Supporting information of

$(AEDPH_3)\cdot(8\text{-}OQH)\cdot(H_2O)$：A yellow supramolecular plaster with ammonia adsorption and ammonia-induced discoloration properties

Di Tian,[a] Juan Xiong,[a] Xi-chao Liang,[a] Jing Deng,[b] Liang-jie Yuan,*[a] Shuo-ping Chen,*[b]

[a] College of Chemistry and Molecular Sciences, Wuhan University, Wuhan 430072, P. R. China. *Corresponding author. E-mail: ljyuan@whu.edu.cn. Tel: +86-27-6875-2800

[b] Key Lab of New Processing Technology for Nonferrous Metals & Materials, Ministry of Education, College of Materials Science and Engineering, Guangxi Scientific Experiment Center of Mining, Metallurgy and Environment, Guilin University of technology, Guilin 541004, P. R. China. *Corresponding author. E-mail: chenshuoping_777@163.com. Tel: +86-773-5896290

List：

Figure S-1. The schematic diagram of the color change between neutral 8-OQ molecule (left) and protonated 8-OQH^+ cation (right).

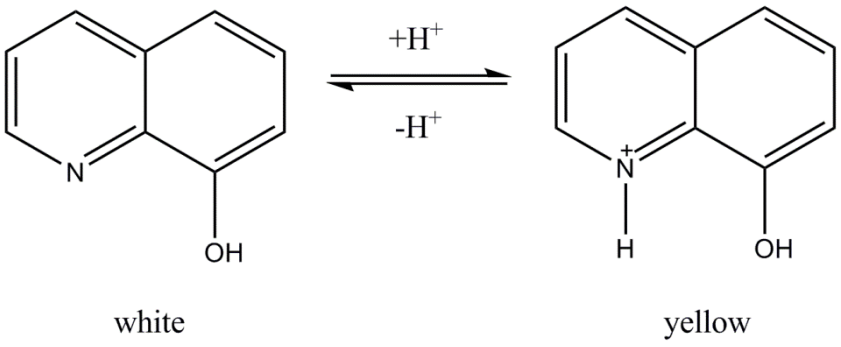


Figure S-2. PXRD pattern of the plaster **1** and PXRD pattern of compound **1** which is calculated by the single crystal data.

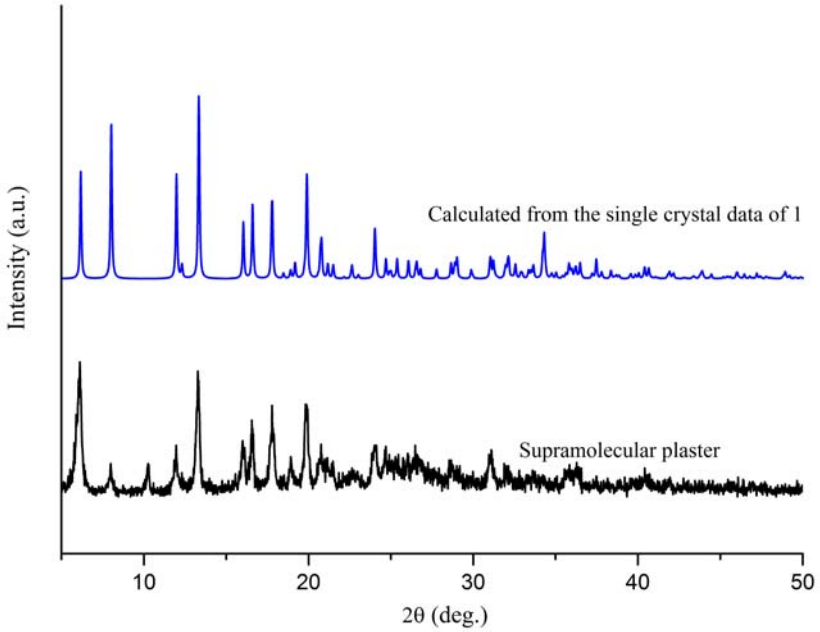
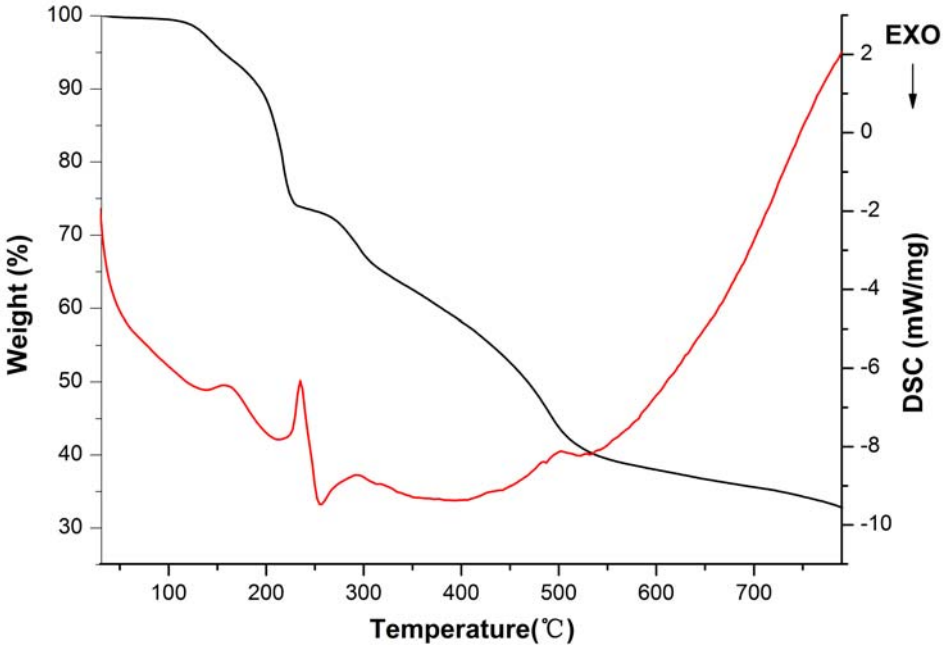


