Electronic Supplementary Information

Investigation of photoelectrochemical properties of layered manganese oxide manganese oxide

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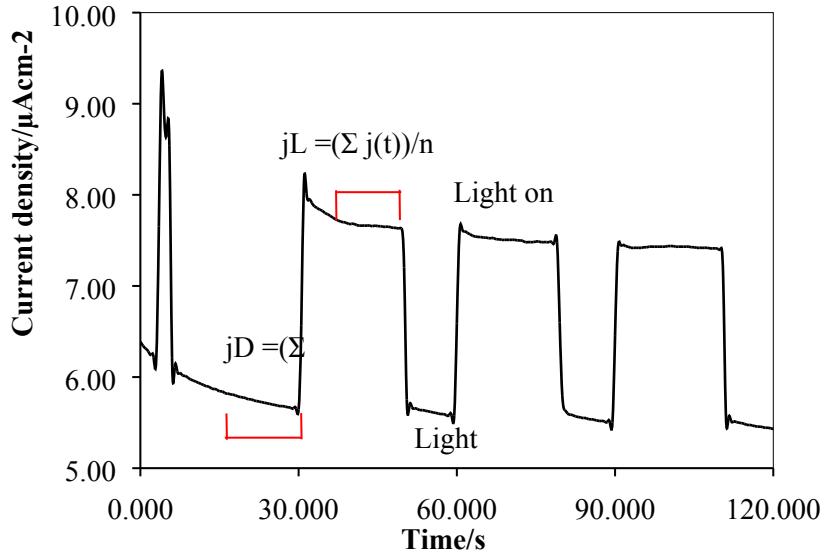


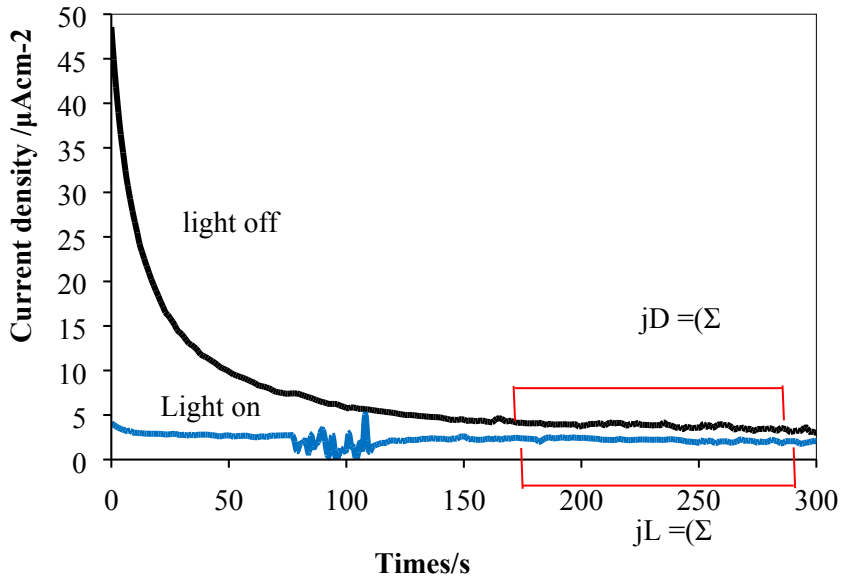


Figure S1. Example plots of photocurrent measurement experiment of (a) pulsed light method in constant potential and (b) constant light method constant potential. The calculation method used in order to obtain photocurrent is as follows:

$$j_{ph} = j_L - j_D = \Delta j$$

Where j_{ph} is photocurrent amount, j_L is current under illumination and j_D is current in dark.

