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MDPI

Supplementary Materials

Article

Sustainable Downscaled Catalytic Colorimetric Determination of Manganese in Freshwater Using Smartphone-Based Monitoring Oxidation of 3,3′,5,5′-Tetramethylbenzidine by Periodate

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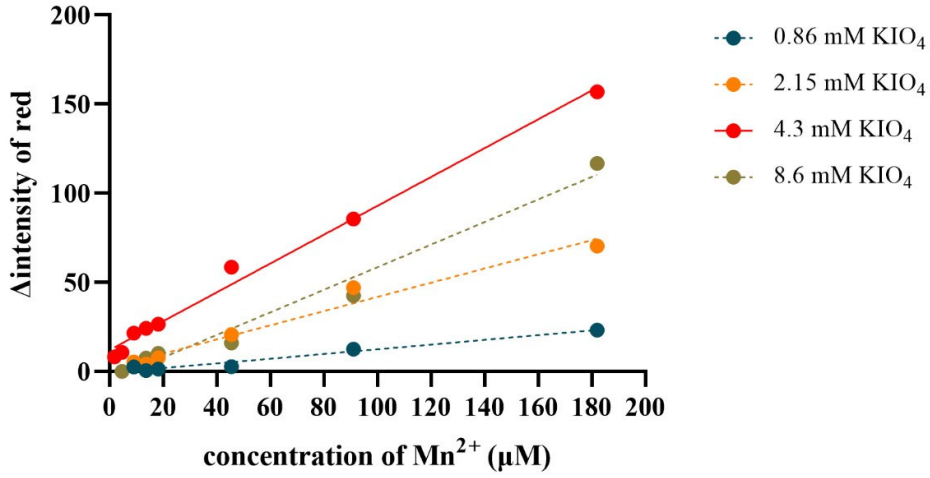

Figure S1. Calibration plots: the delta red intensity vs. concentration of Mn(II); the red intensity due to blu-ish-green, oxidized TMB product occurred from the oxidation of TMB using different concentrations of periodate: 0.86, 2.15, 4.3, and 8.6 mM.

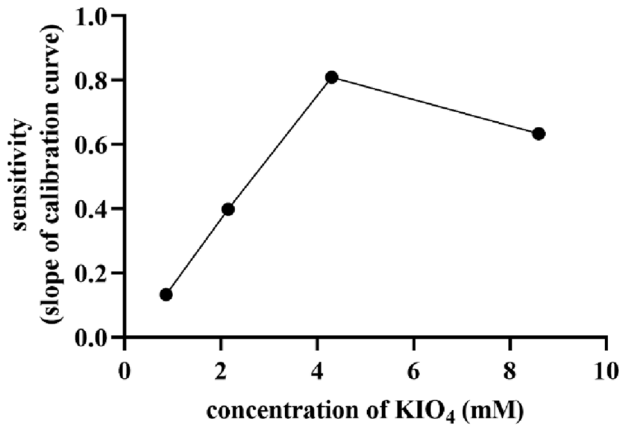

Figure S2. The sensitivity (the slopes of the calibration plots) of Mn(II)-catalyst detection when using different concentrations of periodate.

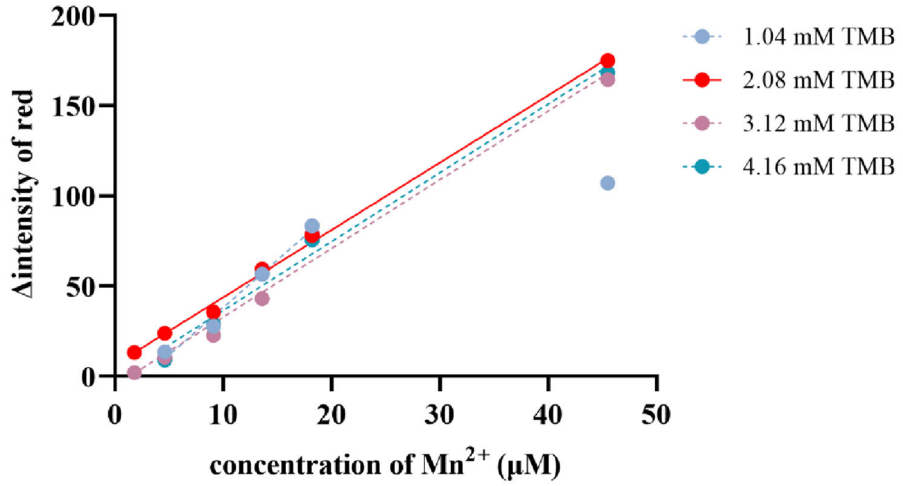

Figure S3. Calibration plots (delta red intensity vs. concentration of Mn(II); the delta red intensity due to the bluish-green, oxidized TMB product from the oxidation using 4.3 mM periodate and with different TMB concentrations: 1.04, 2.08, 3.12 and 4.16 mM.

