Supporting information

Synthesis of poly-pendant 1-D chain based on ‘trans-vanadium’ bicapped Keggin-type vanadtungstate and its photocatalytic properties

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Fig. S1. (a) Polyhedral and ball-and-stick representation of the propeller-shaped structures of the [NiL₄]²⁺ complex fragments in compound 1. (b) windmill.

Fig. S2. XPS spectra of W4f level of compound 1. The XPS of 1 show four partially overlapped peaks, and the fit of curve provides with positions of these four peaks at 34.7, 35.2, 36.8 and 37.3 eV attributing to W⁵ 4f₇/₂, W⁶ 4f₅/₂, W⁵ 4f₇/₂ and W⁶ 4f₅/₂, respectively. The ratios of the peak are for W⁵ to W⁶ is ca. 2 : 10.
Fig. S3. The XPS spectra for V in compound 1.

Fig. S4. View of the distance between the adjacent L pendants from two [NiL₄]²⁺ complexes in compound 1.
Fig. S5. IR spectrum of compound 1.

Fig. S6. TG curve for compound 1.
Fig. S7. Four cycles of photocatalytic degradation of MB (a) RhB (b) with compound 1.

Fig. S8. Absorption spectra of the RhB solution during the decomposition reaction under UV light irradiation with the use of VW_{12} and compound 1.
Fig. S9. The PXRD patterns of compound 1.

Fig. S10. The structures of methylene blue (MB), Rhodamineb (RhB) and methyl orange (MO).