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Supporting Information

2 **Versatile chewed gum with liquid metal for strain sensors,**
3 **electromagnetic interference shielding and flexible electronics**

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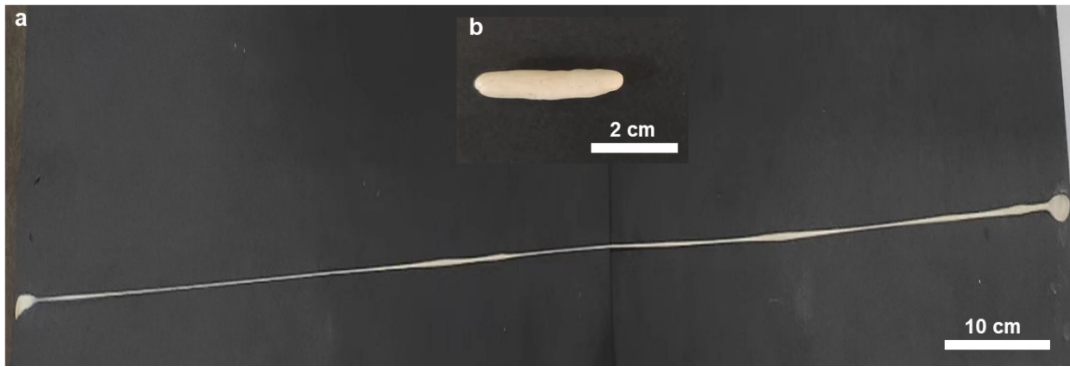
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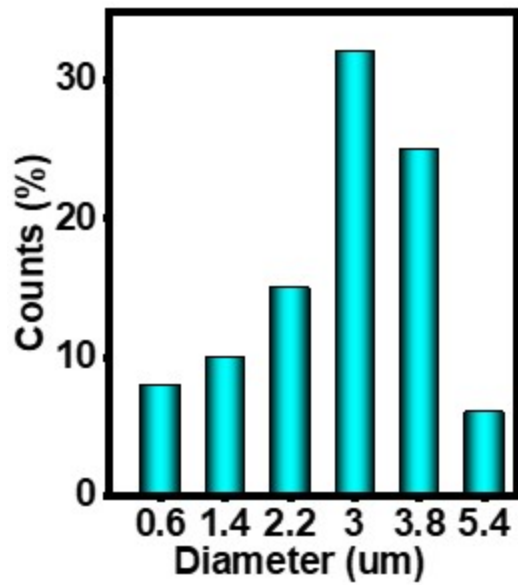
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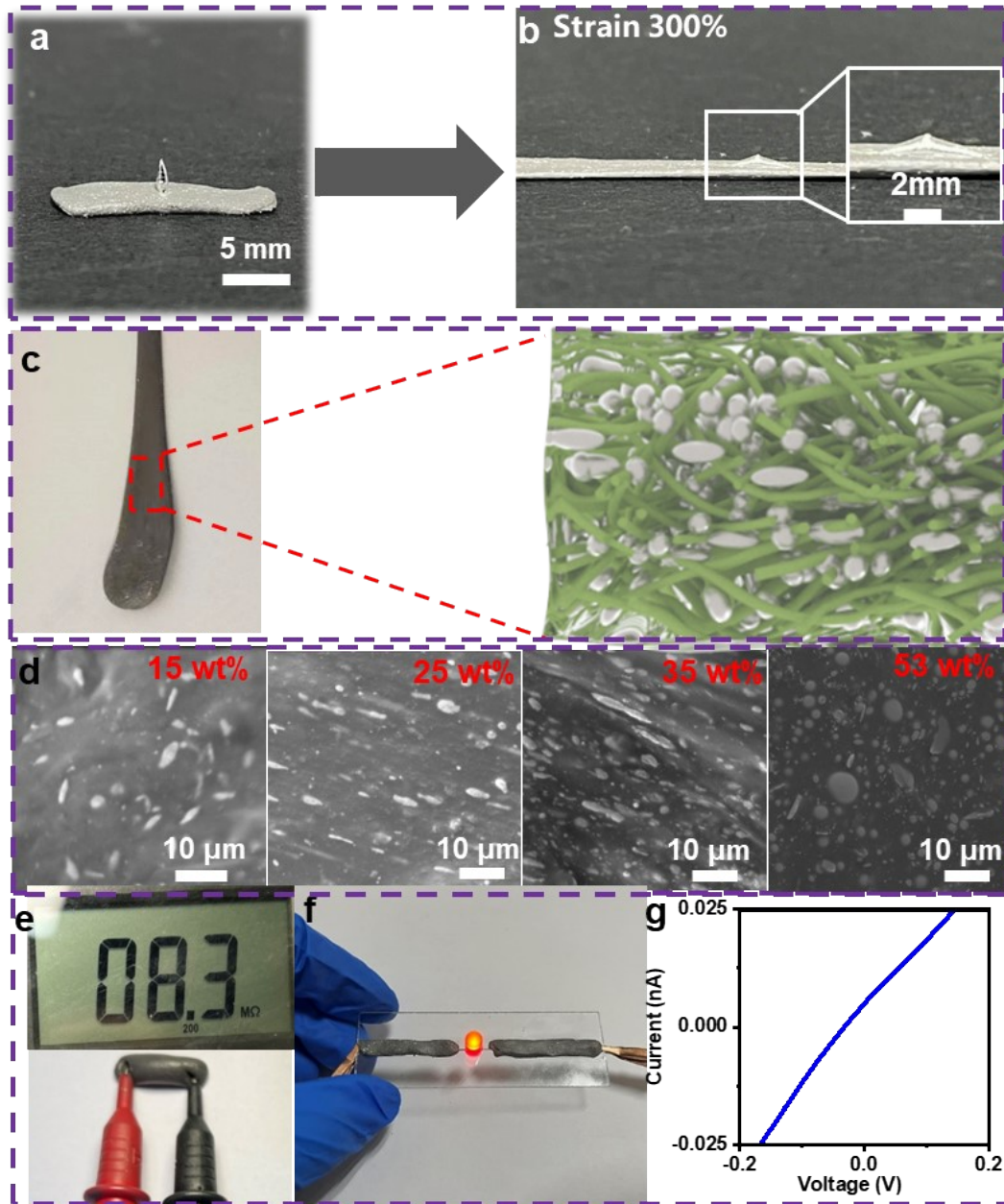
2 **Fig. S1** (a & b) Photographs of chewed gum (a) and its stretched state (b).

