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

Supporting Information

A natural-derived supramolecular elastomer containing green-synthesized silver nanofibers for self-repairing E-skin sensor

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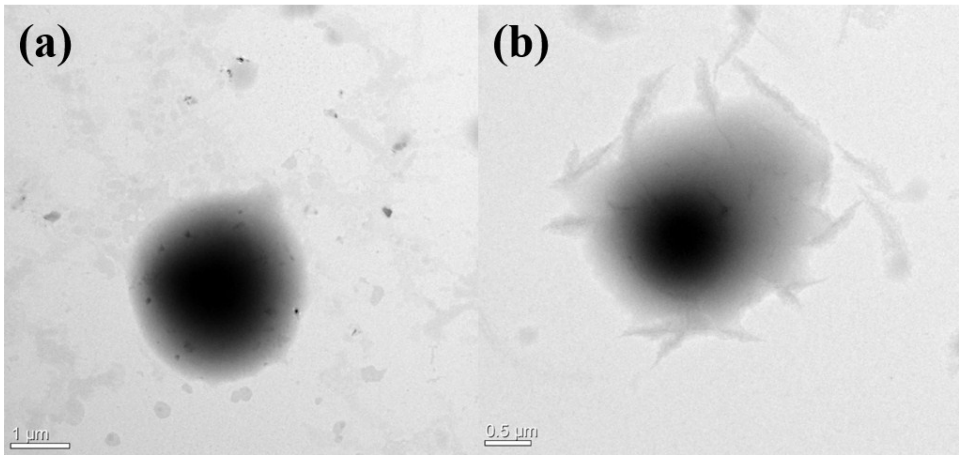

Fig. S1 TEM images of NR (a) and CT@NR (b).

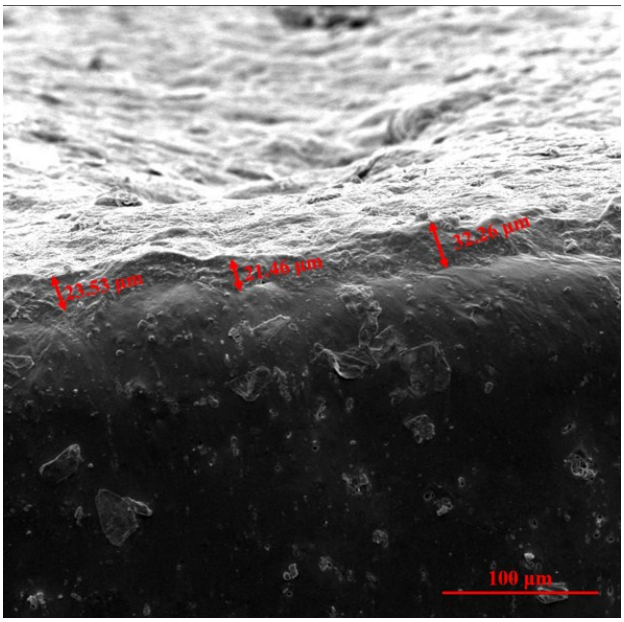

Fig. S2 SEM image of cross-section of the strain sensor. The thickness of coating layer is marked by red arrows.

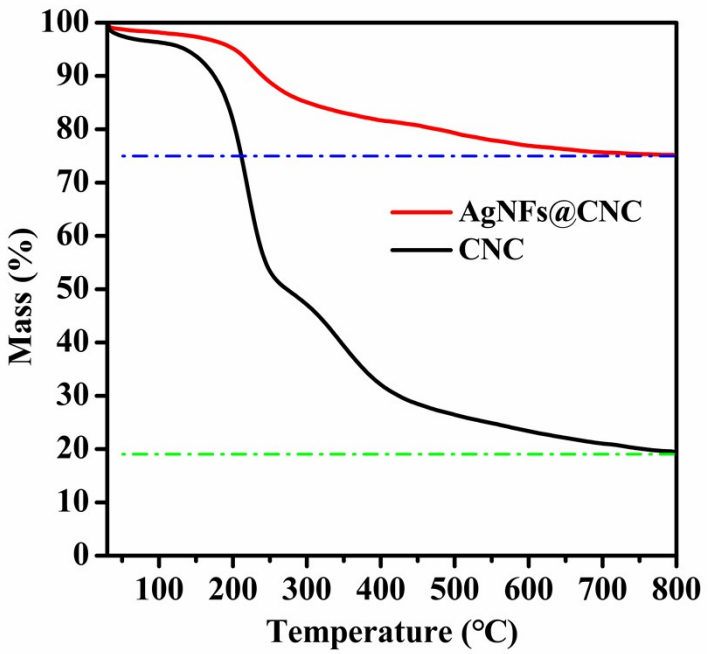

Fig. S3 TG analysis of AgNFs@CNC and pristine CNC.