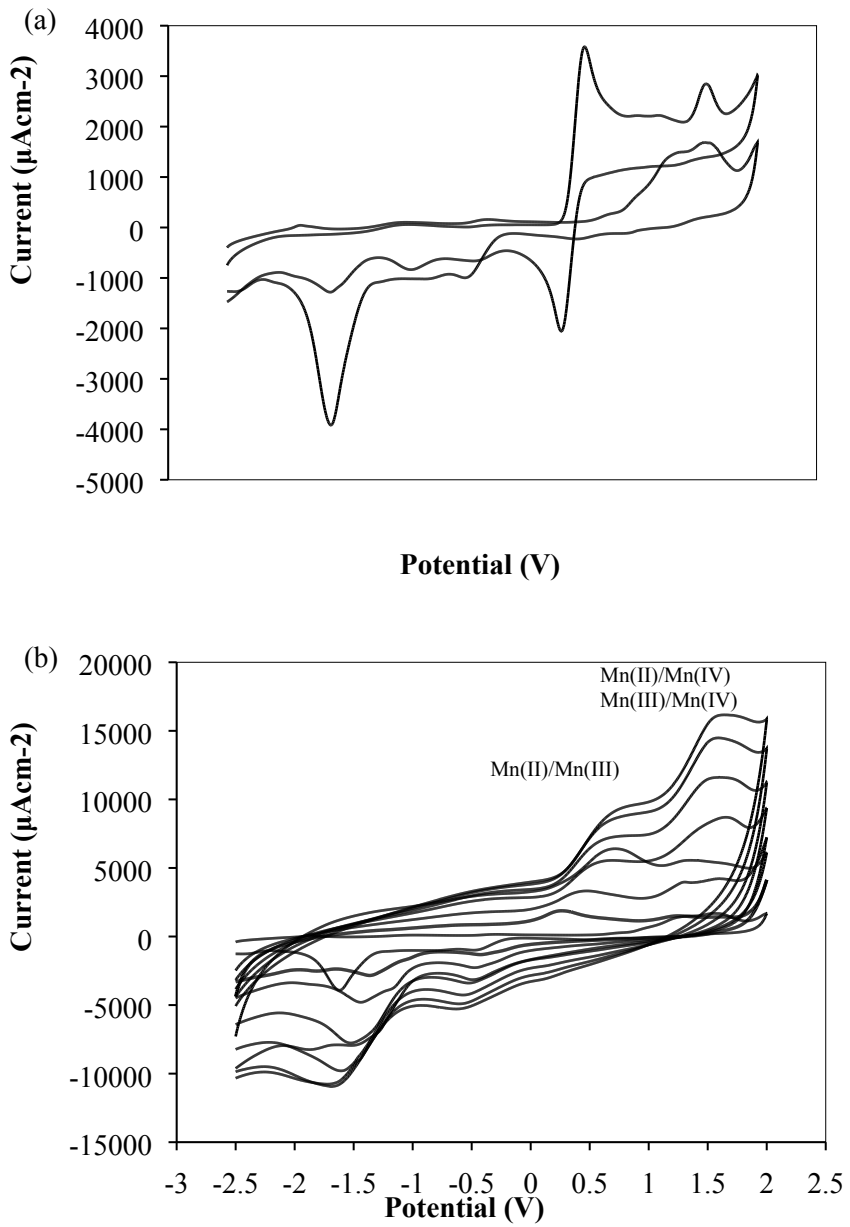
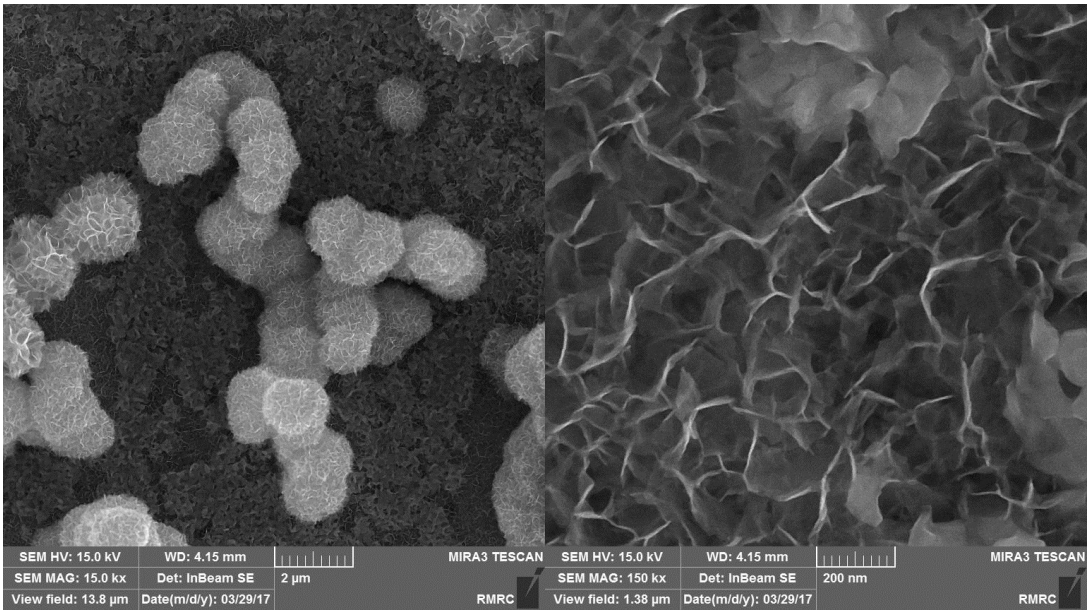


