Electronic Supplementary Information (ESI)

Construction of Cd(II) coordination polymers used as catalysts for photodegradation of organic dyes in polluted water

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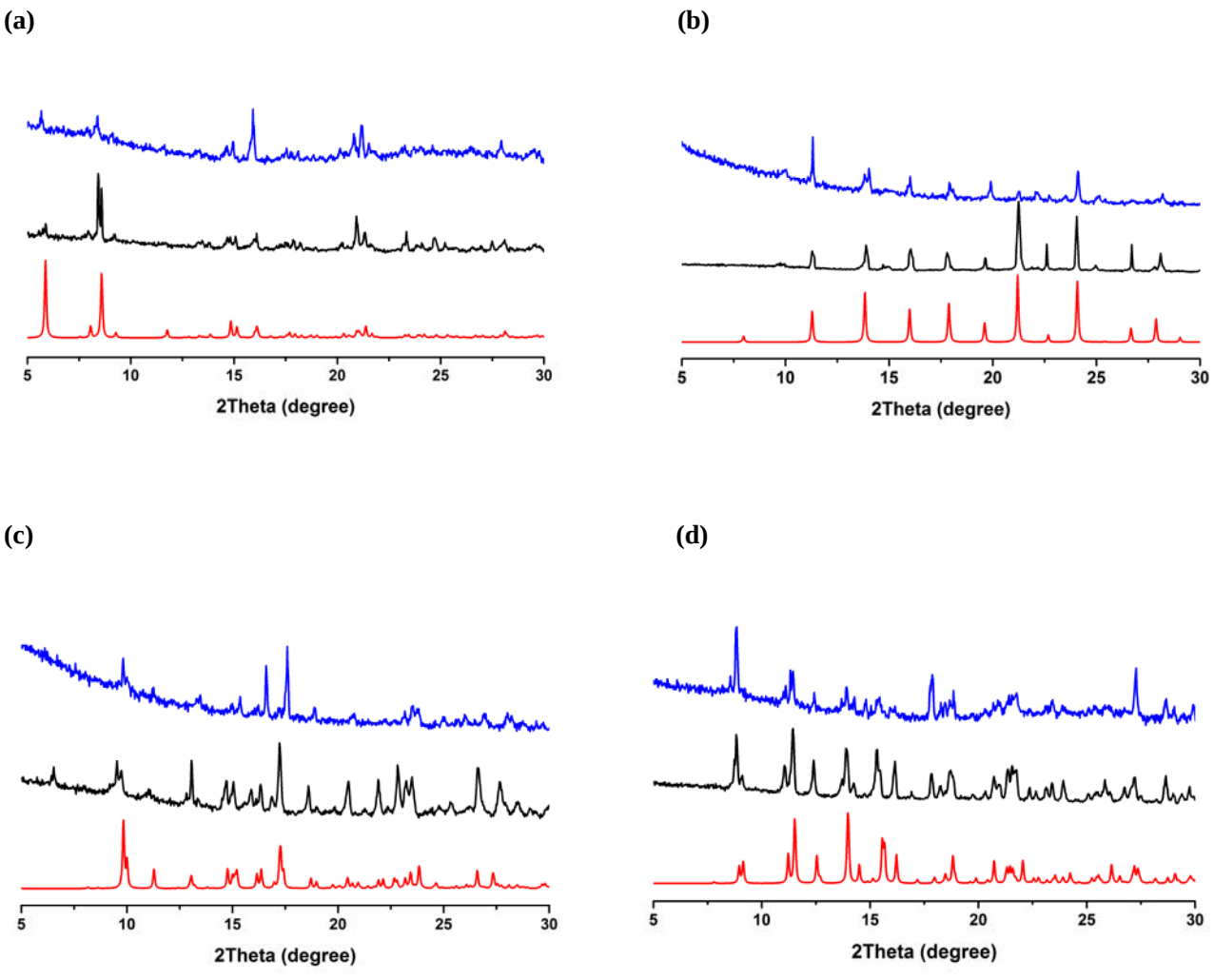
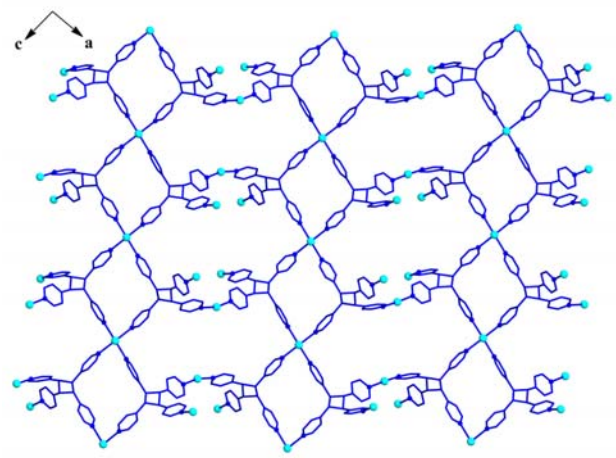


