Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Self-sintering liquid metal ink with laponite for flexible electronics

Pengcheng Wu,[a,b] Luyu Zhou,[a,b] Shang Lv,[a,b] Jianzhong Fu,[a,b] and Yong He*[a,b,c]

[a]*State Key Laboratory of Fluid Power and Mechatronic Systems, School of Mechanical Engineering, Zhejiang University, Hangzhou 310027, China*

[b]*Key Laboratory of 3D Printing Process and Equipment of Zhejiang Province, School of Mechanical Engineering, Zhejiang University, Hangzhou 310027, China*

[c]*Key Laboratory of Materials Processing and Mold, Zhengzhou University, Zhengzhou 450002, China*

** Correspondence to: Yong He, e-mail: yongqin@zju.edu.cn*

Supplementary Text

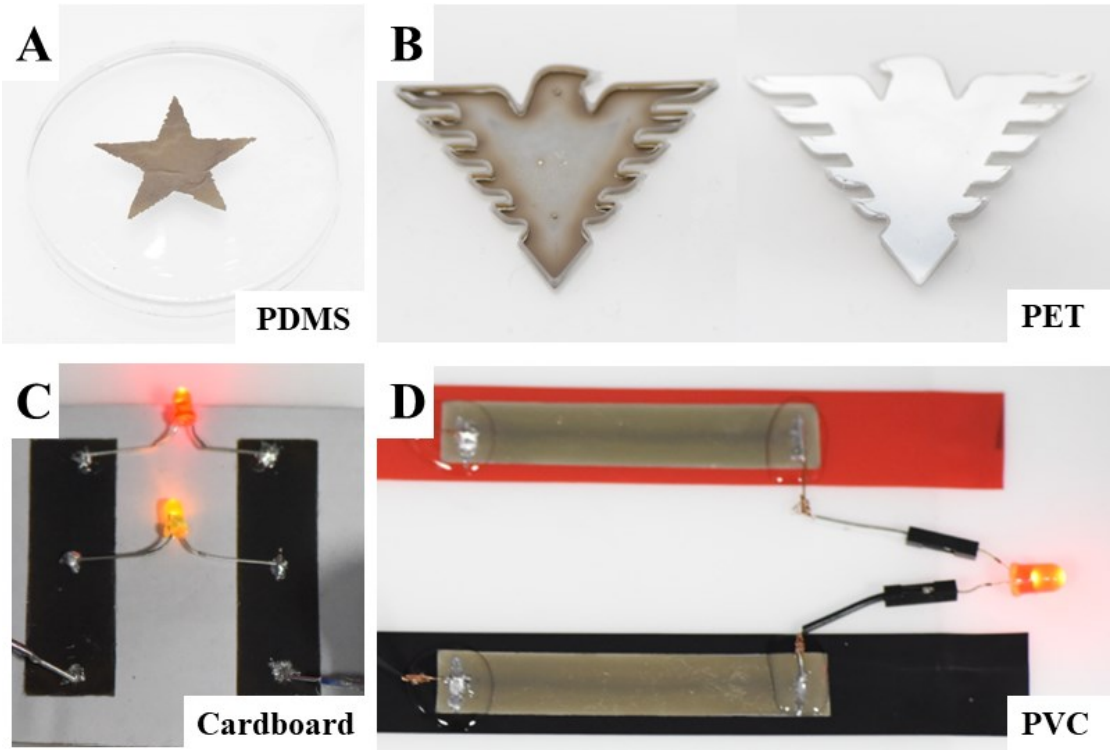

Figure S1. LML ink can sintered on PDMS (A), PET (B), cardboard (C), and PVC (D) to form conductive paths.

