Supplementary Material – MS 8179842

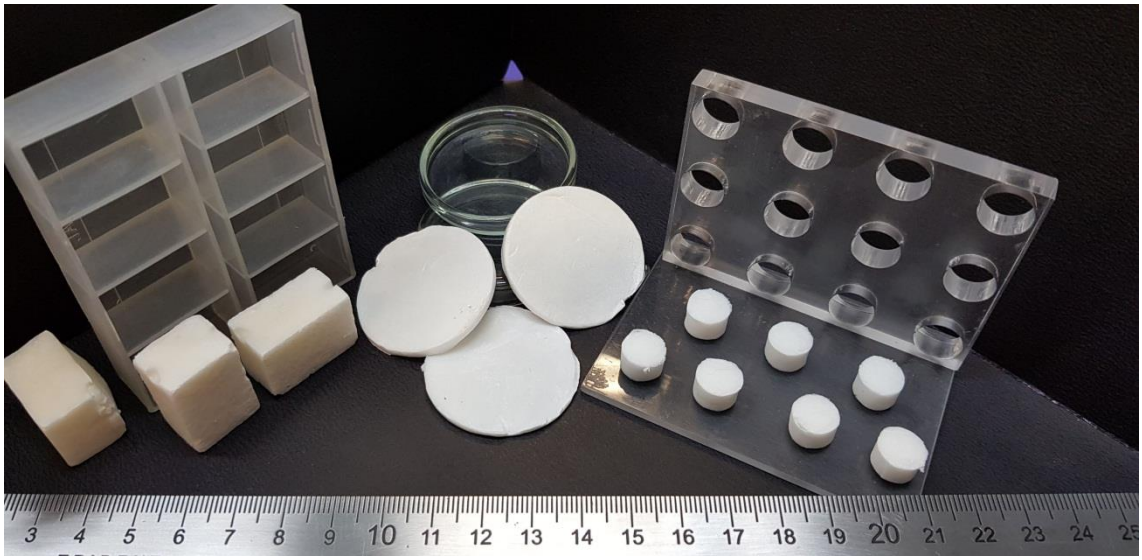


Figure SM1. Photographs of molds used and the resulting cryogels.

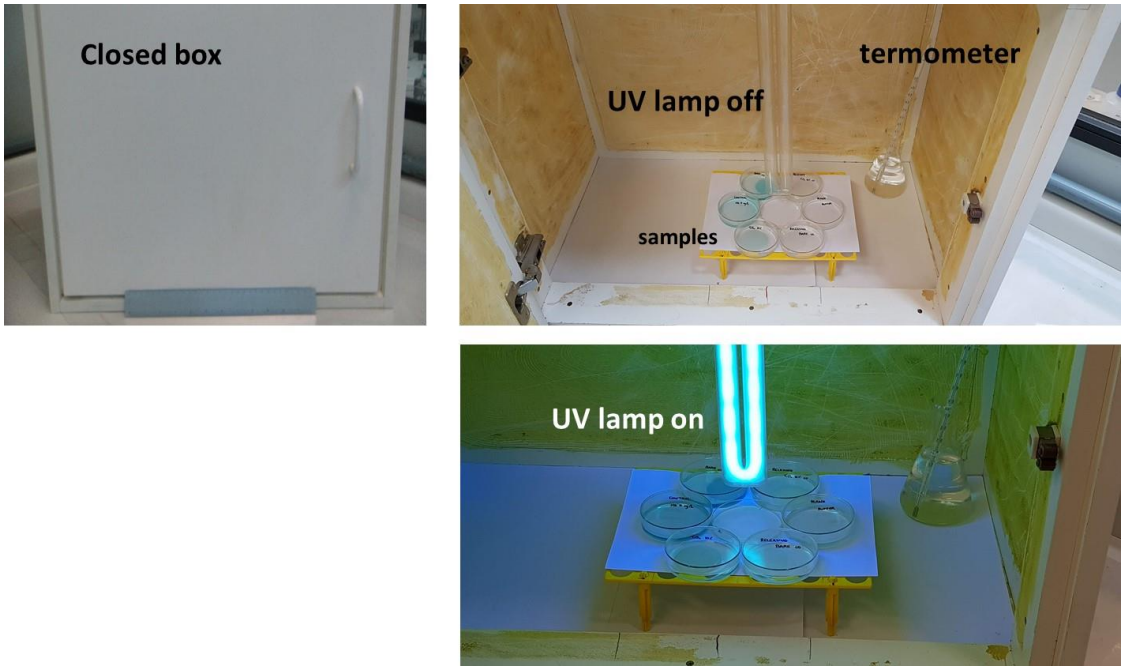
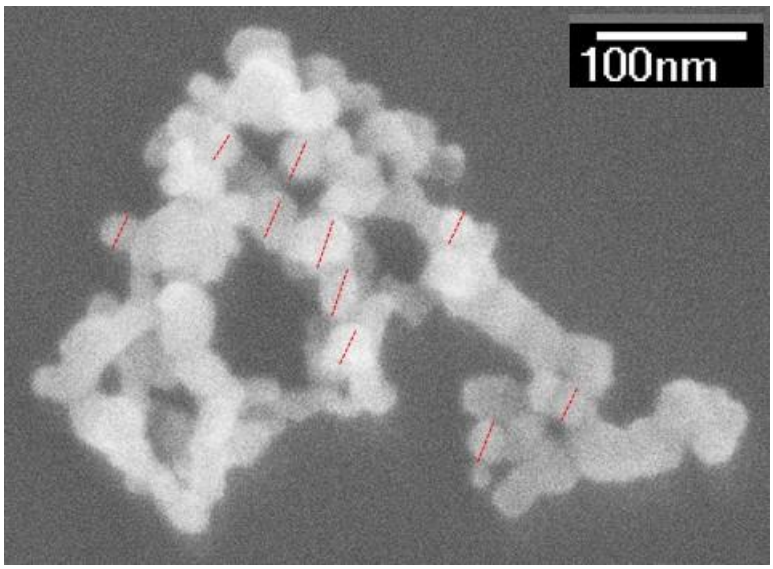
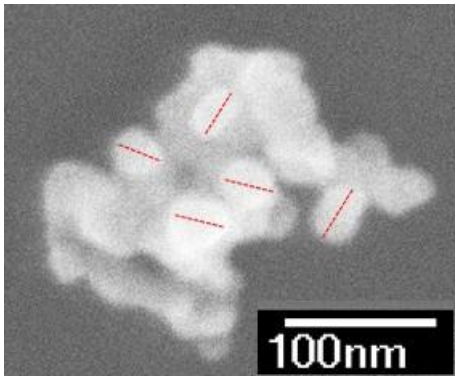


