Supplementary Information

Multidimensional Modular Microfluidic System

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In this supplementary information, schematic drawings and dimensions of the components used in the study are provided.

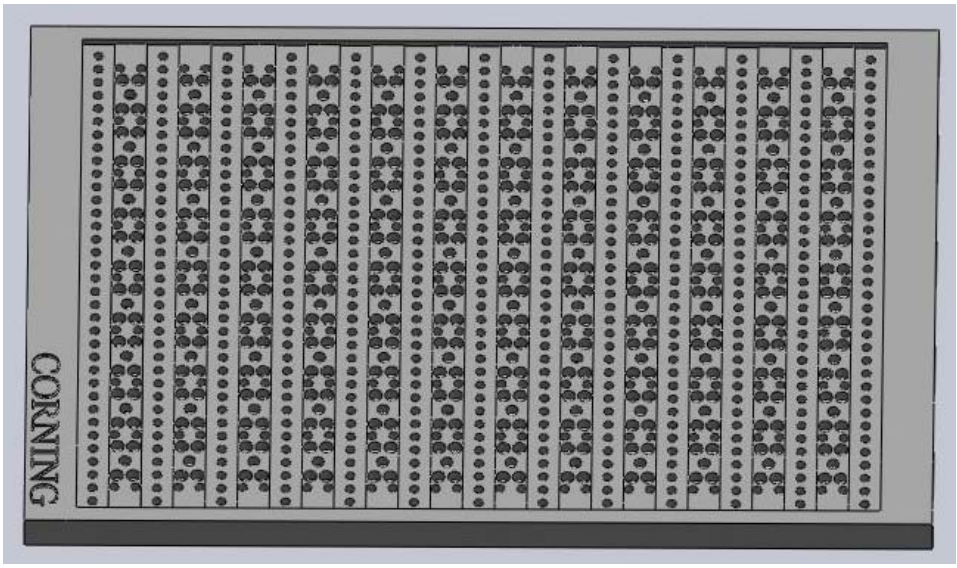

Figure S1a. 3D view of the motherboard. The dimensions of the motherboard are 127 mm (width) × 85 mm (length) × 6 mm (height).

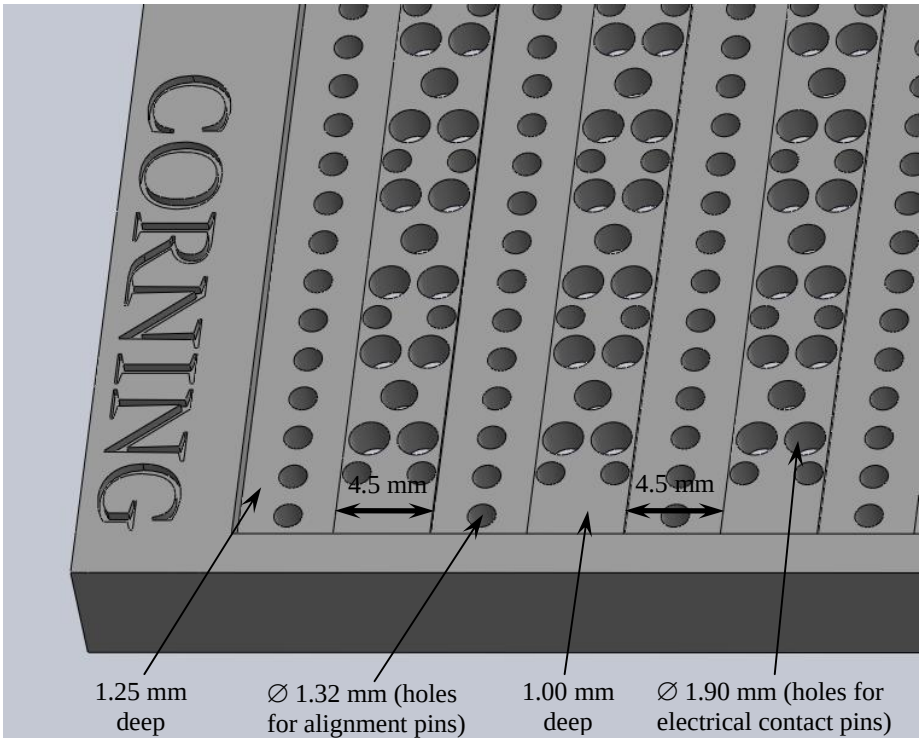

Figure S1b. Zoom in 3D view of the motherboard.