Fig. S1 (a) PXRD patterns for **1**. Simulated (red), single-phase polycrystalline sample (black) and recycled sample (blue) of **1**. (b) PXRD patterns for **2**. Simulated (red), single-phase polycrystalline sample (black) and recycled sample (blue) of **2**. (c) PXRD patterns for **3**. Simulated (red), single-phase polycrystalline sample (black) and recycled sample (blue) of **3.** (d) PXRD patterns for **4**. Simulated (red), single-phase polycrystalline sample (black) and recycled sample (blue) of **4**.·····S3

(a)



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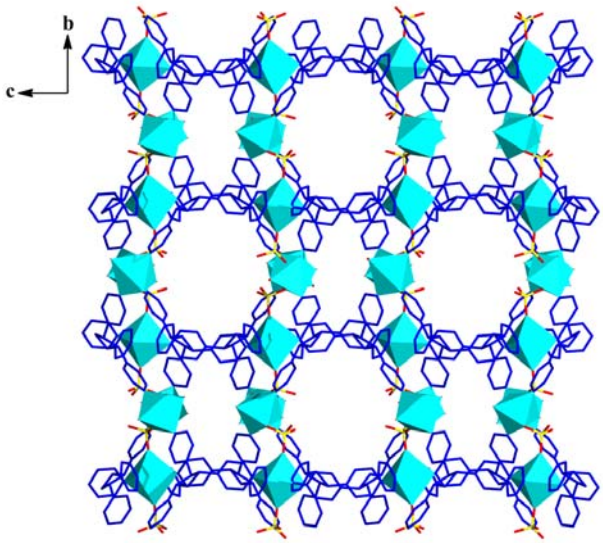

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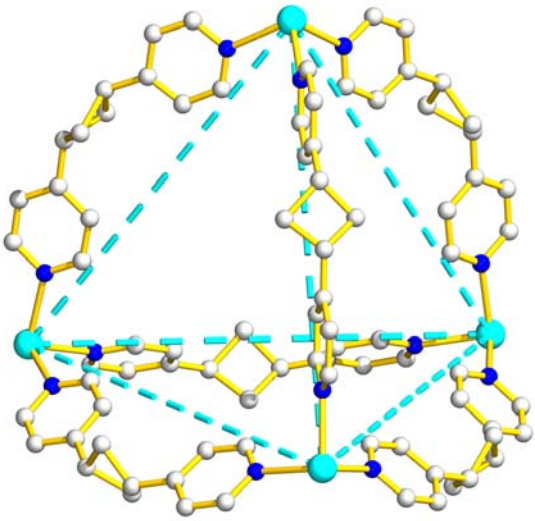

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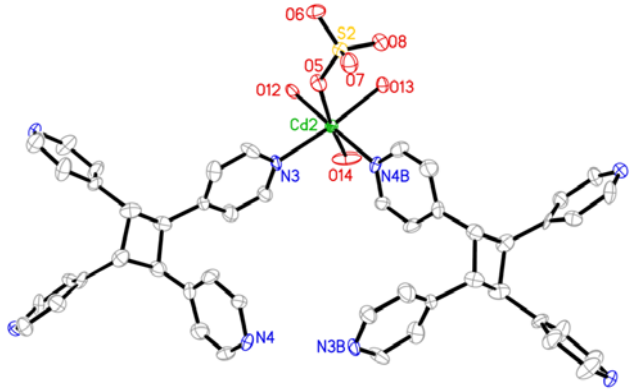

