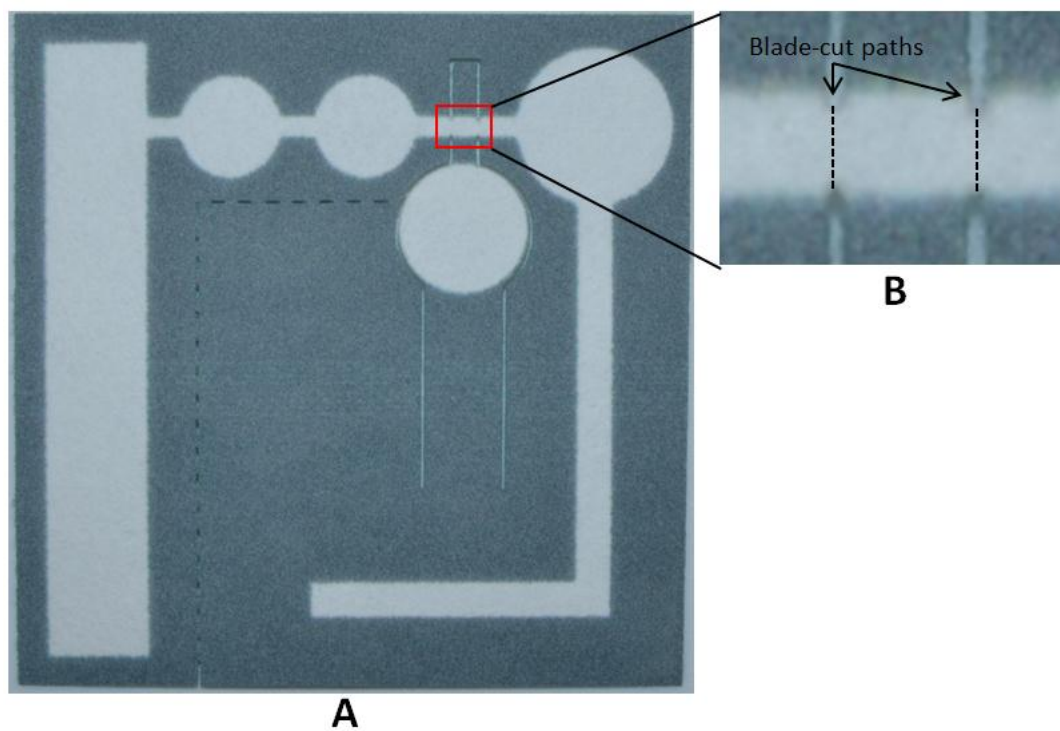


Fig. S1. Fabrication process of the paper cantilever of the normally-closed valve. (A) The major profile of the paper cantilever was laser cut, and the two connection edges of the paper bridge are left intact. (B) The two connection edges were then cut mechanically using a blade, which guarantees the intimate contact between the delivery channel and the paper bridge. Dashed lines indicate the paths of blade-cutting.

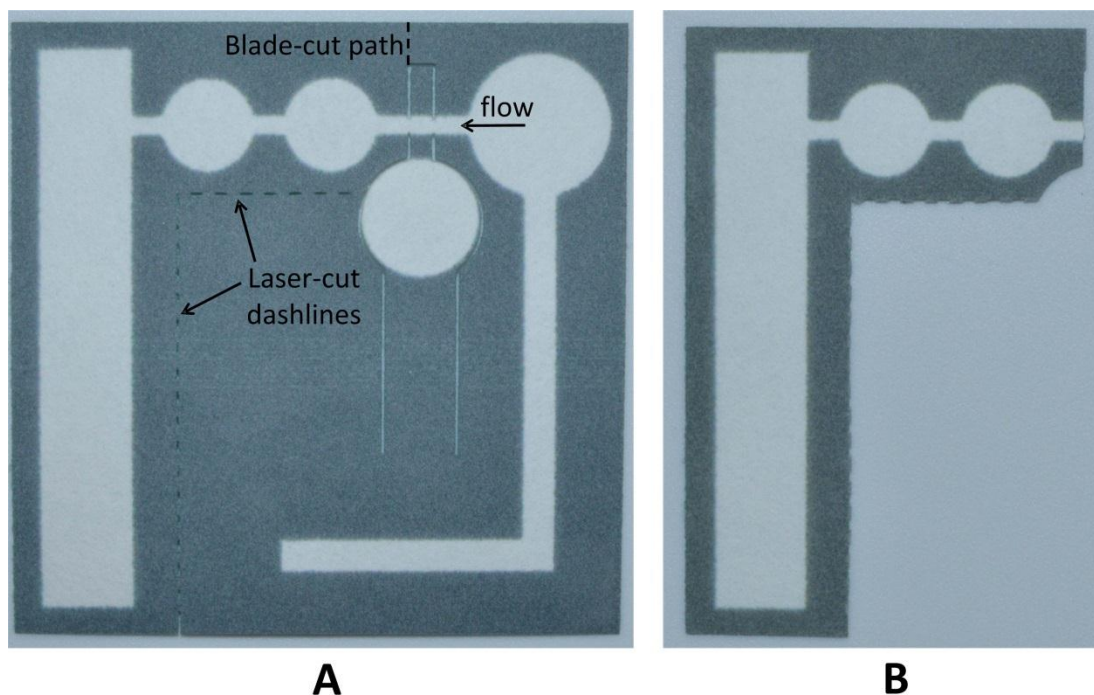


Fig. S2. Measurement of the volume of a solution delivered to the reagent storage zone, which is controlled by a normally-closed timing valve. (A) When measuring the volume of the delivered solution, part of each device, including the reagent storage and test zones, was cut out using a blade, along laser-cut dash lines and a blade-cut path. (B) The cut part to weight using a precision balance. The weight of the delivered solution was obtained by calculating the weight difference of the part before and after solution delivery. The volume of the solution was finally calculated using experimentally measured density of the solution (1.005 g/mL was used for $1\times$ PBS solution in our experiments).