Figure S-3. The TG (black) and DSC (red) curves of plaster **1**. The plaster can be stable up to 120 °C in nitrogen. Then, it decomposes until 250 °C, attributed to the release of water molecules and the decomposition of 8-OQH^+ ions. The weight loss occurring between 244°C and 800 °C corresponds to the decomposition of $AEDPH_3^-$ ions. The final product in 800 °C is probably assumed to be 0.5 (P_2O_3+P_2O_5), and the observed total weight loss (65.67 %) is similar to the calculated value (65.03%).



Figuire S-4. IR spectrum of plaster **1**.

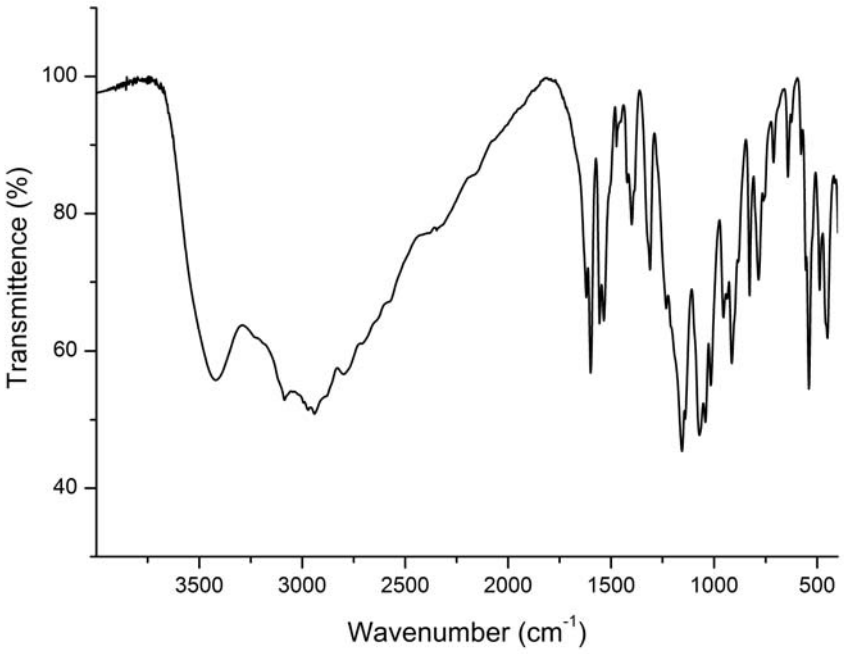


Figure S-5. ^{1}H NMR spectrum of 8-OQ extracted from the equimolar mixture of plaster **1** and ammonia.

