

Rapid Trace Detection of Sulfite Residue in White Wine Using A Multichannel Colorimetric Nanozyme Sensor

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Captions of Figures

Figure S1. UV-visible absorption spectra of reaction systems under different conditions. Air blowing (Black curve) and N₂ blowing (Red curve)

Figure S2. The nyquist curve of MIL-53(Fe/Mn) and MIL-53(Fe)

Figure S3. Adding barium chloride solution to acetate buffer solutions containing different solutes.

A: MIL-53(Fe/Mn)+BaCl₂; B: TMB+ BaCl₂; C: SO₃²⁻+ BaCl₂; D: MIL-53(Fe/Mn)-TMB+ BaCl₂;
E: MIL-53(Fe/Mn)-TMB- SO₃²⁻+ BaCl₂;

Figure S4. The oxidase-like activity of five different batches MIL-53(Fe/Mn)

Table S1. Real samples detection results by smartphone-based colorimetric detection platform

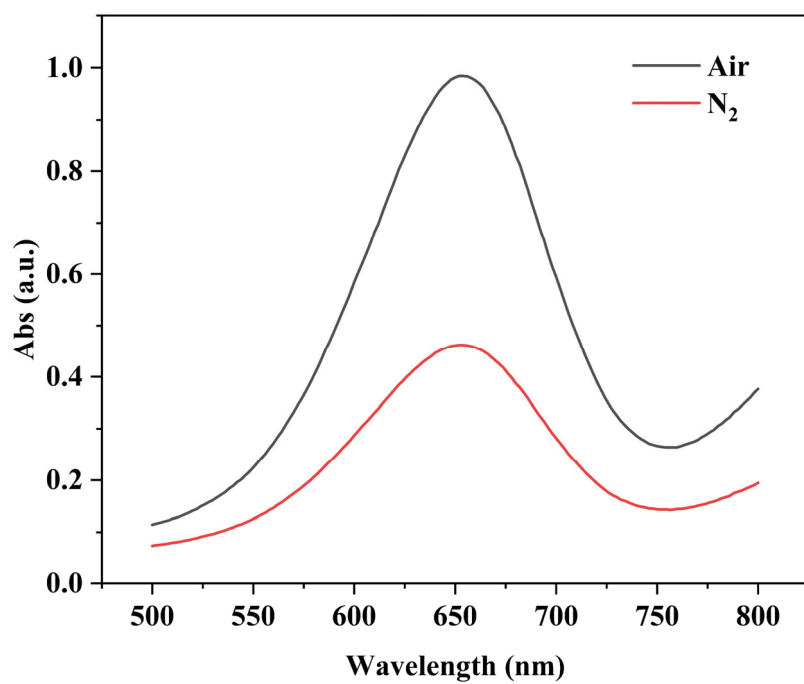


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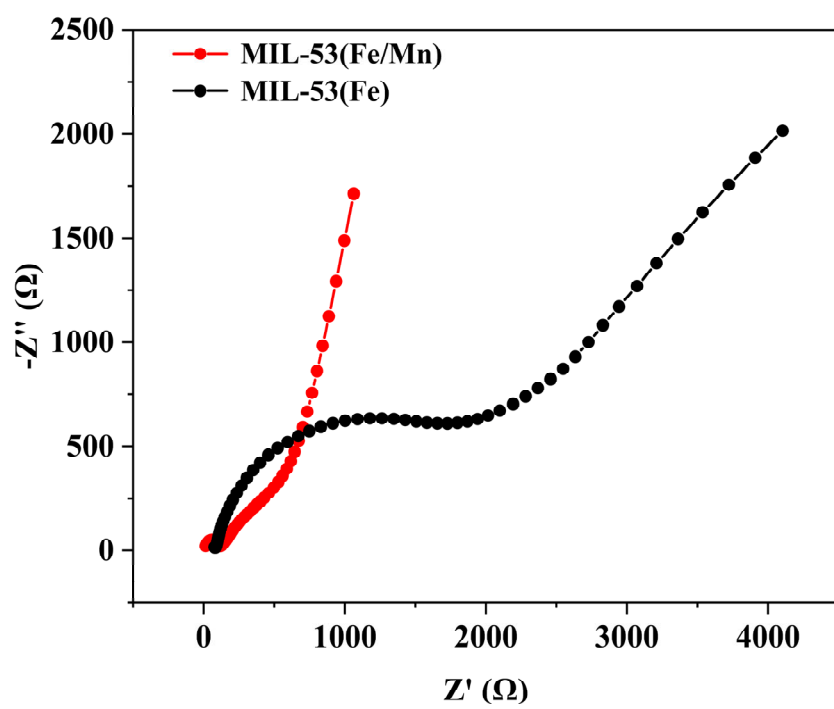


Figure S2. The nyquist curve of MIL-53(Fe/Mn) and MIL-53(Fe).

