

*Supporting Information*

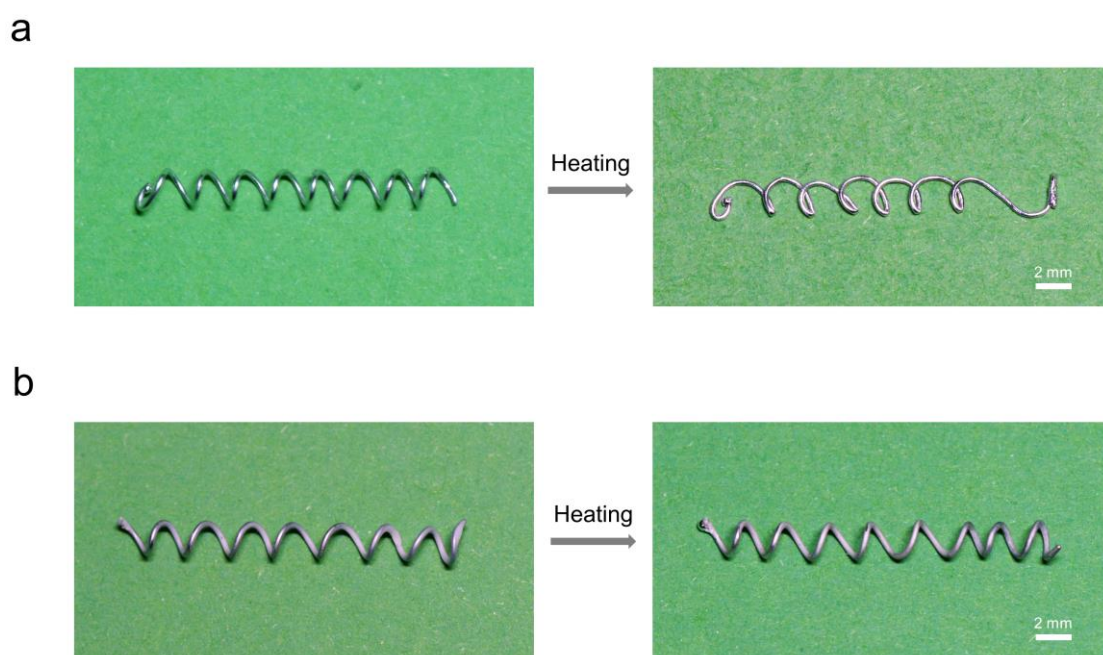
# Shape-Programmable Liquid Metal Fibers

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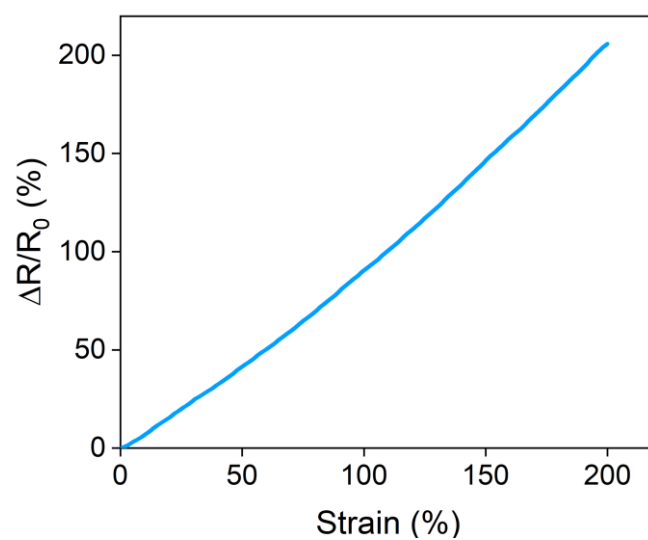
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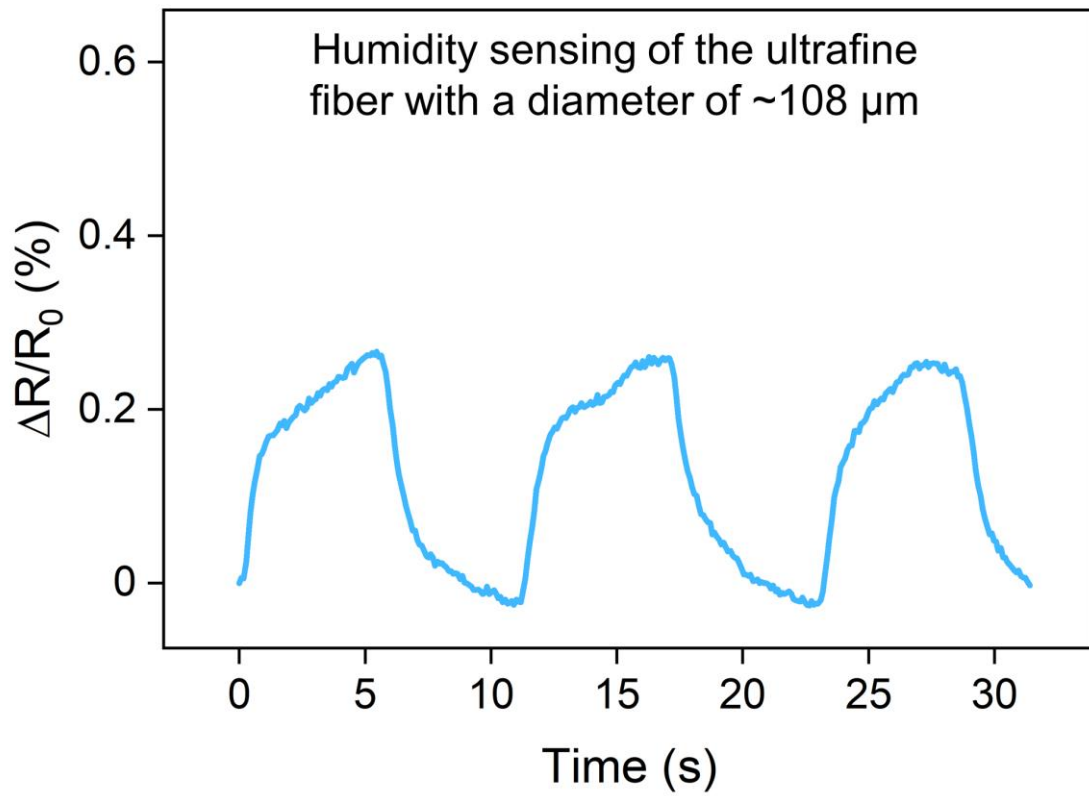
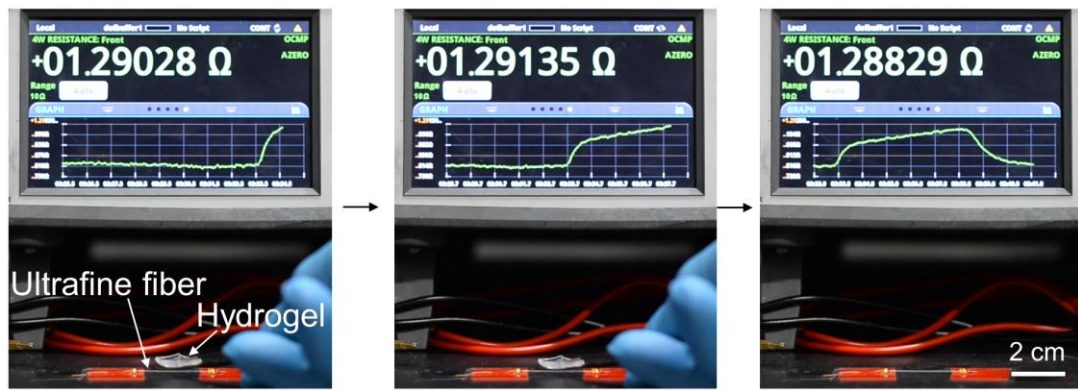
† These authors contributed equally to this work.



