A liquid metal/polypyrrole electrospun TPU composite conductive network for highly sensitive strain sensing in human motion monitoring

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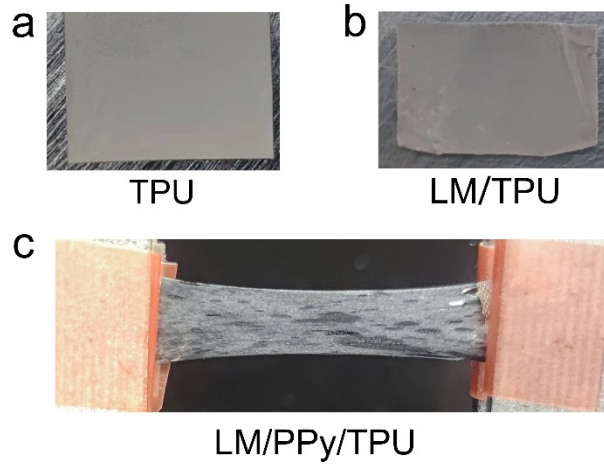
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Fig. S1. a Electrospinning TPU optical photos. **b** LM/TPU optical photos. **c** LM/PPy/TPU optical photos.
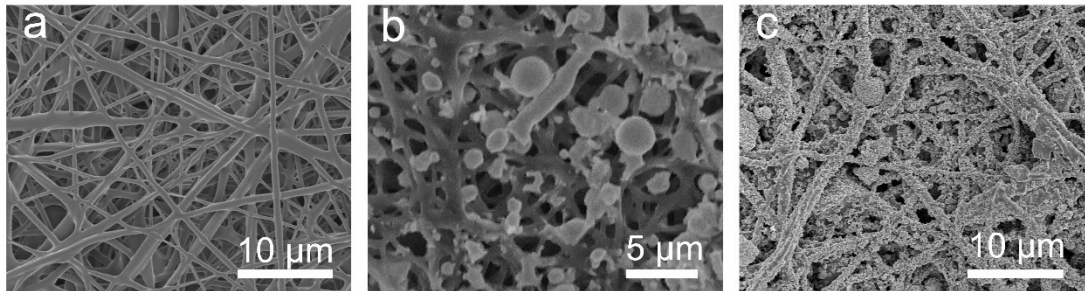

