Two novel octamolybdate nanoclusters as catalysts for dye degradation by air under room conditions

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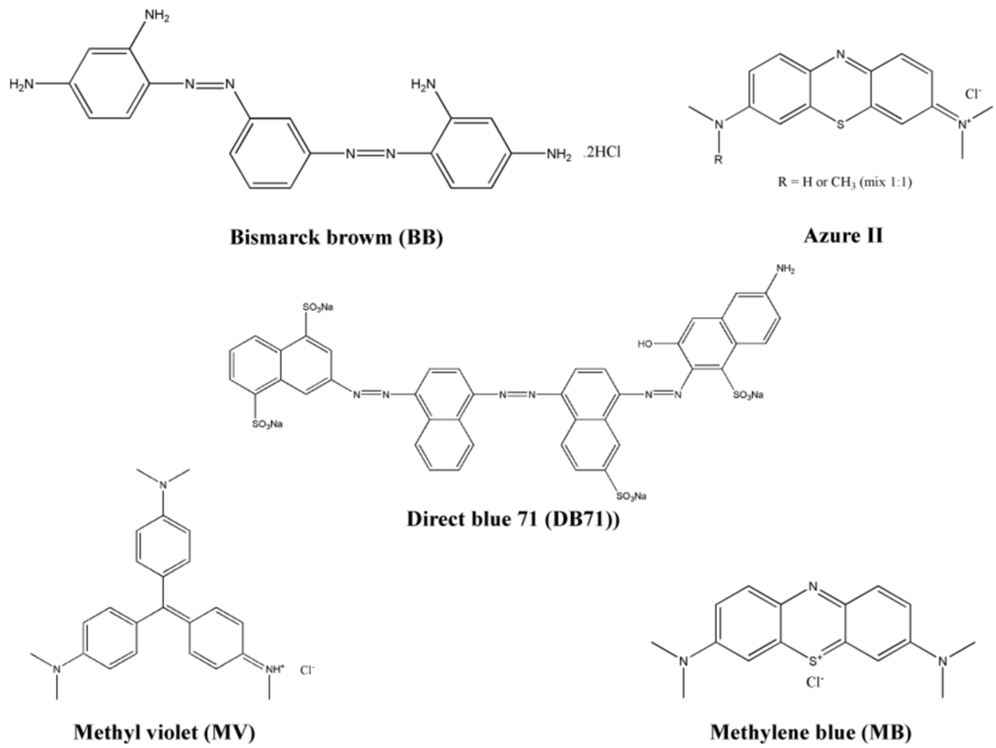


Fig. S1. Structure of the investigated dyes.