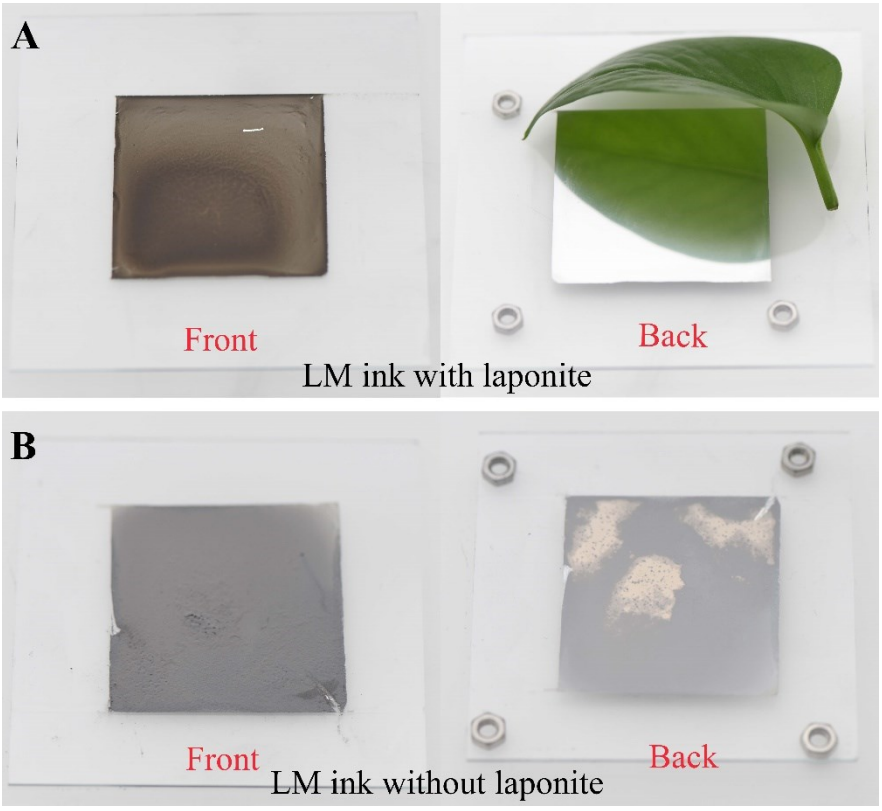

Figure S2. The difference between LM ink with laponite and without laponite after evaporation. The leaf is used to show the mirror-like back side.

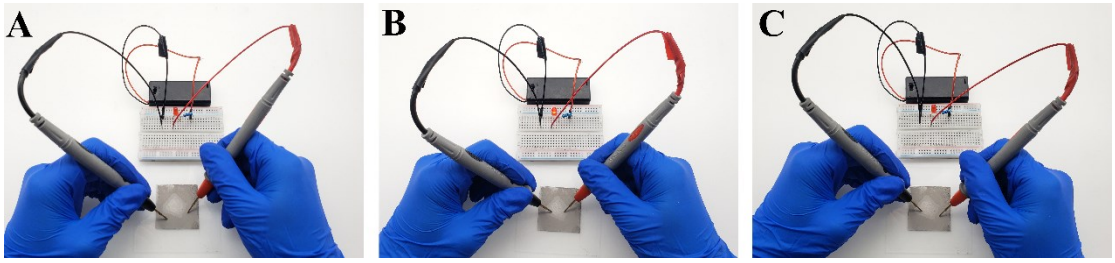

Figure S3. Laponite aqueous dispersion can post-sinter LM nanoparticles. The LM nanoparticles were precipitates formed after LM ink evaporating to dryness, and the LM ink was prepared by sonicating the mixture of bulk LM and water in ice-water bath for 30 minutes.

