

Electronic Supplementary Information

Galinstan-based inkjet printing system for highly stretchable electronics with self-healing capability

*Guangyong Li, Xuan Wu, and Dong-Weon Lee**

MEMS and Nanotechnology Laboratory, School of Mechanical Engineering,

Chonnam National University, Gwangju, 61186, South Korea

(*Corresponding author: Tel: +82-62-530-1684; E-mail: mems@jnu.ac.kr)

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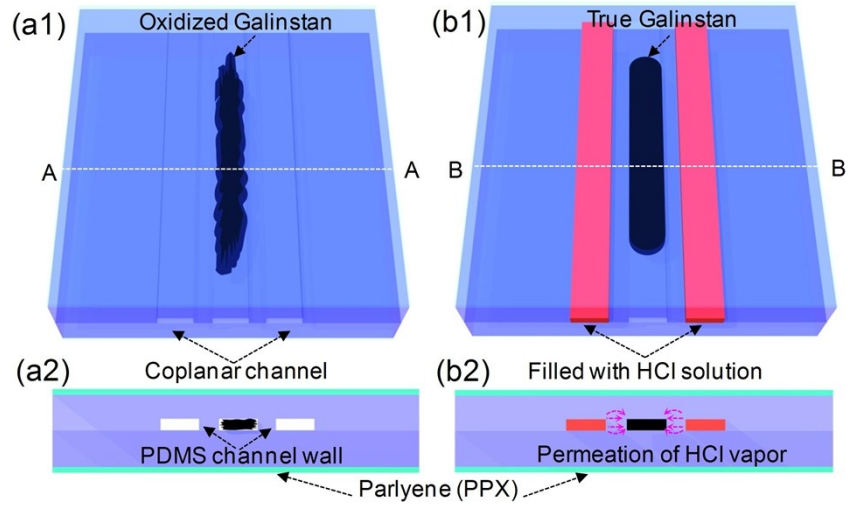


Fig. S1. 3D (a1 and b1) and cross sectional (a2 and b2) views of coplanar channels filled with Galinstan and HCl solution.

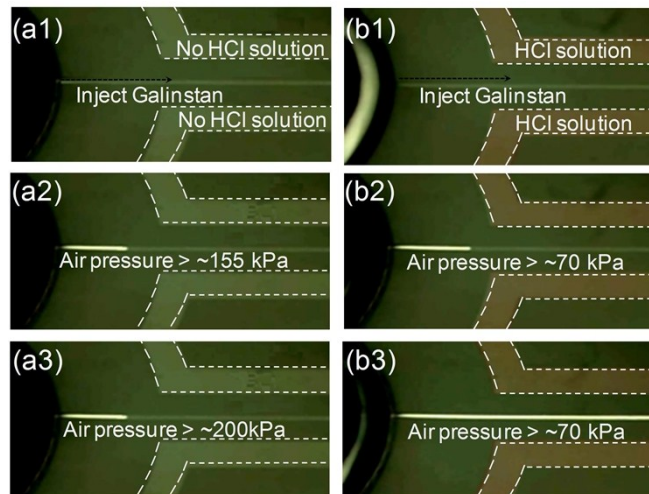


Fig. S2. Behavior of Galinstan in the nozzle surrounded by a coplanar channel (a) without HCl solution and (b) filled with 37 wt% HCl solution.