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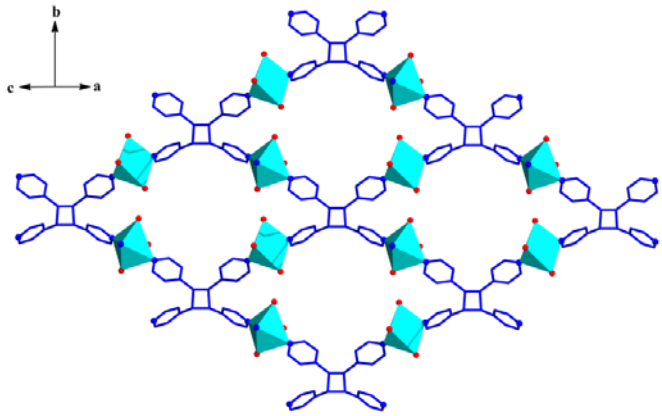

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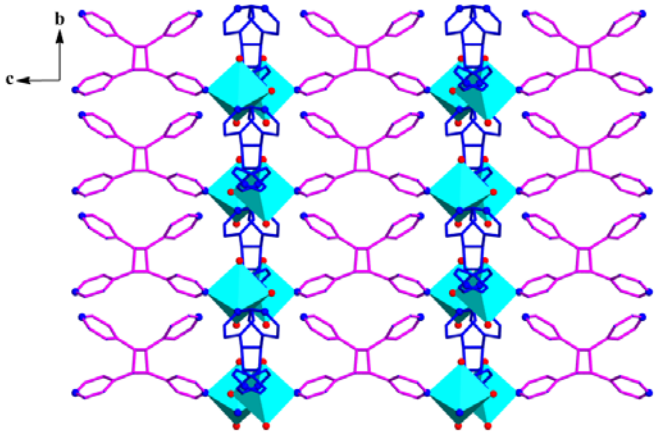


Fig. S2 (a) View of the 2D network of **1** extending along the *ac* plane. (b) View of hexagonal 1D channels of **1** extending along the *a* axis. (c) An adamantane-type unit within a single $[Cd(tpcb)_{0.75}(OH)(OH_2)_2]_n^{n+}$ net in **2**. (d) View of the coordination environment of the Cd2 centre in **3** with a labeling scheme. Symmetry codes: A: $-x+2, -y+3, -z+1$; B: $-x+1, -y+2, -z+1$. (e) View of the $[Cd(tpcb)_{0.5}]_n^{2n+}$ layer of **4** along the *ab* plane. (f) View of a 2D layer of **4** extending along the *bc* plane.

