

Electronic Supplementary Information (ESI)

The Loading of Coordination Complex Modified Polyoxometalate Nanobelts on Activated Carbon Fiber: a Feasible Strategy to Obtain Visible Light Active and High Efficient Polyoxometalate Based Photocatalyst

Tingting Lu^a, Xinxin Xu^{*a}, Huili Li^b, Zhenyu Li^a, Xia Zhang^{*a}, Jinzhao Ou^a, Mingliang Mei^a

^a Department of Chemistry, College of Science, Northeast University, Shenyang, Liaoning, 110819, People's Republic of China

^b Analytic and Testing center, Research Academy, Northeast University, Shenyang, Liaoning, 110819, People's Republic of China

Table S1. Crystal data and structure refinement results for **ZnSiW₁₁**

Empirical formula	C ₄₈ H ₅₅ N ₁₂ O ₄₆ SiW ₁₁ Zn
Formula weight	3651.77
Crystal system	Triclinic
Space group	<i>P</i> -1
<i>a</i> /Å	13.1329(6)
<i>b</i> /Å	14.3222(6)
<i>c</i> /Å	23.9745(10)
α /°	77.7510(10)
β /°	79.0530(10)
γ /°	66.4830(10)
<i>V</i> /Å ³	4012.8(3)
<i>Z</i>	2
<i>D</i> _{calc} /(g cm ⁻³)	2.948
Reflections collected	19455
Reflections unique	13427
R(int)	0.0255
Goodness - of - fit on F ²	1.030
<i>R</i> ₁ [<i>I</i> > 2σ(<i>I</i>)]	0.0556
<i>wR</i> ₂ [<i>I</i> > 2σ(<i>I</i>)]	0.1663
<i>R</i> ₁ (all data)	0.0663
<i>wR</i> ₂ (all data)	0.1762

Note. $R_1 = \Sigma||F_o| - |F_c|| / \Sigma|F_o|$; $wR_2 = \Sigma[w(F_o^2 - F_c^2)^2] / \Sigma[w(F_o^2)^2]^{1/2}$

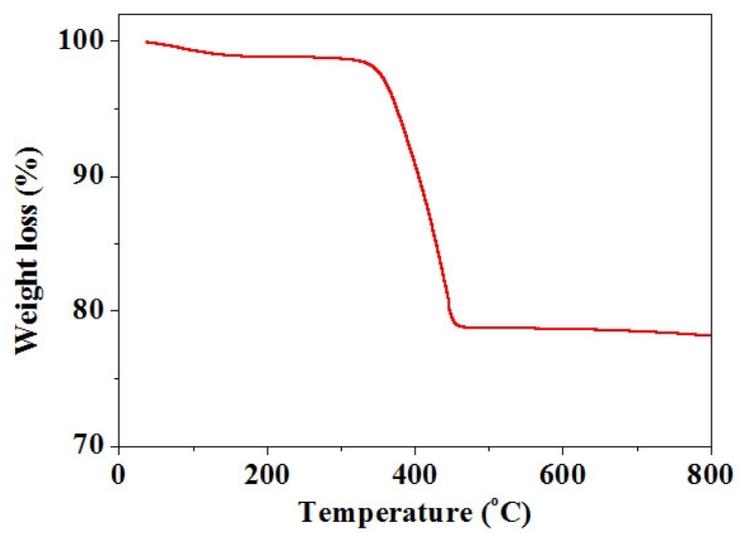


Figure S1. TGA curve of ZnSiW₁₁NB.