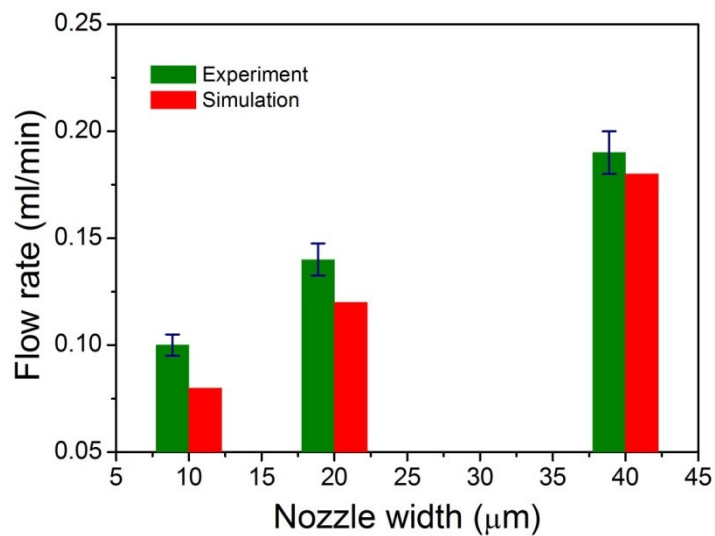


Fig. S3. Experimental and simulation results for the minimum flow rate required for the formation of a Galinstan droplet for different-size nozzles (cross-section size: 40 μm width \times 10 μm height, 20 μm width \times 10 μm height, 10 μm width \times 10 μm height).

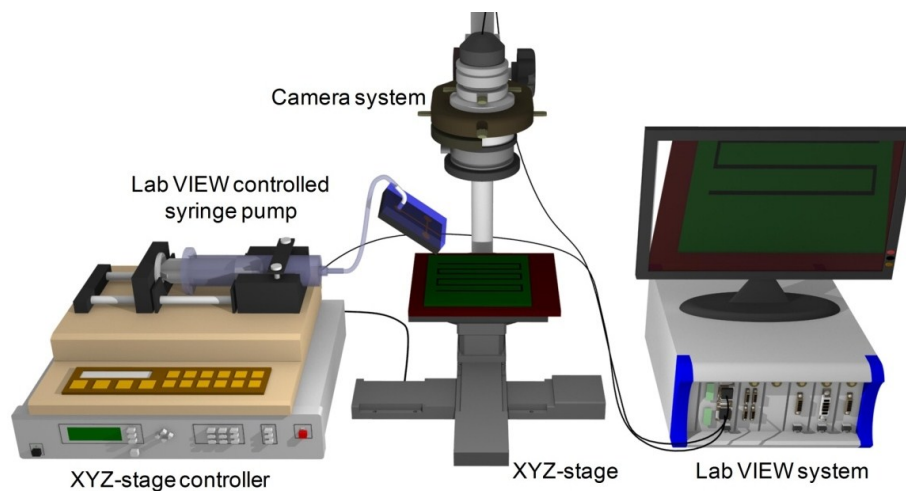


Fig. S4. Galinstan-based inkjet printing system comprising a CCD camera system, Lab VIEW controlled syringe pump, X-Y-Z stage, and a nozzle device.

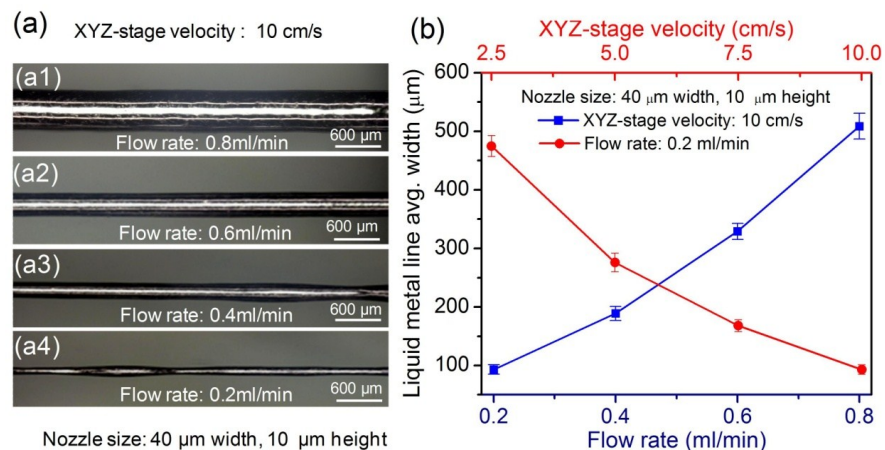


Fig. S5. Relationship between Galinstan flow rate and the X-Y-Z stage velocity. (a) Microscope images of Galinstan lines formed on the substrate with different flow rates. (b) The width of the Galinstan line as a function of the Galinstan flow rate and the X-Y-Z stage velocity.

Video: SV. 1. Video for HCl vapor-treated Galinstan droplet directly rolling on PDMS substrate.

Video: SV. 2. Video for HCl vapor-treated Galinstan injected from syringe needle.

Video: SV. 3. Video for self-healing (connection) or self-reconnection capability test