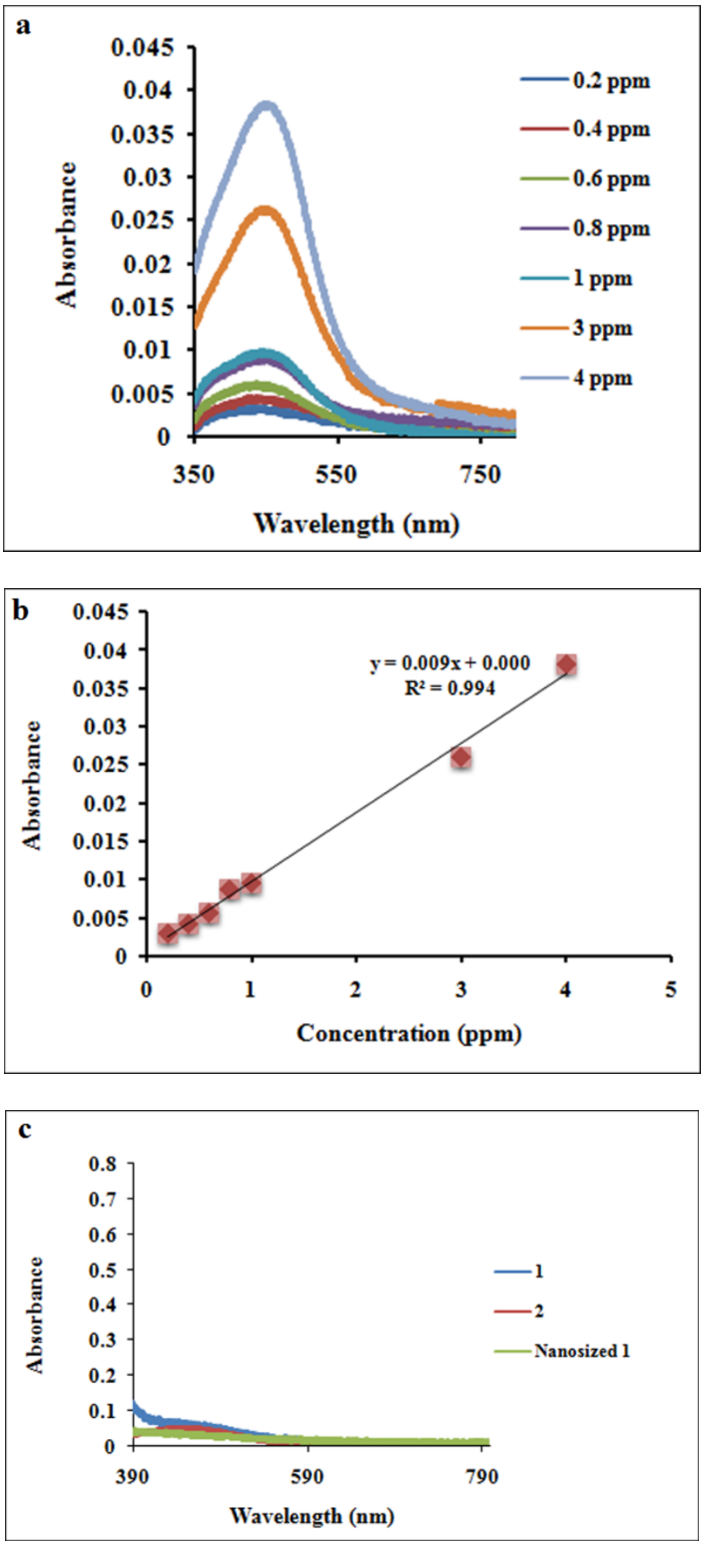


Fig. S2. (a) UV-Vis spectra for the standard solutions of Bismarck brown (BB), (b) calibration curve (c) decomposition of BB (C_0 = 0.3 g/L, 100 ml) in the presence of the catalysts (1.33 g) after 2 h.

