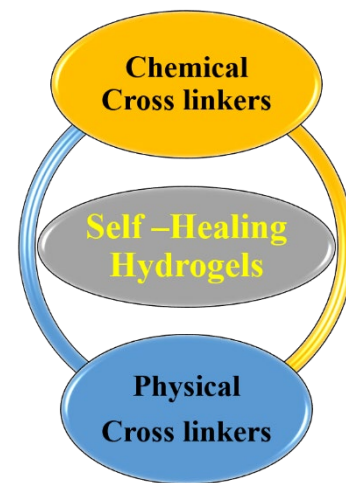# Shape Memory Self-Healable Hydrogel for Self-Powered Triboelectric Nanogenerator–Based E-Skin

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Graphical Abstract/ Layout


Project Description

The energy crisis is a major issue due to the oblivious usage of resources. We waste reliable energy most of the time rather than utilizing it efficiently. Triboelectric nanogenerators demonstrated a superior elective energy asset for some electronic gadgets due to their adaptability and enhanced device properties.

Recently triboelectric nanogenerators (TENG) have been deployed as a favorable strategy in biomechanical applications for energy harvesting, health monitoring, and sensing applications. However, frequent and inevitable mechanical impacts and fatigue during operation challenge their material stability and performance. For increased stability and guaranteed operation, self-healable materials that can autonomously recover from physical damages are required to extend their performance.

The proposed hydrogel-based self-healable E-skin TENG will mimic the morphology of human skin and will be useful for energy harvesting and sensing neurological and muscular data for health care monitoring.

Products/ Instruments/ Results/ Outreach Activities (Pictures)
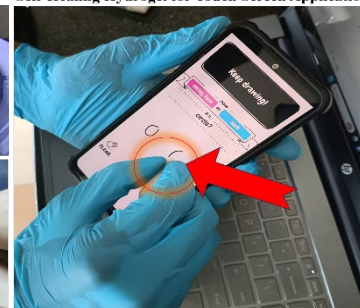

Self-healing & Conductivity performance
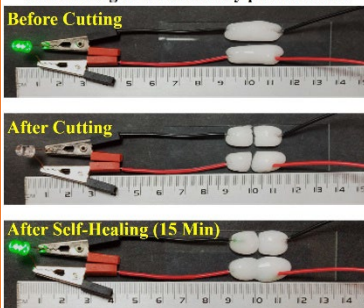
Mechanical Properties of the Self-Healing Hydrogel
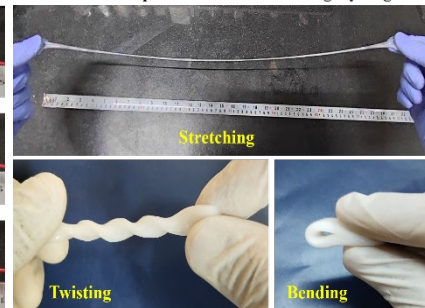
Self-Healing Hydrogel for Touch Screen Application