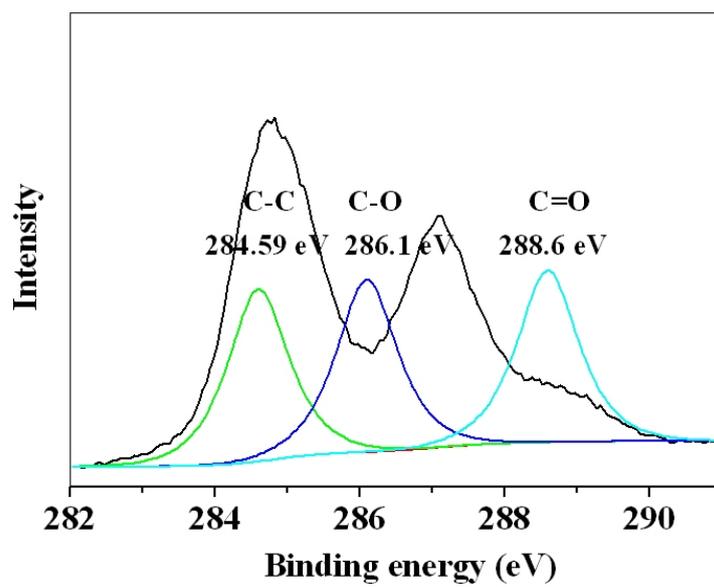


Figure S2. XPS spectrum of ACF (C1s peak of ACF).

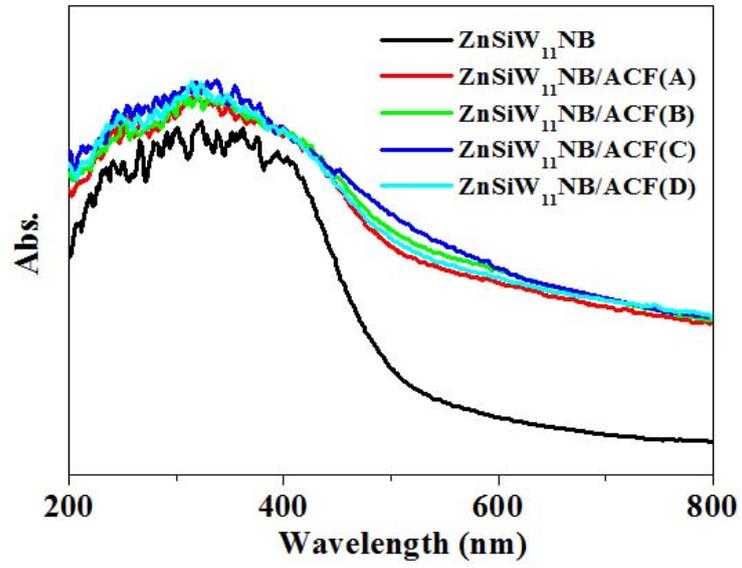


Figure S3. DRS of $\text{ZnSiW}_{11}\text{NB}$ and $\text{ZnSiW}_{11}\text{NB/ACF}$ composite materials.

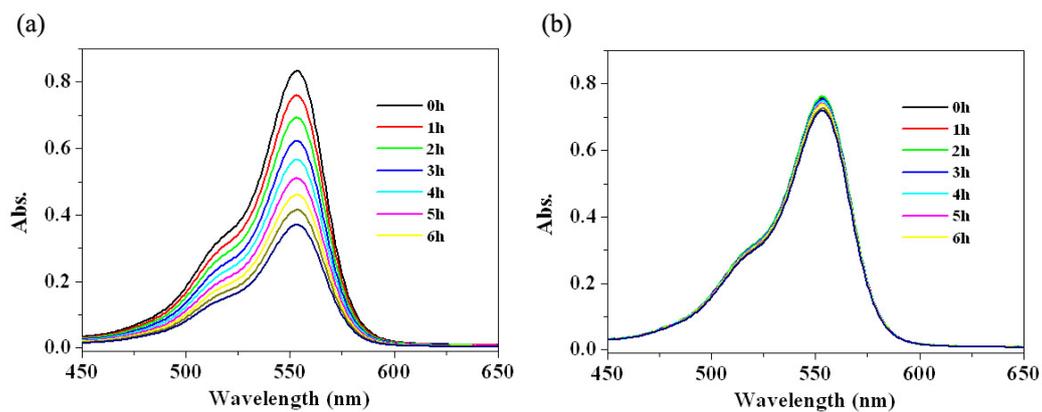


Figure S4. Absorption spectra of RhB degraded with **ZnSiW₁₁NB**: (a) under irradiation of ultraviolet light; (b) under irradiation of visible light.

