

## 氧化还原对 Lindqvist 型多金属氧簇复合物自组装的动态调控

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## Redox-Regulated Dynamic Self-Assembly of a Lindqvist-Type Polyoxometalate Complex

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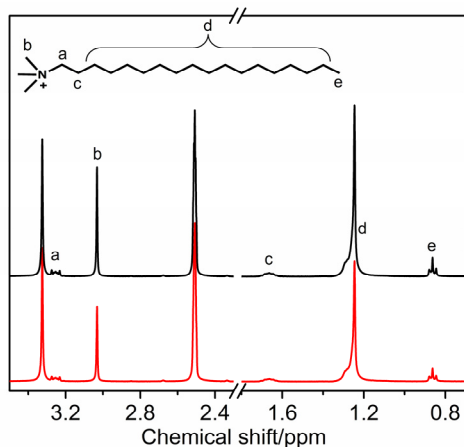


Fig. S1  $^1\text{H}$  NMR spectra of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  at initial state (black curve) and after three cycles of alternate redox (red curve) in  $\text{DMSO-}d_6$ .

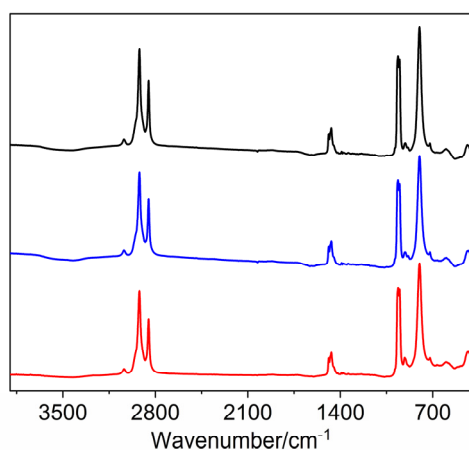


Fig. S2 FT-IR spectra of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  at initial state (black curve), after UV reduction (blue curve), and after three cycles of alternate redox (red curve) in KBr pellets.

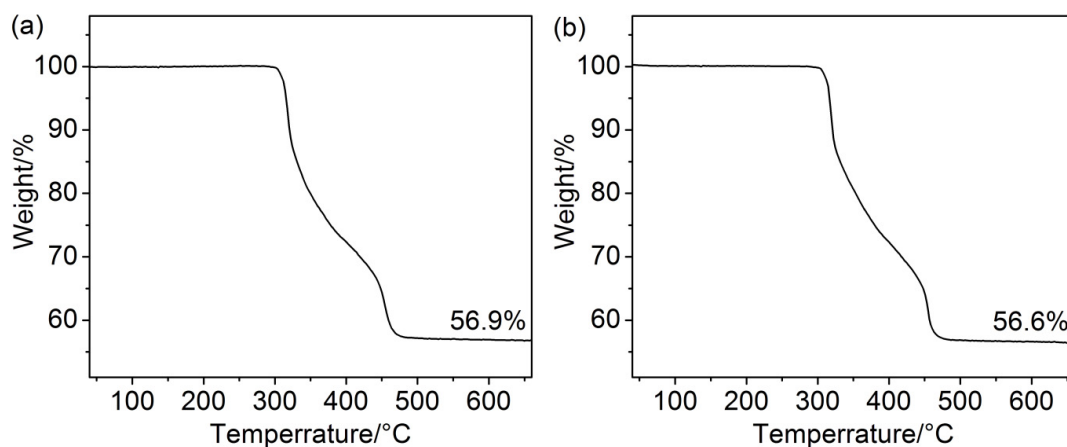
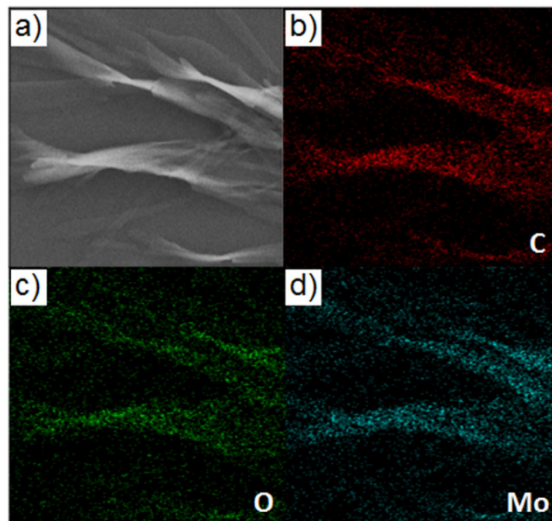
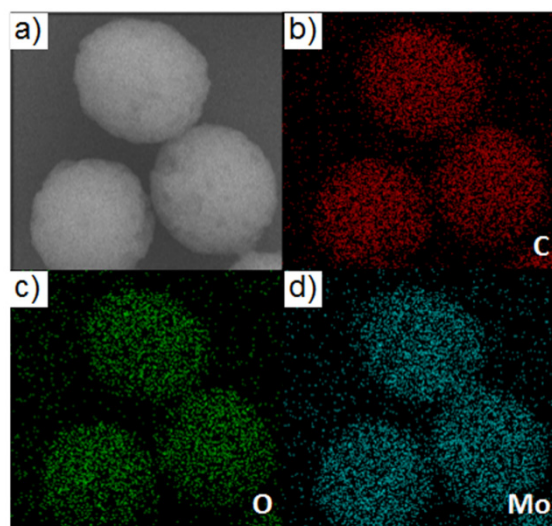