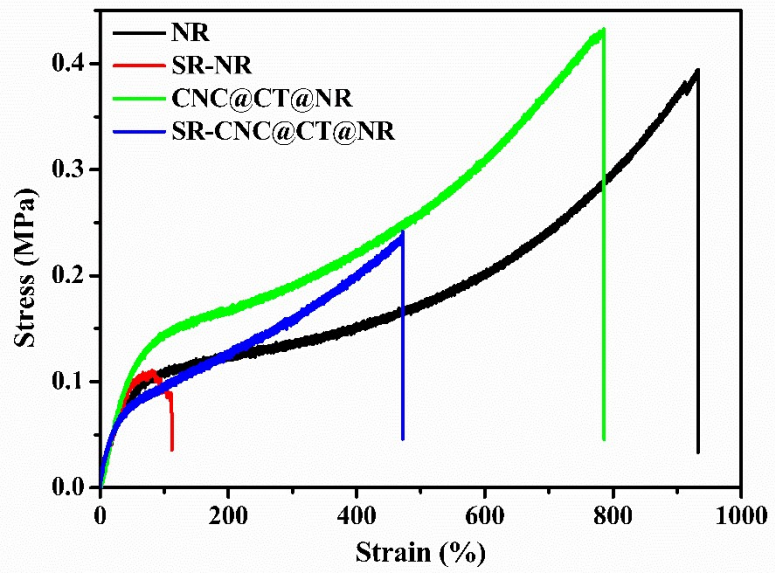

Fig. S4 Stress-strain curves of NR, SR-NR, CNC@CT@NR and SR-CNC@CT@NR.

The self-repairing capacity of pure NR and CNC@CT@NR was investigated. It can be clearly observed in **Fig. S4** that without constructing the supramolecular structure, pure NR presents poor real-time self-repairability at room temperature. Besides, after introducing CNC and CT, the elastomer shows better self-repairing capability compared with the pure NR mainly due to a degree of hydrogen bonding interaction between CNC and CT@NR latex, respectively. However, it cannot outperform our supramolecular elastomer in self-repairability in mechanical strength, which confirms the role of PCA in constructing effective supramolecular system.

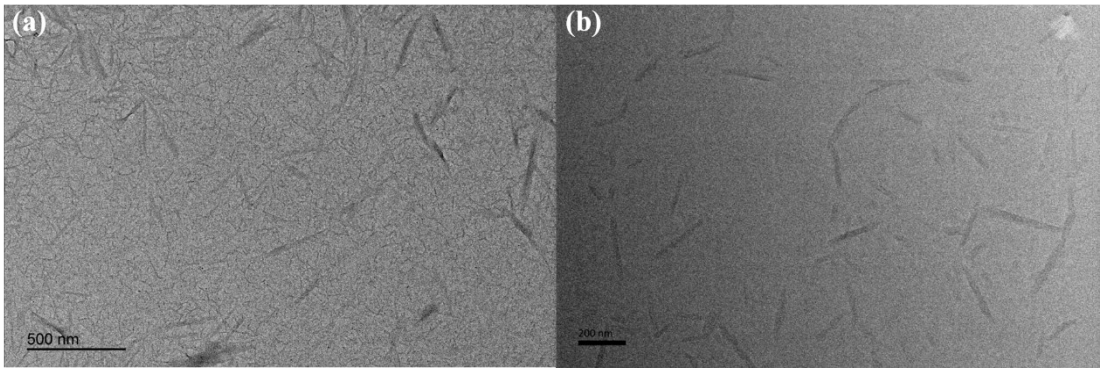

Fig. S5 (a, b) TEM images of CNC with different magnifications.

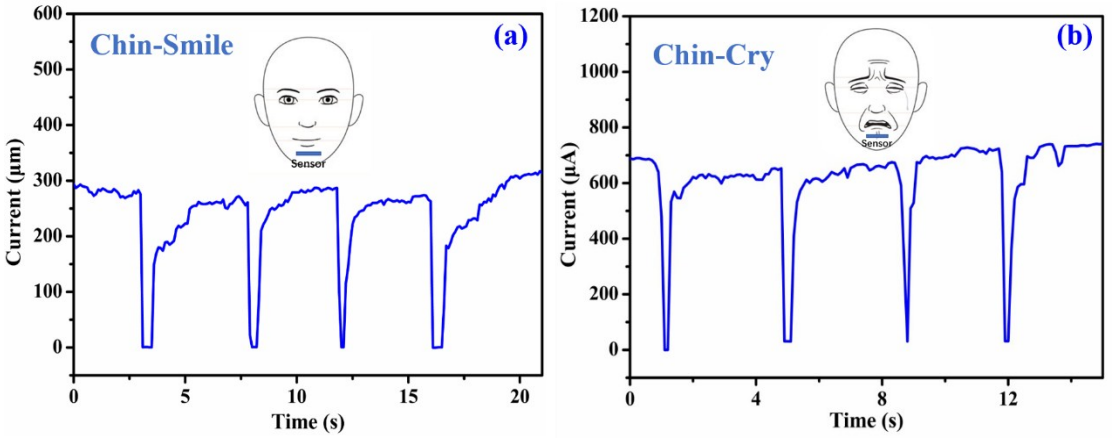

Fig. S6 Sensor attached to chin to monitor (a) smile and (b) cry.