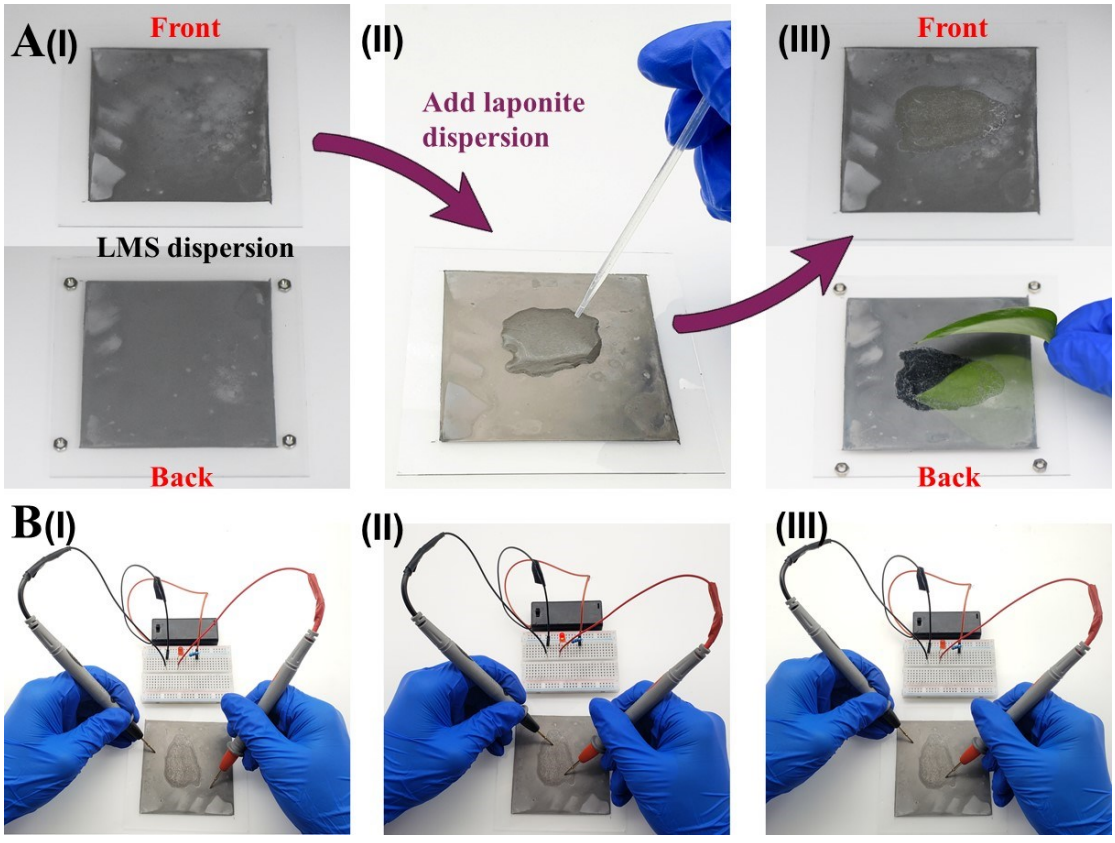

Figure S4. Laponite aqueous dispersion post-sintered LM nanoparticles wrapped with sodium alginate.

