Supporting Materials

Pitcher plant bioinspired bubble slippery surface fabricated by femtosecond laser for buoyancy-driven gas self-transport and efficient capture

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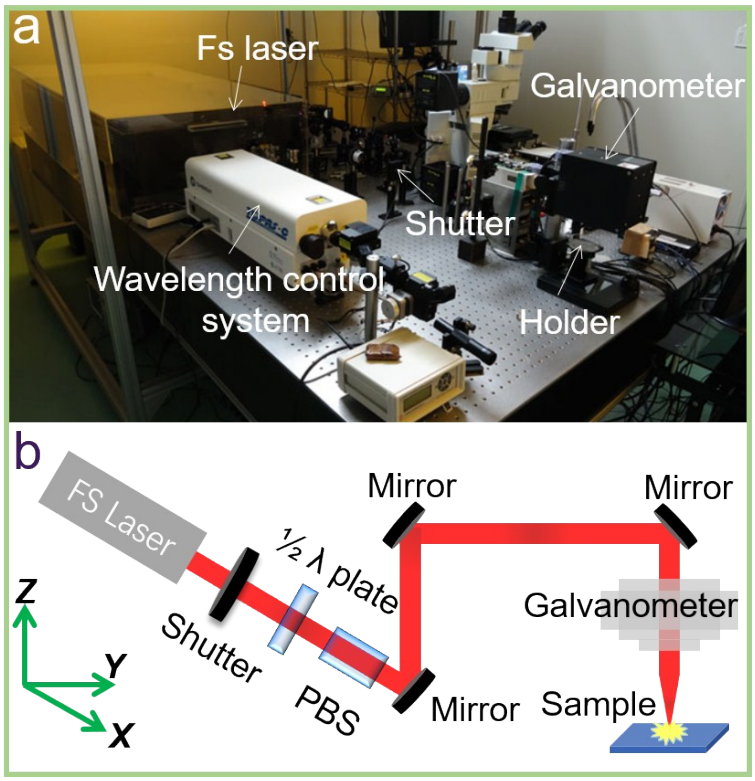

Figure S1 (a) The digital photo of femtosecond laser processing system. (b) Schematic of laser manufacturing process. It can be seen that laser beam (104 fs, 1 KHz, 800 nm) from a regenerative amplified Ti:sapphire femtosecond laser system (Legend Elite-1K-HE, Coherent, USA) was employed for ablation.

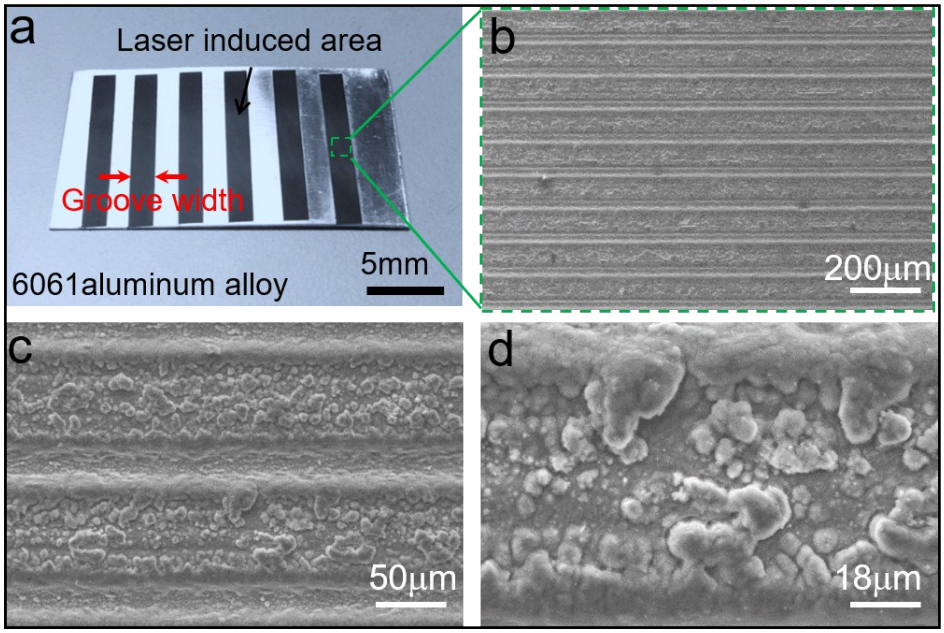

Figure S2 (a) The digital photo of laser-induced aluminum alloy surface. It can be seen that the groove width is defined as the boundary of LSS. (b)~(d) SEM images of laser-

induced aluminum alloy surface. It can be seen that the grooves are regularly distributed on the ablated surface (Figure S2b) and there are some micro/-nanoparticles on the grooves.

Table S1 Some parameters of three types of lubricant

	FC-3283	Silicone oil	Krytox 101
Surface tension (mN/m)	16	21	28
Kinematic viscosity (cSt)	0.82 (25° C)	100 (25° C)	1600 (25° C)
Volatility	Easy	Hard	Hard

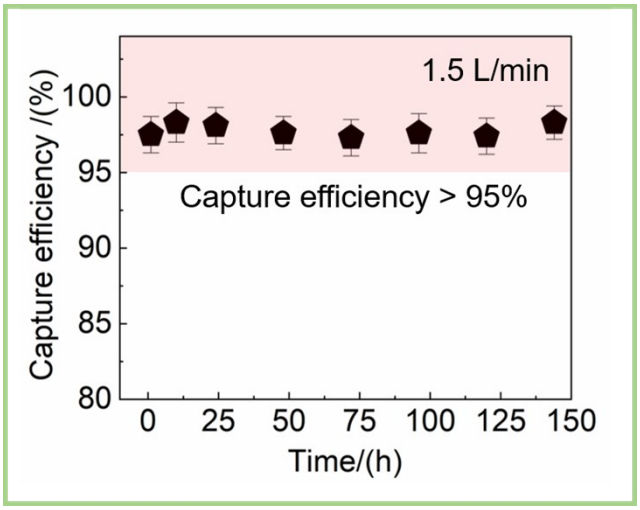

Figure S3 The relationship between the durability of gas catcher and capture efficiency. It can be seen that the gas catcher still keeps a high capture efficiency of more than 95% after placing in air several days, which shows a great fatigue stability.

Movie S1 The process of bubbles slipping along the L-shaped LSS

Movie S2 The process of bubbles slipping along the Y-shaped LSS

Movie S3 The process of bubbles slipping along the Mobius striped LSS.

Movie S4 The process of capturing bubbles by a detector-like gas catcher.