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Electronic Supplementary Information for

Crack-based Nickel@Graphene Wrapped Polyurethane Sponge Ternary Hybrid by Electrodeposition for Highly Sensitive Wearable Strain Sensor

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Contents:

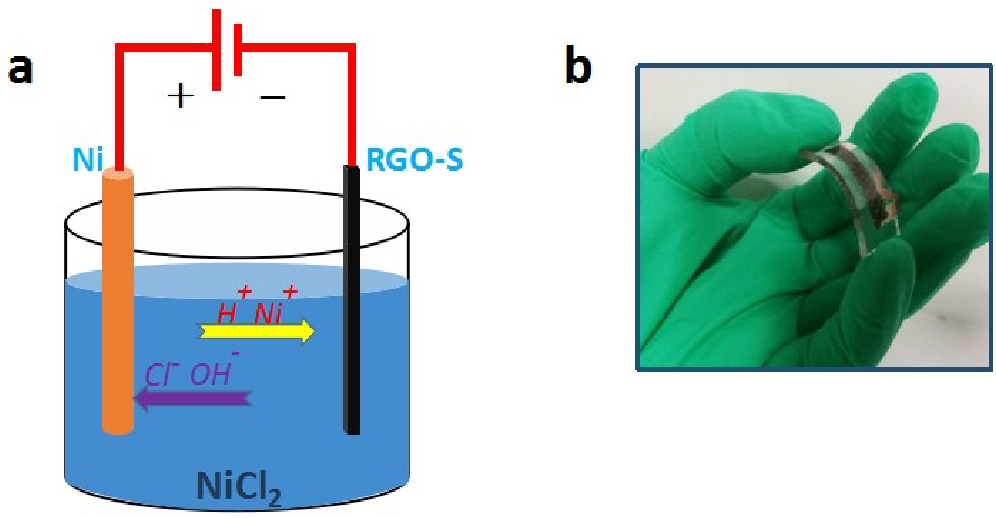

Fig. S1. a) The sketch of electrodeposition device. b) The optical photograph of as-prepared Ni@GPUS strain sensor.

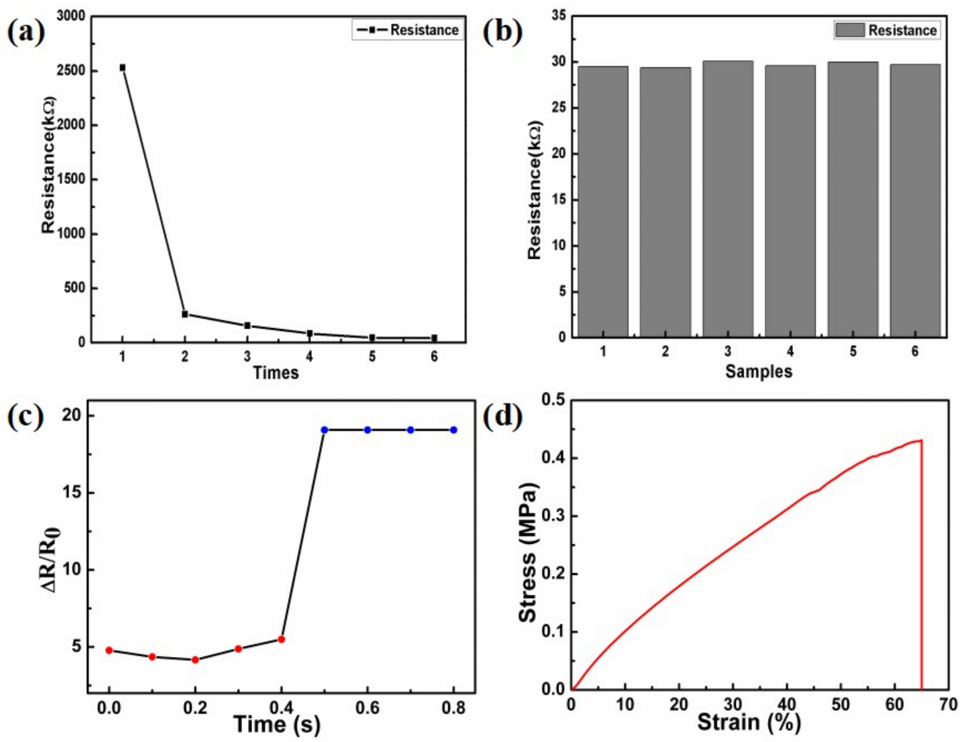

Fig. S2. a) The relationship of the resistance and absorption-reduction times. b) The resistance of six GPUS samples, the average resistance is 29.72 kΩ and the most deviation is only 2%. c) The response time of the sensor. d) The stress-strain curve of the Ni@GPUS strain sensor within 65% strain.

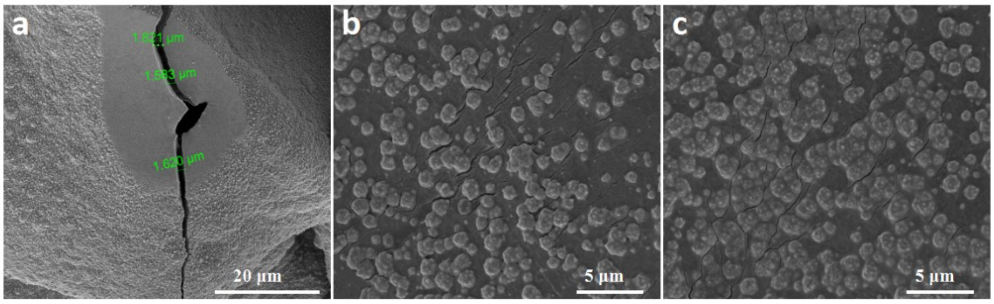

Fig. S3. a) The width of initial cracks on the nickel film. b-c) The cracks generated on graphene layer at the start of electrodeposition process.

Table S1. Conclusion and comparison of gauge factor (GF) from reported papers about flexible strain sensors

Reference	Materials	Stretchability (%)	GF
(1)	AgNWs-PDMS	70	2-14
(2)	CNT-Ag NP composites	2.4	24-95
(3)	CNTs-Ecoflex	500	1-2.5
(4)	Graphene-rubber	800	10-35
(5)	CBs-PDMS	10	1.8-5.5
(6)	ZnONWs-PDMS	50	114

(7)	AuNWs-PANI-rubber	149.6	20.4-61.4
(8)	Graphene foam-PDMS	70	15-29
(9)	Platinum (Pt)-PDMS	2	2000
	Our work	65%	36.03-3360.09

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