

Supplementary Material

Polyoxometalate-based gasochromic silica pieces

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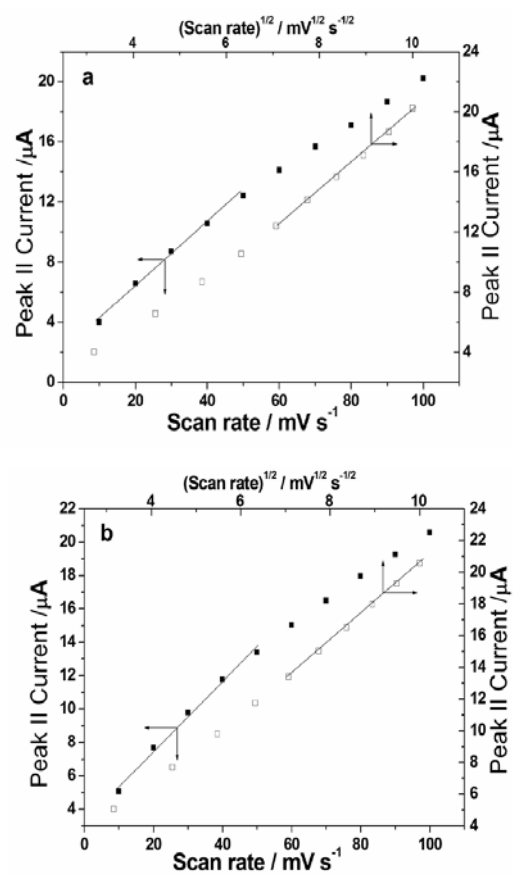


Fig. S 1 The dependence of cathodic peak currents [I_{pc}(II)] on scan rates (black square marks) and the square roots of scan rates (white square marks) for PMO₁₂ aqueous-modified electrode (a) and PMO₁₂ sol-modified electrode (b).

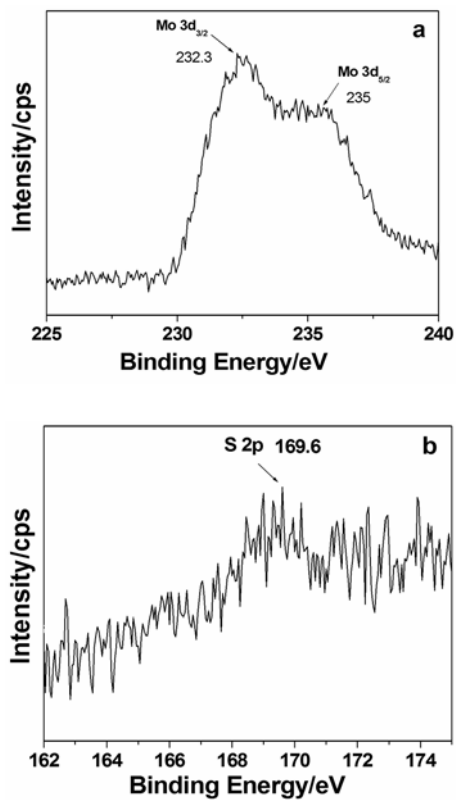


Fig. S 2 (a) Molybdenum atom peaks (Mo 3d_{3/2} and Mo 3d_{5/2}), (b) sulphur atom peak (S 2p) in the X-ray photoelectron spectra for the silica after exposure to SO₂

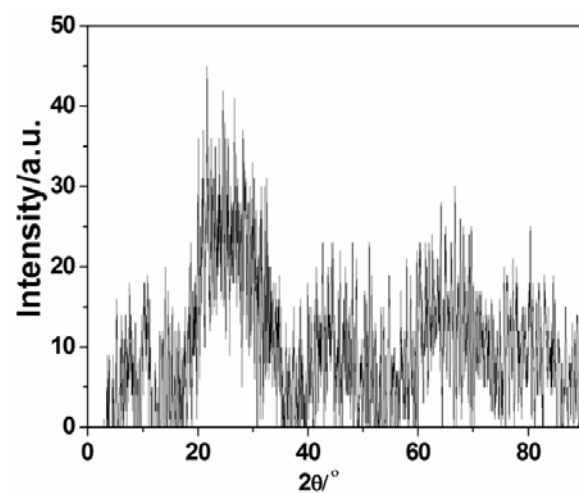


Fig. S 3 X-Ray diffraction pattern of PMO_{12} - SiO_2 hybrid material.

Table S1 Main relevant IR data observed for $\text{H}_3\text{PMo}_{12}\text{O}_{40}$ and $\text{PMo}_{12}\text{-SiO}_2$ hybrid material.

Assignment	$\sigma(\text{cm}^{-1})$		
	PMo_{12}	$\text{PMo}_{12}\text{-SiO}_2^{\text{a}}$	$\text{PMo}_{12}\text{-SiO}_2^{\text{b}}$
Mo-O_b-Mo	784 (760-800) ^c	793	792
Mo-O_c-Mo	869 (840-910)	884	883
Mo-O_d	962 (960-1000)	963	960
P-O_a	1065 (1060-1080)	1070 ^d	1063 ^d

^aBefore exposure to H_2S gas. ^bAfter exposure to H_2S gas. ^cValues in parentheses show the range of frequencies found in the literature.
^dMay also originate from Si-O-Si vibrations in silica framework.