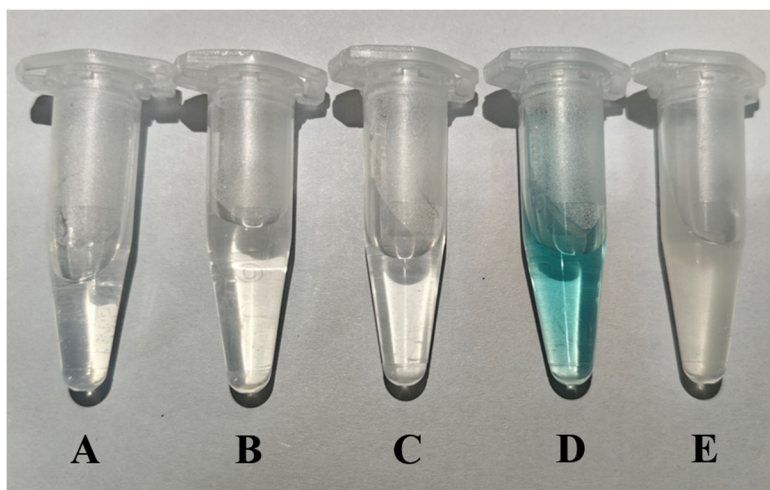


Figure S3. Adding barium chloride solution to acetate buffer solutions containing different solutes. A: MIL-53(Fe/Mn)+BaCl₂; B: TMB+ BaCl₂; C: SO₃²⁻+ BaCl₂; D: MIL-53(Fe/Mn)-TMB+ BaCl₂; E: MIL-53(Fe/Mn)-TMB-SO₃²⁻+ BaCl₂.

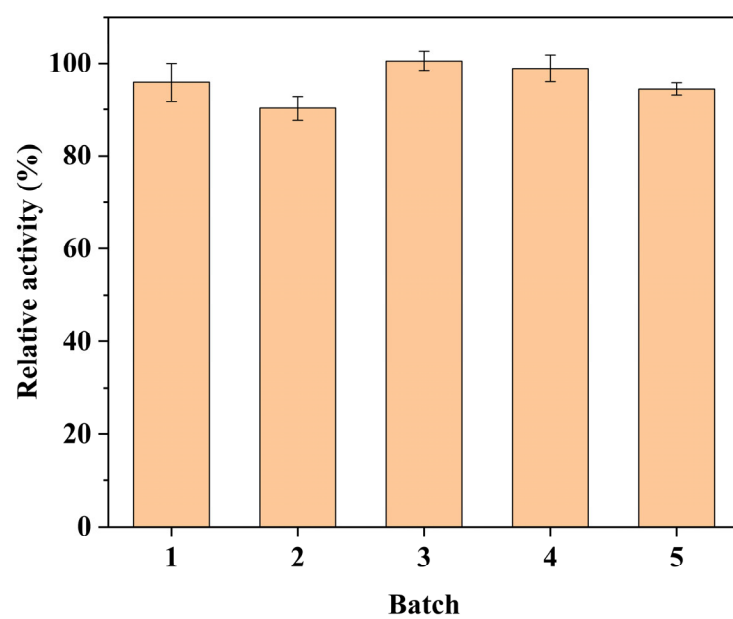


Figure S4. The oxidase-like activity of five different batches MIL-53(Fe/Mn).

Table S1. Real samples detection results by smartphone-based colorimetric detection platform.

Sample	IC (mg L ⁻¹)	Add (mg L ⁻¹)	Detected by smartphone (mg L ⁻¹)	Recovery (%)	RSD (% , n = 3)
White wines	40.22	0	40.95	101.82	17.7
		20	60.03	99.68	6.0
		40	82.29	102.58	6.7
		60	98.19	97.97	5.6