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5 **Fig. S2** Diameter histogram of LM droplets in chewed gum.



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2 **Fig. S3** (a & b) LM droplets on chewed gum (a) and its stretched state at strain of 300%

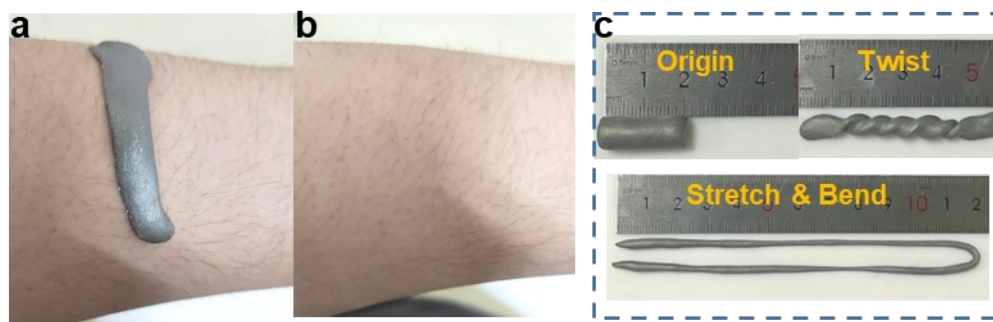
3 (b). (c) Chewed gum filled with LM micro/nano droplets and its schematic diagram. (d)

4 SEM images of chewed gum filled with different contents of LM micro/nano droplets.

5 (e–g) Resistance (e), conductivity test (f) and current-voltage curve (g) of chewed gum

6 filled with LM micro/nano droplets.

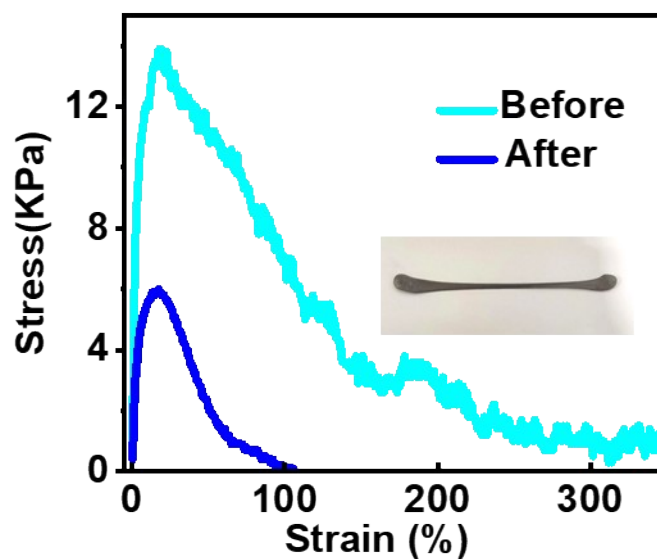
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2 **Fig. S4** (a & b) Optical image of chewed gum filled with LM droplets before (a) and
 3 after (b) adhering to skin test. (c) Twisting, bending and stretching test of chewed gum
 4 filled with LM droplets.