Fig. S2. a SEM image of electrospun TPU. **b** SEM image of LM/TPU composite film. **c** SEM image of LM/PPy/TPU composite film.
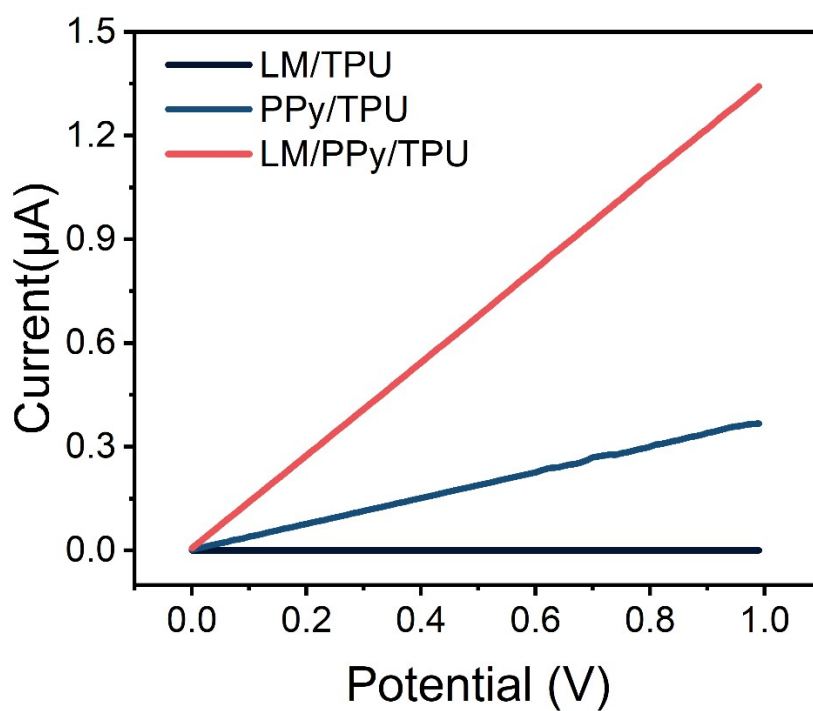
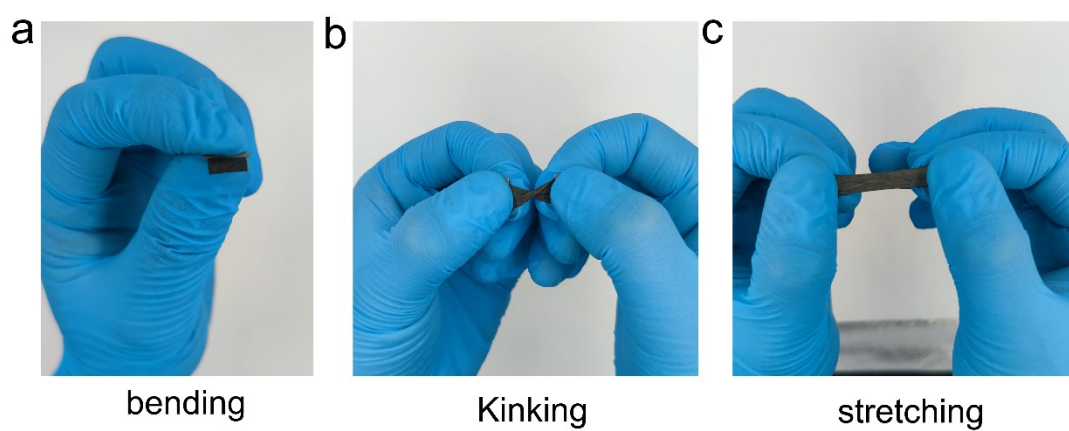**Fig. S3.** *I-V* curves of LM/TPU film, PPy/TPU composite film and the LM/PPy/TPU composite film.

Fig. S4. a Photo of flexible strain sensor bending. **b** Photo of flexible strain sensor kinking. **c** Photo of flexible strain sensor stretching.
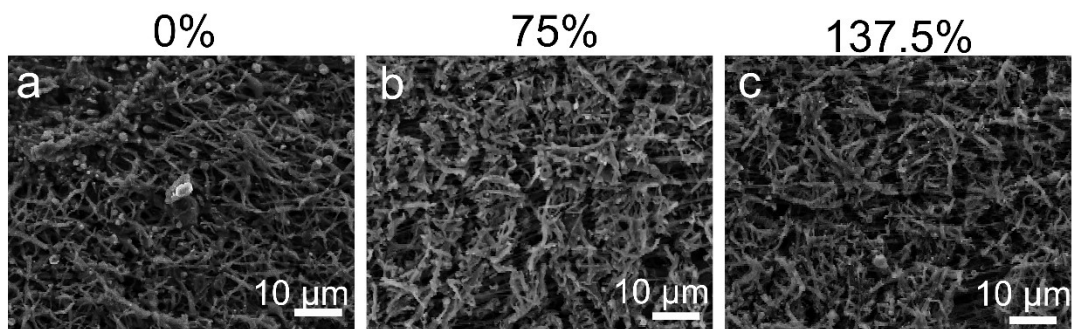
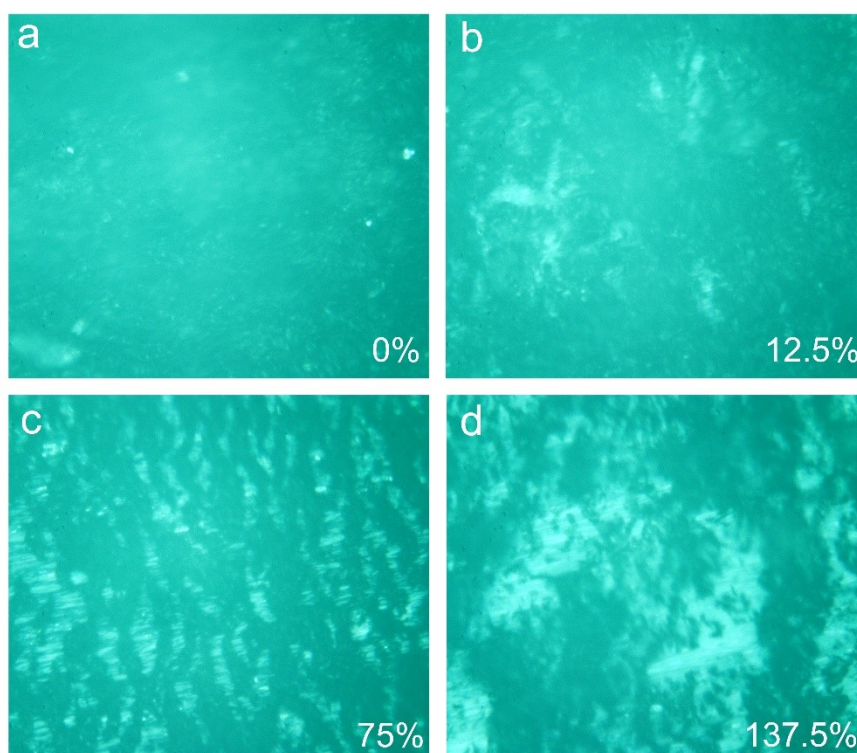**Fig. S5.** SEM images of LM/PPy/TPU film under different tensile of 0%,75% and 137.5%.