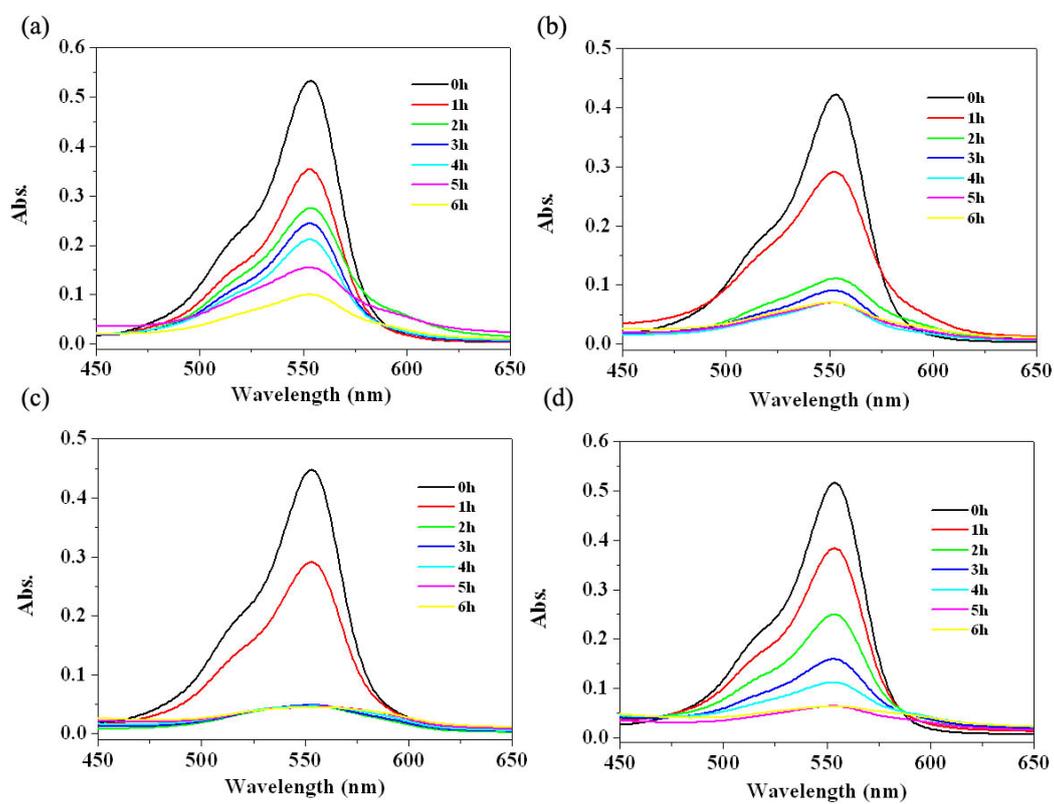


Figure S5. Absorption spectra of RhB degraded with **ZnSiW₁₁NB/ACF**: (a) **ZnSiW₁₁NB/ACF(A)**; (b) **ZnSiW₁₁NB/ACF(B)**; (c) **ZnSiW₁₁NB/ACF(C)**; (d) **ZnSiW₁₁NB/ACF(D)**.