Figure SM2 – Experimental setup for the photocatalytic experiments.



(a)



(b)

Figure SM3 – Typical SEM images of TiO_2 P25 particles. The particles were not coated with gold prior to the analyses because they are semiconductor. The mean size of TiO_2 particles amounted to (30 ± 5) nm, as an average of 15 measurements (red lines). The aggregates ranged from 100 nm to 500 nm, in agreement with the D_z values.

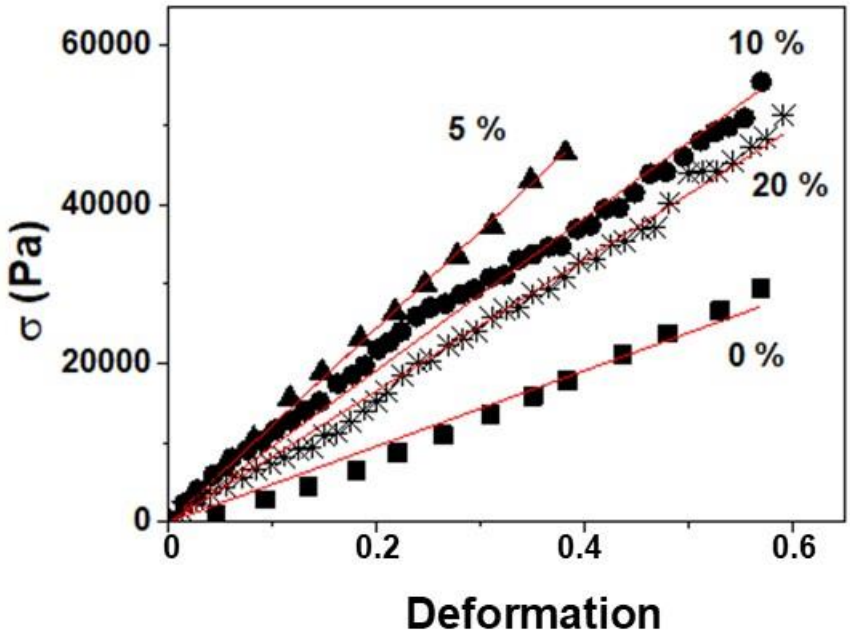


Figure SM4 – Typical compressive stress (σ)-strain curves determined for bare XG cryogels (0 %) and XG/TiO_2 cryogels with 5%, 10% and 20% TiO_2 prepared at pH 4.