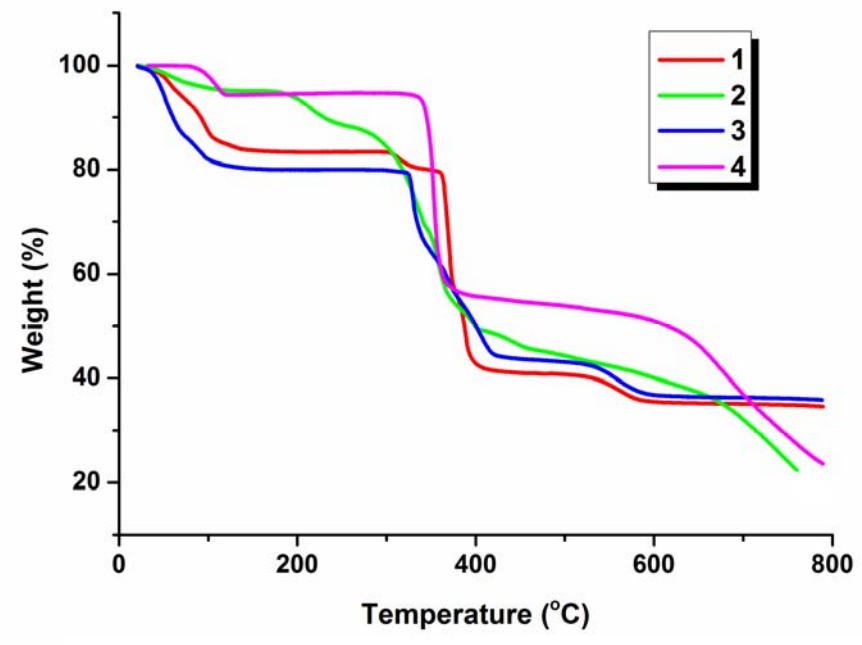
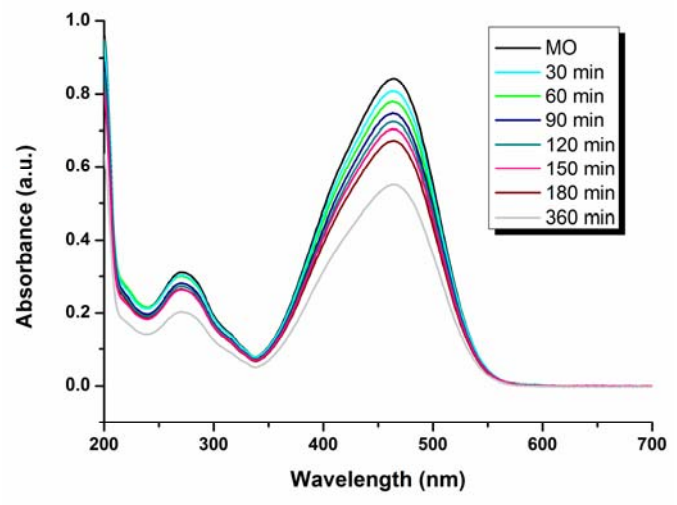


Fig. S3 The TGA curves for complexes **1**-**4**.

(a)



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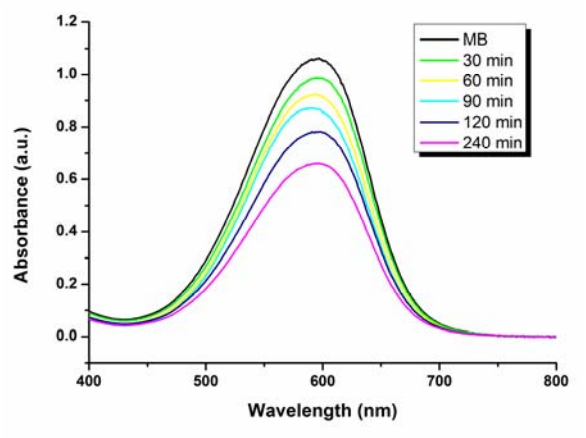

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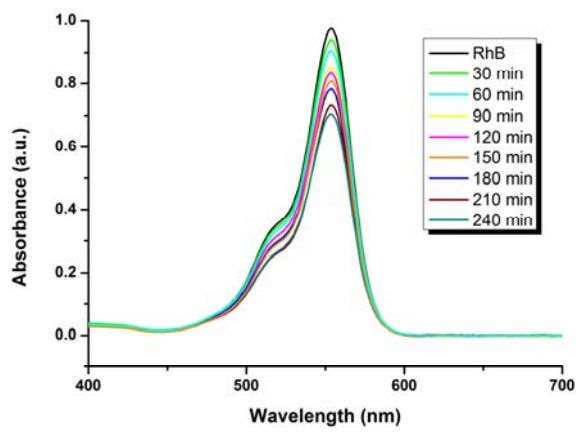
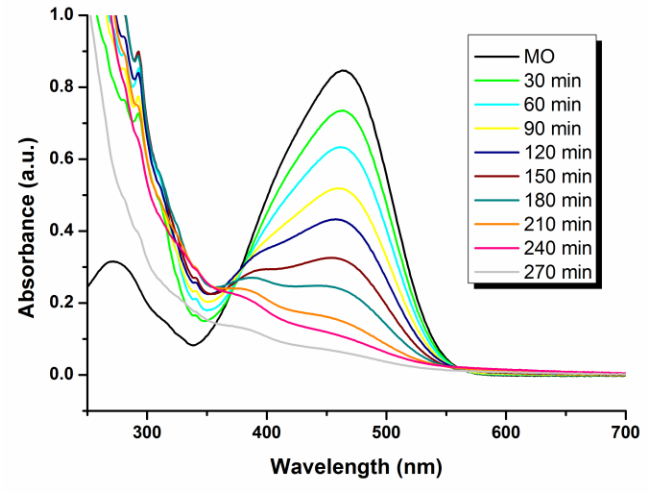


Fig. S4 UV-Vis absorption spectra of the MO (a), MB (b), and RhB (c) solutions degraded without photocatalysts under UV irradiation at different time intervals.

