

Supporting Information for

## Mechanoluminescent-Triboelectric Bimodal Sensors for Self-Powered Sensing and Intelligent Control

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### Supplementary Figures

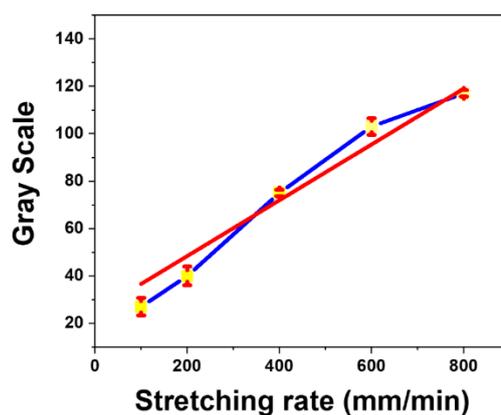


Fig. S1 Grayscale scale as a function of stretch rate

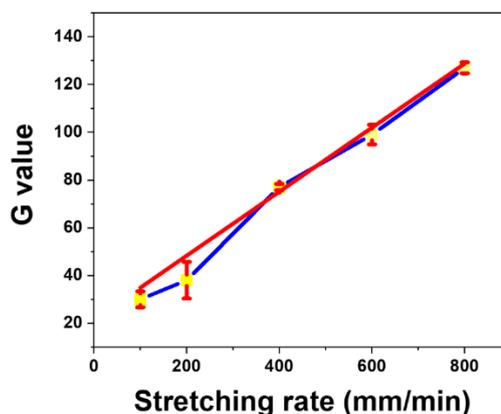
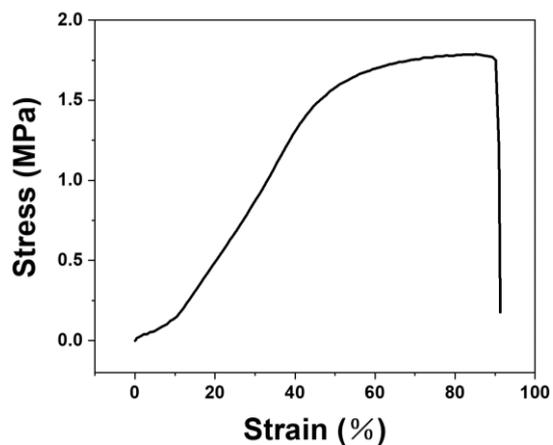
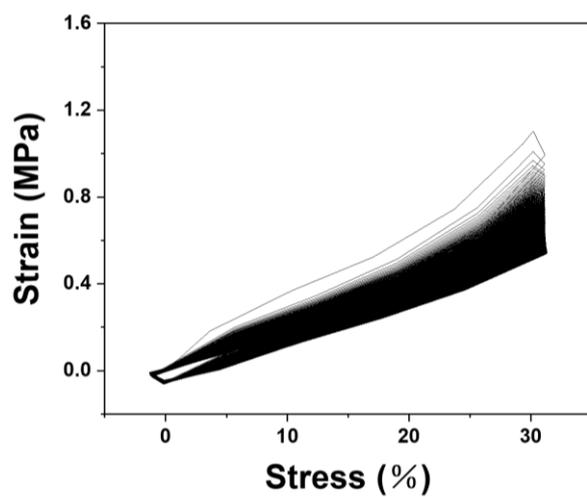


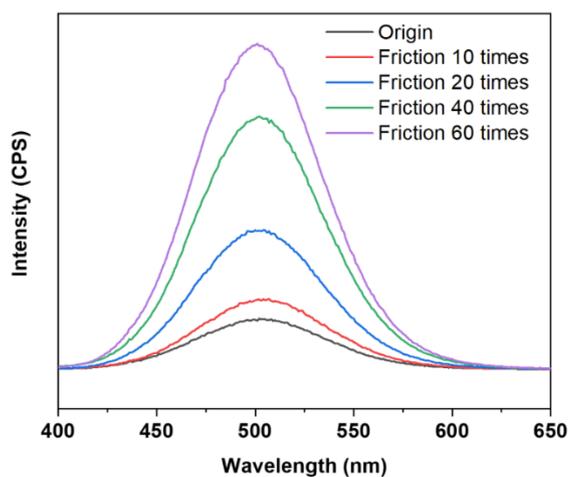
Fig. S2 G value as a function of stretch rate



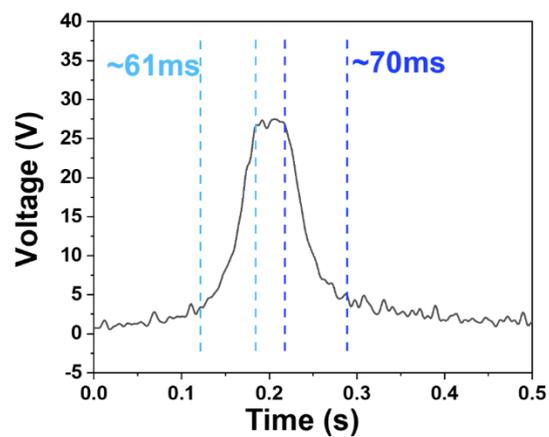
**Fig. S3** Stress-strain curve of the composite elastomer



