

Supplementary Materials: Fabrication of Metal-Substituted Polyoxometalates for Colorimetric Detection of Dopamine and Ractopamine

Xixin Duan ¹, Zhixian Bai ¹, Xueting Shao ¹, Jian Xu ², Ning Yan ^{1,3}, Junyou Shi ^{1,*} and Xiaohong Wang ^{2,*}

Table S1. Results of FT-IR and UV-Vis of SiW₁₁M, SiW₁₀M₂, and SiW₉M₃(M = Co²⁺, Fe³⁺, Cu²⁺, Mn²⁺).

Compound	ν/cm^{-1}				λ/nm	
	W-O _d	Si-O _a	W-O _b -W	W-O _c -W	O _d →W	O _b /O _c →W
SiW ₁₁ Fe	1012	971	902	750	205	259
SiW ₁₁ Cu	1008	950	886	736	206	261
SiW ₁₁ Mn	999	951	885	765	203	262
SiW ₁₁ Co	1001	956	887	736	202	256
SiW ₁₀ Fe ₂	973	943	841	732	203	254
SiW ₁₀ Cu ₂	999	954	890	772	204	257
SiW ₁₀ Mn ₂	995	950	879	789	203	260
SiW ₁₀ Co ₂	995	950	887	782	201	256
SiW ₉ Fe ₃	989	947	889	770,716,654	203	252
SiW ₉ Cu ₃	999	939	885	770,728,639	202	253
SiW ₉ Mn ₃	991	941	877	766,704	201	253
SiW ₉ Co ₃	987	948	889	786,705,651	201	248

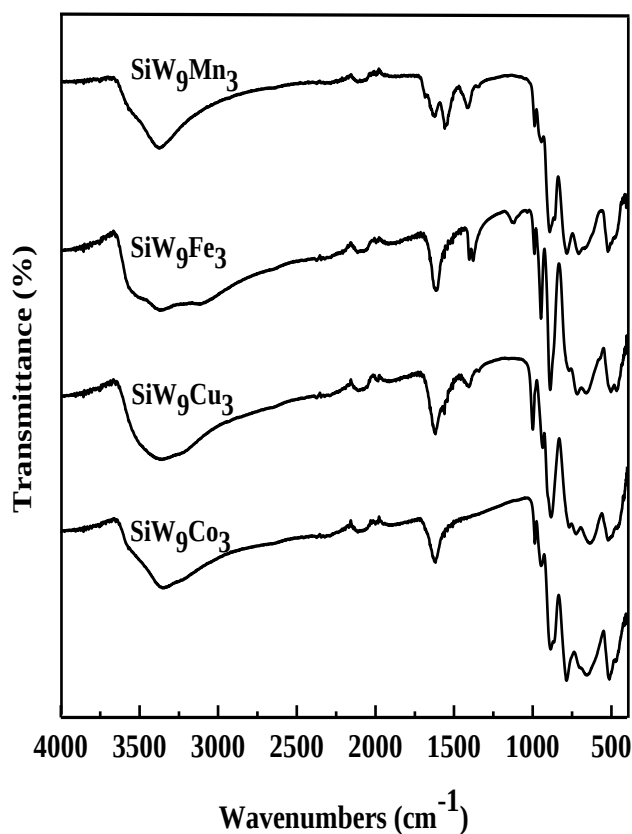


Figure S1. FTIR spectra of SiW₉M₃ (M = Co²⁺, Fe³⁺, Cu²⁺, Mn²⁺).

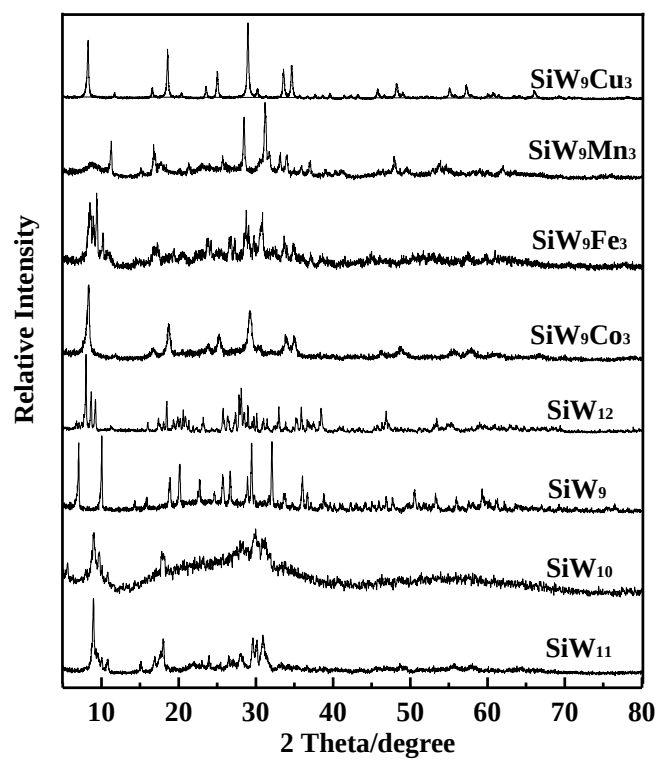


Figure S2. XRD patterns of SiW_9M_3 ($\text{M} = \text{Co}^{2+}$, Fe^{3+} , Cu^{2+} , Mn^{2+}), SiW_9 , SiW_{10} , SiW_{11} , and SiW_{12} .