(a)



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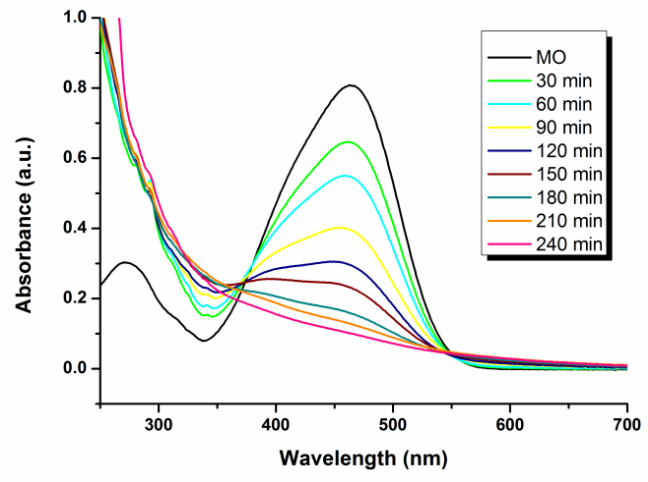

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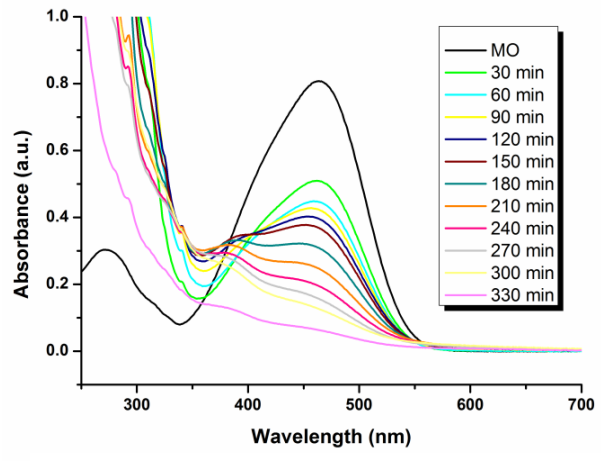

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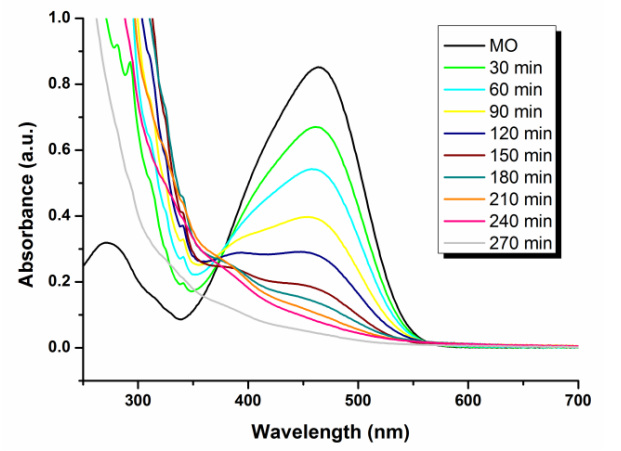

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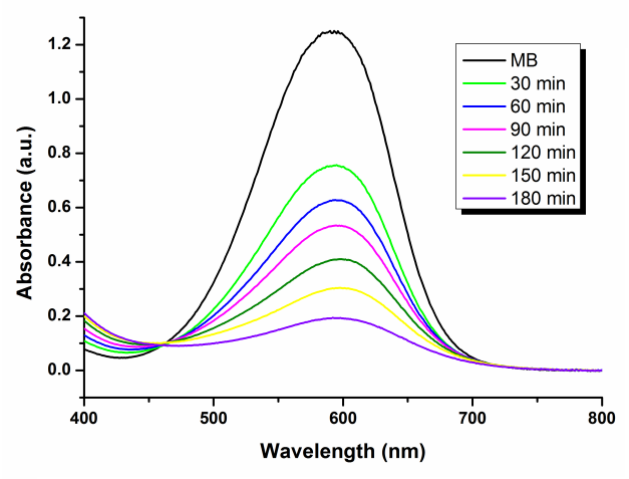