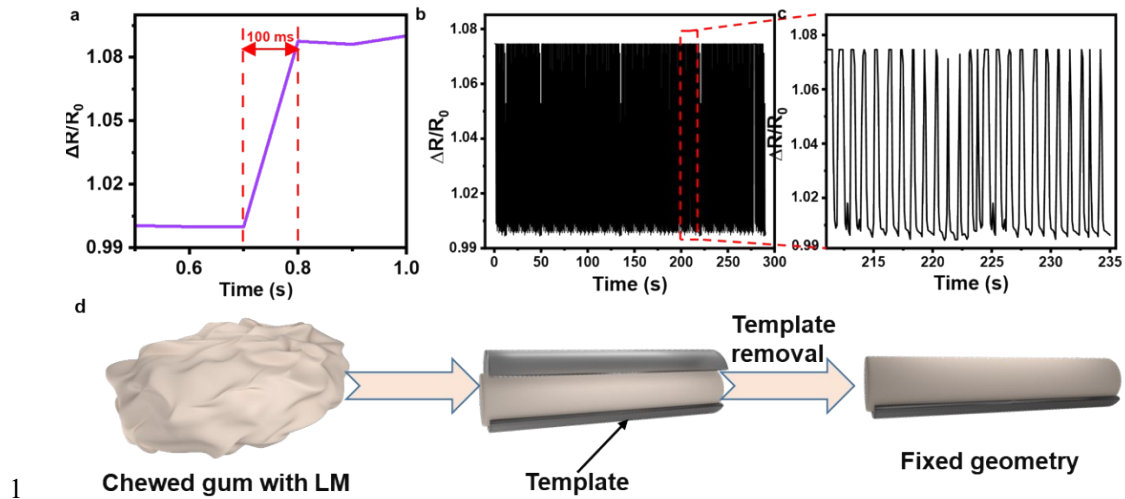
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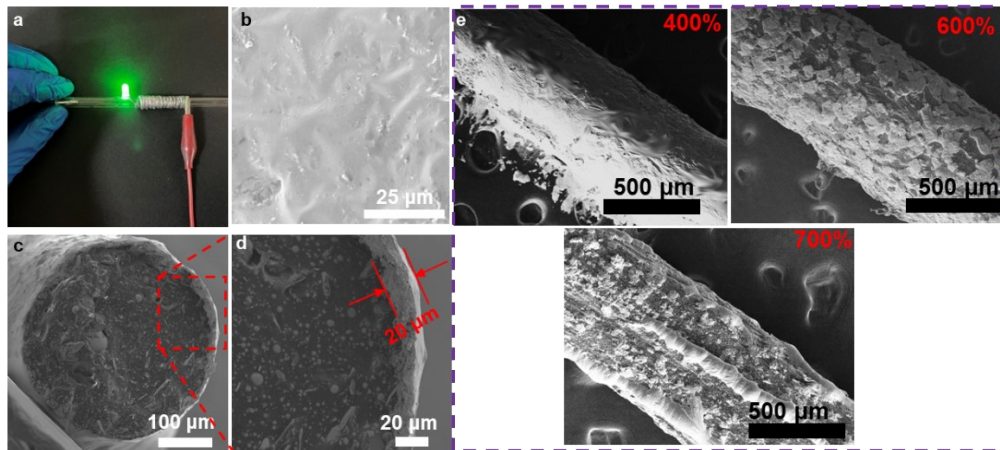
7 **Fig. S5** Mechanical performance chewed gum before and after healing.