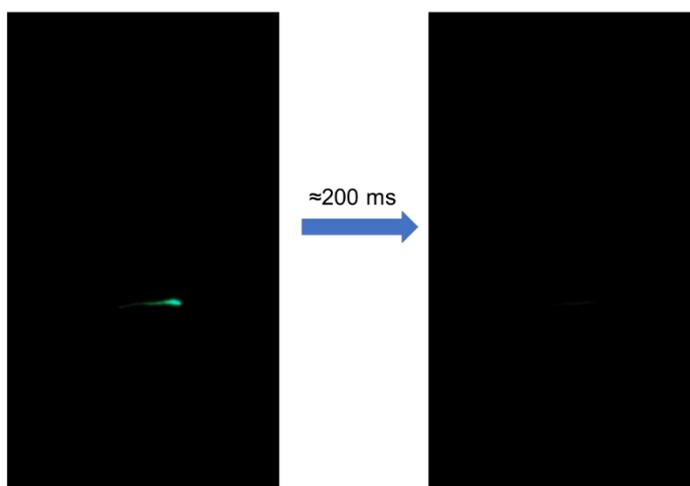
**Fig. S4** Stress-strain curves for 2000 tensile cycles



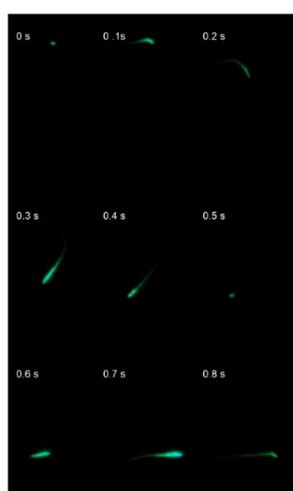
**Fig. S5** Fluorescence spectra before and after friction with PET



**Fig. S6** Response time and recovery time of the STME



**Fig. S7** Time of the ML



**Fig. S8** Continuous photos taken with the number 2 written in real time



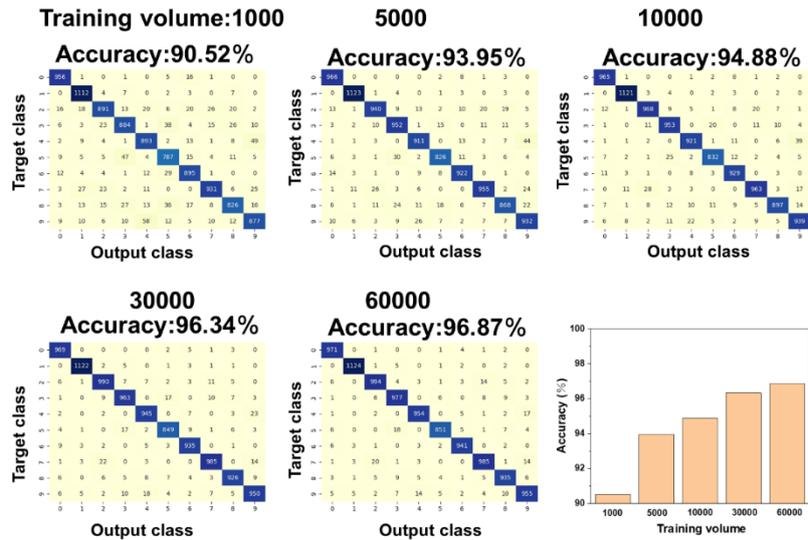


Fig. S12 Prediction confusion matrix using 1000, 5000, 10000, 30000, 60000 training volumes

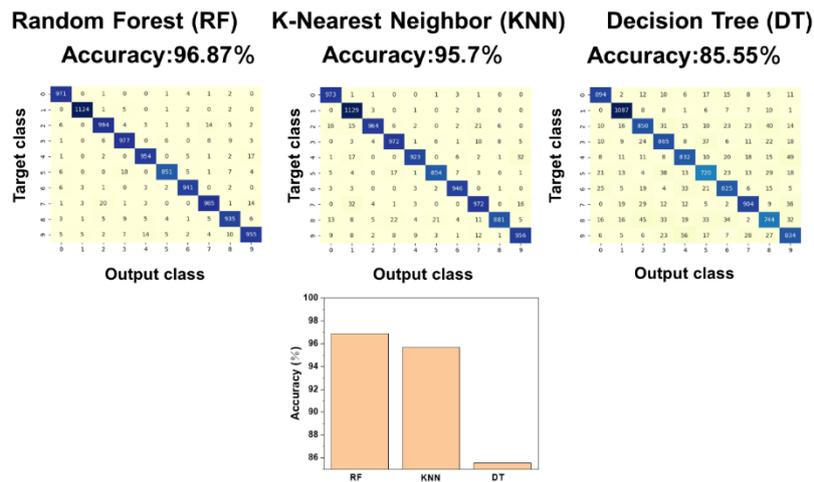


Fig. S13 Prediction confusion matrix using RF, KNN and DT algorithm

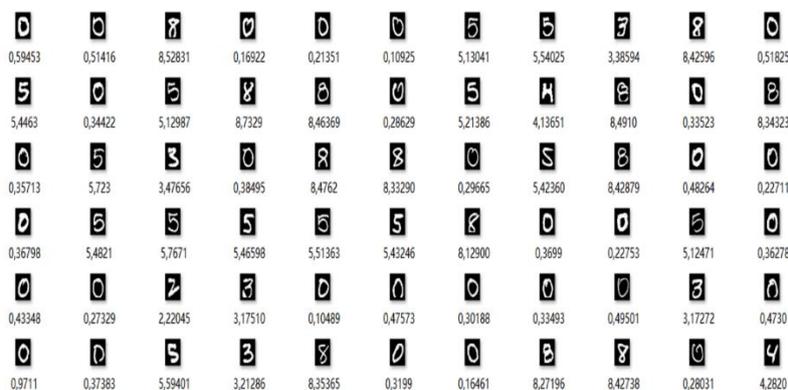


Fig. S14 Arabic numerals in an open source third-party handwritten numeral database