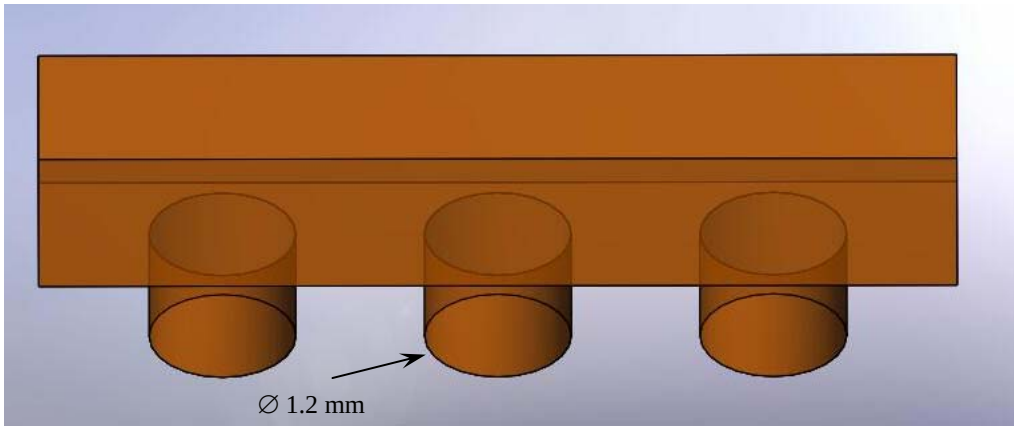

Figure S2. 3D view of the alignment pin.

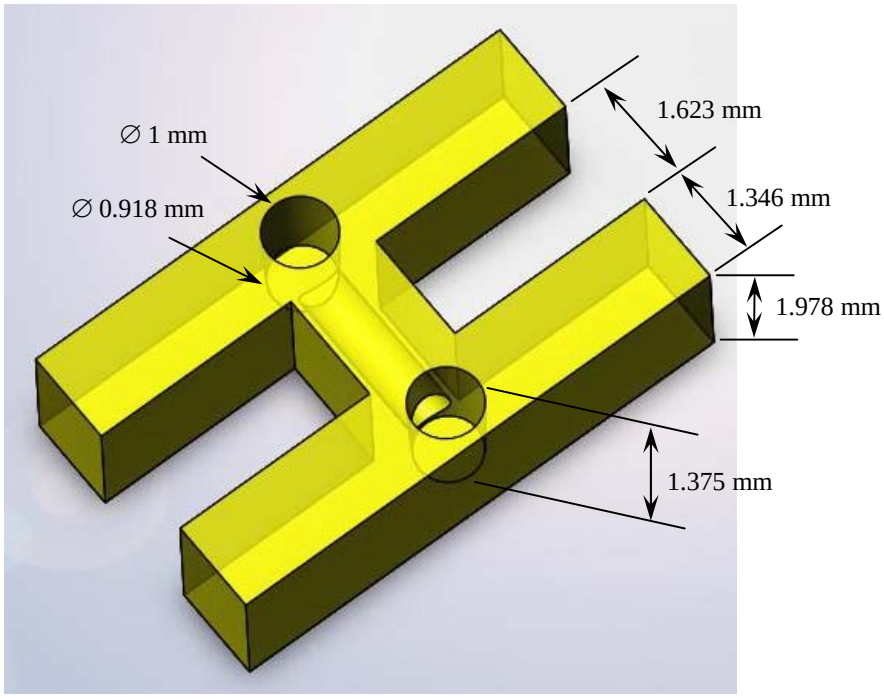

Figure S3. 3D view of the H-shaped microchannel insert. The center microchannel is 0.635 mm in diameter. The dimensions of the miniature female luer fitting are the same for every module used in this study.