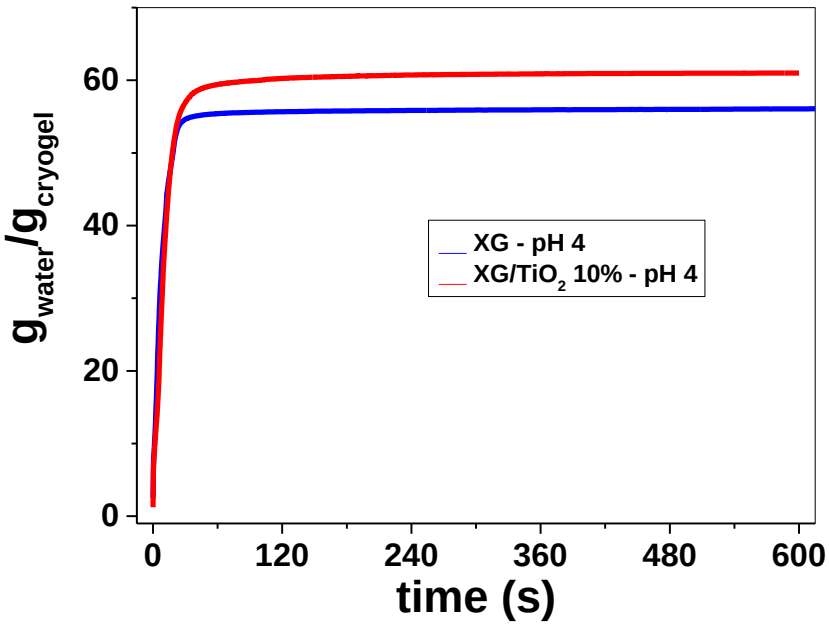


Figure SM5. Typical MilliQ water sorption curves determined for XG and XG/TiO_2 10% cryogels prepared at pH 4, at (21 ± 1) °C.

Table SM1 – Bands assignment regarding the FTIR spectra obtained for XG and TiO_2 powder, and XG and XG/TiO_2 10% cryogels.

Wavenumber (cm^{-1})	**Band Assignment**	**Cryogel**	**Powder**
3000-3500, broad	ν_{OH} intramolecular hydrogen bond	XG XG/TiO_2 10%	XG and TiO_2
2910	ν_{as} CH_2	XG XG/TiO_2 10%	XG
1725	ν C=O ester	XG XG/TiO_2 10%	-
1600	ν C=O carboxylic acid	XG XG/TiO_2 10%	XG
1515	δ C-H bending	XG/TiO_2 10%	-
1452	δ O-H carboxylic acid bending	XG/TiO_2 10%	-
1404	δ C-O-H carboxylic acid bending	XG	XG
1366	ν_{as} C=O carboxylate	XG XG/TiO_2 10%	XG
1195	C-O-H glycosidic ring	XG XG/TiO_2 10%	XG
1154	C-O-H glycosidic ring	XG XG/TiO_2 10%	XG

