Electronic Supplementary Material (ESI) for Environmental Science: Nano.

Activation of inorganic peroxides with magnetic graphene for the removal of antibiotics in wastewater

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SUPPLEMENTARY INFORMATION

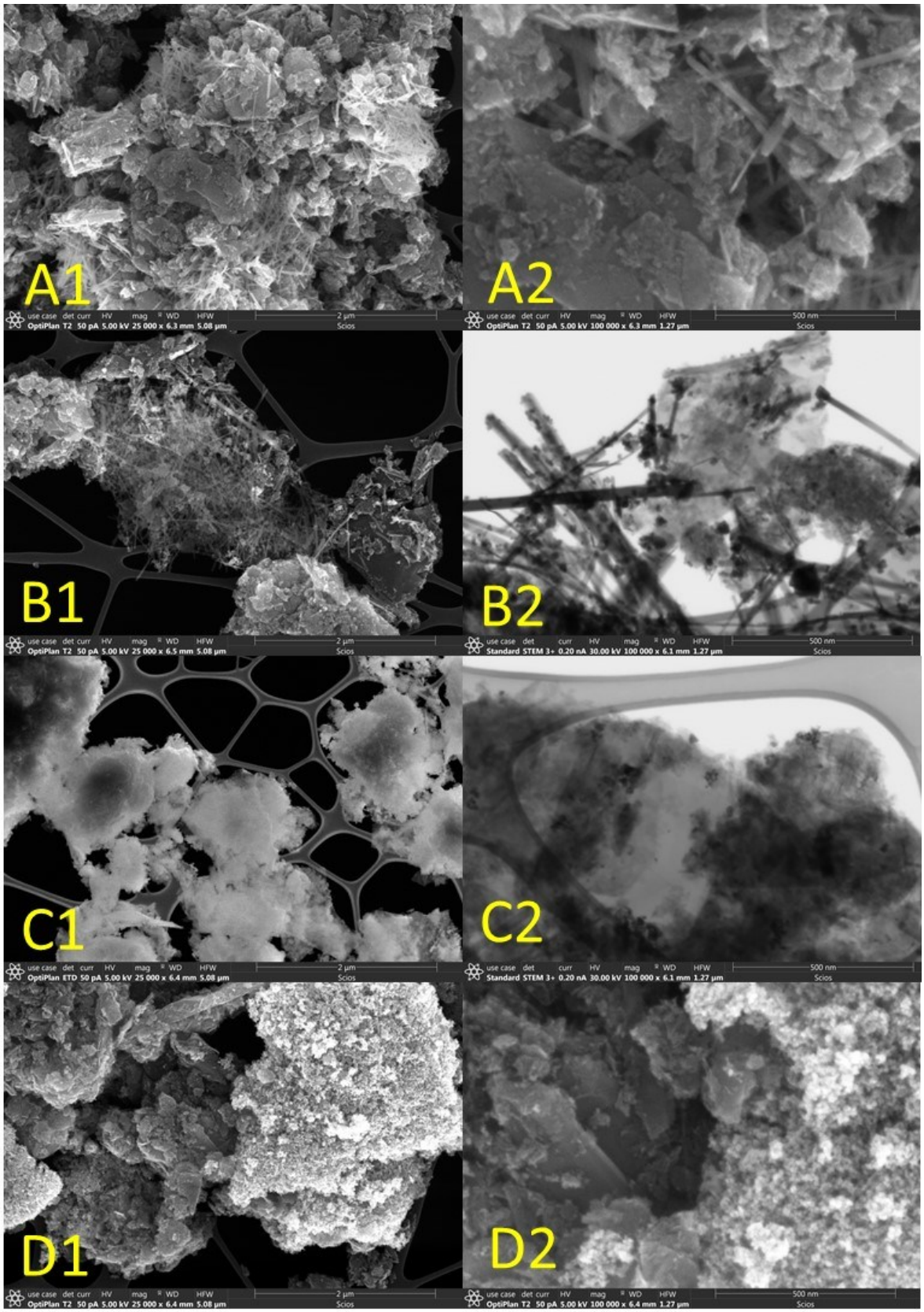

Figure S1. SEM images of magnetic graphene with different magnetite:graphene ratios. MG0.2 (A1 and A2), MG0.4 (B1 and B2), MG0.6 (C1 and C2) and MG0.8 (D1 and D2)