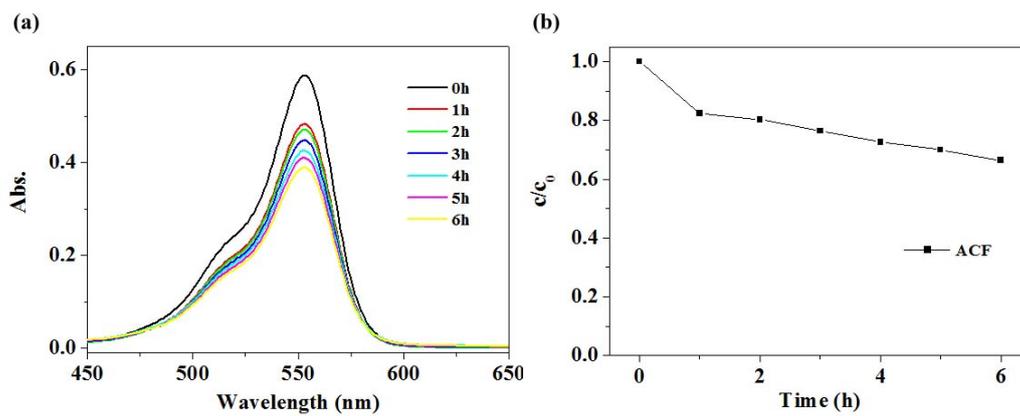


Figure S6. Absorption spectra of RhB degraded with ACF.

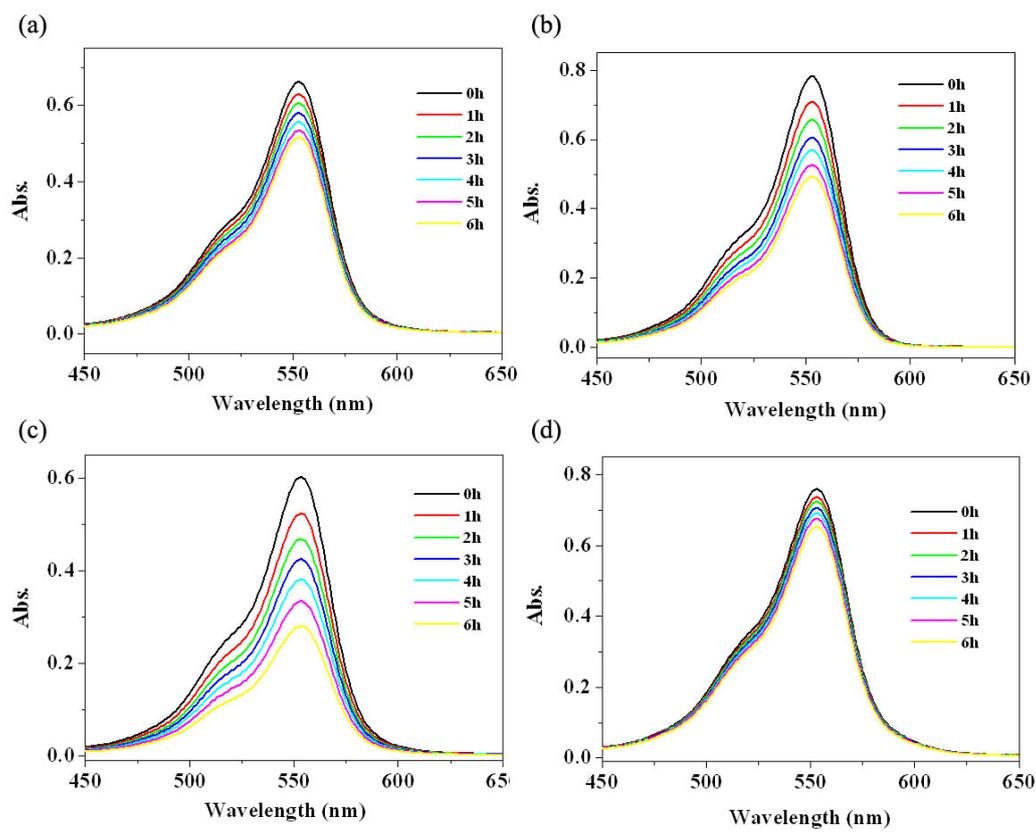


Figure S7. Absorption spectra of RhB degraded with $\text{ZnSiW}_{11}\text{NB/ACFM}$: (a) $\text{ZnSiW}_{11}\text{NB/ACF(A)M}$; (b) $\text{ZnSiW}_{11}\text{NB/ACF(B)M}$; (c) $\text{ZnSiW}_{11}\text{NB/ACF(C)M}$; (d) $\text{ZnSiW}_{11}\text{NB/ACF(D)M}$.