

A recognition-molecule-free photoelectrochemical sensor based on $\text{Ti}_3\text{C}_2/\text{TiO}_2$ heterostructure for monitoring of dopamine

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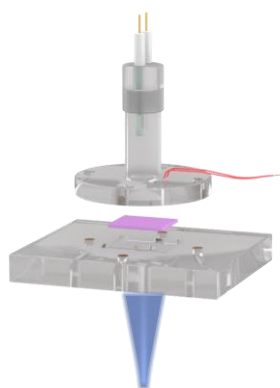


Figure S1 Picture of homemade photoelectric detection cell.

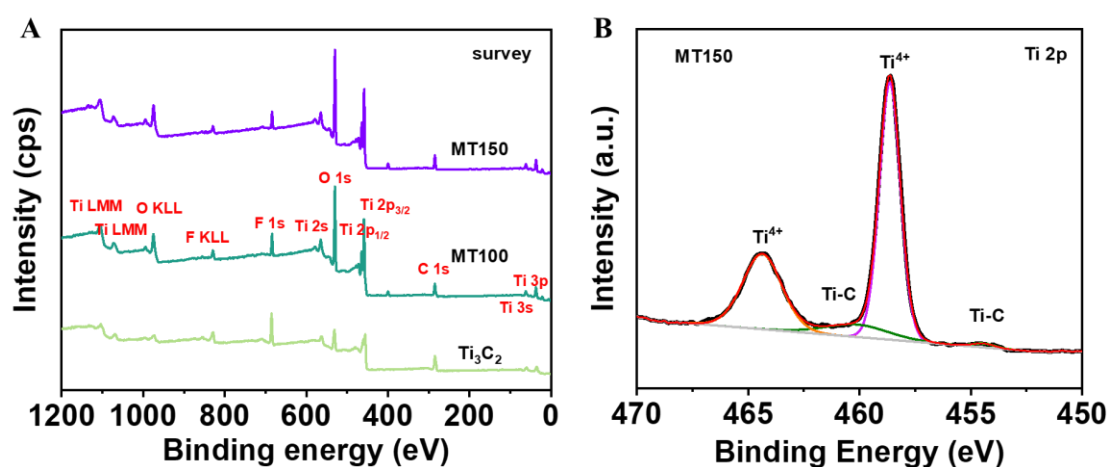


Figure S2 (A) XPS survey spectrum of Ti_3C_2 , MT100, and MT150. (B) High-resolution Ti 2p XPS spectra of the MT150.

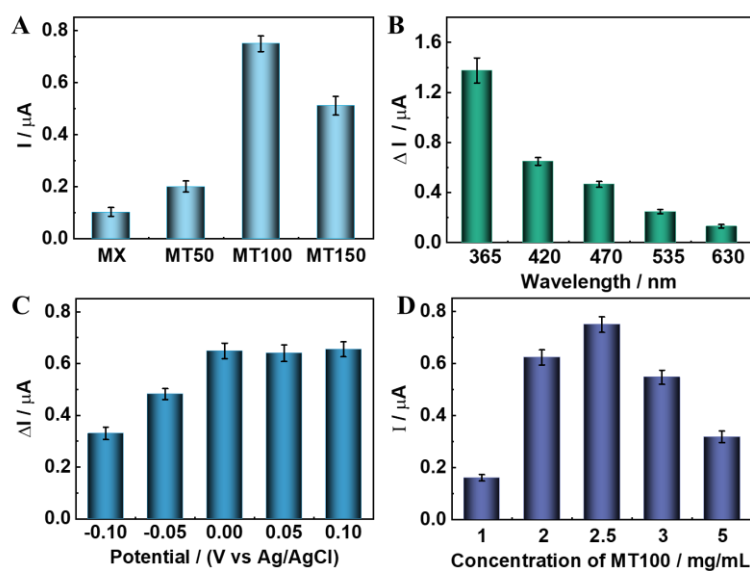


Figure S3. Effects of (A) different degrees of oxidation of Ti_3C_2 , (B) excitation wavelength, (C) the applied potential and (D) the concentration of MT100 on photocurrent response of MT100-modified FTO electrode in 0.1M PBS (pH=7.40) containing 50 μM DA.

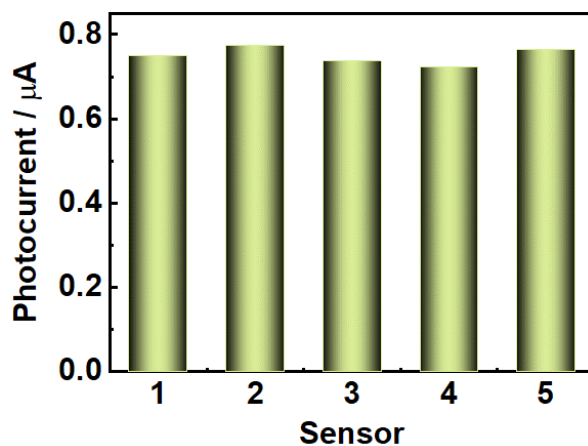


Figure S4 Repeatability of five MT100 photoelectrodes for detection of 50 μM DA.

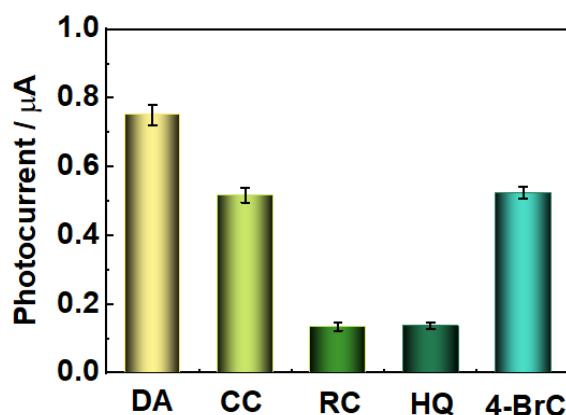


Figure S5. Photocurrent response of some other catechins derivatives on the MT100-based sensor.

Table S1 Comparison of previous and current DA detection methods

Material	Method	Linear range (μM)	Limit of detection (μM)	Refs
BiVO ₄ /FeOOH	PEC	0.2–40 and 40–1400	0.09	1
GDY@TiO ₂	PEC	0.5–500	0.136	2
Cu ₂ O@CdTe QDs	PEC	0.001–0.100	0.0003	3
DE-TiO ₂ NTPCs	PEC	0.01–2	0.002	4
WS ₂ /TiO ₂	PEC	0.99–48.78 72.29–333.33	0.32	5
TiO ₂ nanopore array	PEC	200–1500	20	6
Ti ₃ C ₂ @(001)TiO ₂	PEC	1–1000	0.52	7
ZnPc-P8BT-Pdots	PEC	0.0025–125	0.00169	8
Ti ₃ C ₂ /TiO ₂	PEC	0.125–400	0.045	This work

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