Figure S2. Cyclic voltammetry of gold electrode in presence and absence Ferrocene (a) and cyclic voltammetry of manganese oxide coated gold electrode at different scan rates (10, 20, 40, 50, 60, 80, 100 mVs^{-1}). All experiments conducted in the three-electrode system (gold electrode as working electrode, platinum plate as a counter electrode and silver wire electrode as a reference electrode), lithium perchlorate (0.1 M) as supporting electrolyte.



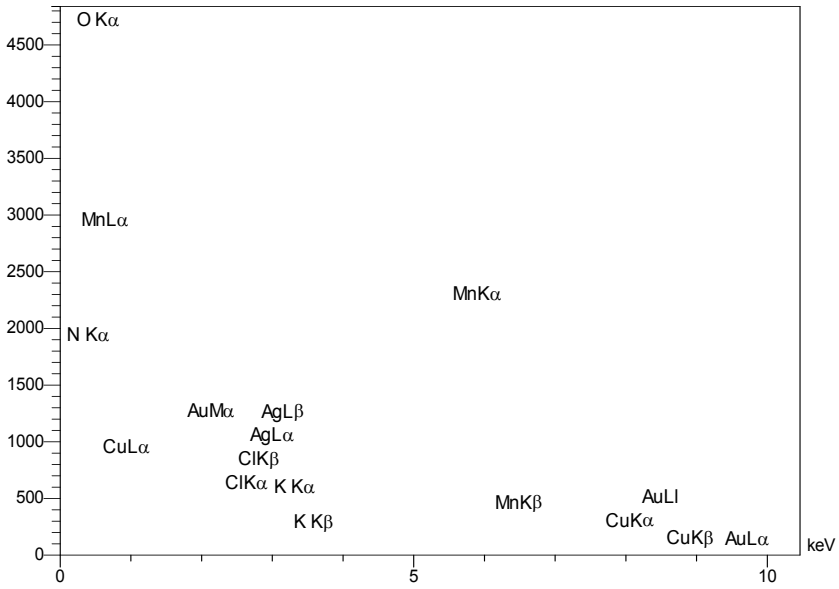
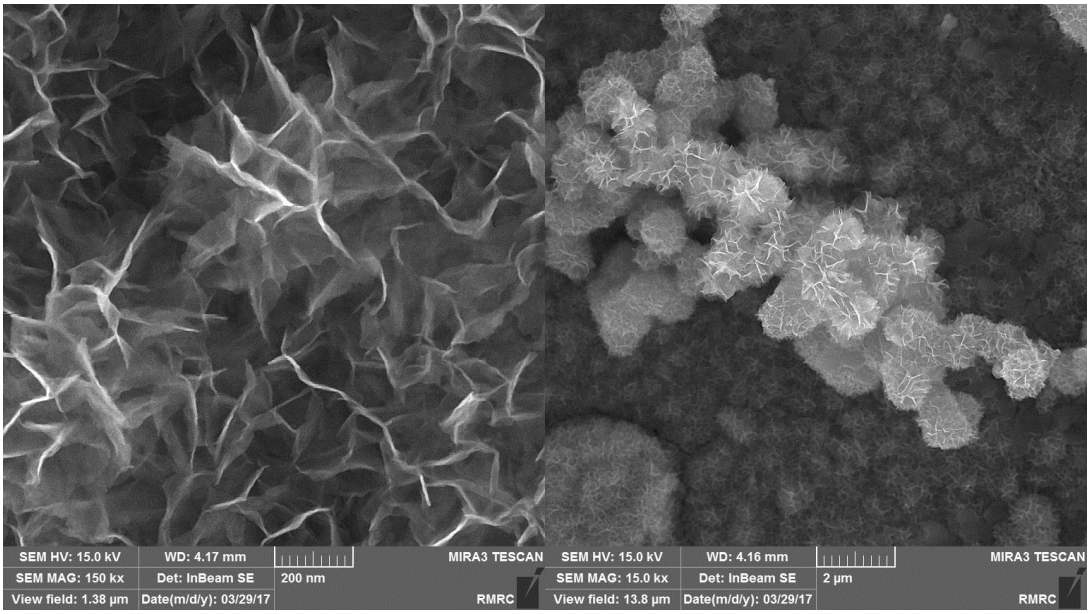