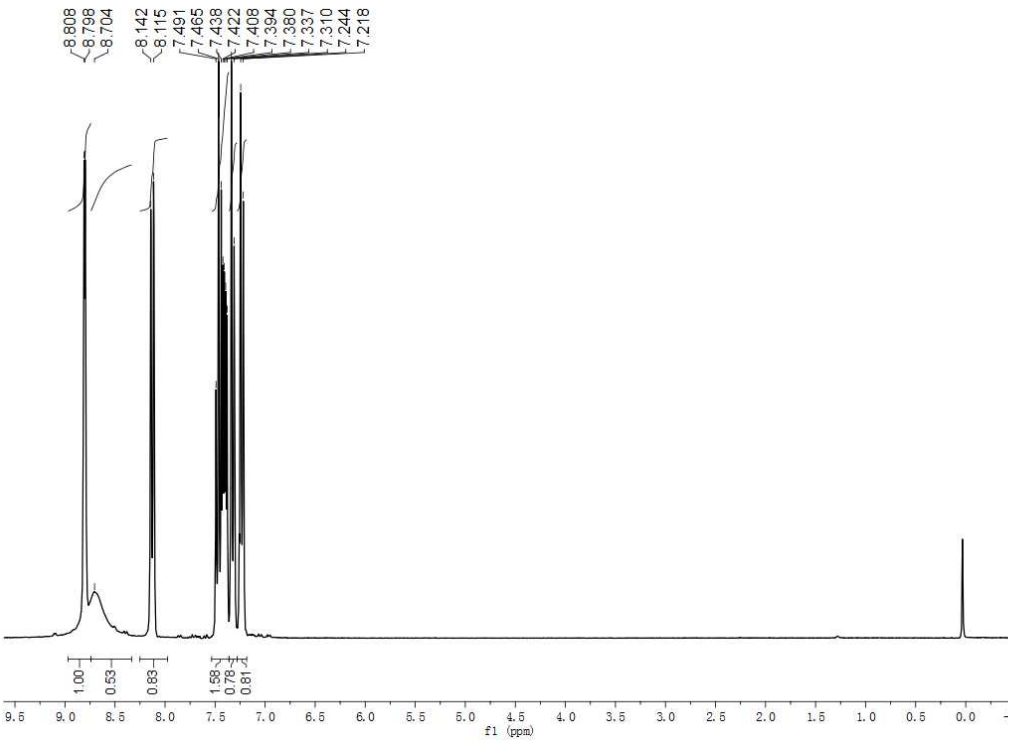


Figure S-6. ^{13}C NMR spectrum of 8-OQ extracted from the equimolar mixture of plaster **1** and ammonia.

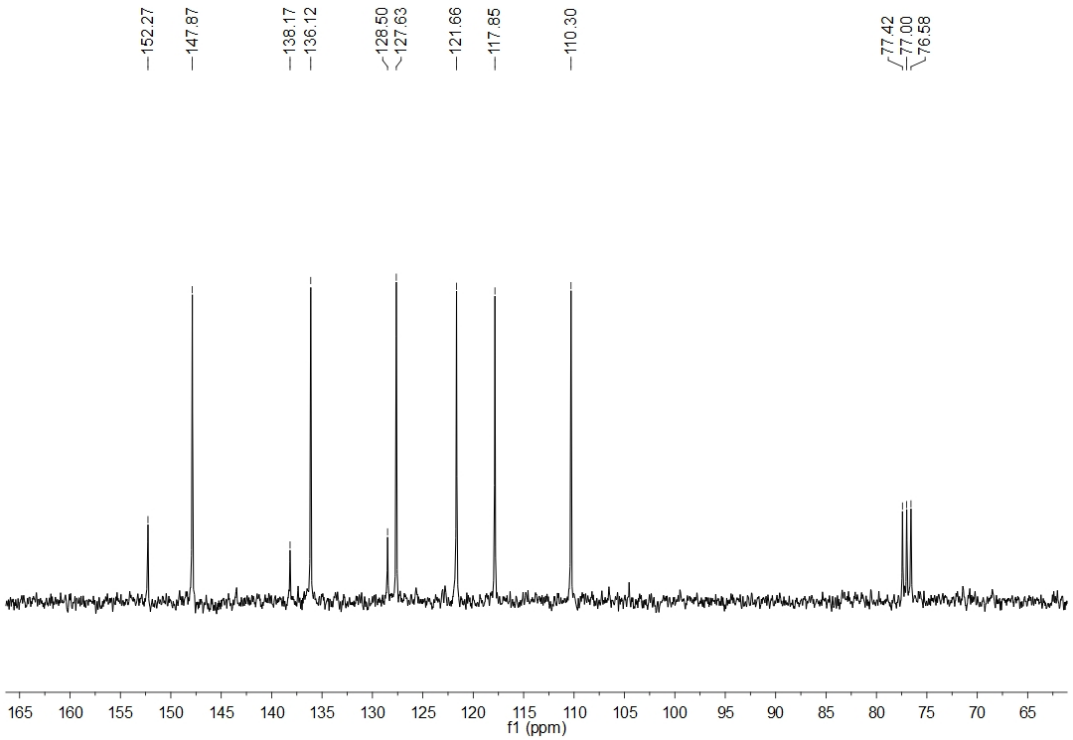


Table S-7. Hydrogen bonds of plaster **1** (Å and °).

Donor−H···Acceptor	D(Donor···Acceptor)	<(Donor−H···Acceptor)
O(7)-H(7A)...O(2)	2.760(11)	119.6
O(7)-H(7B)...O(1)#1	2.790(11)	178.2
O(8)-H(8)...O(7)#2	2.410(12)	177.7
O(6)-H(6A)...O(5)#3	2.549(7)	127.5
O(3)-H(3A)...O(4)#4	2.584(8)	179.7
N(1)-H(1C)...O(6)#1	2.854(8)	144.3
N(1)-H(1B)...O(4)#5	2.839(7)	139.2
N(1)-H(1A)...O(1)#1	2.753(8)	158.5
N(2)-H(2)...O(2)	2.662(18)	141(24)
N(2)-H(2)...O(8)	2.74(2)	111(21)

Symmetry transformations used to generate equivalent atoms: #1 x,y,z-1; #2 -x+1,-y+1,-z+1; #3 x,-y+1/2,z+1/2; #4 -x,-y+1,-z+2; #5 -x,-y+1,-z+1.