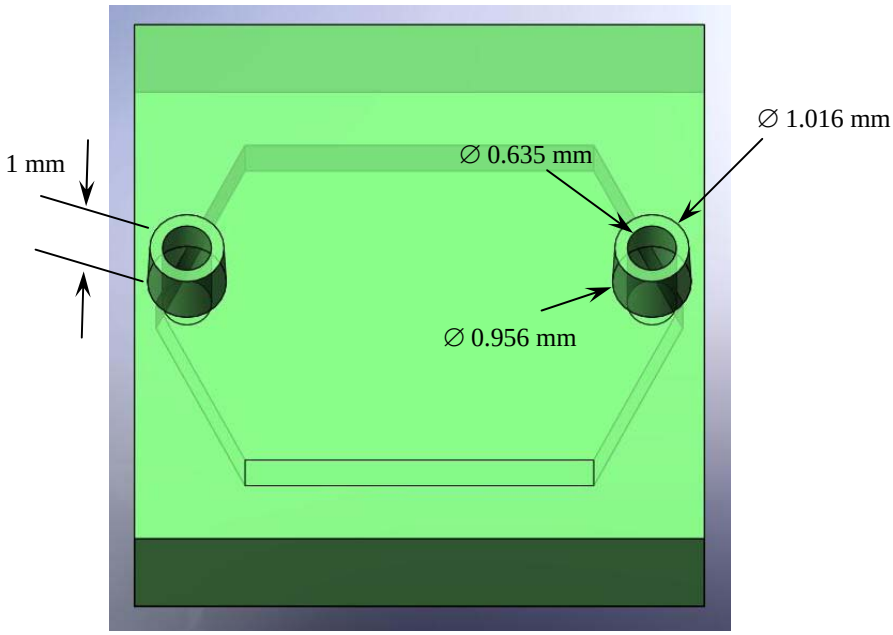

Figure S4. 3D view of the small reaction chamber module. The dimensions of the module are 7.5 mm × 7.5 mm × 2 mm. The reaction chamber depth is 0.762 mm. The dimensions of the miniature male luer fitting are the same for every module used in this study.

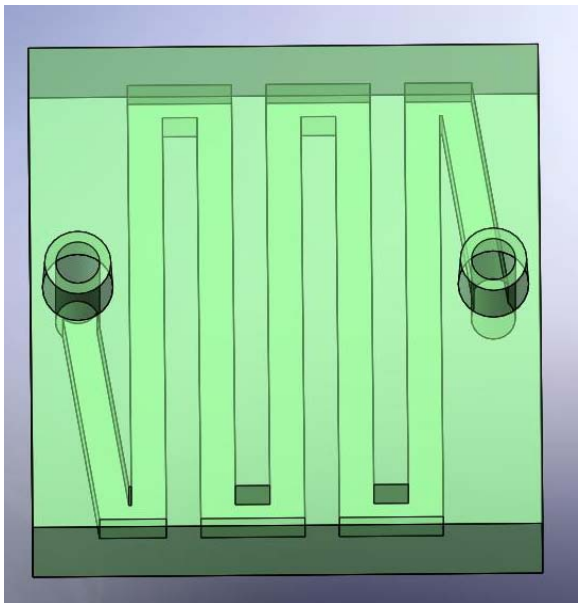

Figure S5. 3D view of the small serpentine microchannel module. The dimensions of the module are 7.5 mm × 7.5 mm × 2 mm. The square microchannel is 0.762 mm × 0.762 mm. The dimensions of the miniature male luer fitting are the same as the one depicted in Figure S4.