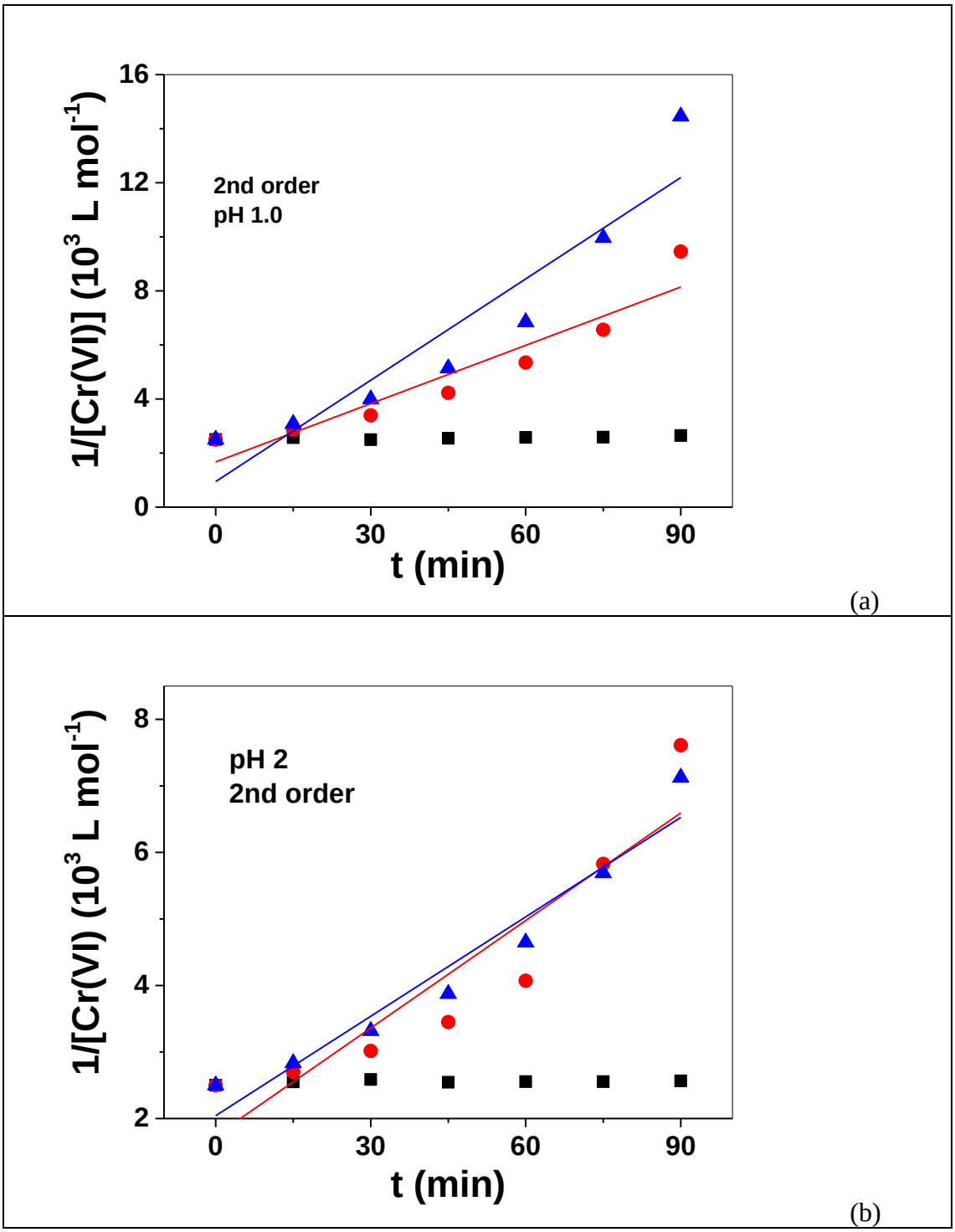


Figure SM 6. Fittings to second order kinetic model for the experimental data of reduction of Cr(VI) at (a) pH 1.0 and (b) pH 2.0 (see Figure 8).

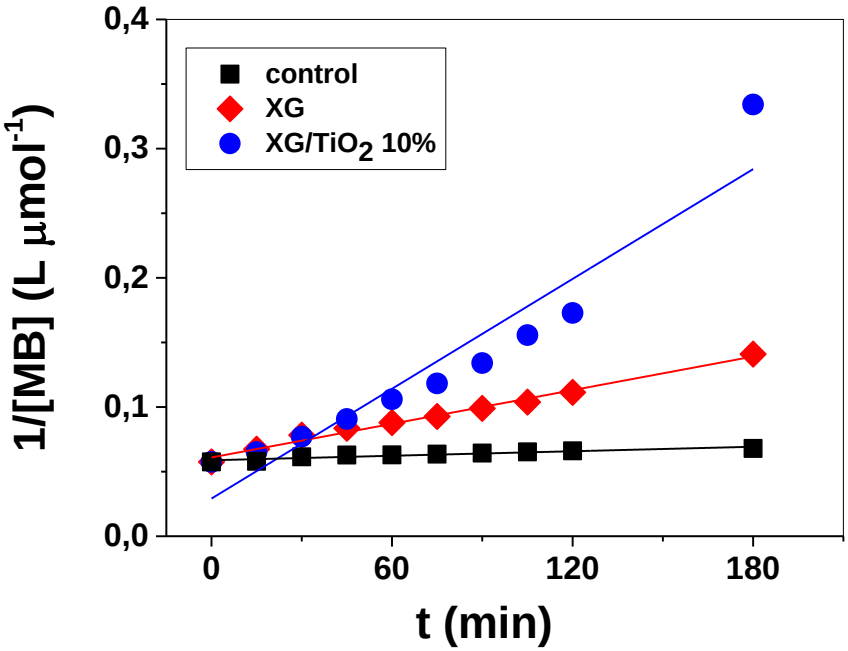


Figure SM 7. Fittings to second order kinetic model for the experimental data of degradation of MB at pH 7.0 (see Figure 9).