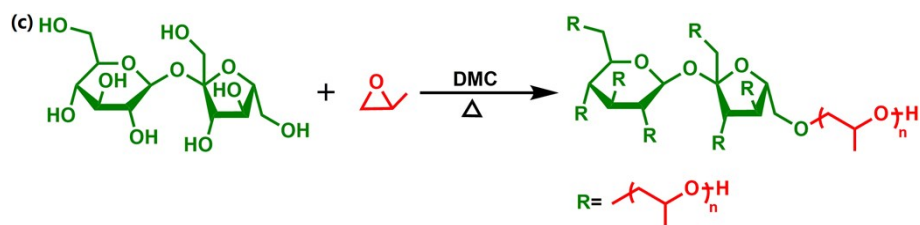
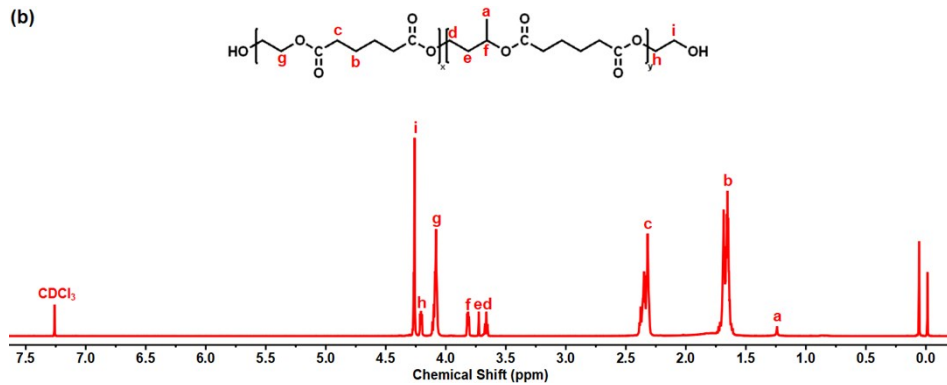
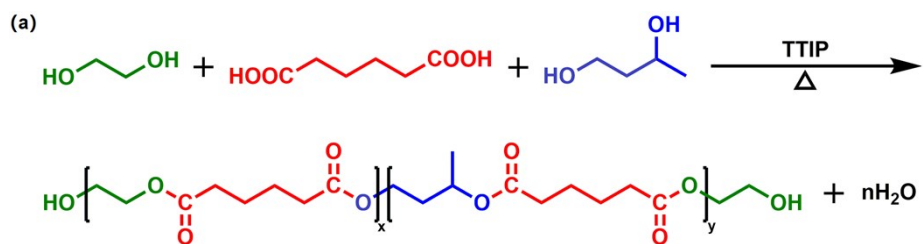


**Ultrasensitive and Highly Compressive Piezoresistive Sensor Based on
Biopolyol-Reinforced Polyurethane Sponge Coated with Silver
Nanoparticles and Carbon Nanotubes/Cellulose Nanocrystals**

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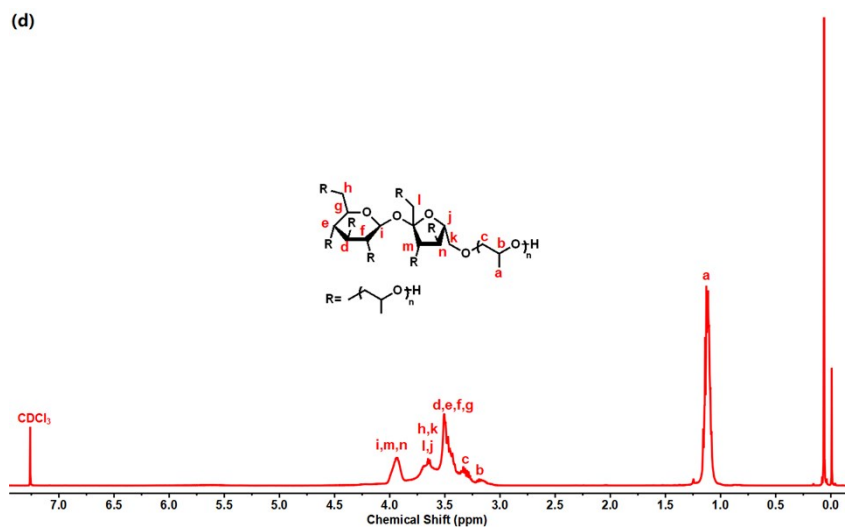


Figure S1. (a) Synthesis of bio-based polyester polyol. (b) ^1H NMR spectrum of bio-based polyester polyol. (c) Synthesis of bio-based polyether polyol. (d) ^1H NMR spectrum of bio-based polyether polyol.



