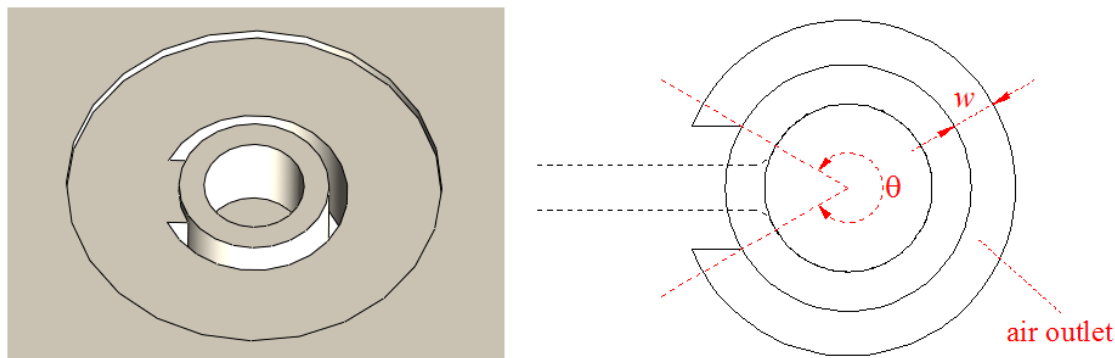


## Supplementary Figure



**Fig. S1** 3D structure (left) and a 2D zoom-in view (right) of the air nozzle. Dashed lines indicate the embedded air inlet channel.  $w$  is the width and  $\theta$  is the circumferential angle of the air outlet. In current design,  $w = 400 \mu\text{m}$ ,  $\theta = 300^\circ$ .

## Supplementary Videos

- Movie S1:** Agitation of 30-50  $\mu\text{m}$  diameter glass beads in water in a closed chamber,  $P_0 = 1.0$  bar.
- Movie S2:** Focusing of 30-50  $\mu\text{m}$  diameter glass beads using the device shown in Fig. 1(b). The liquid is glycerol-water solution of 93 cSt,  $P_0 = 0.6$  bar.
- Movie S3:** Mixing of 14  $\mu\text{l}$  99.5% glycerol and 0.5  $\mu\text{l}$  aqueous food dye in an open well.