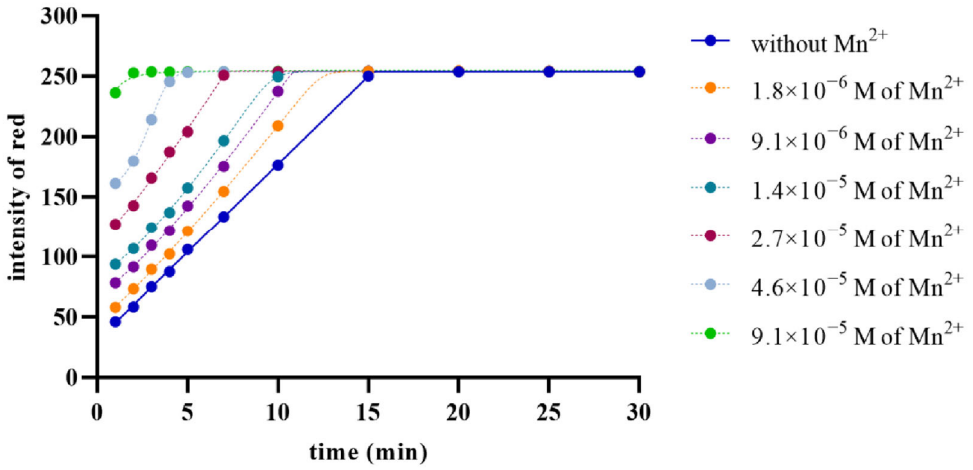

Figure S4. Kinetic plots due to the oxidation of 2.08 mM TMB by 4.3 mM periodate with various Mn(II) concentrations under phosphate buffer at pH 6.

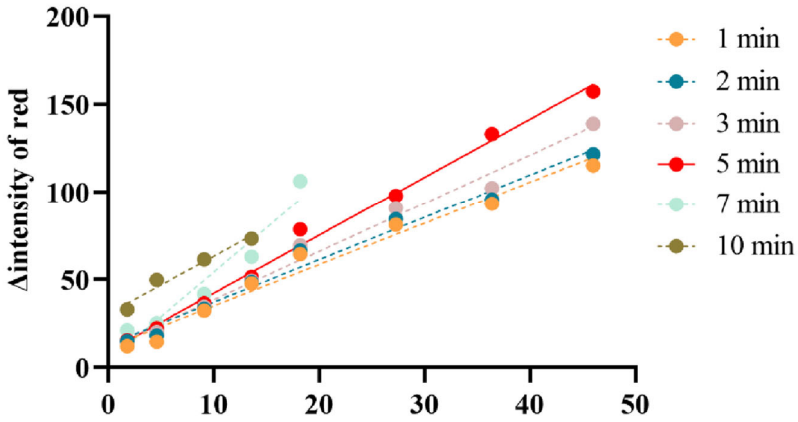

Figure S5. Calibration plots: the delta intensity of red (the bluish-green, oxidized TMB product) vs. Mn(II) concentration with different incubation periods.

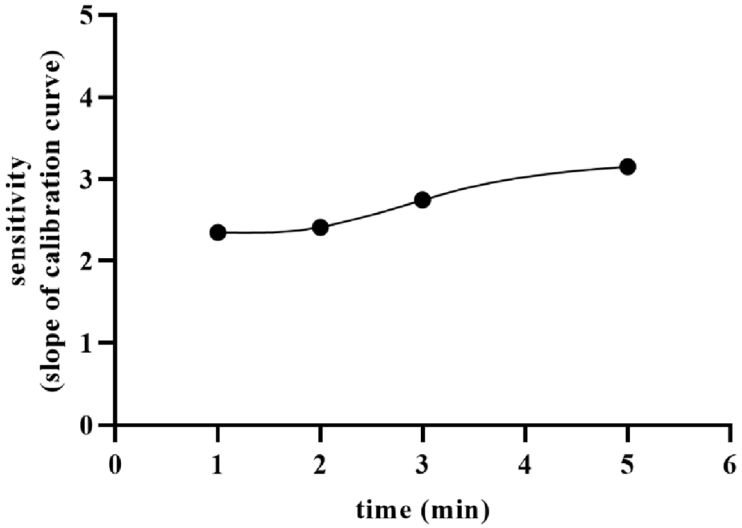

Figure S6. The sensitivity (the slopes of the calibration plots in Figure S5) at different incubation time durations.