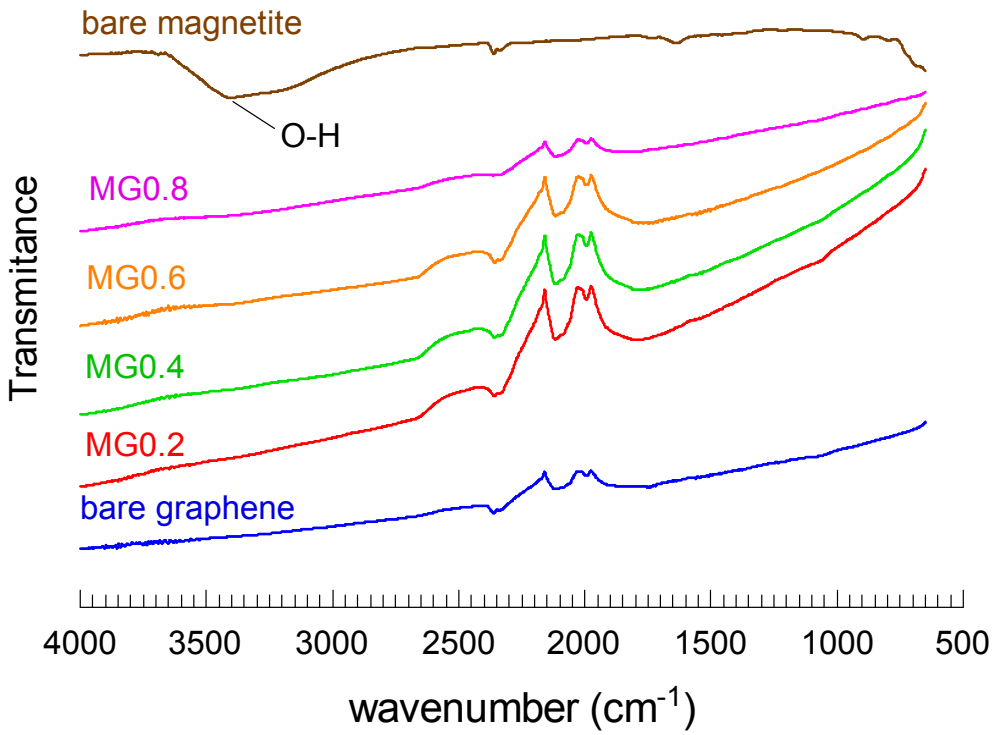

Figure S2. FTIR spectra of magnetic Graphene with different magnetite:graphene ratios