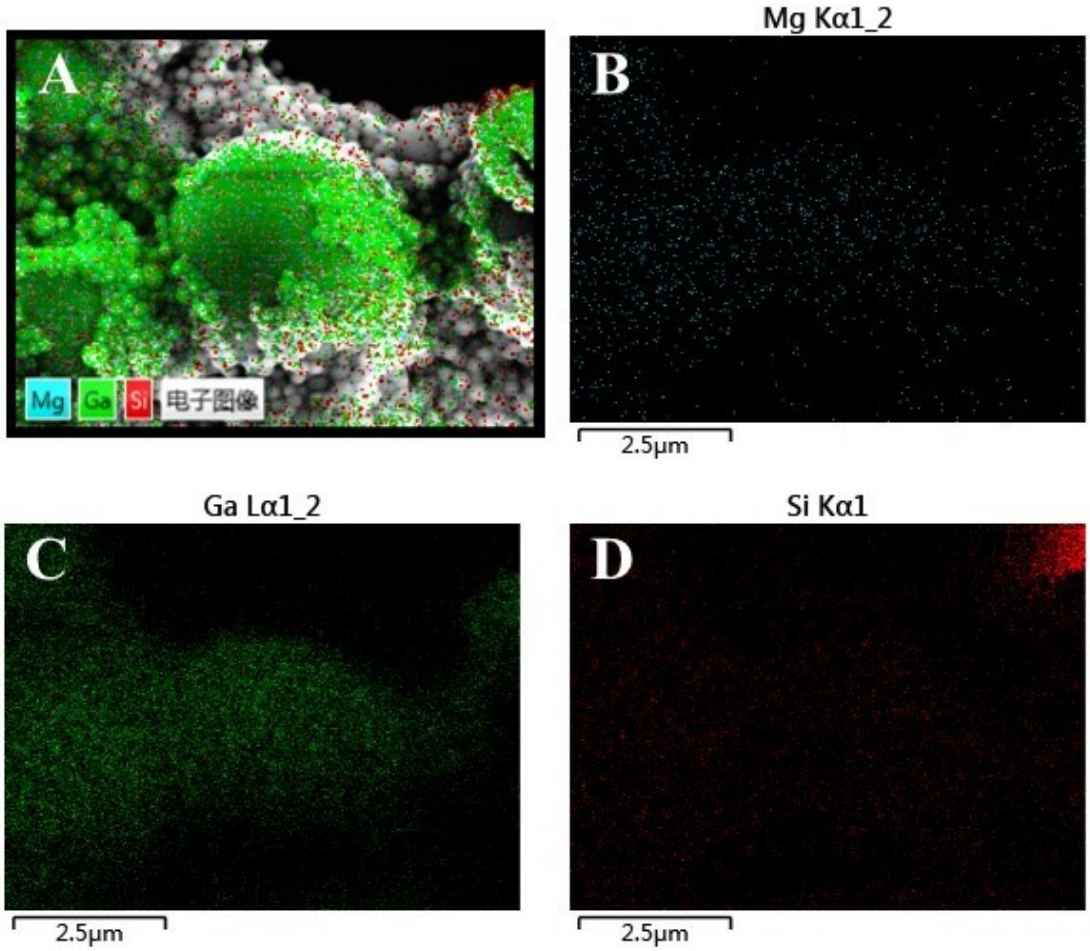

Figure S5. The Mg, Ga, Si elemental mapping of LM droplets.

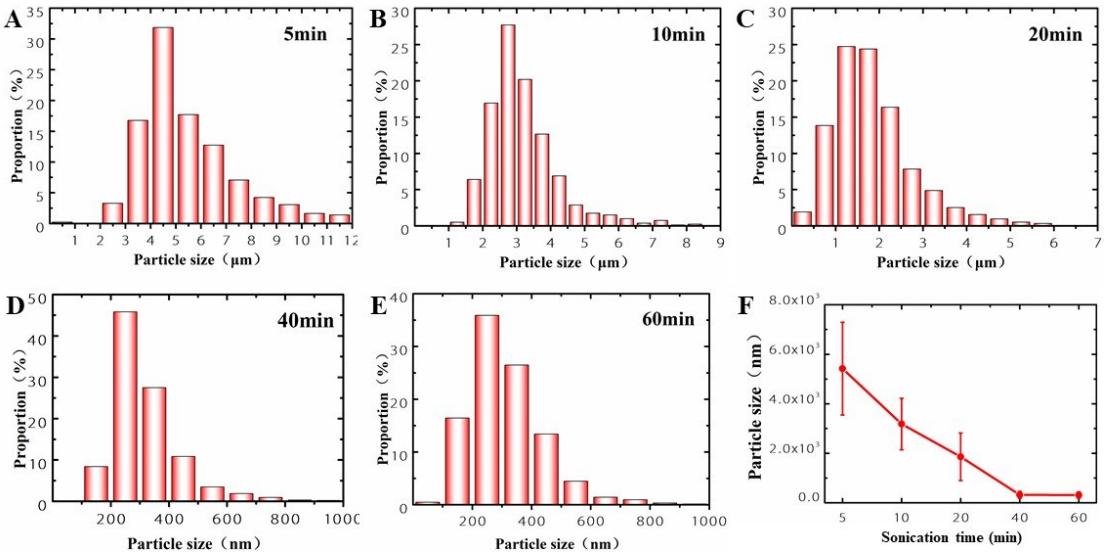

Figure S6. Changes of liquid metal particle size distribution with ultrasonic time, with LM concentration of 40mg/ml and laponite concentration of 1% (w/v).

