

Supplementary Materials for

Self-generating electricity system driven by aqueous humor flow and trabecular meshwork contraction motion activated BCKa for glaucoma intraocular pressure treatment

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Supplementary Text

SI Table1: Primer sequences of human RT-PCR

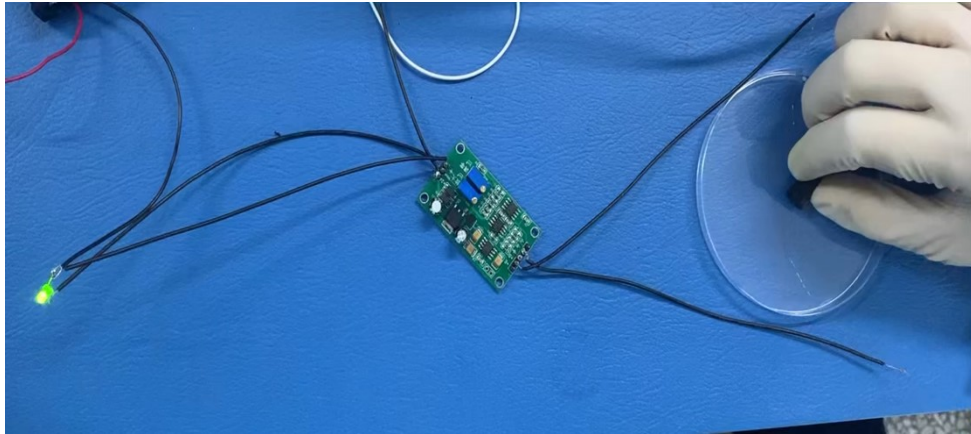
Target	Forward	Reverse
<i>GAPDH</i>	CTGGGCTACACTGAGCACC	AAGTGGTCGTTGAGGGCAATG
<i>FN</i>	CGGTGGCTGTCAGTCAAAG	AAACCTCGGCTTCCTCCATAA
<i>COL1a1</i>	GTGCGATGACGTGATCTGTG	CGGTGGTTTCTTGGTCCGGT
<i>α-SMA</i>	CTATGAGGGCTATGCCTTGC	GCTCAGCAGTAGTAACGAAGG
	C	A

SI Table2: Primer sequences of rabbit RT-PCR

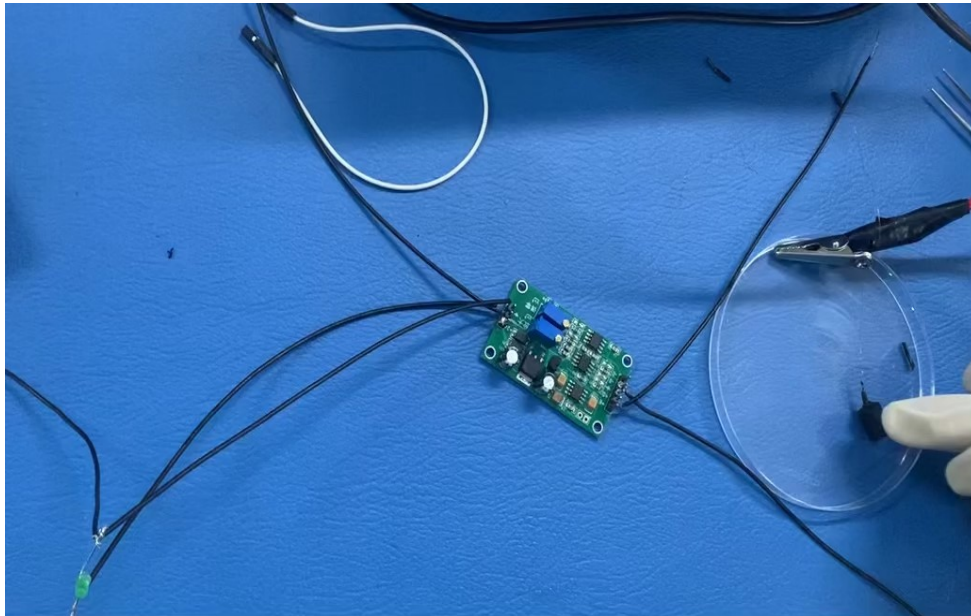
Target	Forward	Reverse
<i>GAPDH</i>	GTTTGTGATGGGCGTGAACC	GTCATGAGCCCCTCCACAAT
<i>IL-6</i>	ACTCACCTCTTCAGAACGAATT	CCATCTTTGGAAGGTTTCAGGTT
	G	G
<i>α-SMA</i>	AGCACTGTCAGGAATCCCGT	CAGCTCTTGGAGCATCGTCT