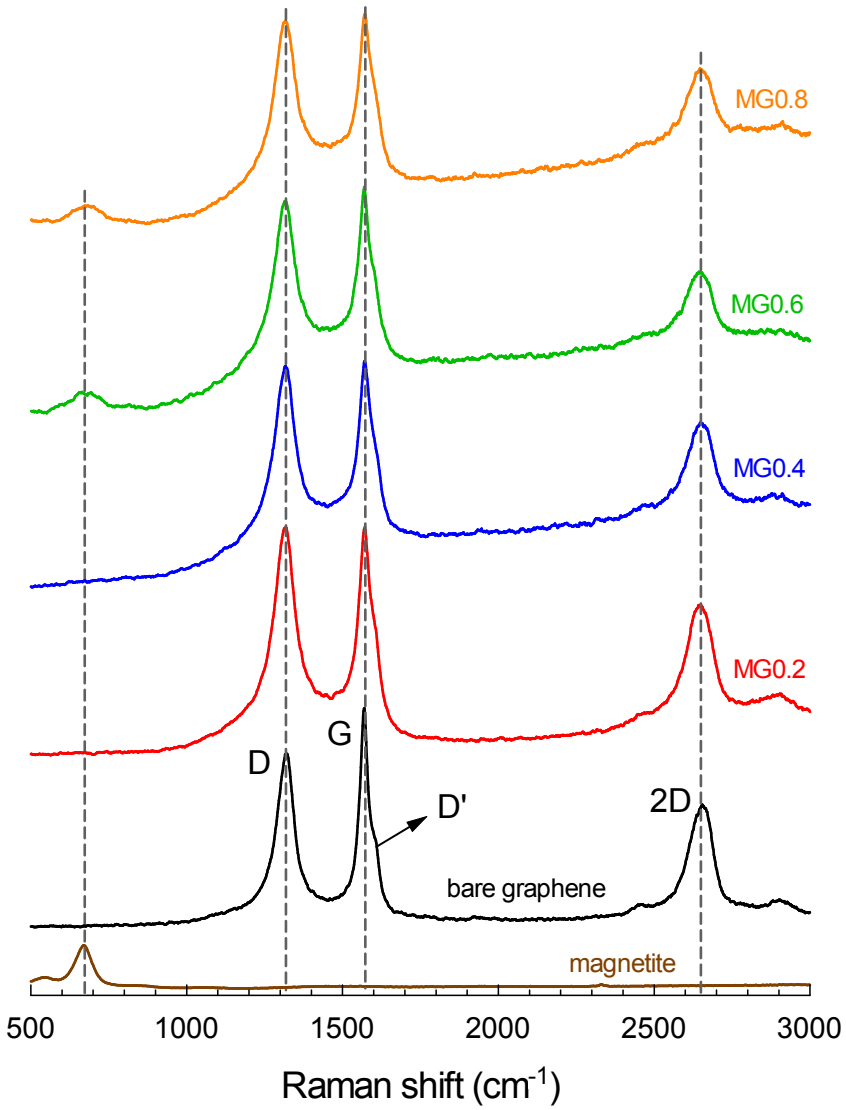

Figure S3. Raman spectra of bare graphene, magnetic graphene with different magnetite ratios, and bare magnetite (from RRUFF™ database)

