Electronic Supplementary Information (ESI)

Three-Dimensional Interconnected Microporous Poly(dimethylsiloxane) Microfluidic Devices

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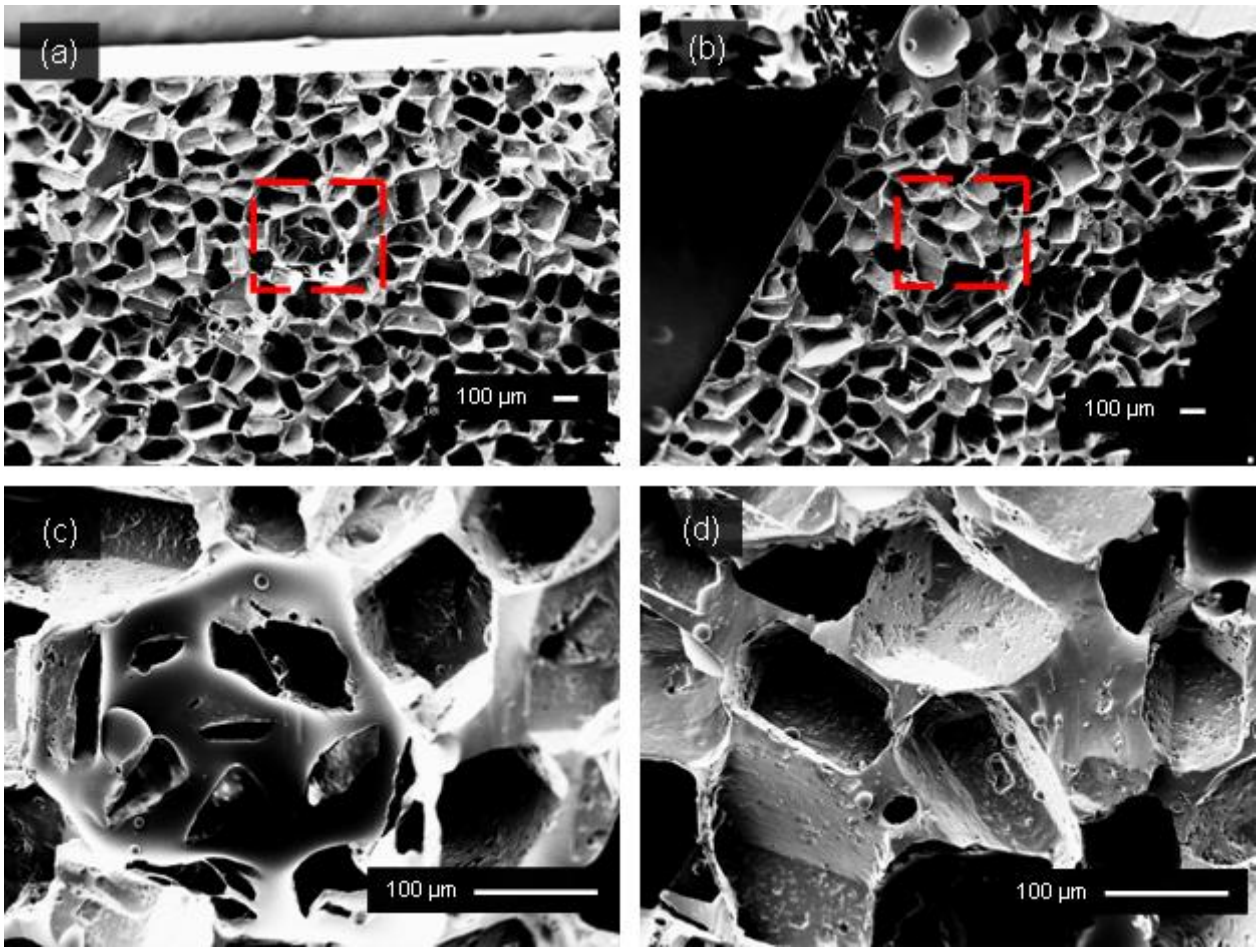

Fig. S1 SEM images of microporous PDMS structures fabricated from 150 µm – 180 µm sugar particles. (a) and (c) Top view. (b) and (d) Cross-sectional view. (c) and (d) are the zoom in view of the red dotted line area in (a) and (b), respectively.

