

# **Enhancing cell packing in buckyballs by acoustofluidic activation**

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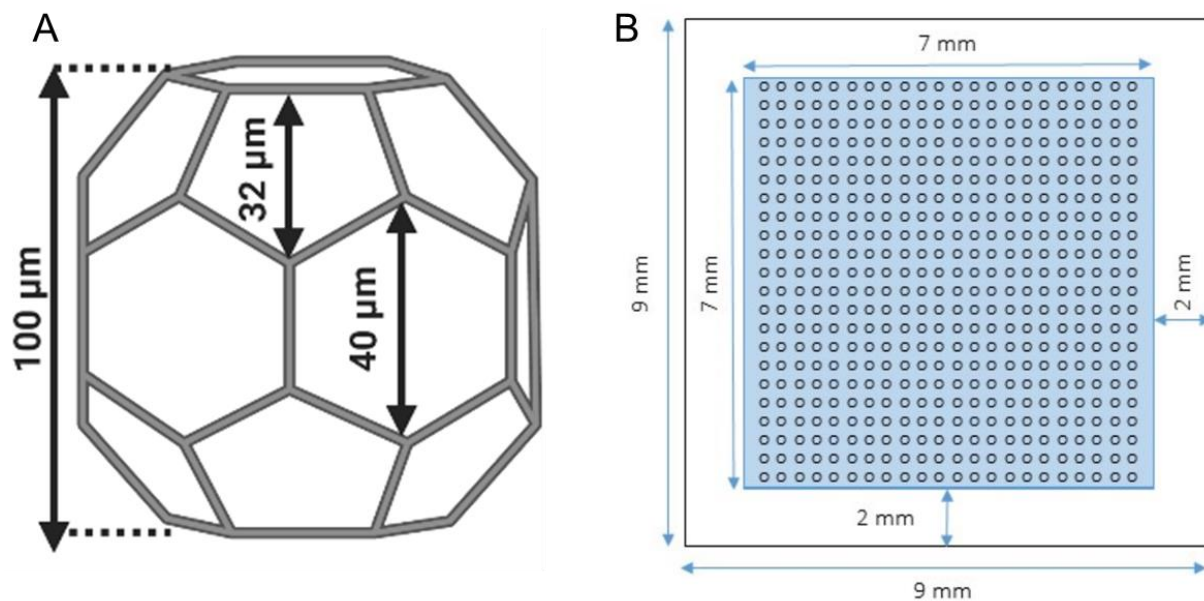
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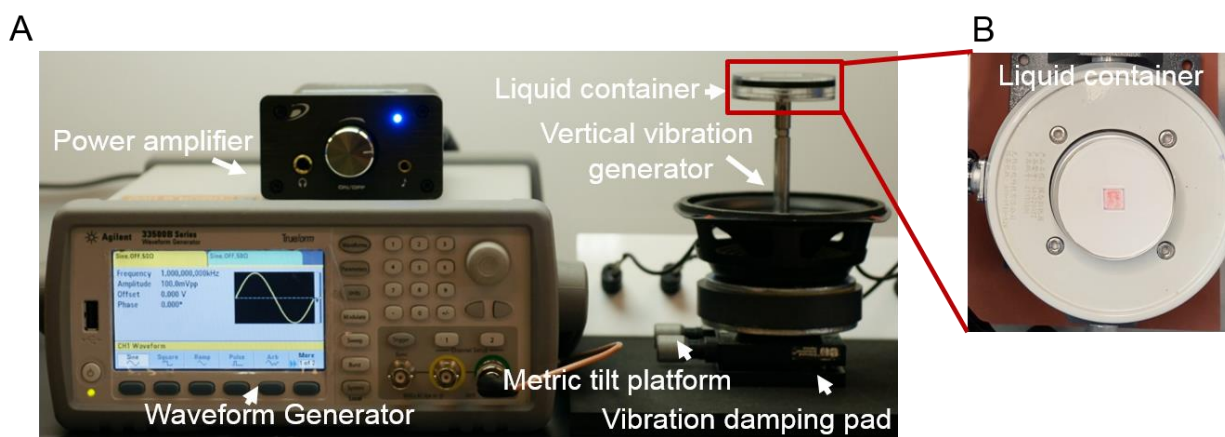