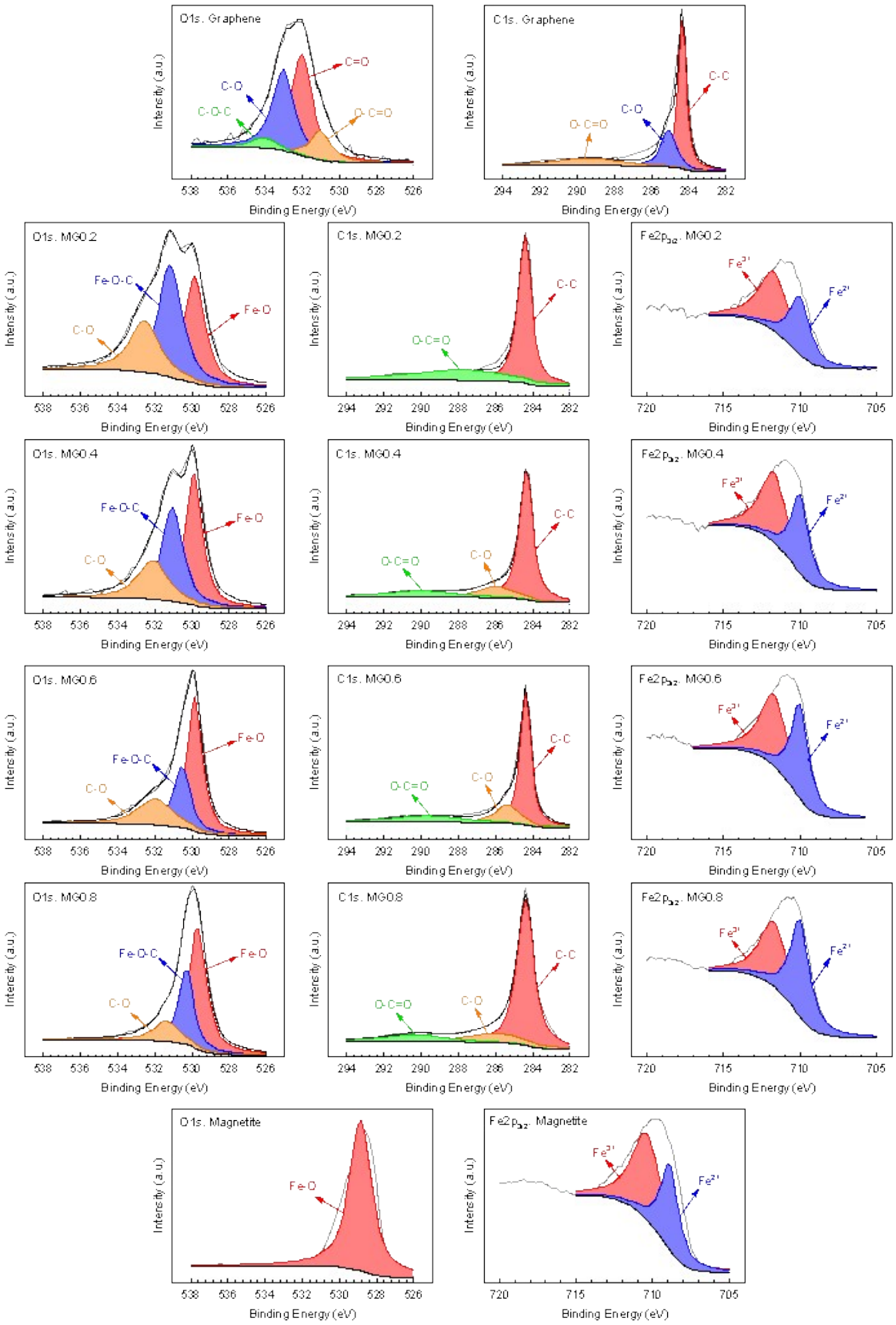

Figure S4. XPS high resolution spectra of O1s, C1s and $Fe2p_{2/3}$ and their deconvolution of the magnetic graphene catalysts

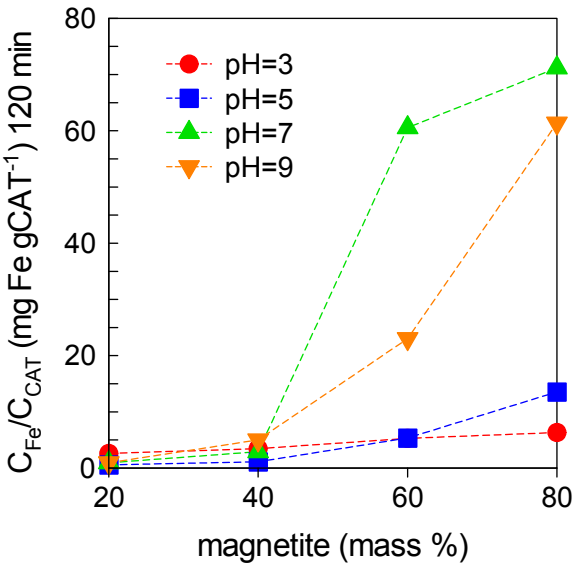

Figure S5. Leaching of iron into solution after 120 min in magnetic graphene catalysts at different pH values. *Experimental conditions: V=100 mL;* C_{CAT}*=0.5 g* L^{-1}*;* C_{H3PO4}*= 5 mM.*