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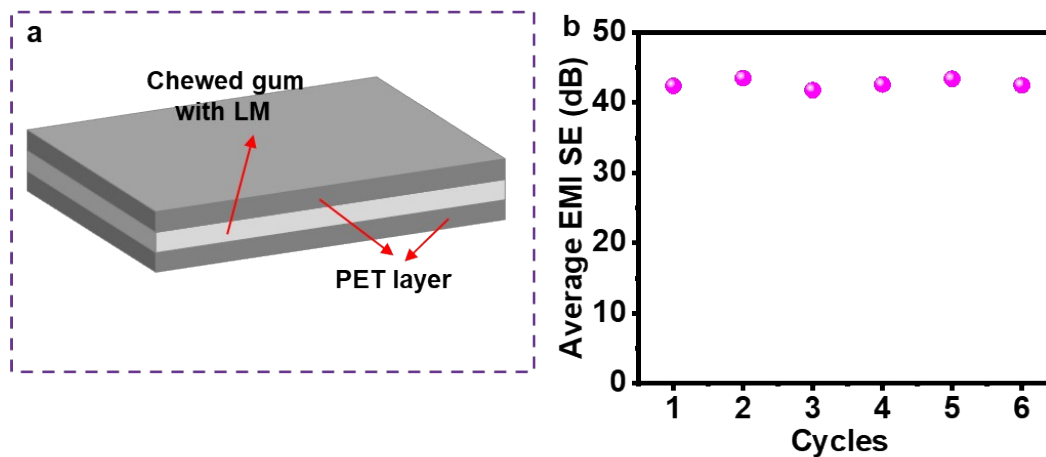
1 **Fig. S6** (a) Response time of chewed gum as strain sensor. (b) The sensing performance
 2 of chewed gum based sensor when fixed on the finger under repeated bending (angle
 3 of 90°)-release for 500 cycles. (c) The relative resistance change curves extracted from
 4 the red part in (b). (d) Preparation process of chewed gum for electrical conductivity
 5 measurement.
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9 **Fig. S7** (a) Conductive gum wrapped with LM as an electrode. (b–d) SEM image of
 10 surface (b) and cross section (c & d) of conductive chewed gum. (e) SEM images of
 11 surface morphology for liquid metal layer wrapped on the chewed gum during
 12 stretching process, which corresponding to strain of 400%, 600% and 700%.



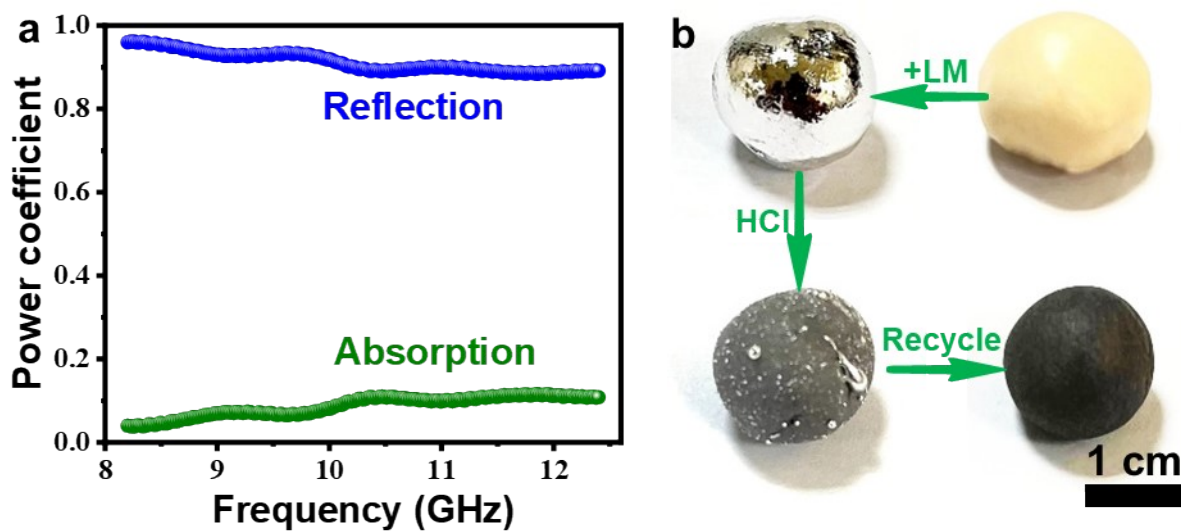
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2 **Fig. S8** (a) schematic diagram of chewed gum with liquid metal for EMI shielding

3 measurement. (b) Average EMI SE value of chewed gum wrapped with liquid metal

4 for different cycles.

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8 **Fig. S9** (a) Reflection and absorption coefficient of chewed gum wrapped with liquid

9 metal in frequency range 8.2-12.4 GHz. (b) Recycled test of conductive chewed gum

10 wrapped with bulk LM in 1 M HCl solution.