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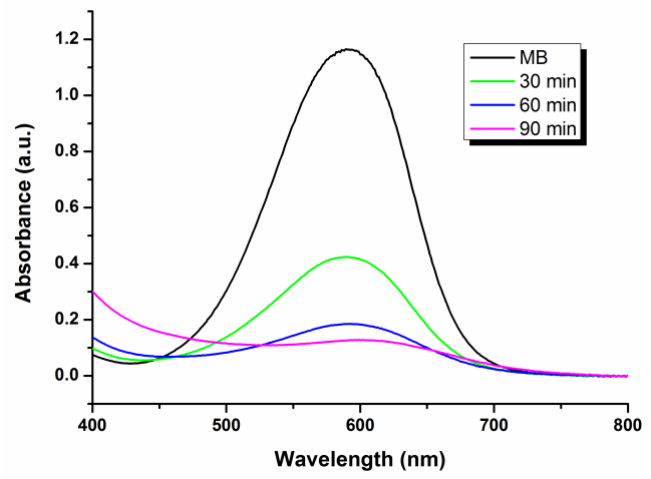

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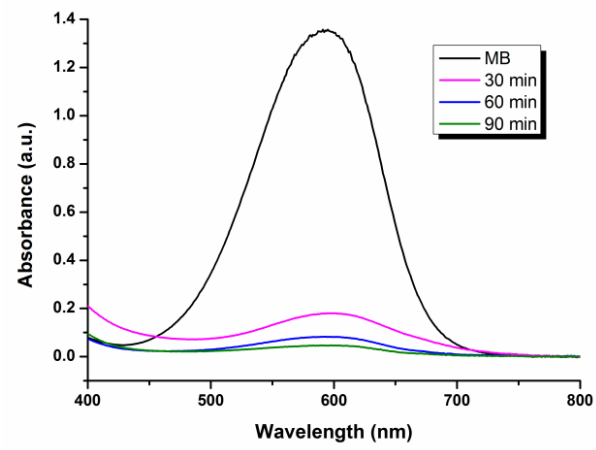

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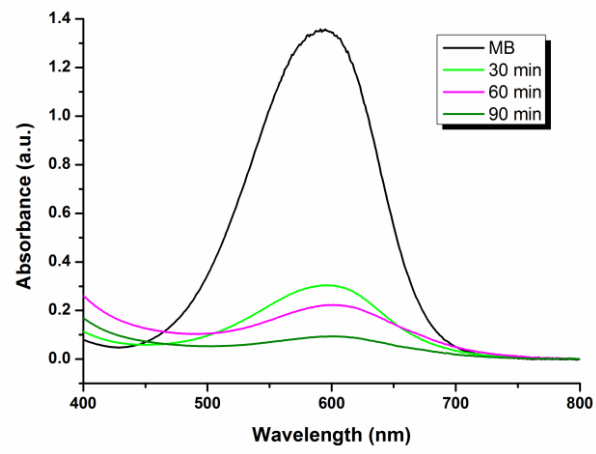
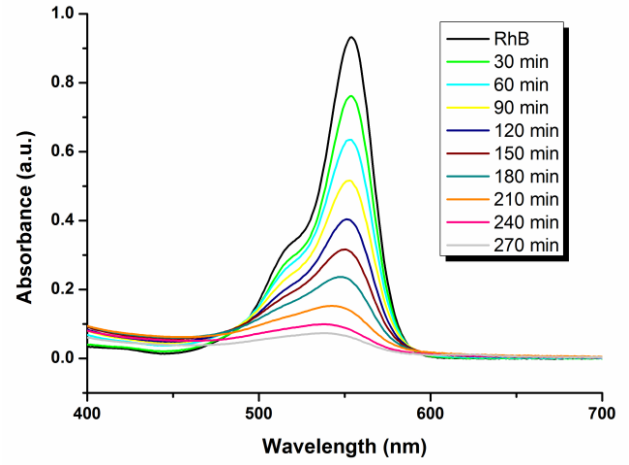