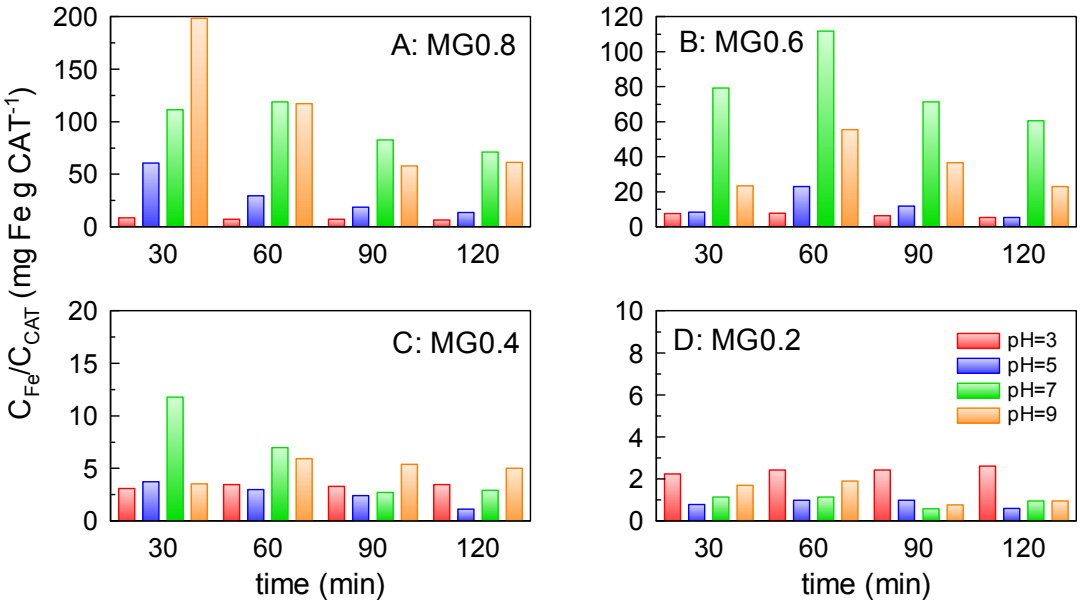

Figure S6. Leaching of iron into solution over time in MGX catalysts at different pH values. *Experimental conditions: V=100 mL;* C_{CAT}*=0.5 g* L^{-1}*;* C_{H3PO4}*= 5 mM.*

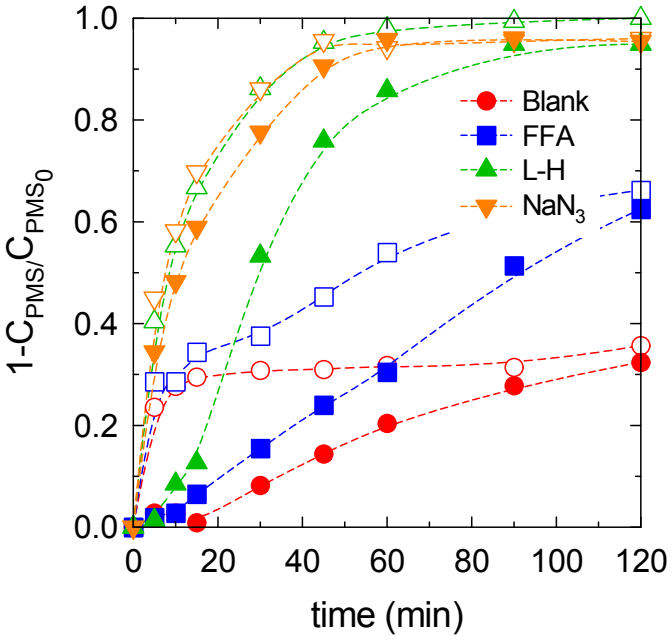

Figure S7. Evolution of PMS conversion in the presence of scavengers in ultrapure (empty symbols) SUWW matrix (filled symbols) during PMS-catalytic activation. *Experimental conditions: V=250 mL; $C_{SMX,0}$=5 mg L^{-1}; $C_{MG0.2}$=250 mg L^{-1}; $C_{scavenger}$= 10 mM; $C_{PMS,0}$=0.5 mM; pH_i=9.2±0.1.*