

## Supporting Information

# Self-cleaning properties in engineered sensors for dopamine electroanalytical detection

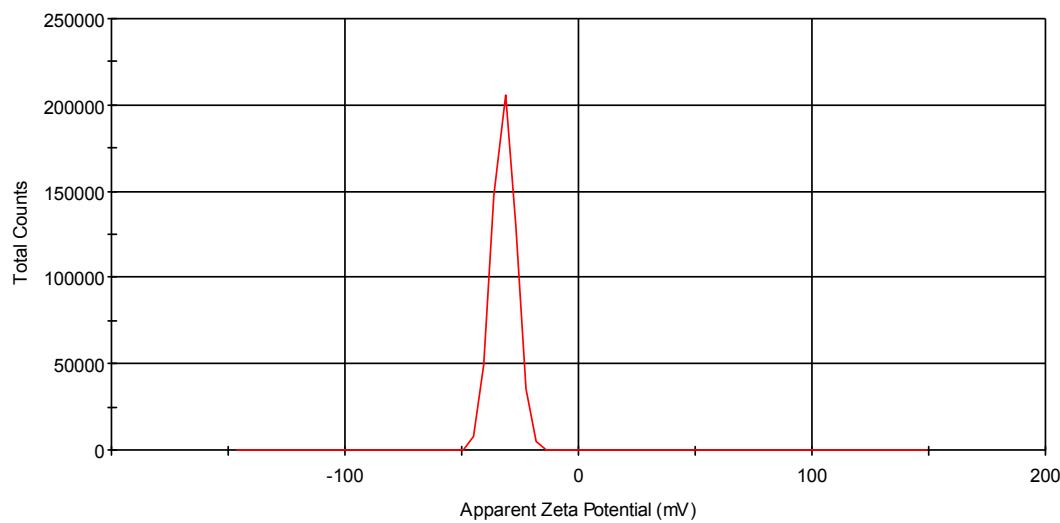
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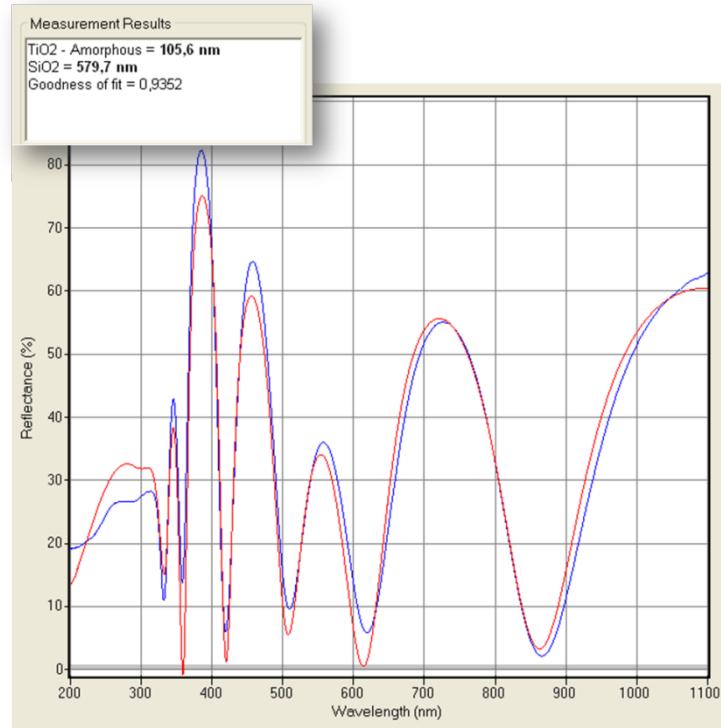
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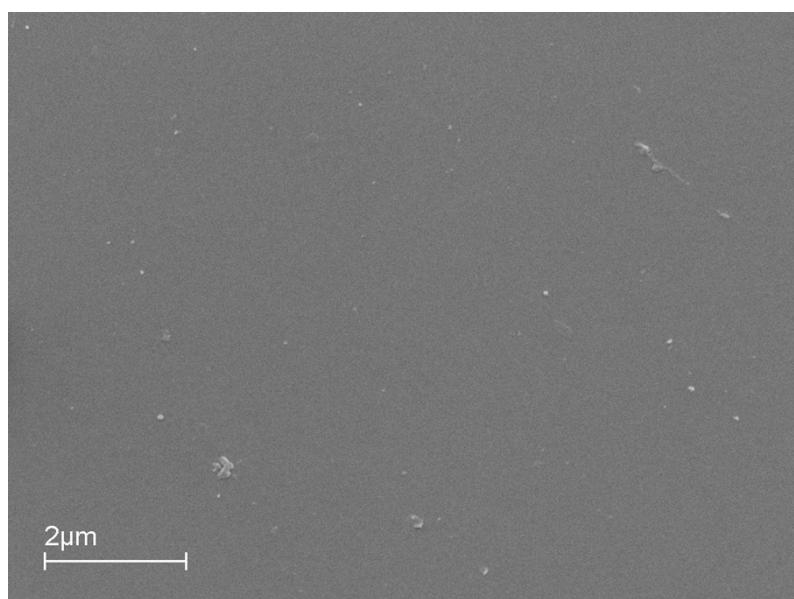
**Figure S1.** Z-potential spectrum obtained for the aqueous suspension of Ag NPs.