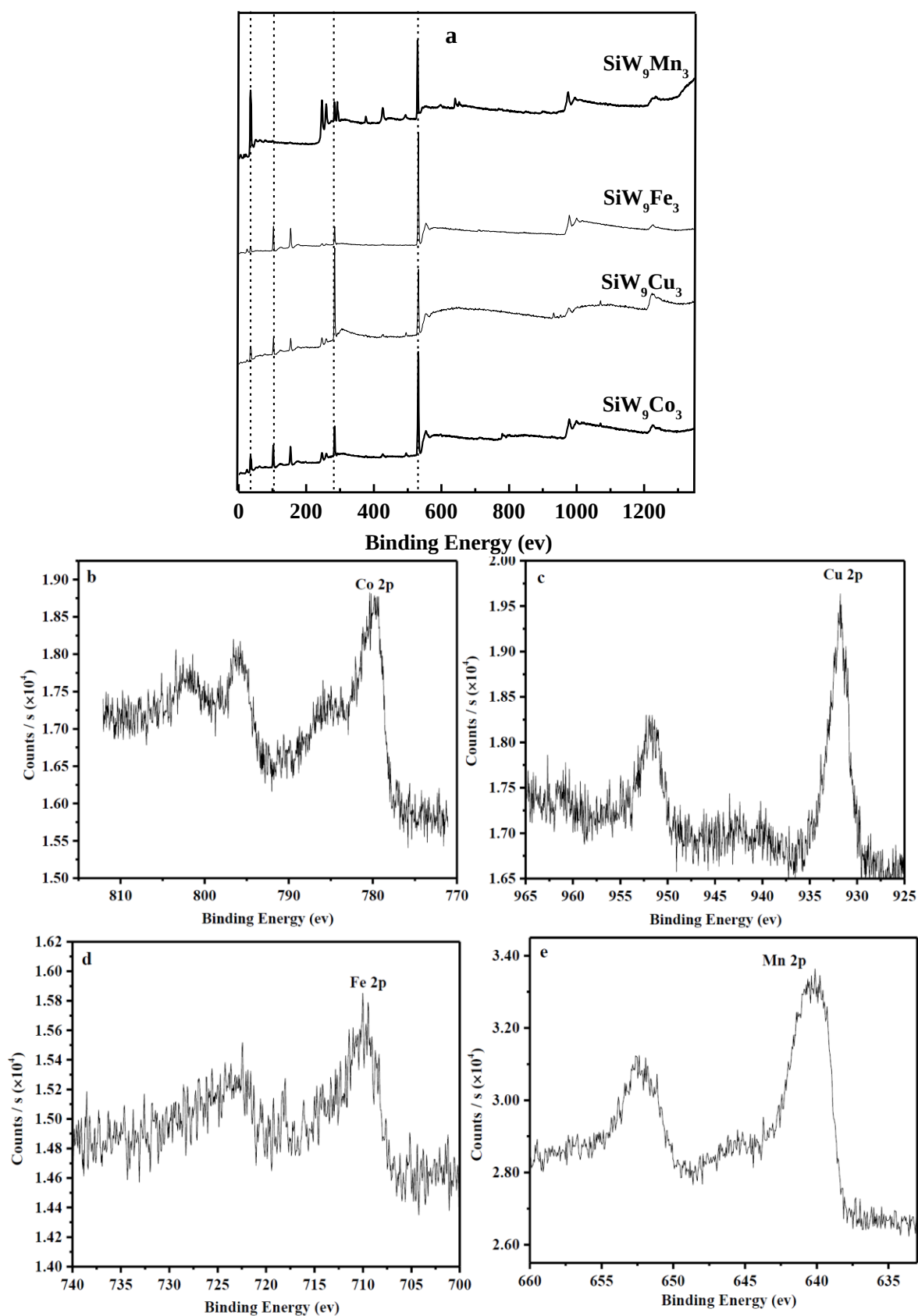


Figure S3. XPS spectra of SiW_9M_3 ($\text{M} = \text{Co}^{2+}, \text{Fe}^{3+}, \text{Cu}^{2+}, \text{Mn}^{2+}$). Survey (a) high-resolution of Co 2p (b), Cu 2p (c), Fe 2p (d), and Mn 2p (e).