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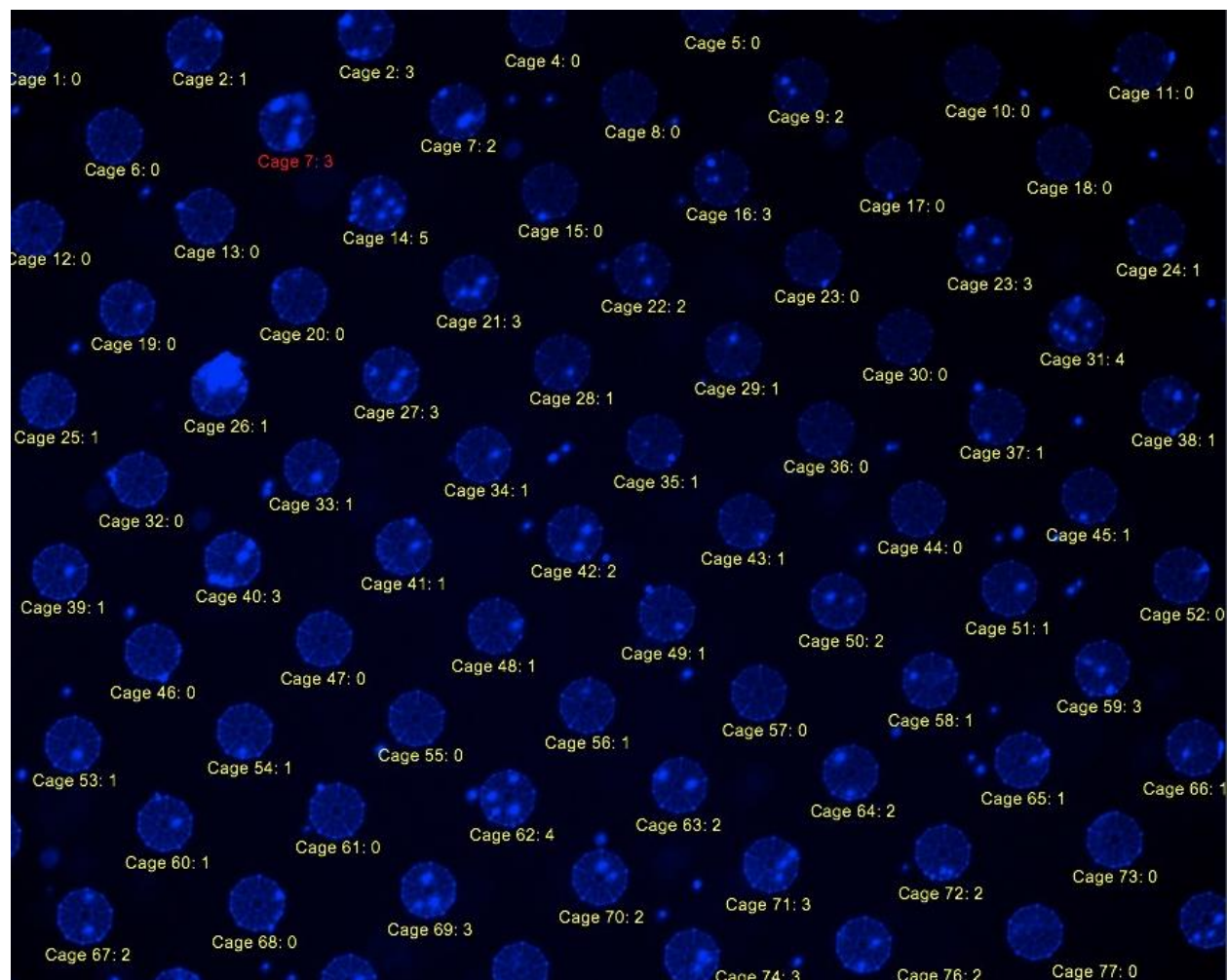
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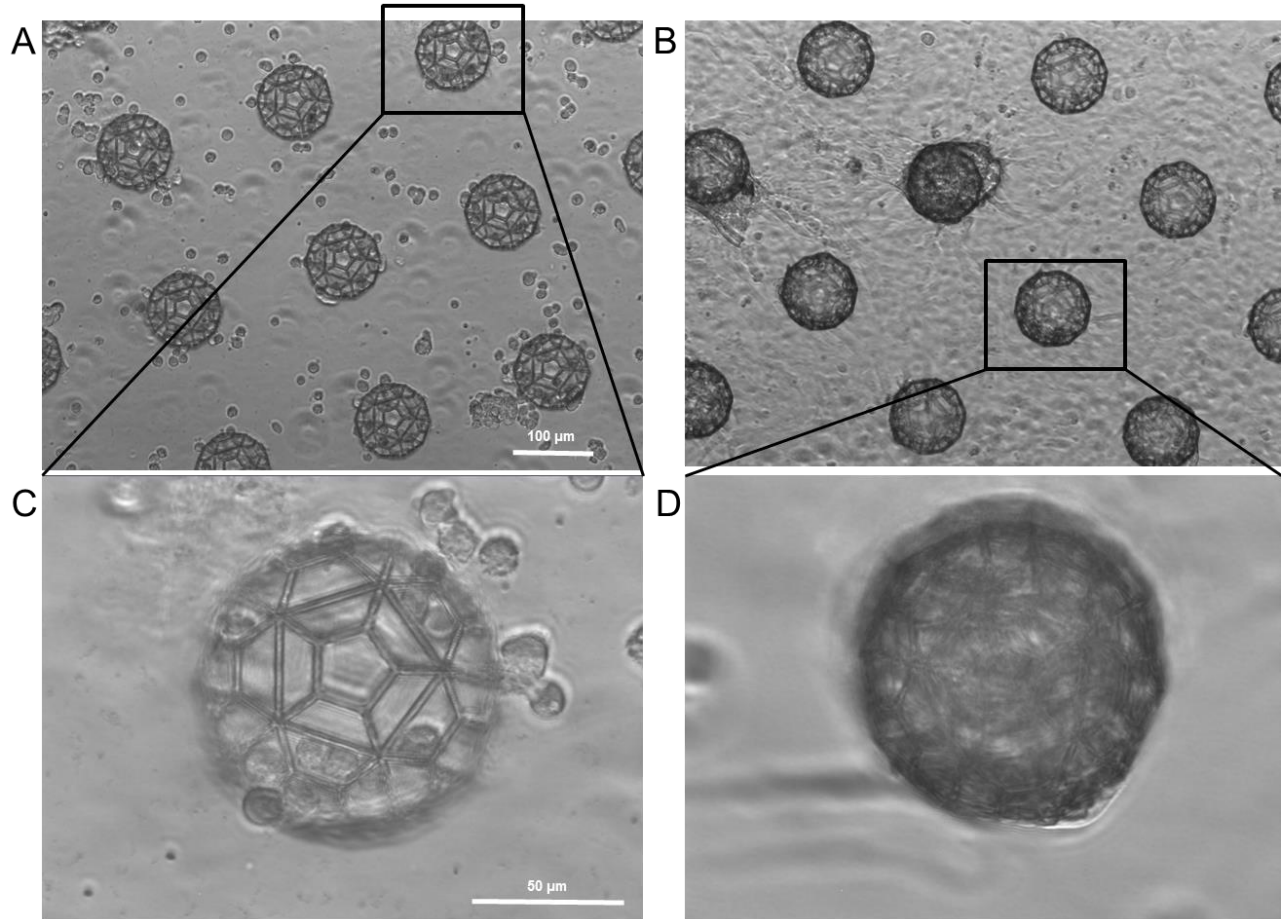
**Figure S1.** Schematic drawing showing the detail size of buckyball and the distribution of buckyball array.