(i)



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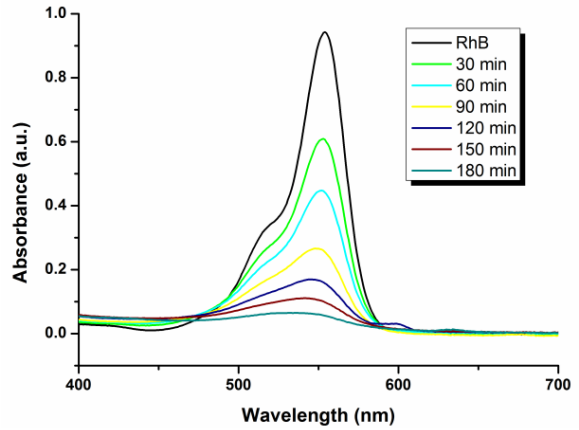
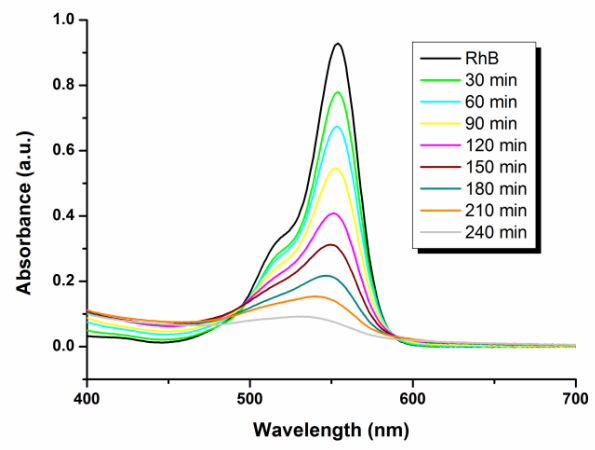


(k)



(l)

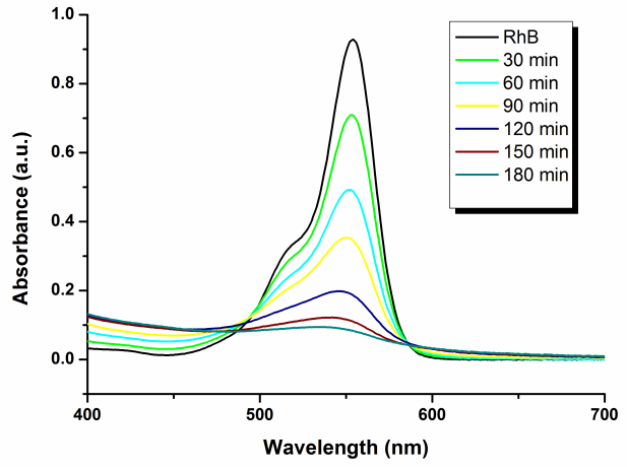
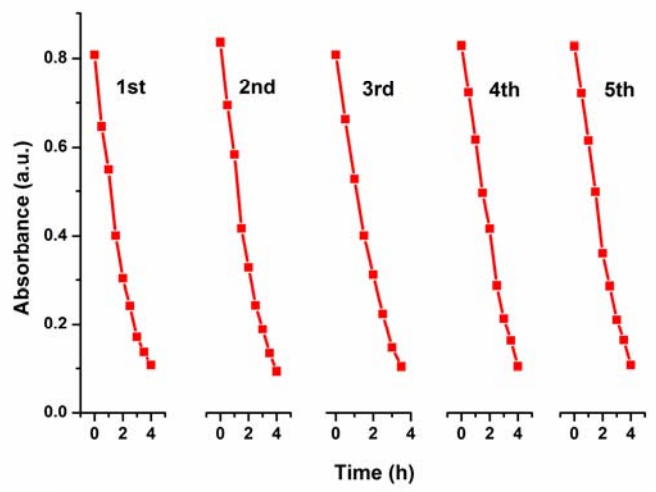


Fig. S5 UV-Vis absorption spectra of the MO, MB and RhB solutions degraded by different photocatalysts under UV irradiation at different time intervals: (a) **1** in MO; (b) **2** in MO; (c) **3** in MO; (d) **4** in MO; (e) **1** in MB; (f) **2** in MB; (g) **3** in MB; (h) **4** in MB; (i) **1** in RhB; (j) **2** in RhB; (k) **3** in RhB; (l) **4** in RhB.