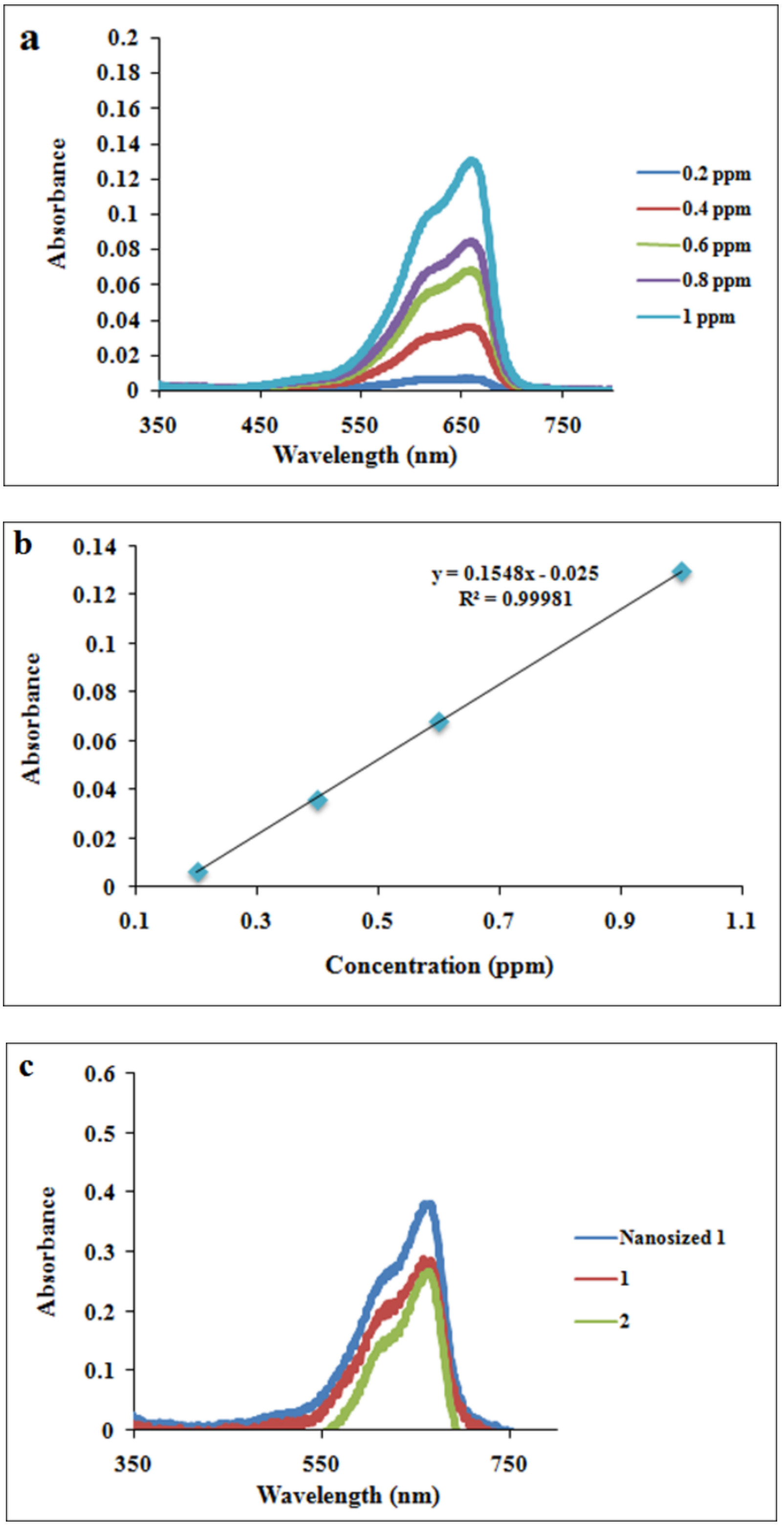


Fig. S3. (a) UV-Vis spectra for the standard solutions of Azure II, (b) calibration curve (c) decomposition of the dye (C_0 = 0.3 g/L, 100 ml) in the presence of the catalysts (1.33 g) after 2 h.

