

Supplementary information

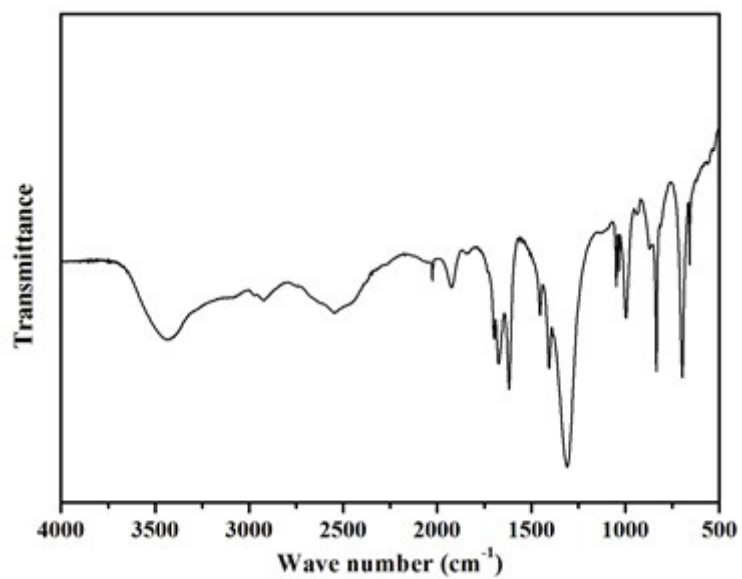


Fig. S1. FT-IR spectrum of Na₁₀[α-SiW₉O₃₄]

Table S1.

The interference study for the determination of H₂O₂ (5×10⁻⁵ mol/L) by the proposed method.

Coexisting substance	Content (mol/L)	ΔI ^a /I (%)
Na ⁺	5×10 ⁻³	-0.71
K ⁺	5×10 ⁻³	1.50
NH ₄ ⁺	5×10 ⁻³	3.19
SO ₄ ²⁻	2×10 ⁻³	-2.67
Mn ²⁺	2×10 ⁻³	1.77
Cl ⁻	2×10 ⁻³	2.65
CO ₃ ²⁻	2×10 ⁻³	-13.26
Glucose	2×10 ⁻³	2.23
Citric acid	2×10 ⁻³	-1.11

^aΔI=I₀-I, where I₀ and I are the fluorescence intensity of TH-Na₁₀[α-SiW₉O₃₄]-H₂O₂ system in absence and presence of interfering species.

Table S2.

The interference study for the determination of H₂O₂ (5×10⁻⁴ mol/L) by the proposed method.

Coexisting substance	Content (mol/L)	ΔI ^a /I (%)
Na ⁺	5×10 ⁻³	-0.46
K ⁺	5×10 ⁻³	-1.50
NH ₄ ⁺	5×10 ⁻³	-0.86
SO ₄ ²⁻	2×10 ⁻³	-2.56
Mn ²⁺	2×10 ⁻³	3.72
Cl ⁻	2×10 ⁻³	0.96
CO ₃ ²⁻	2×10 ⁻³	-1.59
Glucose	2×10 ⁻³	2.61
Citric acid	2×10 ⁻³	3.97

^aΔI=I₀-I, where I₀ and I are the fluorescence intensity of HPPA-Na₁₀[α-SiW₉O₃₄]-H₂O₂ system in absence and presence of interfering species.

Table S3.

Results of the analyses of H₂O₂ in water samples, when the substrate was TH.

Samples	Added (μM)	Detected (μM)	Recovery (%)	RSD (n = 3, %)
1	25	24.16±0.981	96.55	4.06
2	50	47.61±0.392	95.20	0.82
3	100	104.25±1.581	104.22	1.52

Table S4.

Results of the analyses of H₂O₂ in water samples, when the substrate was HPPA.

Samples	Added (mM)	Detected (mM)	Recovery (%)	RSD (n = 3, %)
1	0.05	0.065±0.0018	128.76	2.75
2	0.1	0.121±0.0020	118.84	1.67
3	0.2	0.191±0.0021	95.28	1.08