

NON-VOLATILE SURFACE TENSION-DRIVEN ELECTROCHEMICAL LIQUID METAL ACTUATOR

Tech ID: 33372 / UC Case 2024-060-0

PATENT STATUS

Patent Pending

BRIEF DESCRIPTION

UC Berkeley researchers have developed a surface-tension driven electrochemical liquid metal (LM) actuator without the gas-producing side-reaction. The actuator is and capable for fabrication/operation in ambient air for practical applications. A 2Å-4 LM droplet array is demonstrated to actuate by a low voltage of 3.5 V for a maximum force of ~8.5 mN and a displacement of 0.56 mm in only 1.75 s. With the favorable scaling law of surface tension, further downscaling could provide new opportunities in applications such as microrobotics, microfluidics, soft robotics, and so on.

SUGGESTED USES

» Semiconductor manufacture

ADVANTAGES

- » Does not generate gas bubbles
- » Does not require operation in liquid

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- ▶ Reconfigurable Soft Li-Ion Battery
- ▶ Wafer Level Chip Scale Packaging Technology For Integrated MemS Devices

CONTACT

Terri Sale
terri.sale@berkeley.edu
tel: 510-643-4219.



INVENTORS

» Lin, Liwei

OTHER INFORMATION

CATEGORIZED AS

- » **Optics and Photonics**
 - » All Optics and Photonics
- » **Imaging**
 - » Other
- » **Semiconductors**
 - » Design and Fabrication

RELATED CASES

2024-060-0