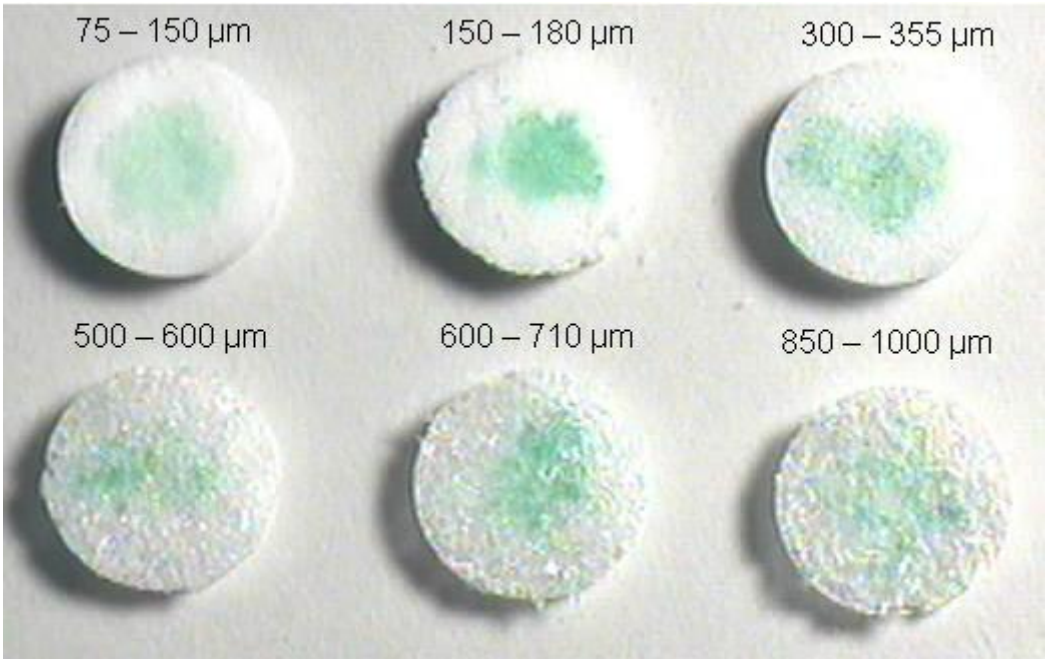

Fig. S2 Ethanol with a small amount of green colored food dye was used to demonstrate the 3D interconnectivity of microporous PDMS structures fabricated by different sizes of pre-sieved sugar particles.