Figure S6. 3D view of the long reaction chamber module. The dimensions of the microchip are 7.5 mm × 16.5 mm × 2 mm. The reaction chamber depth is 0.762 mm. The dimensions of the miniature male luer fitting are the same as the one depicted in Figure S4.

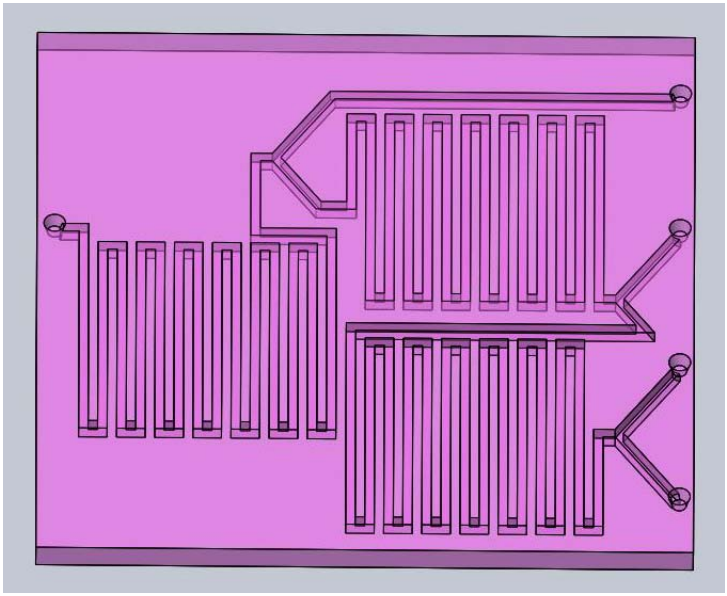

Figure S7. 3D view of the large mixer module with four inlets and one outlet. The dimensions of the microchip are 34.5 mm × 34.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female luer fitting are the same as the one depicted in Figure S3.

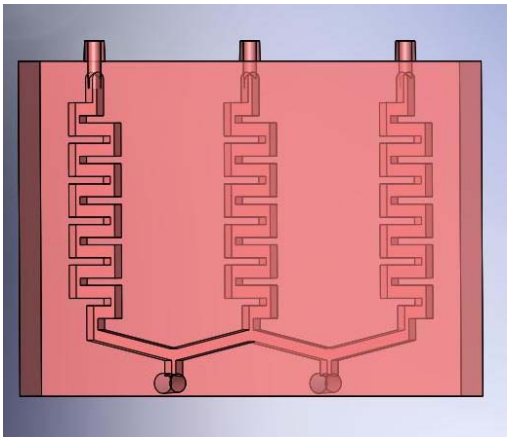

Figure S8. 3D view of the two-three flow splitter module. The dimensions of the microchip are 25.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

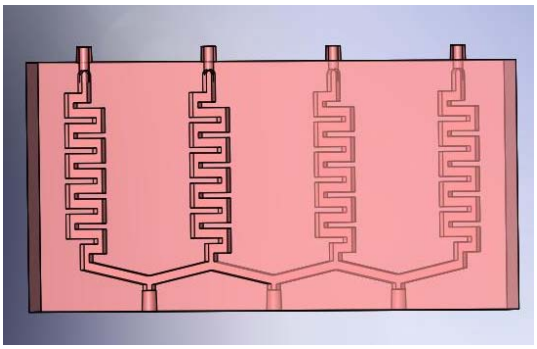

Figure S9. 3D view of the three-four flow splitter module. The dimensions of the microchip are 34.5 mm × 16 .5mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

