Monitoring aging effects in graphite bisulphates by Raman spectroscopy

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Supplementary Materials

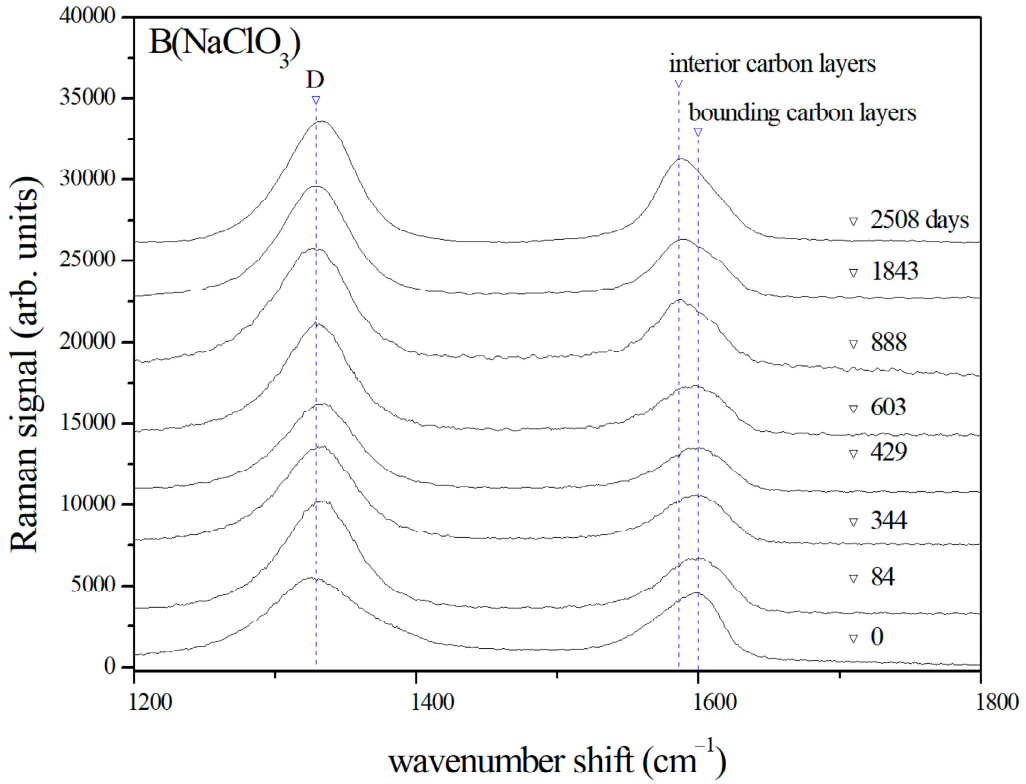

Fig. S1 Effect of aging on the Raman response of the graphite bisulphate prepared with $NaClO_3$ as oxidizing component (sample B ($NaClO_3$)). The Raman spectra have been collected on a fresh prepared sample (0) and after 3, 12, 14, 29, 30, 61, and 84 months of aging, respectively.