Fig. S6. Optical microscope images of LM/PPy/TPU film under different tensile of 0%,12.5% and 137.5%.
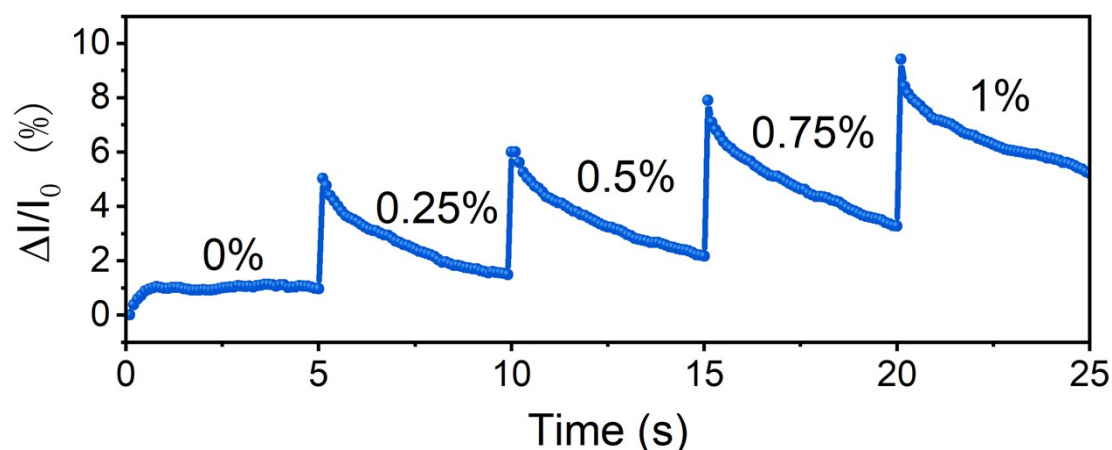
Fig. S7. Relative current change curve of LM/PPy/TPU stress sensor under 0% - 1% strain.

Table S1. Performance comparison of strain sensors based on liquid metal

Sample	Detectability	Sensitivity	Response time	Working range	Ref.
EGaIn	0.09%	4.91	116 ms	$0 < \varepsilon < 320\%$	1
EGaInSn	0.3%	2.2	--	$0 < \varepsilon < 140\%$	2
EGaIn	2.9%	0.66	--	$0 < \varepsilon < 100\%$	3
EGaAu	--	1	--	$0 < \varepsilon < 4\%$	4
EGaInSn	2.5%	4.36	180ms	$0 < \varepsilon < 137.5\%$	This work

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