Figure S3. SEM images in different magnifications and EDS spectra of the manganese oxide coated gold electrode before being exposed to 800 mV bias potential for 2 hours.



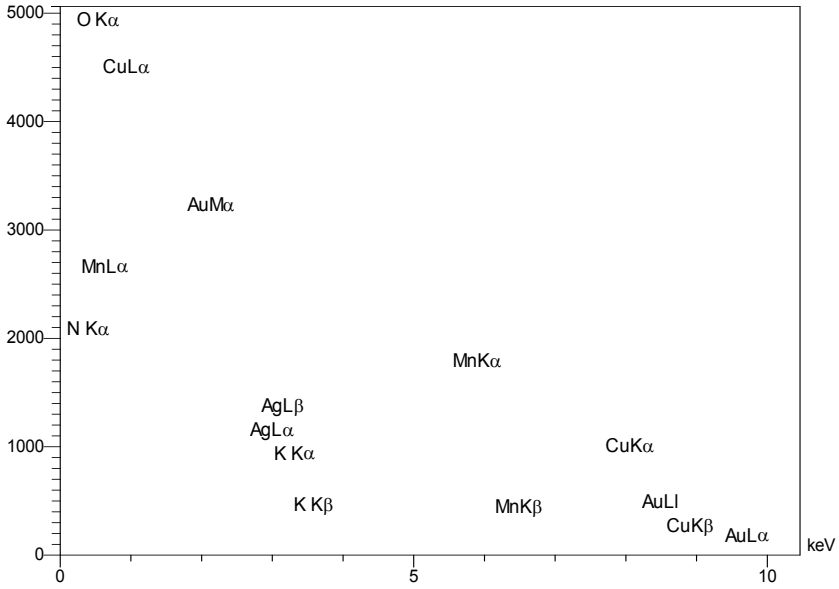


Figure S4. SEM images in different magnifications and EDS spectra of the manganese oxide coated gold electrode after being exposed to 800 mV bias potential for 2 hours.