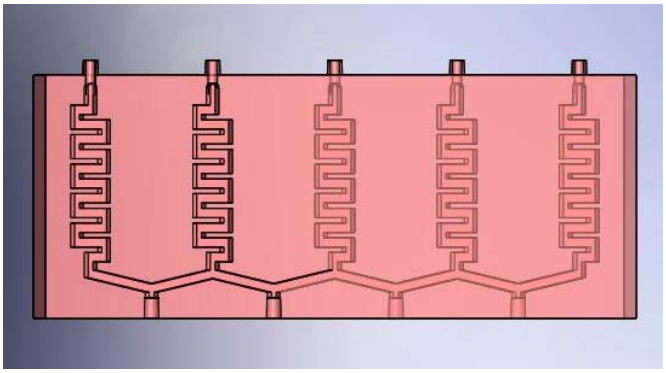

Figure S10. 3D view of the four-five flow splitter module. The dimensions of the microchip are 43.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

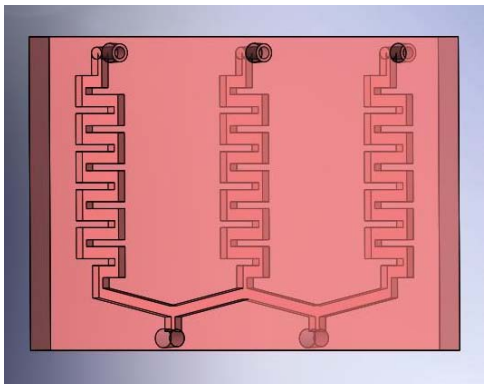

Figure S11. 3D view of the two-three flow splitter module. The dimensions of the microchip are 25.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

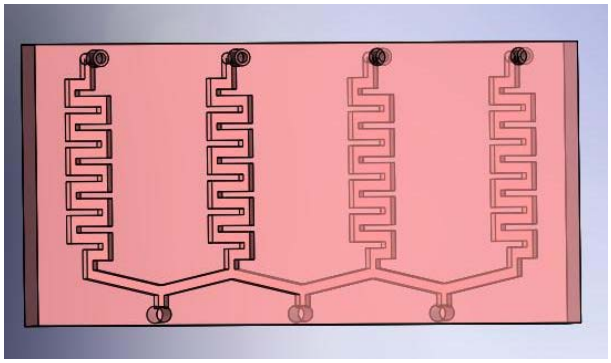

Figure S12. 3D view of the three-four flow splitter module. The dimensions of the microchip are 34.5 mm × 16 .5mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

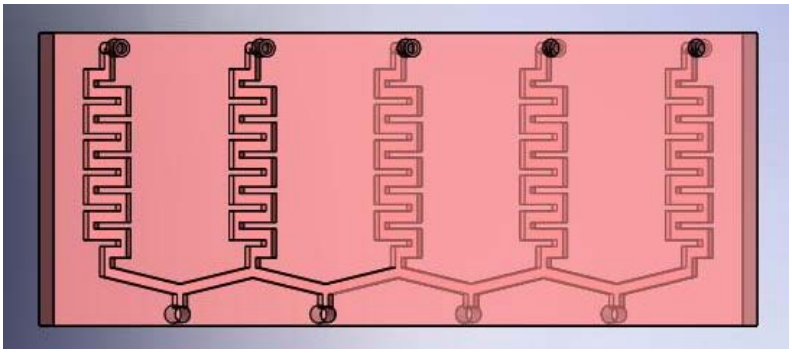

Figure S13. 3D view of the four-five flow splitter module. The dimensions of the microchip are 43.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