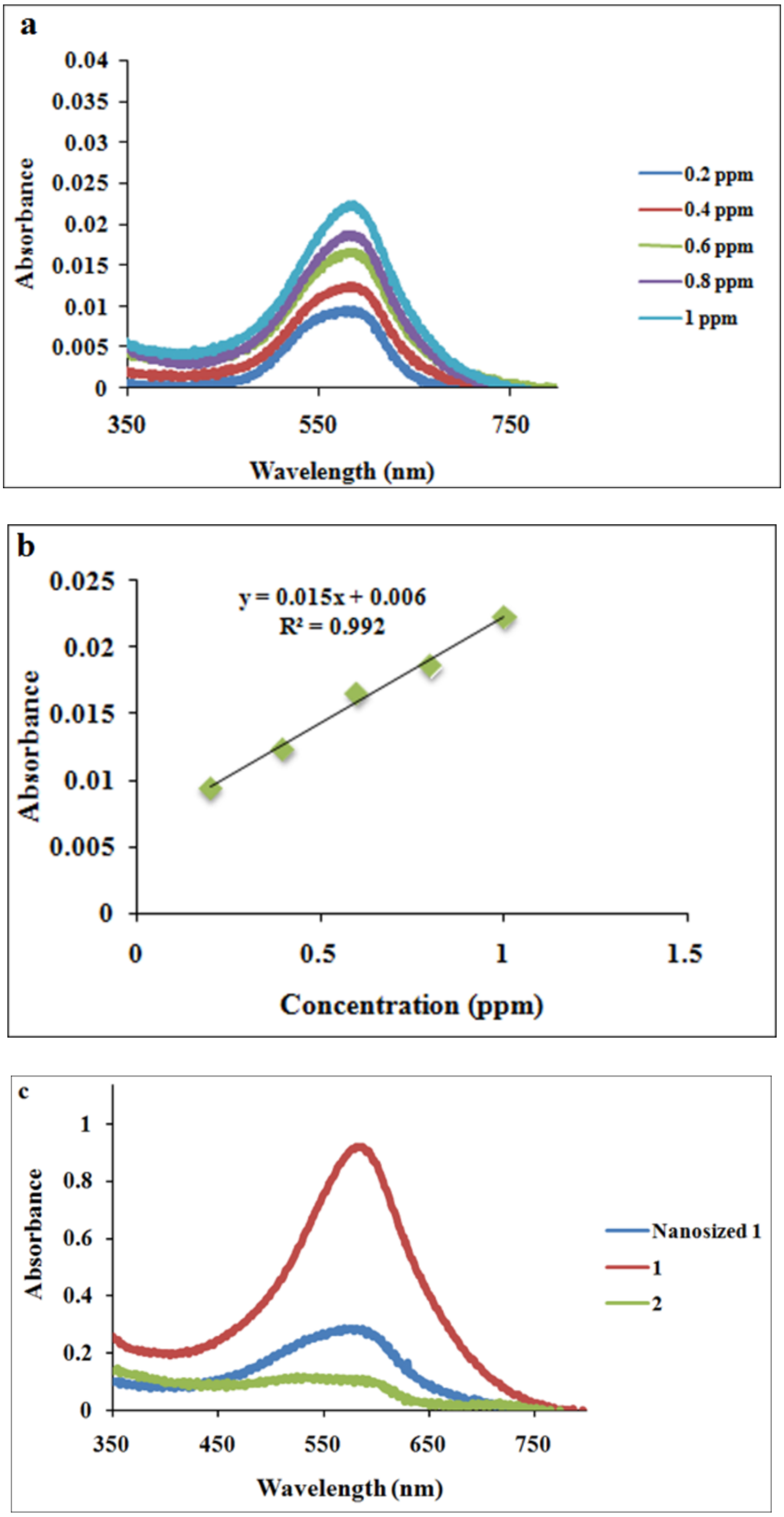


Fig. S4. (a) UV-Vis spectra for the standard solutions of Direct blue 71 (DB 71), (b) calibration curve (c) decomposition of DB 71 (C_0 = 0.3 g/L, 100 ml) in the presence of the catalysts (1.33 g) after 2 h.

