

Additive Manufacturing Sensor for Stress Biomarker Detection

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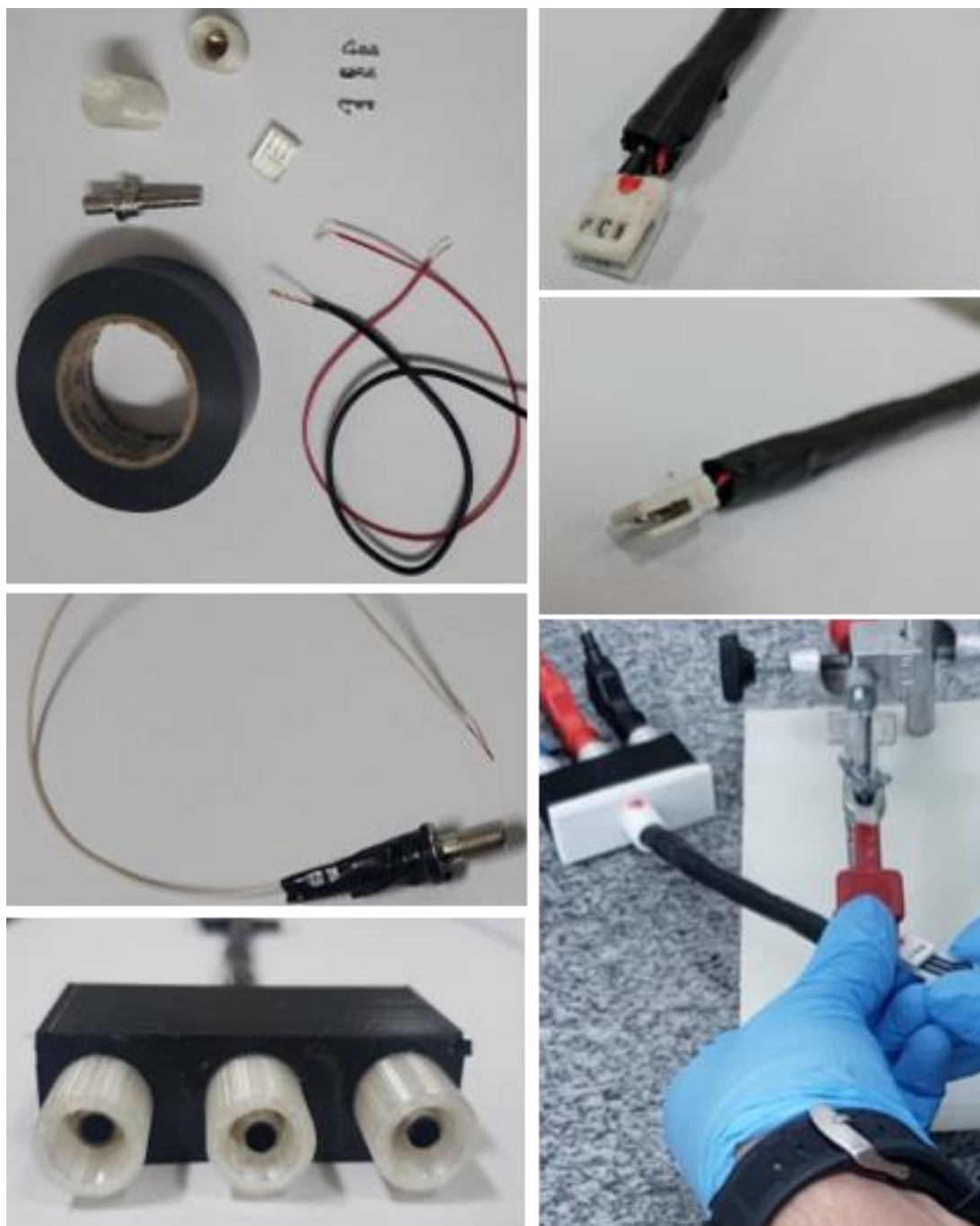


Figure S1. Assembling of the connector and support for the electrodes: (A-D) materials and the parts used for the connector fabrication; and (E-F) the ready-to-use connector.