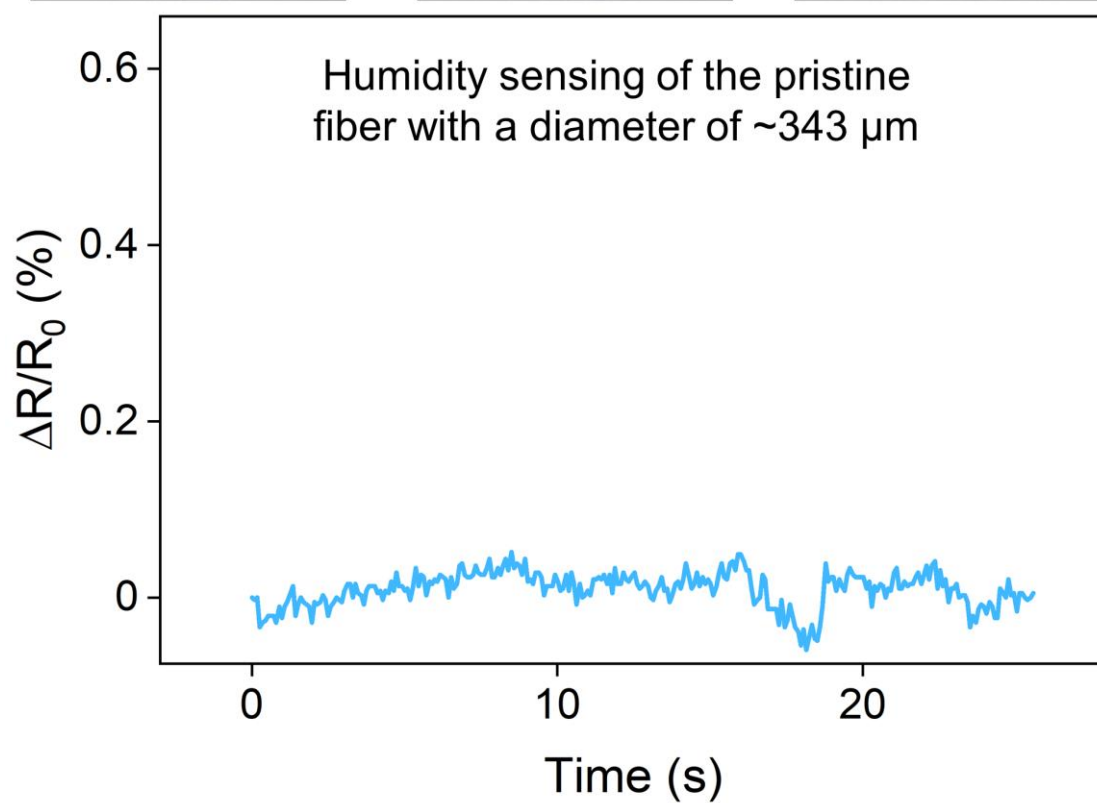
**Figure S1.** Comparations of the helical gallium fiber without (a) and with (b) PU shell after heating. The helical structure can be maintained with the support of a PU shell when the gallium was in the liquid state.



**Figure S2.** Relative resistance change of the ultrafine LM fiber as a function of the tensile strain.



**Figure S3.** Humidity sensing of the ultrafine fiber. The resistance of ultrafine fiber increased rapidly when a piece of hydrogel approached.



**Figure S4.** The pristine LM fiber with a diameter of  $\sim 343 \mu\text{m}$  showed no response to the humidity change of the environment.