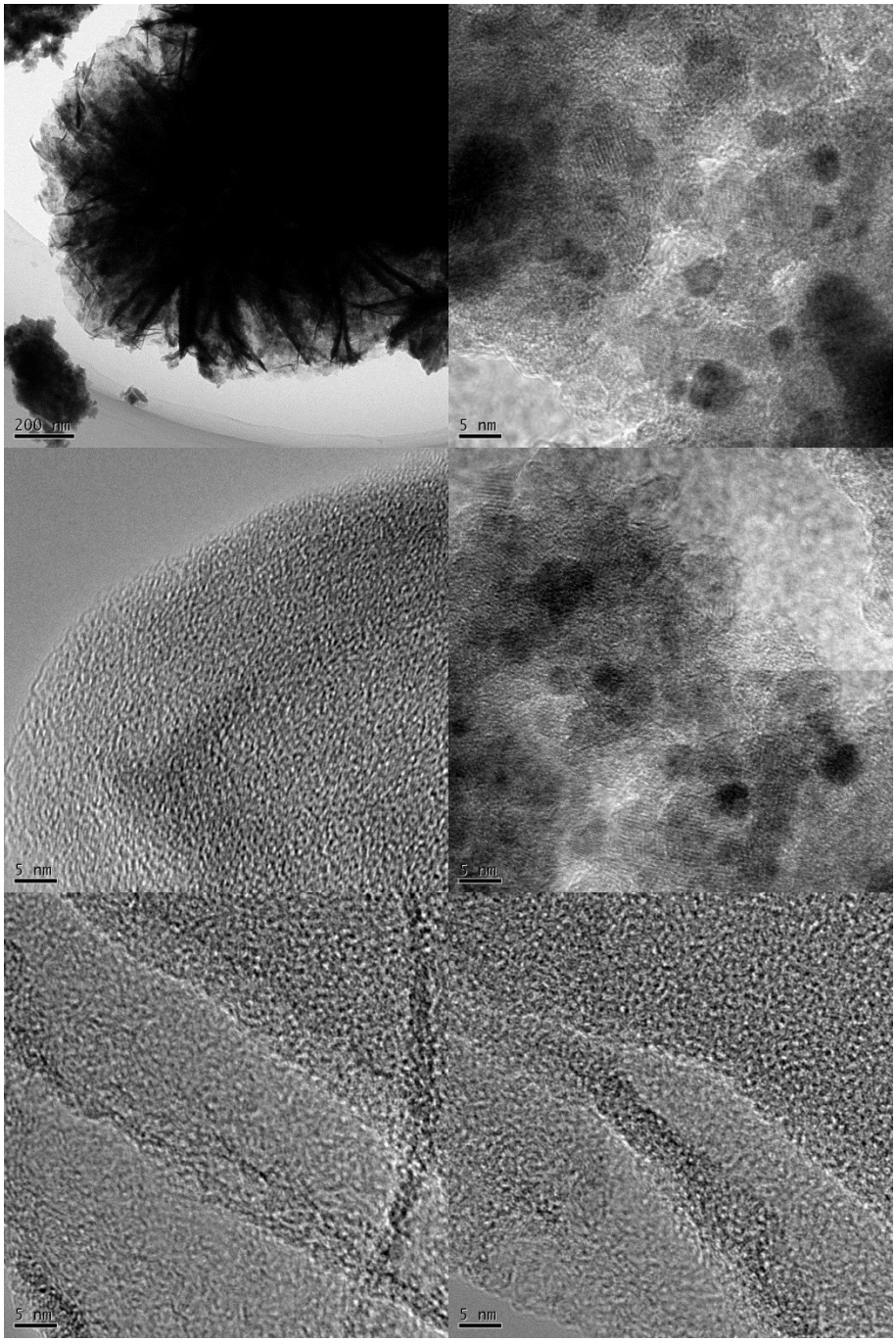


Figure S5. HR-TEM images from different points of the manganese oxide after being exposed to 800 mV bias potential for 2 hours.