(a)



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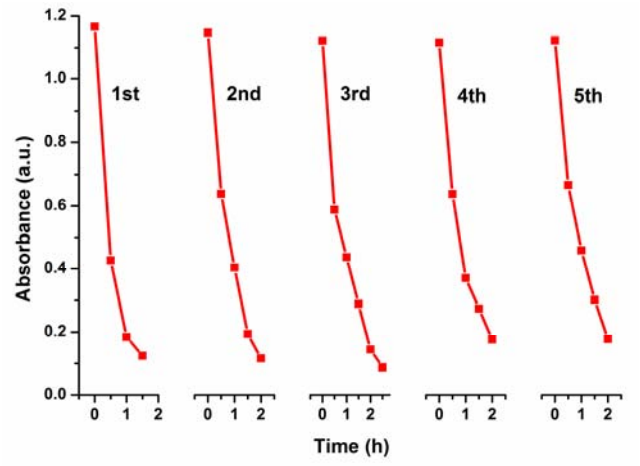

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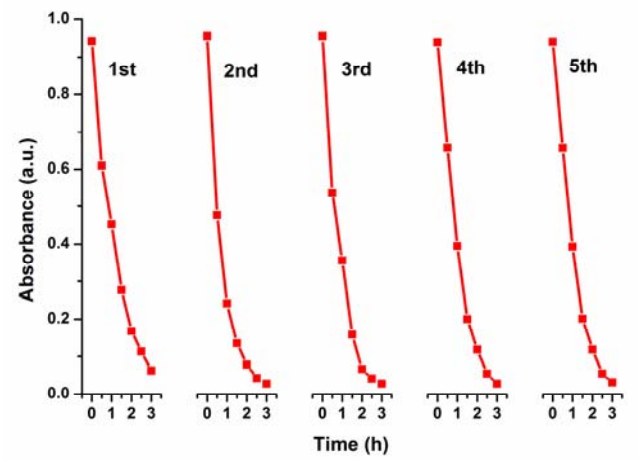
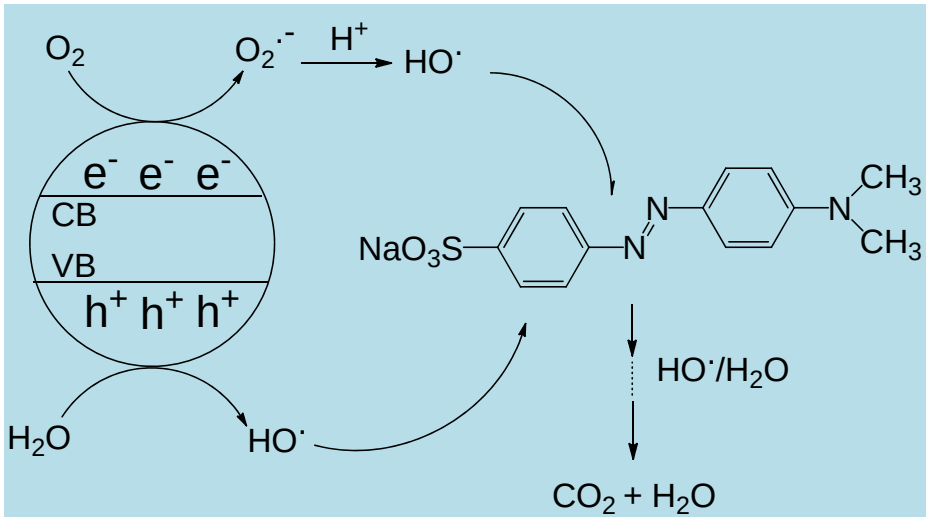


Fig. S6 Recycling experiments using **2** for the photocatalytic degradation of MO (a), MB (b) and RhB (c) under UV irradiation.



Scheme S1 Schematic diagram of the photocatalytic mechanism.