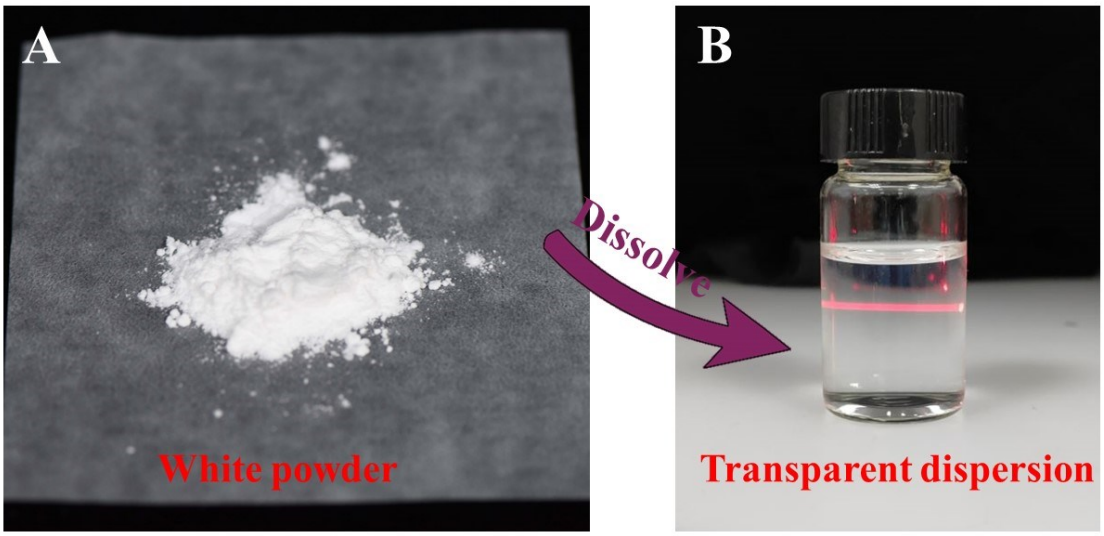

Figure S7. The optical images of laponite powder and laponite transparent dispersion. Laponite transparent dispersion exhibits Tyndall effect.

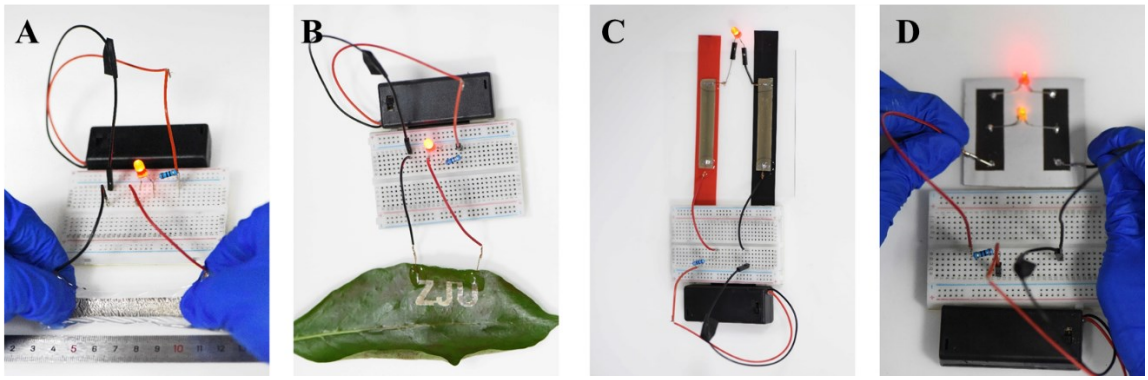

Figure S8. Conductive paths formed after LML ink evaporating to dryness.

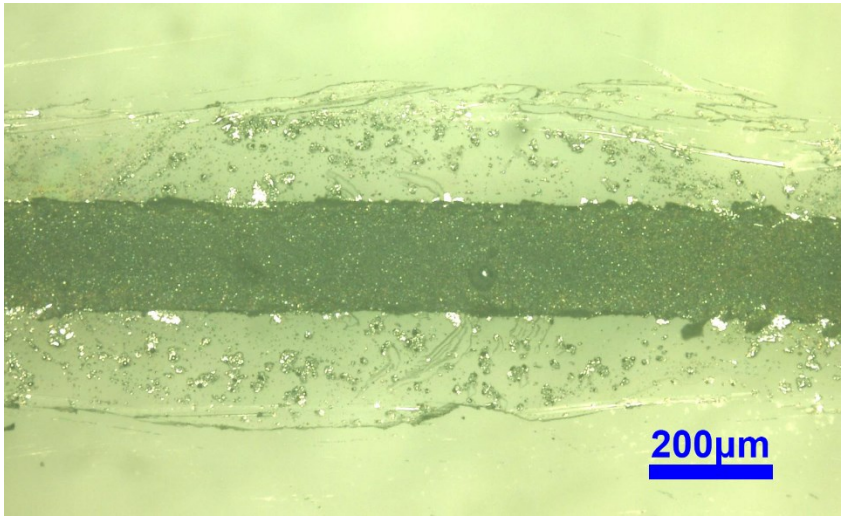

Figure S9. Optical microscope image of the minimum line-width prepared with LML ink.