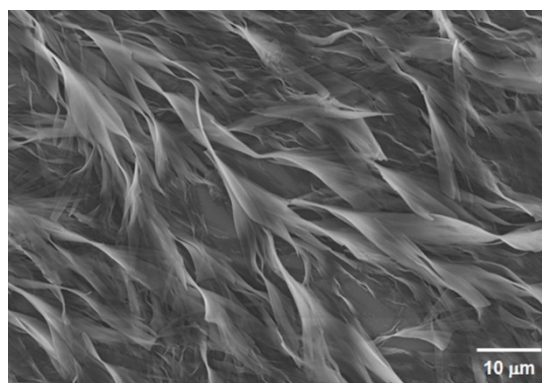
Fig. S3 TGA curve of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  (a) at initial state and (b) after three cycles of alternate redox. The measured residue of 56.9% at initial state and 56.6% after three cycles of alternate redox at 600 °C are in agreement with the calculated value of 57.4% from the given formula  $\text{C}_{42}\text{H}_{92}\text{N}_2\text{Mo}_6\text{O}_{19}$ .



**Fig. S4** a) SEM image of the helical assemblies of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  on silica substrate; b), c) and d) the EDX-mapping image of C, O and Mo element distribution marked as red, green and blue dots, respectively.



**Fig. S5** a) SEM image of the spherical assemblies of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  on silica substrate; b), c) and d) the EDX-mapping image of C, O and Mo element distribution marked as red, green and blue dots, respectively.



**Fig. S6** SEM image of helical assemblies of  $(\text{ODTA})_2[\text{Mo}_6\text{O}_{19}]$  obtained from dichloromethane/propanol (4 : 1 v/v) solution after air oxidation.

**Table S1** The integral area fitted from Mo 3d XPS spectra of (ODTA)<sub>2</sub>[Mo<sub>6</sub>O<sub>19</sub>] and the negative charge of [Mo<sub>6</sub>O<sub>19</sub>]<sup>n-</sup> based on calculation of the chemical composition [Mo<sup>VI</sup><sub>6x67%</sub>Mo<sup>V</sup><sub>6x33%</sub>O<sub>19</sub>] after UV irradiation for different time.

Irradiation time/min	Mo <sup>6+</sup> (3/2)/%	Mo <sup>5+</sup> (3/2)/%	Mo <sup>6+</sup> (5/2)/%	Mo <sup>5+</sup> (5/2)/%	Charge
0	40.00	0.00	60.00	0.00	-2.000
1	39.17	0.83	58.76	1.24	-2.126
2	36.06	3.94	54.08	5.92	-2.592
3	27.27	12.73	40.91	19.09	-3.909
5	26.48	13.52	39.73	20.27	-4.027