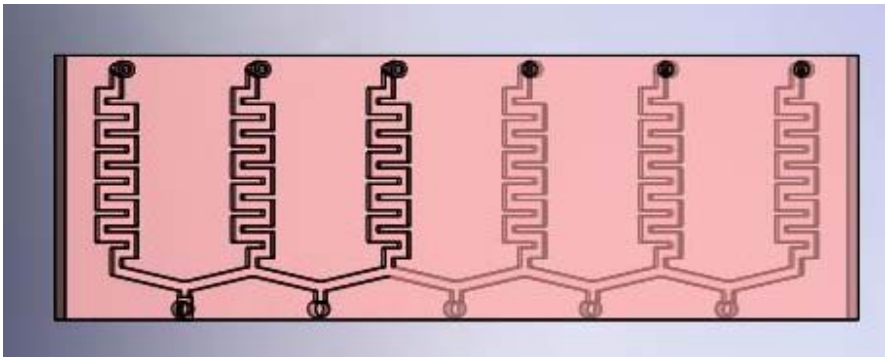

Figure S14. 3D view of the five-six flow splitter module. The dimensions of the microchip are 52.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

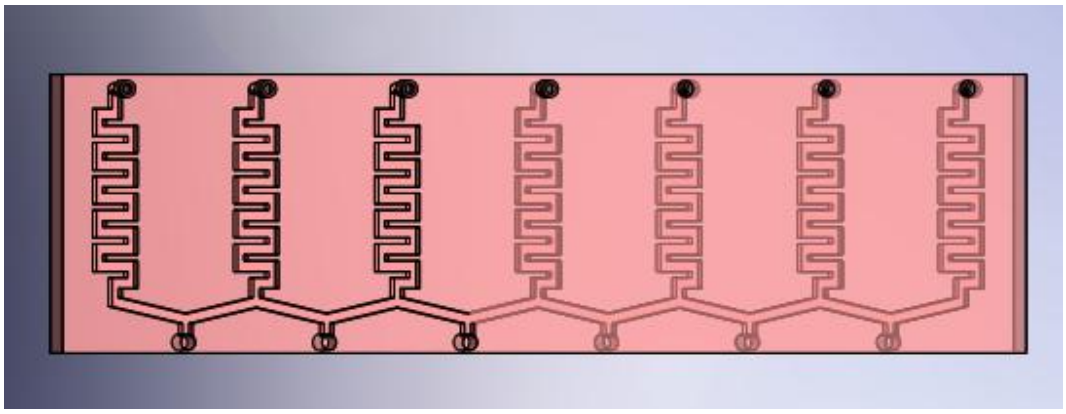

Figure S15. 3D view of the six-seven flow splitter module. The dimensions of the microchip are 61.5 mm × 16.5 mm × 2mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.

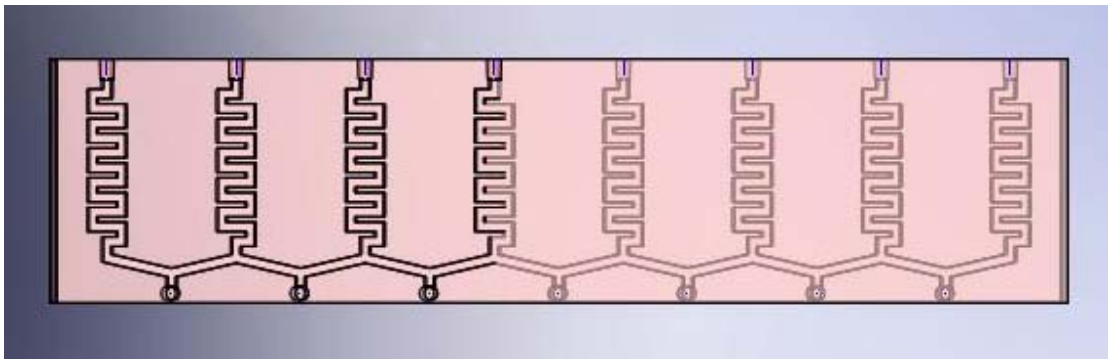

Figure S16. 3D view of the seven-eight flow splitter module. The dimensions of the microchip are 70.5 mm × 16.5 mm × 2 mm. The square microchannels are 0.762 mm × 0.762 mm. The dimensions of the miniature female and male luer fittings are the same as the one depicted in Figures S3 and S4, respectively.