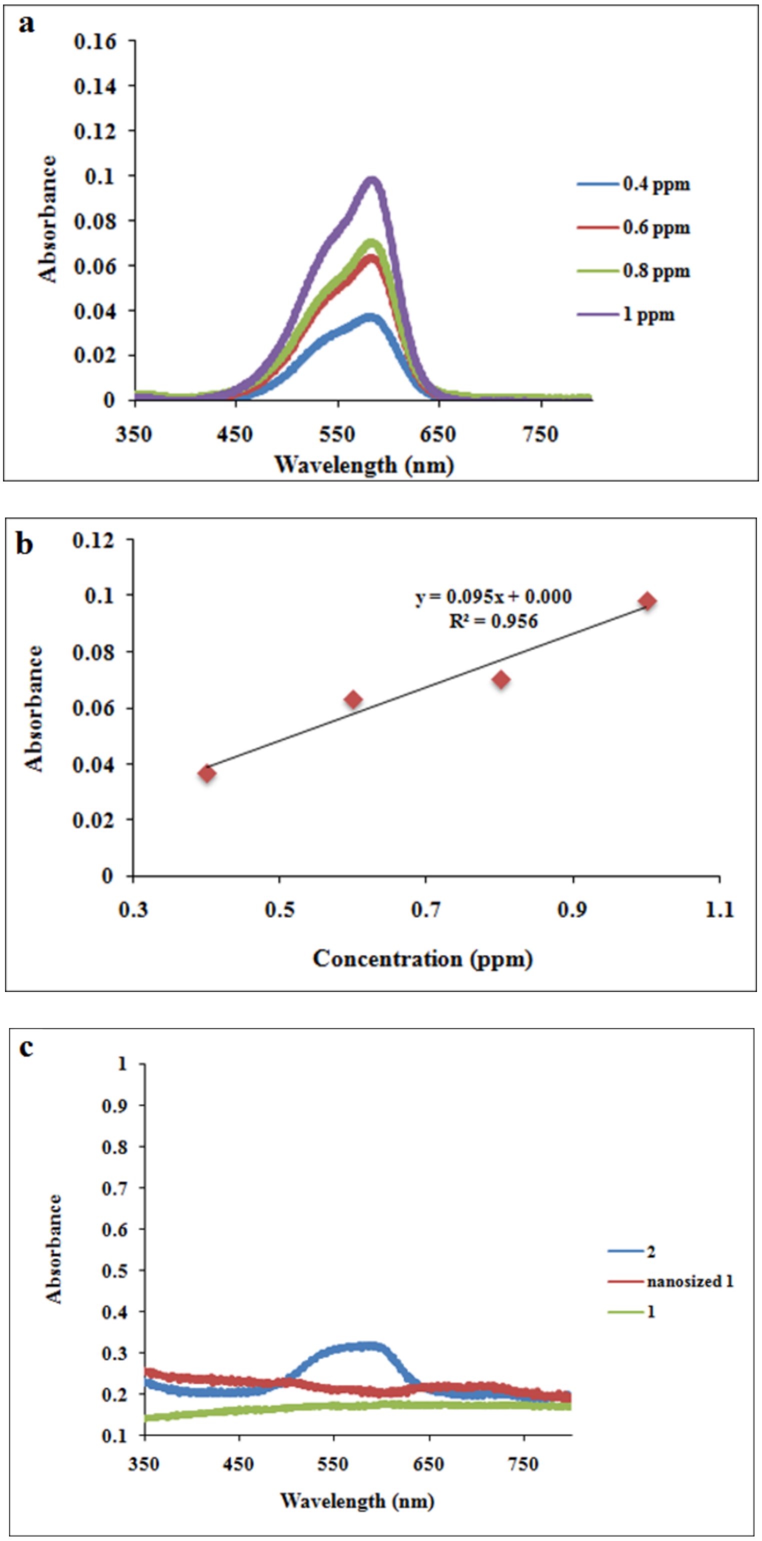


Fig. S5. (a) UV-Vis spectra for the standard solutions of Methyl violet (MV), (b) calibration curve (c) decomposition of MV (C_0 = 0.3 g/L, 100 ml) in the presence of the catalysts (1.33 g) after 2 h.