SI Table3: The electrical conductivity of hydrogel

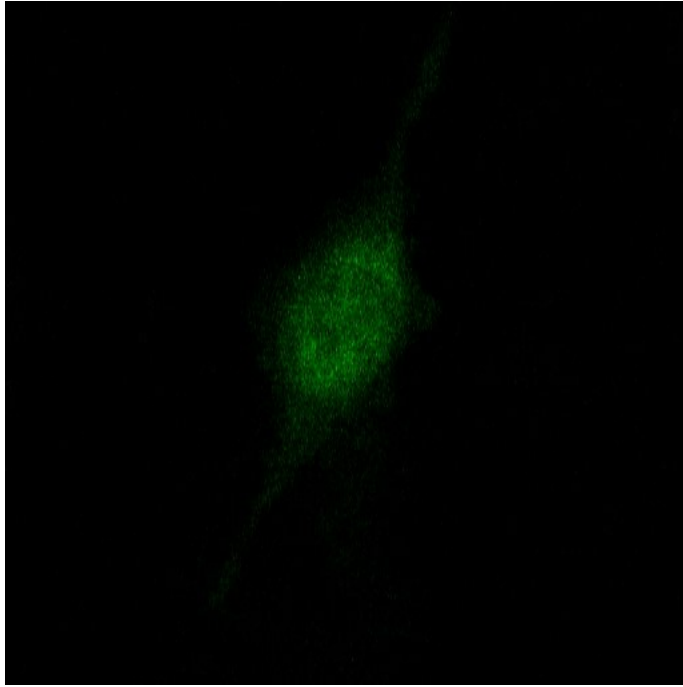
Sample	Conductivity, $\mu\text{S}/\text{cm}$
AM/GelMA/HA 0% MXene hydrogel	4.01 ± 0.08
AM/GelMA/HA 4% MXene hydrogel	7.92 ± 0.16



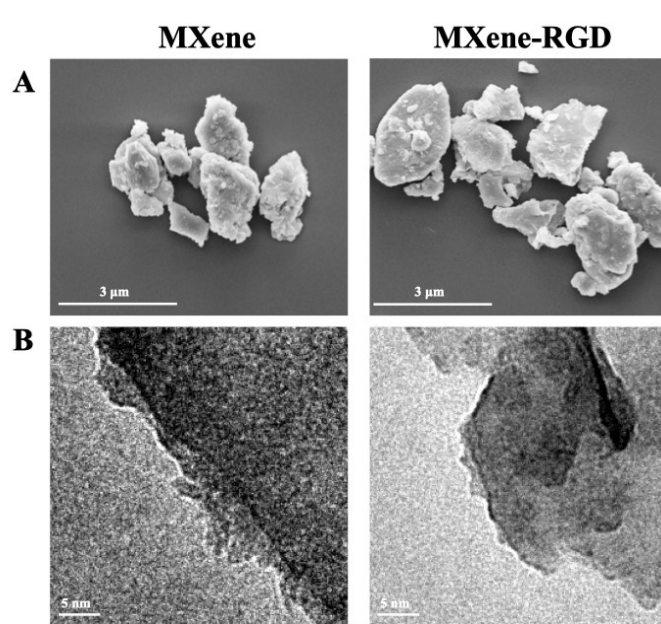
Supplementary Video 1. The movie of LED lighted by hand tapping of the AM/GelMA/HA 4% MXene hydrogel.



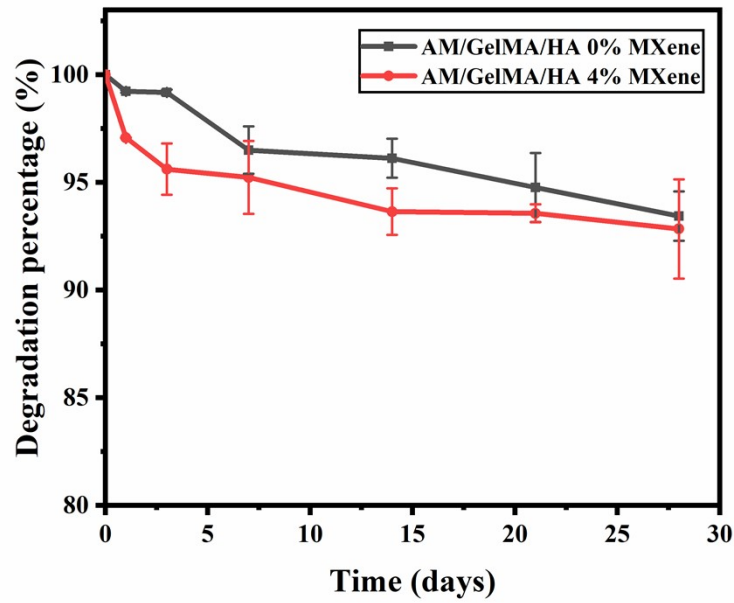
Supplementary Video 2. The movie of LED lighted by hand tapping of the AM/GelMA/HA 8% MXene hydrogel.



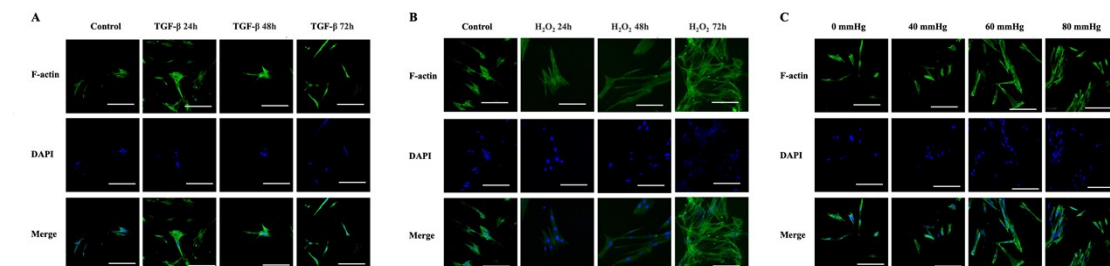
Supplementary Video 3. Fluorescence time lapses of Ca^{2+} imaging in piezoelectrically stimulated HTM cells. Total duration of the time lapse = 10 second.



Supplementary Figure 1. SEM (A) and TEM (B) images of MXene and MXene-RGD



Supplementary Figure 2. Degradation performance of the hydrogel for different doping concentrations of MXene nanosheets.



Supplementary Figure 3. Representative confocal images of F-actin in HTM cells with TGF-β₂, H₂O₂, and elevated pressure treatment. Scale bar=50 μm.