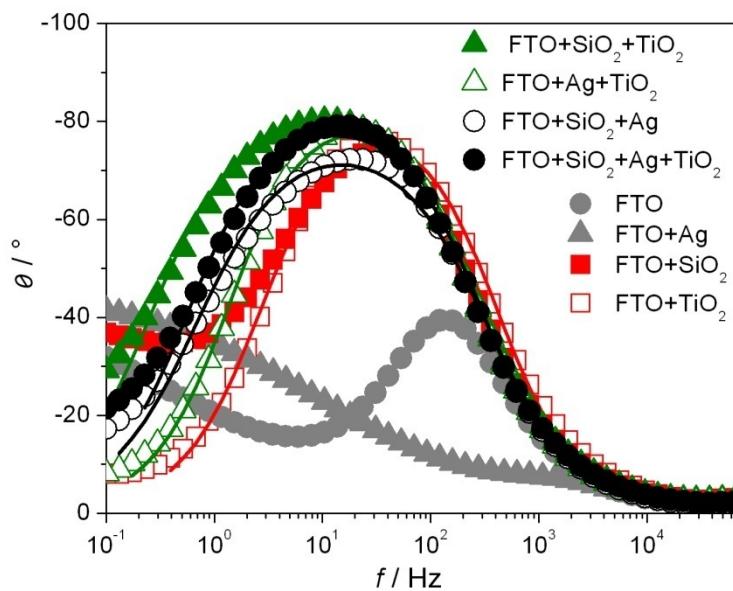
**Figure S2.** Photograph of the final device on a printed white paper with the logo of the Università degli Studi di Milano, in order to show transparency properties.



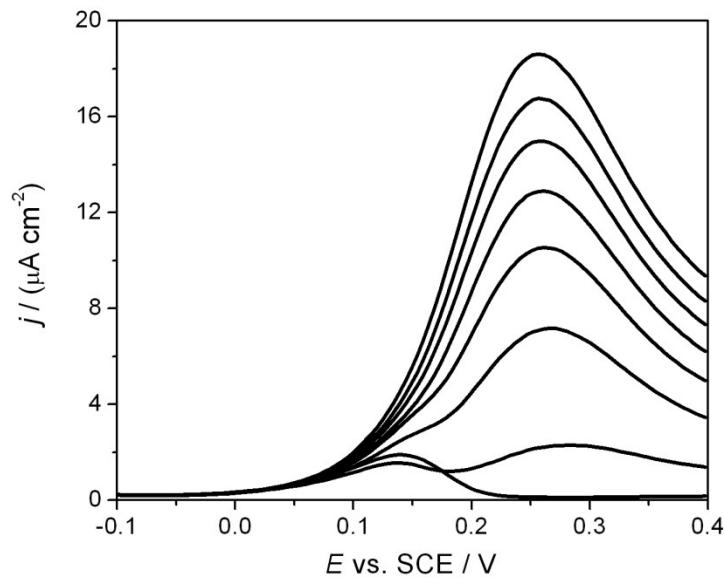
**Figure S3.** FILMETRICS® analysis of a SiO<sub>2</sub> – Ag – TiO<sub>2</sub> sandwich obtained on silicon wafer. The thicknesses of the SiO<sub>2</sub> and TiO<sub>2</sub> layers (Ag could be neglected) were obtained by comparing the experimental reflectance spectrum (blue) with the one calculated by the software (red) using the following layered model using indicative values for the layers:  
 Si (substrate, infinite) – SiO<sub>2</sub> (800 nm, vary) – TiO<sub>2</sub> Amorphous (200 nm, vary) – Air.  
 Final results were the average of at least three measurements.



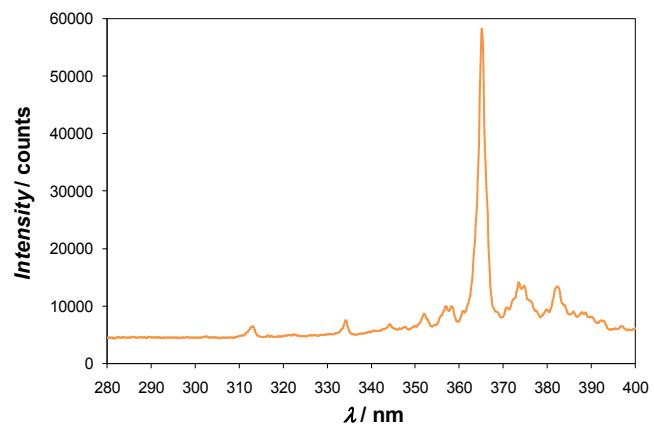
**Figure S4.** Scanning electron microscopy top picture of the titania top layer in the final device.  
 S3



**Figure S5.** Bode plots for all the tested electrodes, registered at + 0.1 V (SCE) in the presence of the model probe molecule K<sub>4</sub>[Fe(CN)<sub>6</sub>].



**Figure S6.** Differential pulse voltammograms registered for consecutive additions of dopamine at FTO+Ag+TiO<sub>2</sub> electrode.



**Figure S7.** Emission spectrum of the UV iron halogenide lamp Jelosil HG500.