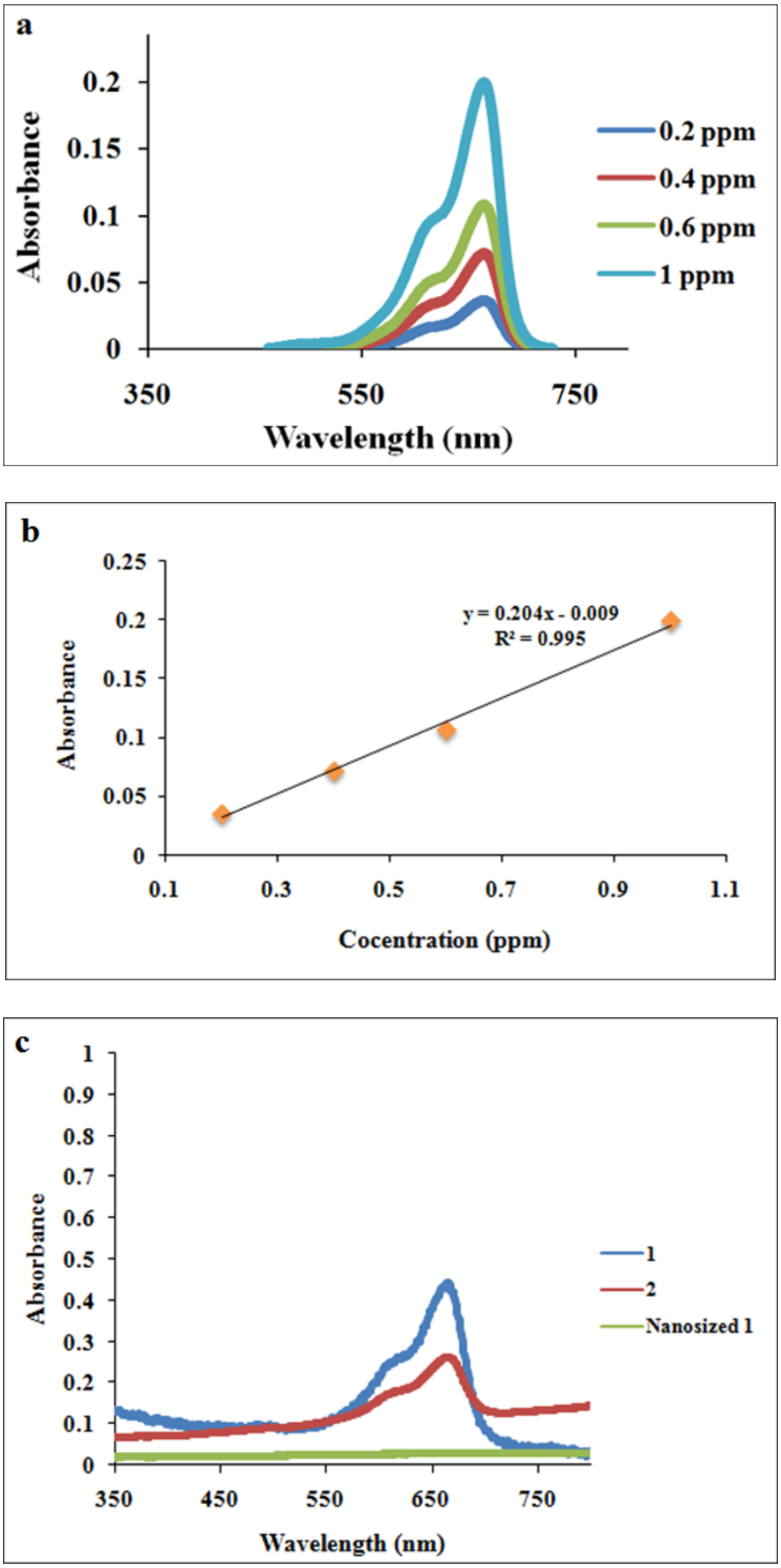


Fig. S6. (a) UV-Vis spectra for the standard solutions of Methylene blue (MB), (b) calibration curve (c) decomposition of MB (C_0 = 0.3 g/L, 100 ml) in the presence of the catalysts (1.33 g) after 2 h.

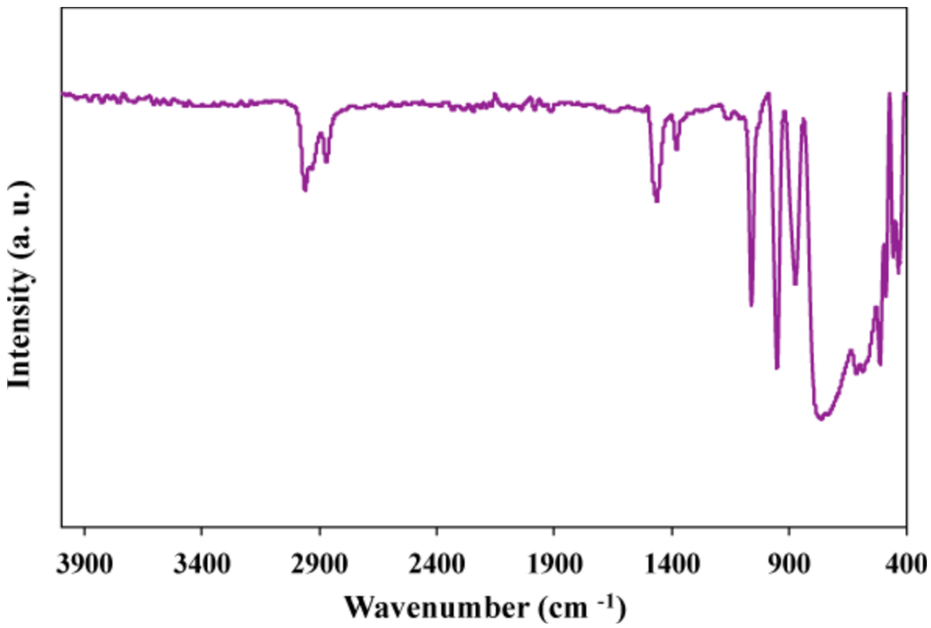


Fig. S7. FT-IR spectrum of tetrabutylammonium octamolybdate.