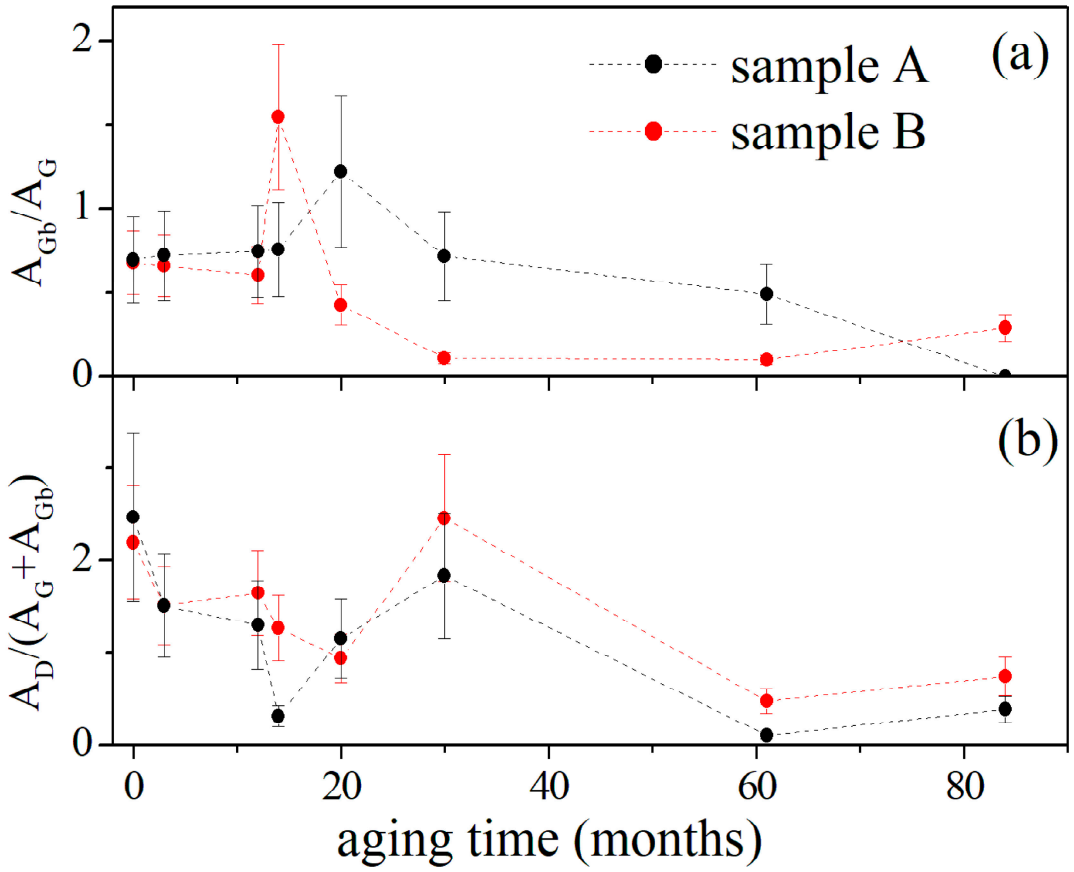

Fig. S2 Effect of aging on the Raman response of the graphite bisulphates prepared with HNO_3 (sample A, black dots and line) and $NaClO_3$ (sample B, red dots and line) as oxidizing component. The time dependence of the A_{Gb}/A_G area ratio of the G_b and G mode peaks (**a**) and of the ratio of the D and G mode peaks (**b**) are reported.

Table S1: Effects of the aging on the A_D/A_G area ratio of D and G Raman modes and the width of G peak (Γ_G). Data refer to GBS produced with different oxidation agents and have been used to estimate L_a and L_D parameters reported in Table 2 . E_L = 1.96 eV is photon energy of the excitation laser.

Sample	oxidizing agent	$(A_D/A_G)E_L^4$ (eV^4)		Γ_G (cm^{-1})	
		pristine	after aging	pristine	after aging
A	HNO_3	34.5 ± 12.7	27.9 ± 12.7	29.3 ± 3.8	19.7 ± 1.8
B	$NaClO_3$	44.8 ± 2.2	39.0 ± 14.7	46.9 ± 2.1	23.8 ± 2.5
C	$NaIO_4$	41.9 ± 2.1	38.8 ± 1.6	34.7 ± 1.5	33.5 ± 1.5
D	$KMnO_4$	13.5 ± 1.7	10.1 ± 1.9	17.2 ± 0.8	17.4 ± 0.8
E	$K_2Cr_2O_7$	15.9 ± 2.5	12.3 ± 4.8	16.0 ± 0.8	16.1 ± 2.4
F	H_2O_2	14.4 ± 9.2	11.3 ± 4.5	15.4 ± 0.5	17.6 ± 1.0
G	KNO_3	12.0 ± 4.3	15.5 ± 4.5	20.2 ± 1.1	19.0 ± 1.0