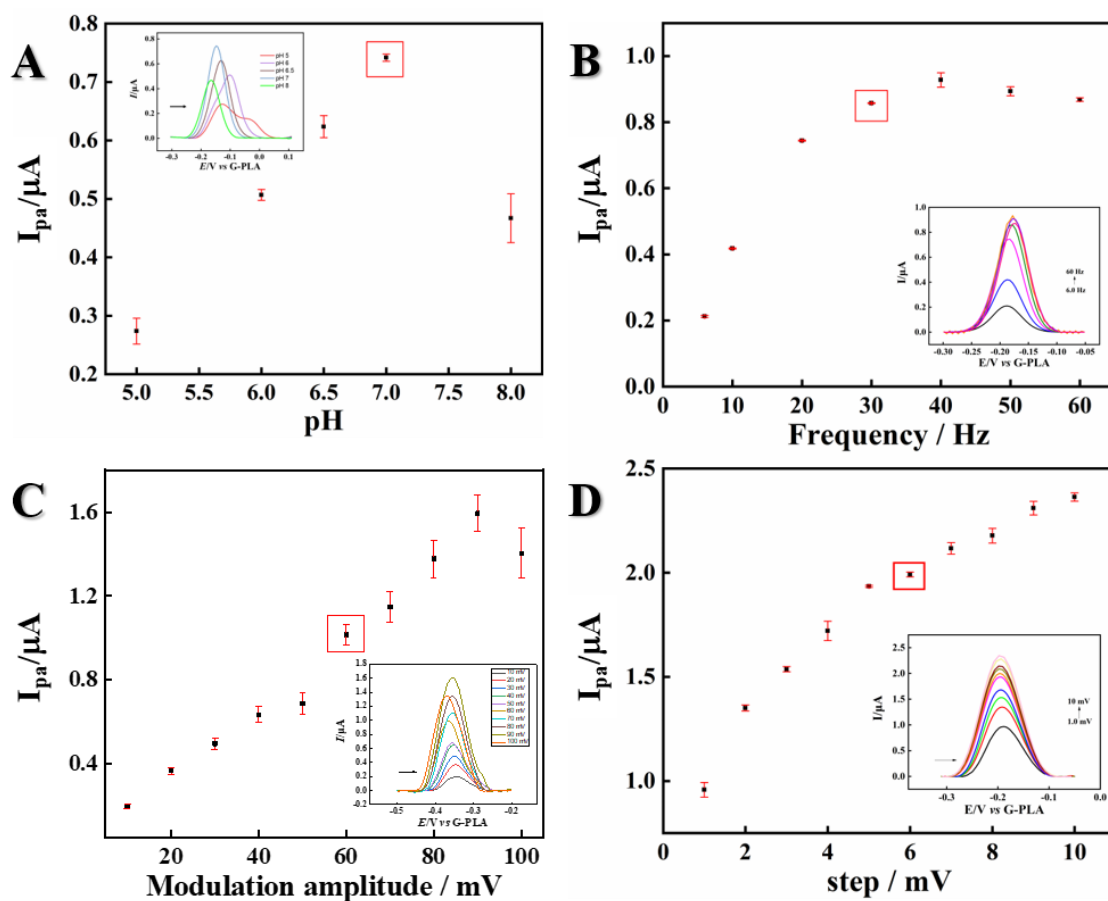


Figure S2. Evaluation of measurement and instrumental parameters for the determination of 0.1 mmol L⁻¹ epinephrine by SWV technique: (A) pH effect (5.0–8.0), (B) frequency (5.0–60 Hz), (C) modulation amplitude (5.0–8.0), and (D) step potential (n=3). SWV used parameters: (A) step = 5.0 mV, modulation amplitude = 20 mV, frequency = 6.0 Hz; (B) step = 5.0 mV, modulation amplitude = 20 mV; (C) step = 5.0 mV, Frequency 30 Hz; (D) Modulation amplitude = 60 mV, frequency = 30 Hz. (B-D) Supporting electrolyte: 0.1 mol L⁻¹ phosphate buffer (pH 7.0).