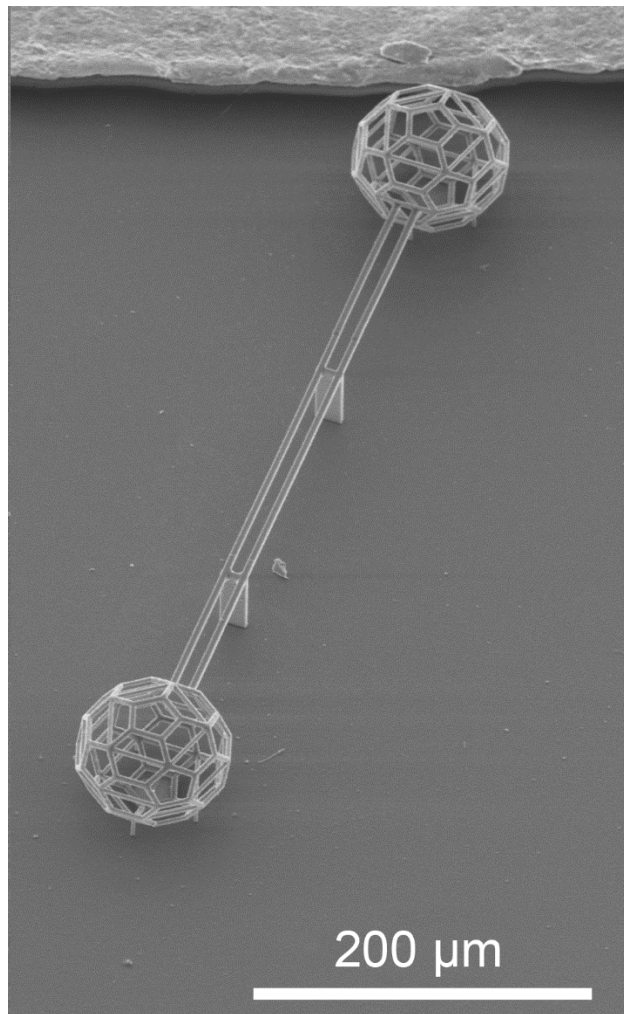
**Figure S2.** (A) Experimental setup of acoustofluidic activation system. (B) Top view of the assembling chamber.



**Figure S3.** Screenshot of ImageJ when counting the cell number in buckyball cages in control group as an example to illustrating cell counting. Microcages were marked in sequence and cell number were labeled for each cages.



**Figure S4.** Buckyball packing using higher cell density. 4 million/mL HUVEC suspension in the liquid container with coverslip at the bottom. Apply acoustofluidic activation with 60 Hz, 50 mV for 1 minutes. (A,C) After acoustic assistant packing,  $10.9 \pm 2.2$  cells were packed in each cage (N=9). (B, D) After culture for 24 h, cell spheroids were formed in 7% microcages. The cell spheroids are highly consistent in size and morphology, and highly controlled in distribution.



**Figure S5.** SEM image of buckyball microcages connected with 500  $\mu\text{m}$  long bridge.