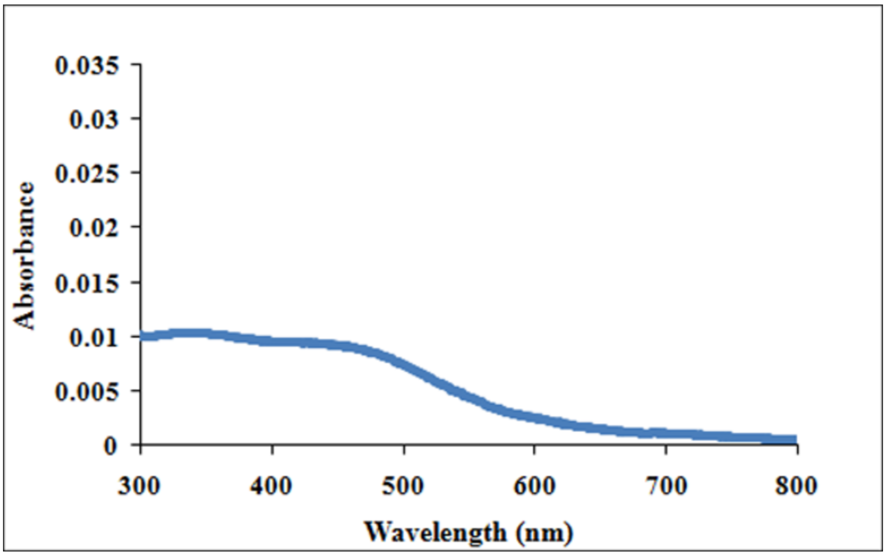
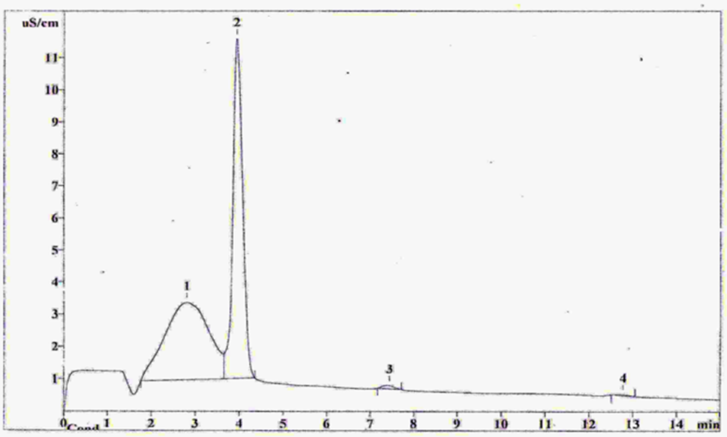


Fig. S8. The UV-Vis spectrum of BB solution in the presence of tetrabutylammonium octamolybdate after 2 h.

a.



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
1	2.80	2.39	166.358	0.000	
2	3.94	10.57	164.827	12.648	chloride
3	7.45	0.10	1.919	0.280	nitrate
4	12.78	0.03	0.650	0.000	
4	15.01	13.09	333.754	12.928	

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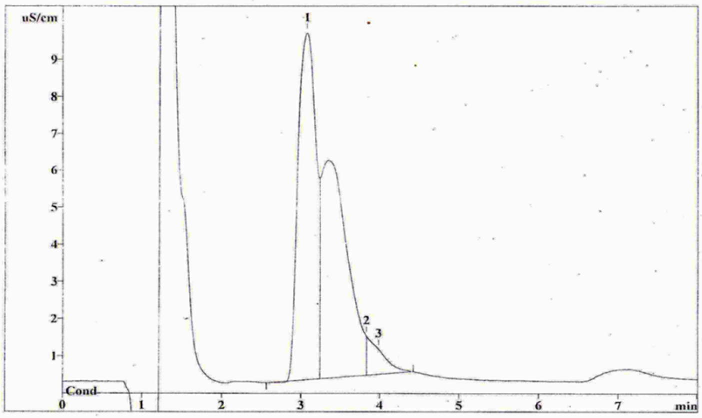
b.



Quantitation method: Custom

No	Retention min	Height uS/cm	Area uS/cm*sec	Conc. mg/L	Name
2	3.83	1.04	135.754	10.470	ammonium

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Fig. S9. The ion chromatograms for BB solution for detected a. anions and b. cation in the treated sample after 2h.