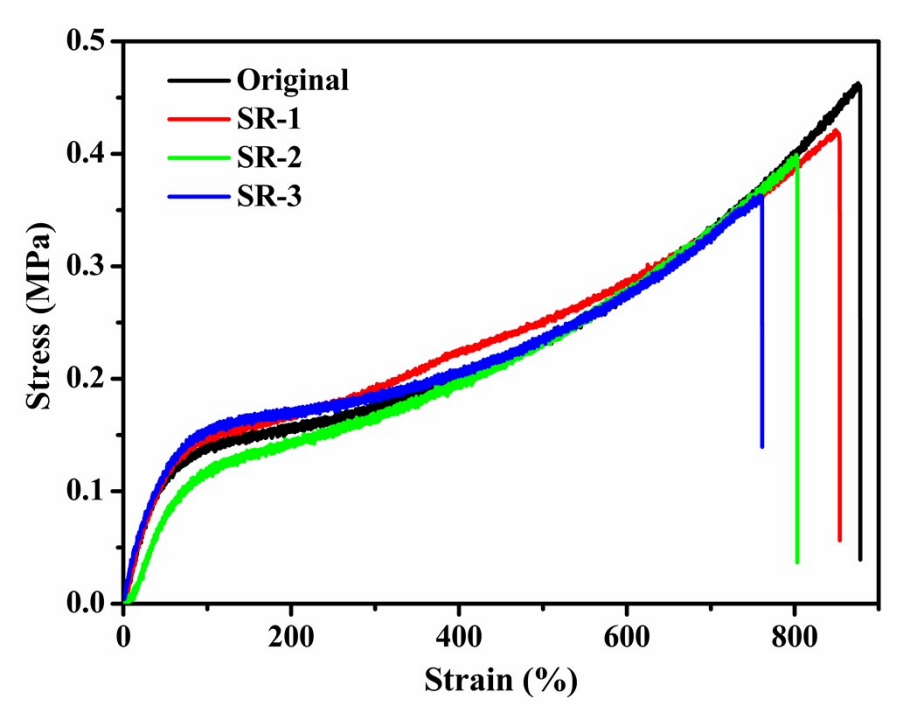

Fig. S7 Stress-strain curves of original, 1st, 2nd and 3rd self-repaired supramolecular elastomer.

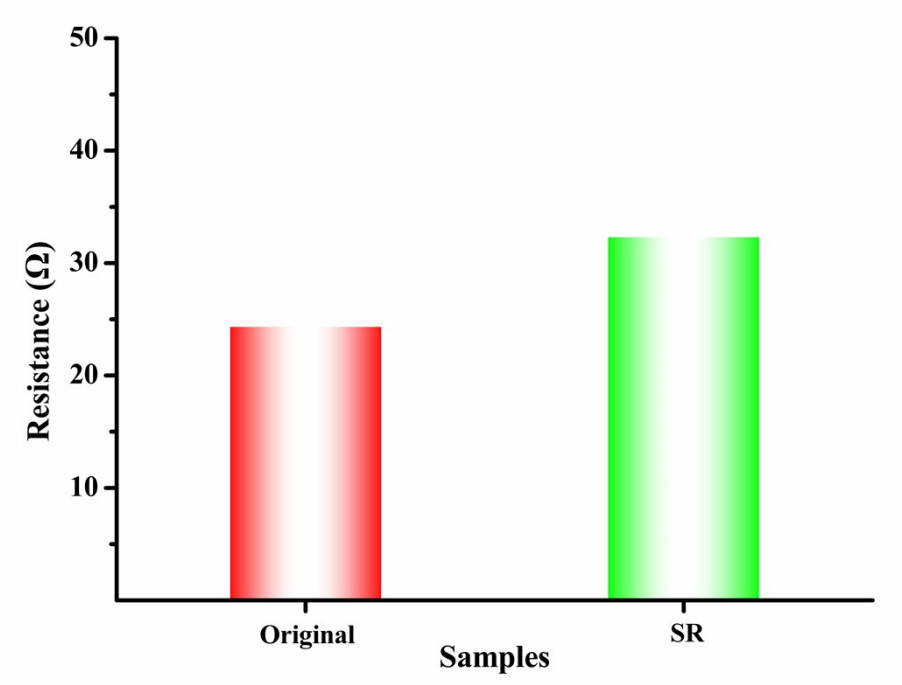

Fig. S8 Electrical self-repairing performance of the strain sensor.

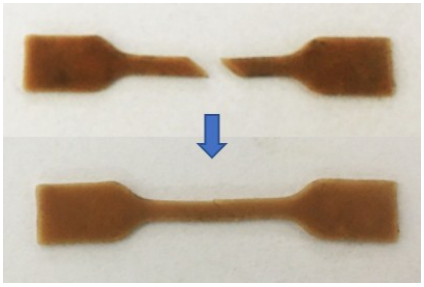

Fig. S9 Camera photos of the damaged and self-repaired supramolecular elastomer.