Figure S2. The reaction equation for the reaction of isocyanate groups with moisture to form carbon dioxide.

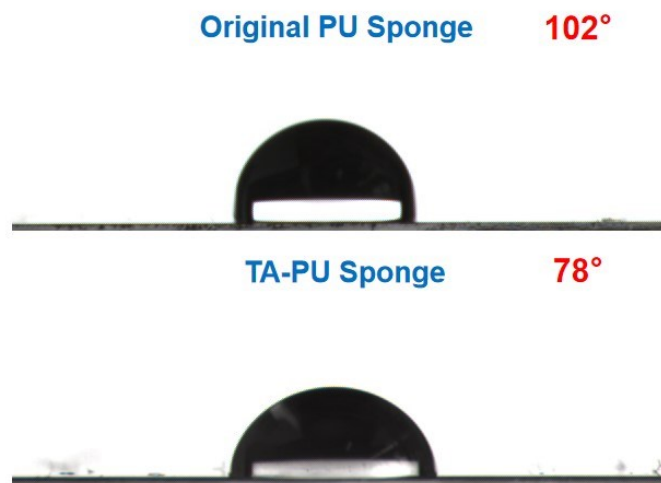


Figure S3. Water contact angle of original PU sponge and TA-PU sponge.

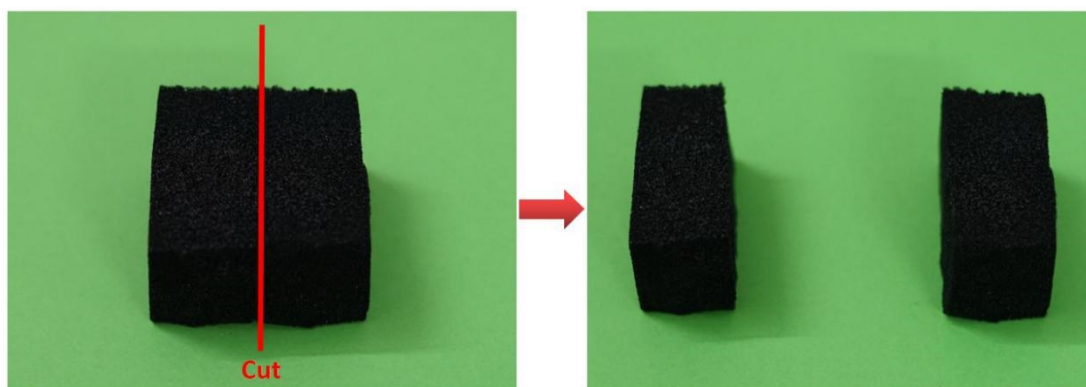


Figure S4. Uniform black outer appearance and fractured surfaces of AgNPs/CNTs-CNCs@TA-PU sponge.



Figure S5. Green leaf stably supports the AgNPs/CNTs-CNCs@TA-PU sponge.

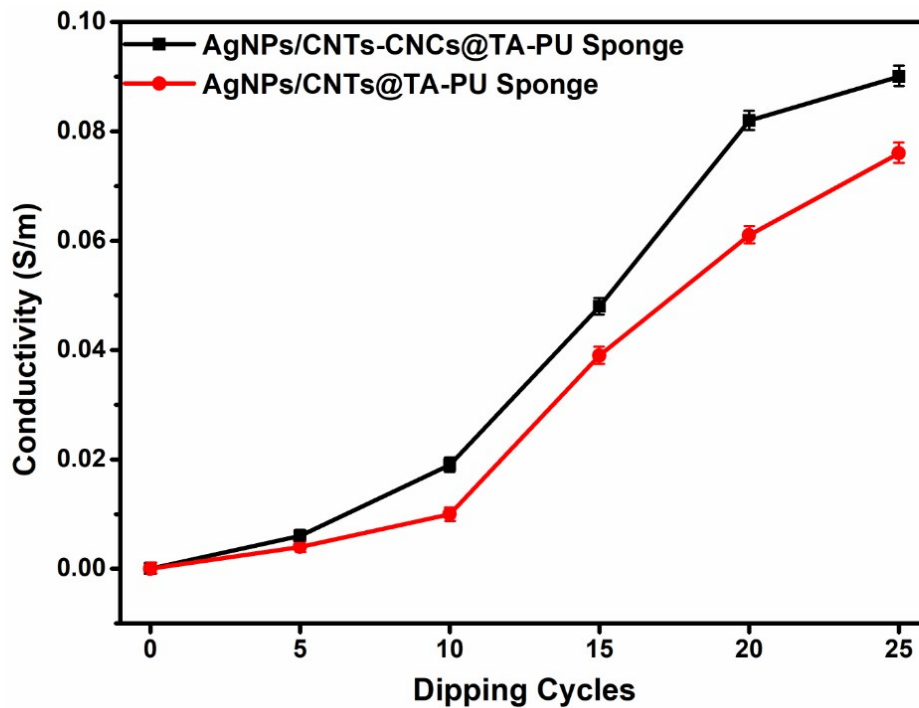


Figure S6. The relationship between the conductivity of the sponge and the dipping number.