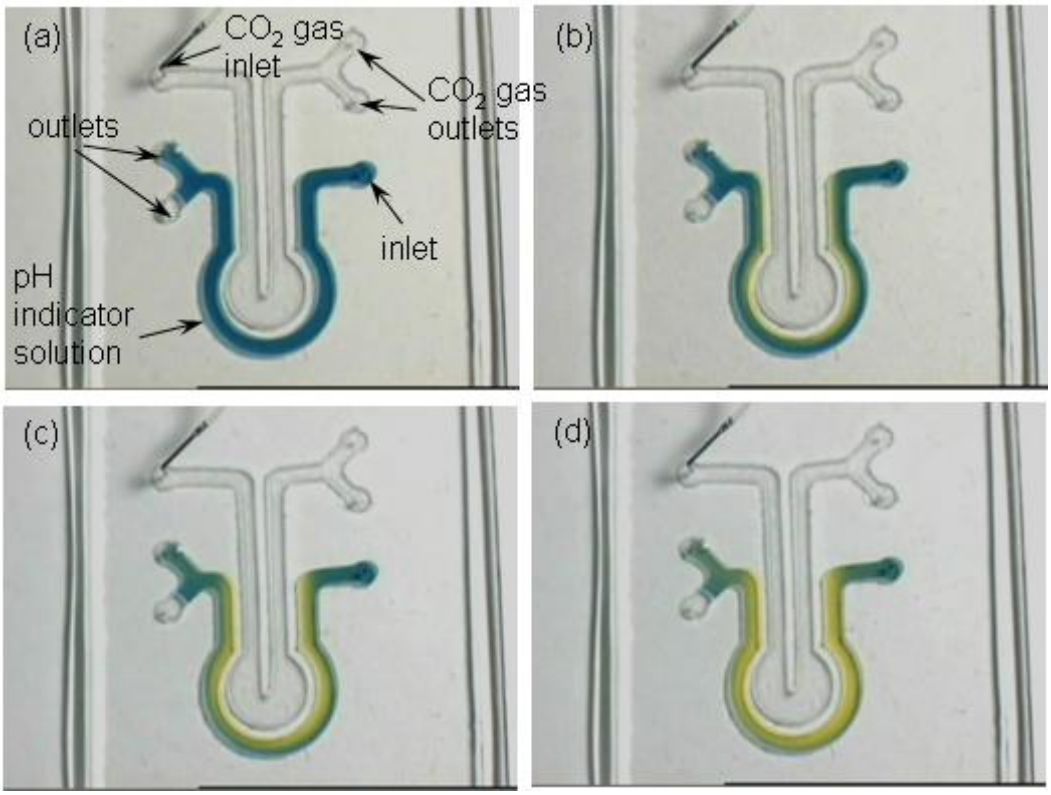

Fig. S3 Time lapse images of acidification of water by CO2 gas experiment using non-porous PDMS. (a) t = 0 s. (b) t = 4 min. (c) t = 6 min 30 s. (d) t = 9 min 30 s.

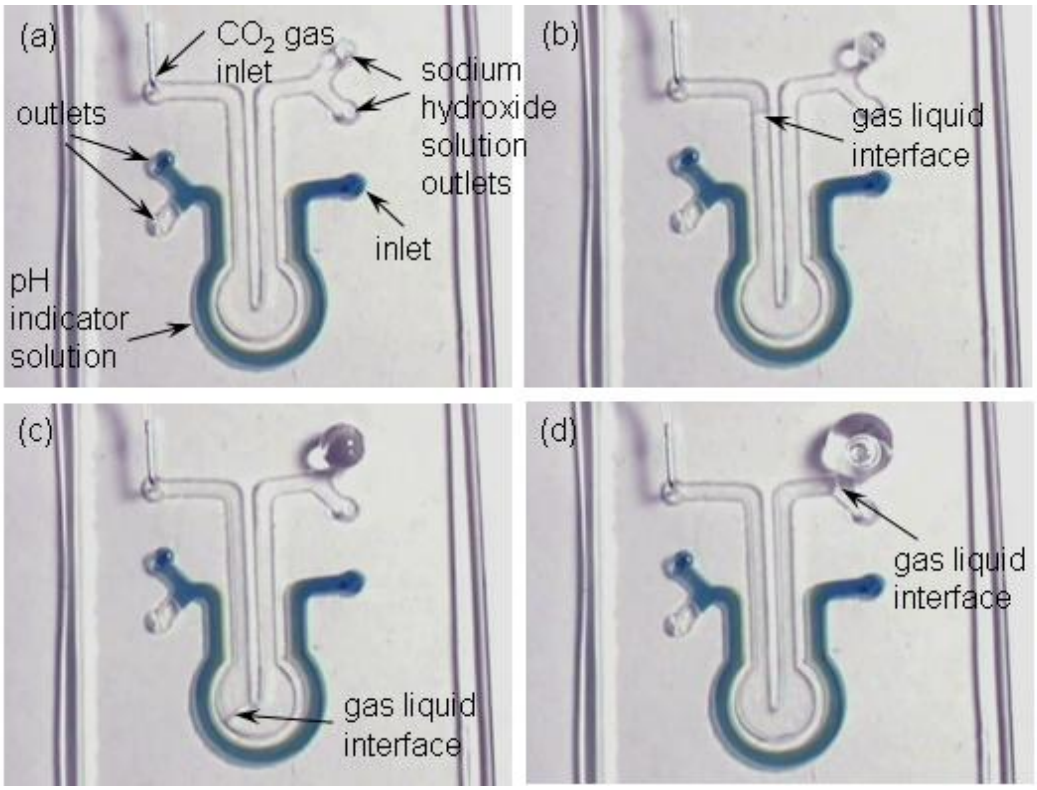

Fig. S4 Time lapse images of acidification of water by CO2 gas experiment using non-porous PDMS. The inner chamber was filled with sodium hydroxide solution. (a) t = 0 s. (b) t = 2 s. (c) t = 5 s. (d) t = 10 s.

Video 1:
Acidification of water by CO_2 gas experiment shown in Fig. 5.
The video was speeded up 3 ×.

Video 2:
Acidification of water by CO_2 gas experiment shown in Fig. 8.
The video was speeded up 10 ×.

Video 3:
Sodium hydroxide solution loading experiment.
The video was speeded up 5 ×.

Video 4:
Acidification of water by CO_2 gas experiment shown in Fig. 6.
The video was speeded up 30 ×.

Video 5:
Acidification of water by CO_2 gas experiment shown in Fig. 7.
The video was in real time.

Video 6:
Ethanol with a small amount of green colored food dye was used to demonstrate the 3D interconnectivity of microporous PDMS structures fabricated by 150 – 180 μm sugar particles. The video was in real time.