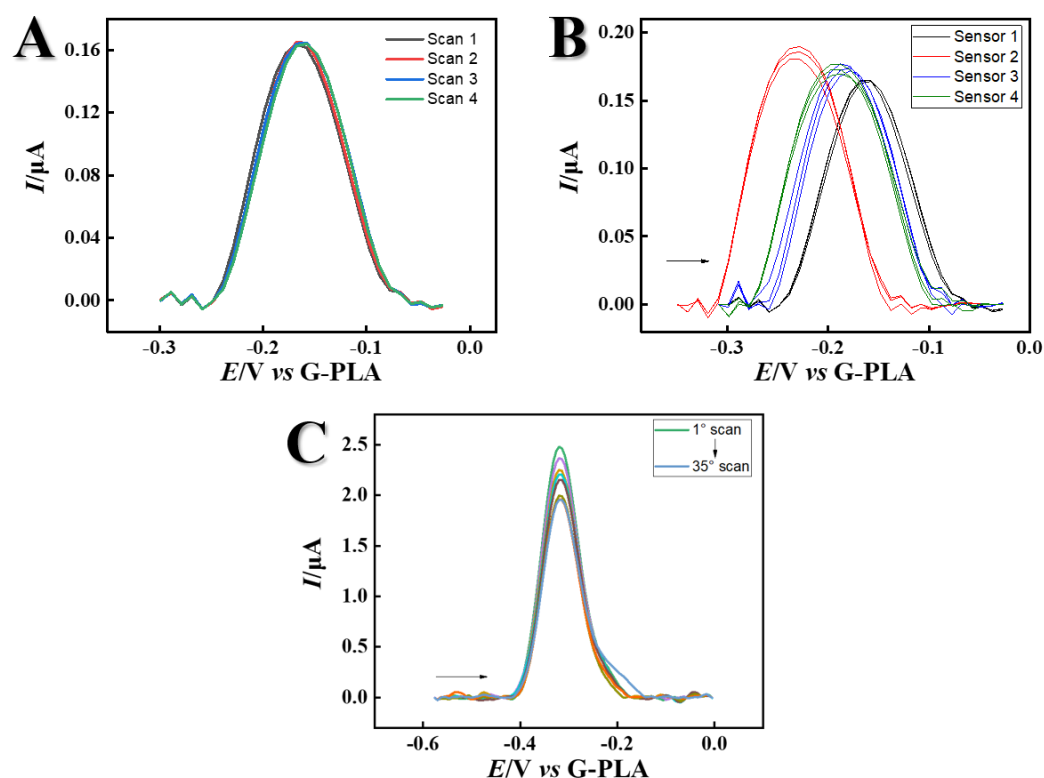


Figure S3. SWV voltammograms for the (A) repeatability study ($n=4$), (B) inter-device study ($n=4$) (C) stability study (over 35 scans, displayed every 5 scans), in the presence of $10.0 \mu\text{mol L}^{-1}$ of epinephrine. Experimental conditions: step potential: 6 mV; modulation amplitude: 60 mV; frequency: 30 Hz. Supporting electrolyte: 0.1 mol L^{-1} phosphate buffer (pH 7.0).

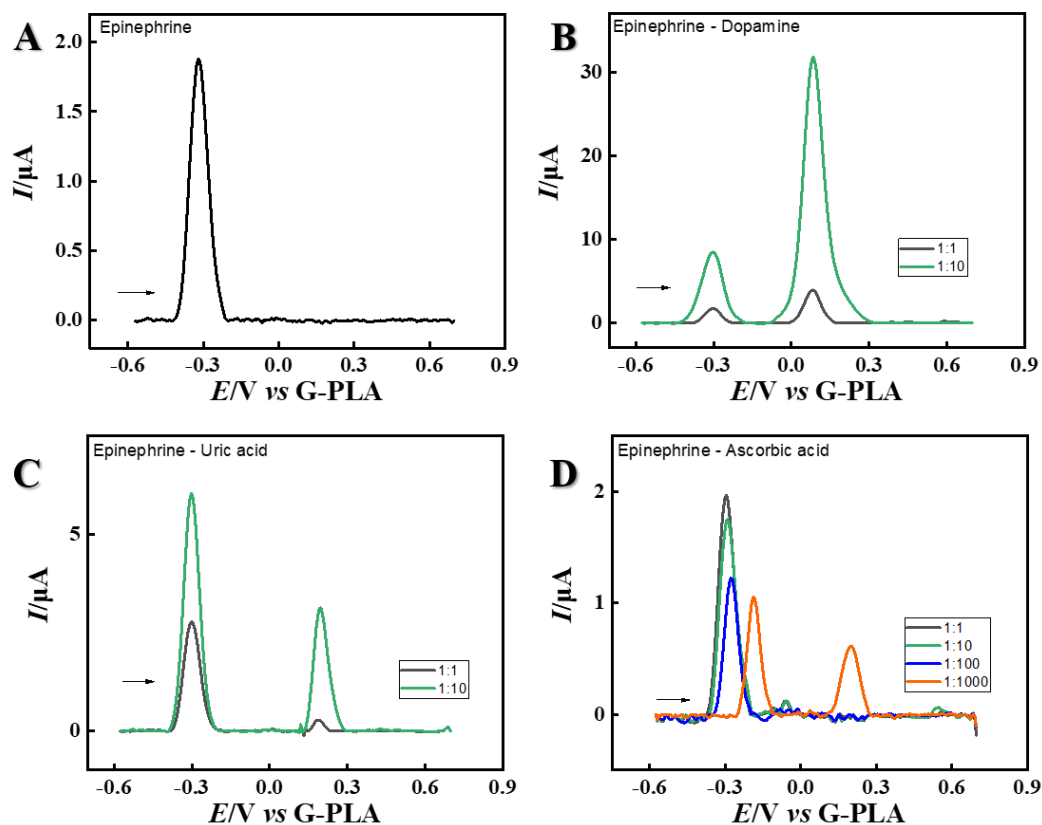


Figure S4. SWV voltammograms for the selectivity study, in the presence of (A) 0.1 mmol L^{-1} of epinephrine, (B) 0.1 mmol L^{-1} of epinephrine and Dopamine at two different ratios (1:1 and 1:10),

(C) 0.1 mmol L⁻¹ of epinephrine and uric acid at two different ratios (1:1 and 1:10), (D) 0.1 mmol L⁻¹ of epinephrine and uric ascorbic at four different ratios (1:1, 1:10, 1:100 and 1:1000). Experimental conditions: step potential: 6 mV; modulation amplitude: 60 mV; frequency: 30 Hz. Supporting electrolyte: 0.1 mol L⁻¹ phosphate buffer (pH 7.0).

Table S1. Selectivity study on the SWV signal of 0.1 mmol L⁻¹ epinephrine.

Interferents	Interfering ratio (Epinephrine:interferent)	Currente signal variation (%)
Dopamine	1:1	-7.44
	1:10	+351
Uric acid	1:1	+48
	1:10	+221
Ascorbic Acid	1:1	+4.25
	1:10	-6.19
	1:100	-34.5
	1:1000	-43.6