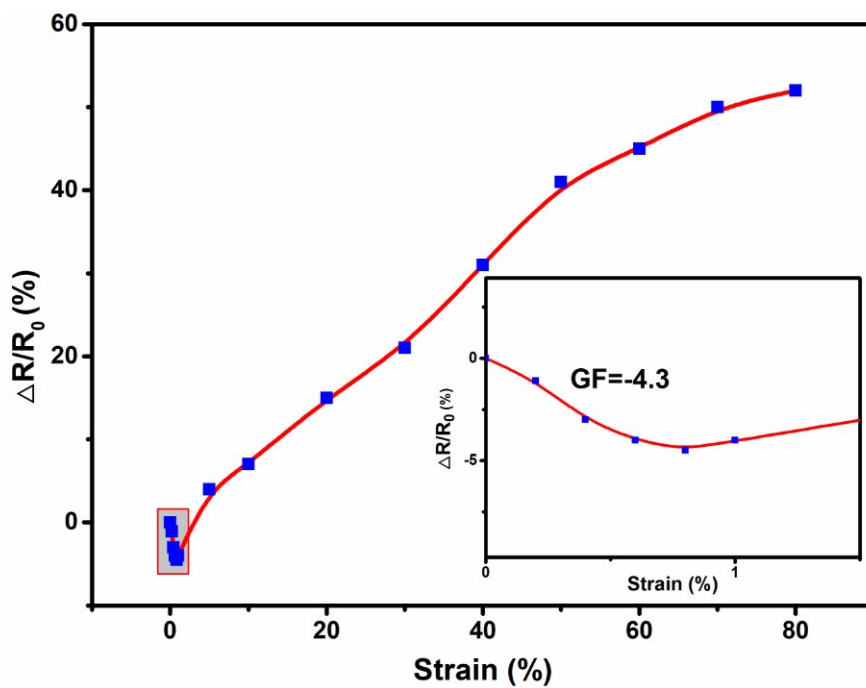


Figure S7. $\Delta R/R_0$ of the conductive AgNPs/CNTs@TA-PU sponge at different compressive strain.

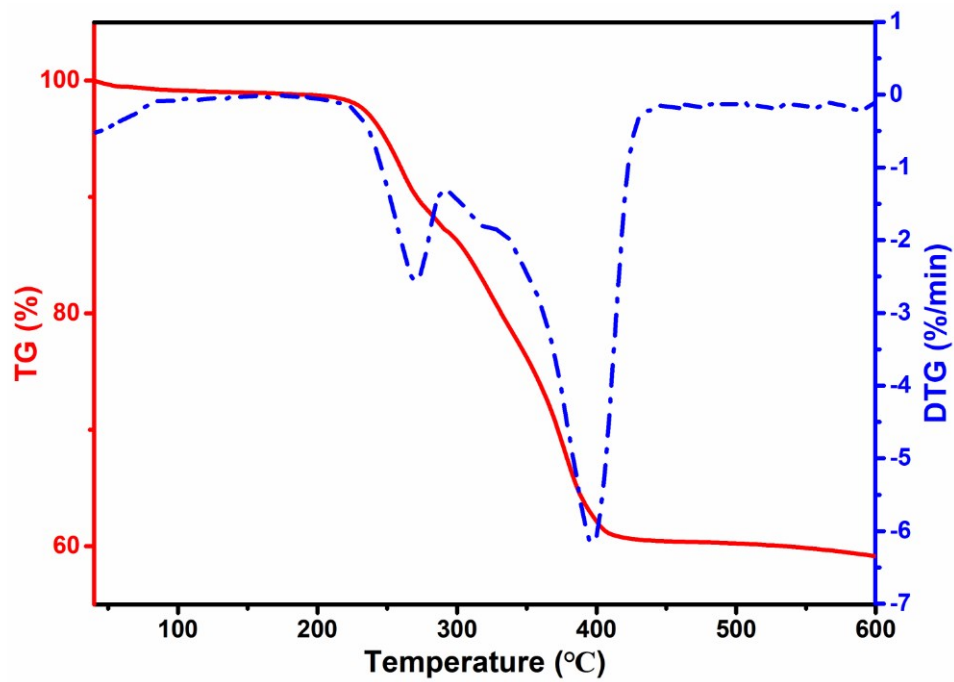


Figure S8. TGA and DTG curves of AgNPs/CNTs-CNCs@TA-PU sponge.

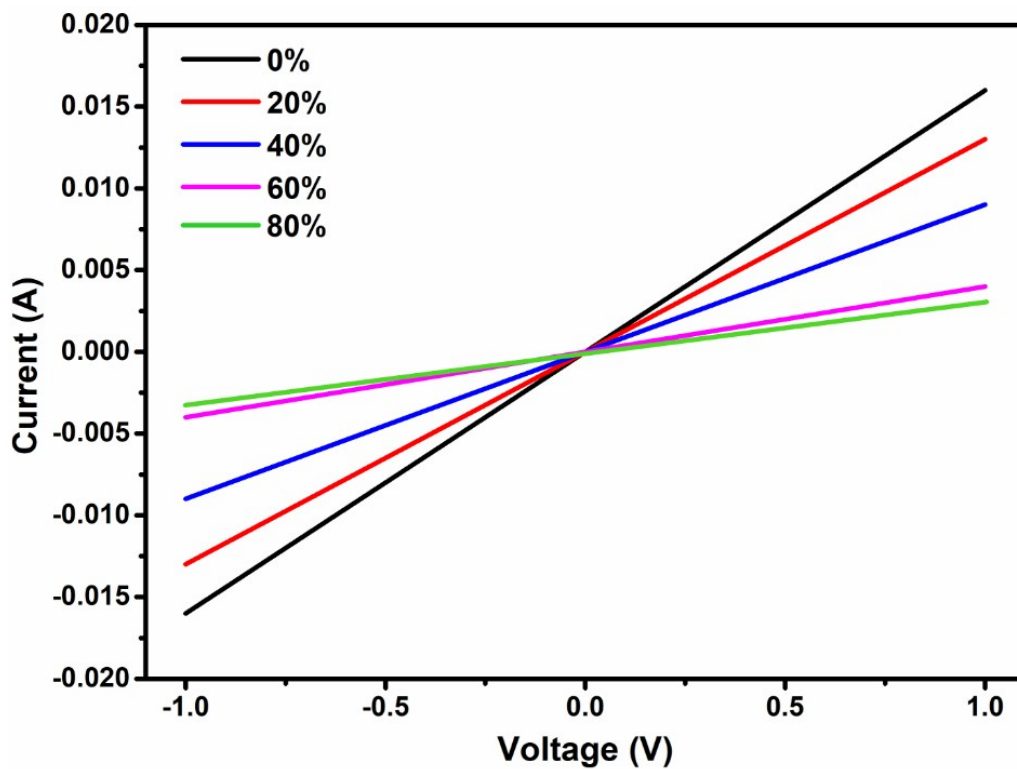


Figure S9. Current-voltage characteristic curves of healed conductive sponges under different compressive strain.

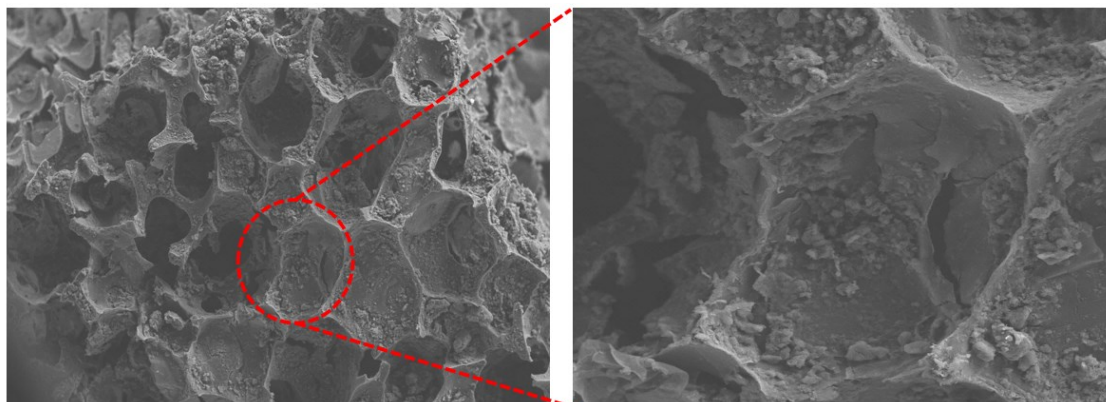


Figure S10. SEM images of the healed AgNPs/CNTs-CNCs@TA-PU sponge.