

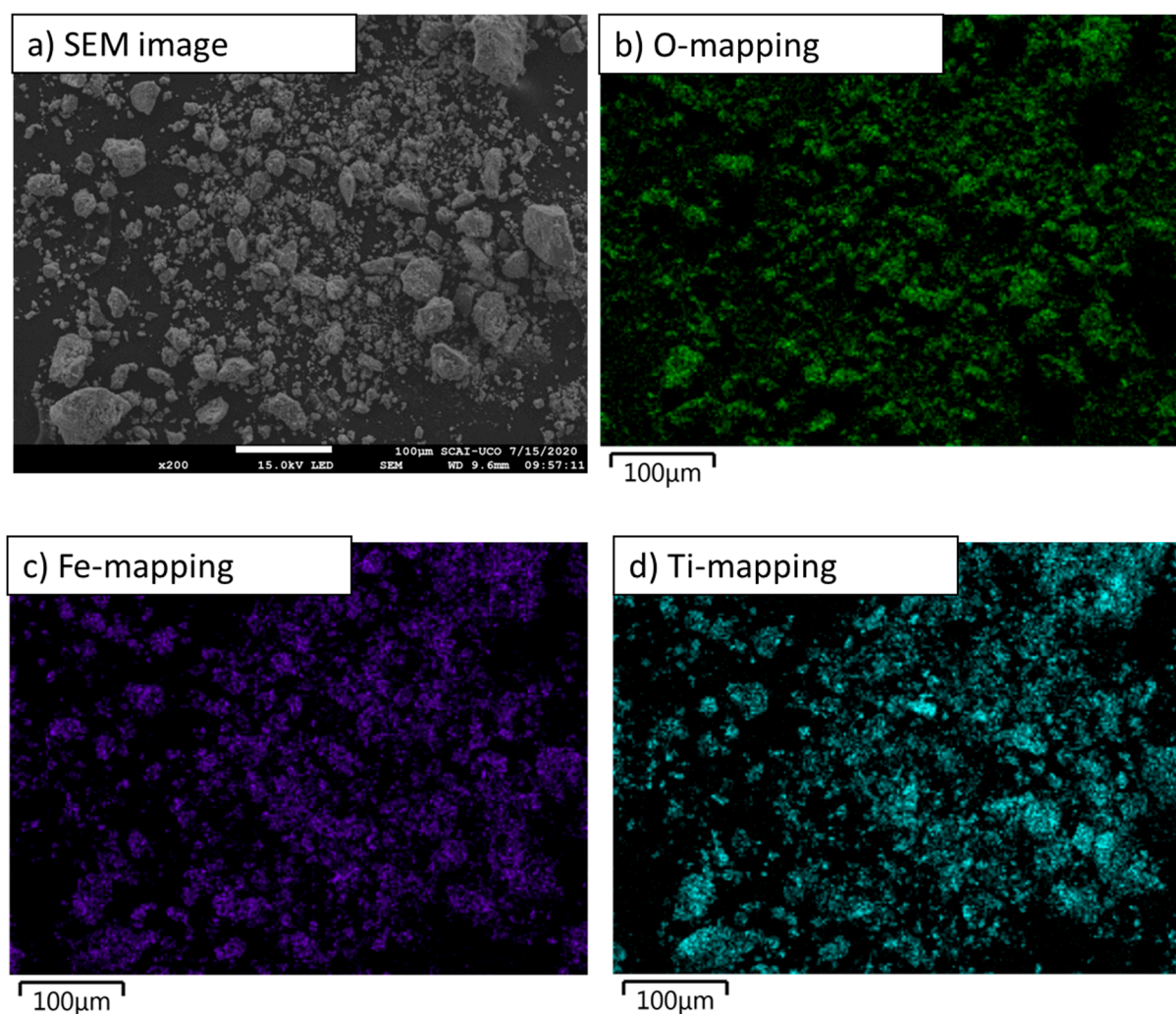
Supplementary Materials

# Checking the Efficiency of a Magnetic Graphene Oxide–Titania Material for Catalytic and Photocatalytic Ozonation Reactions in Water

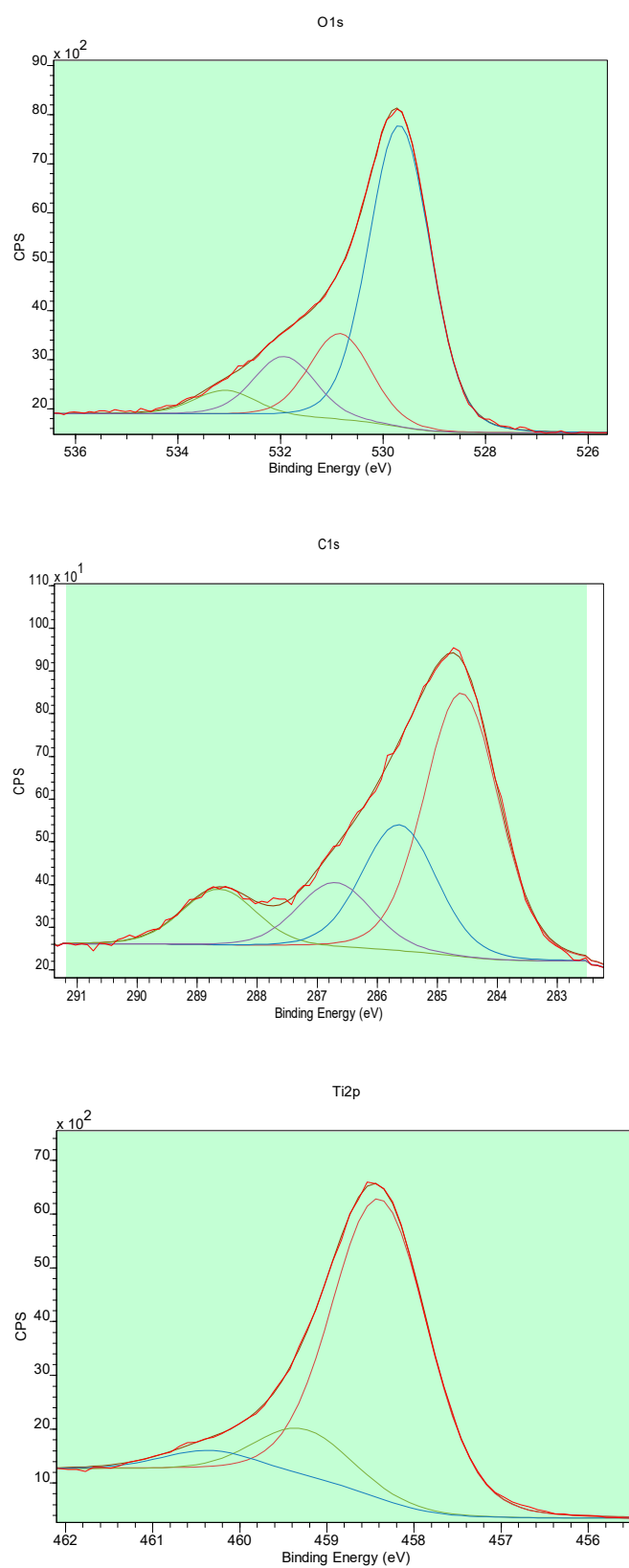
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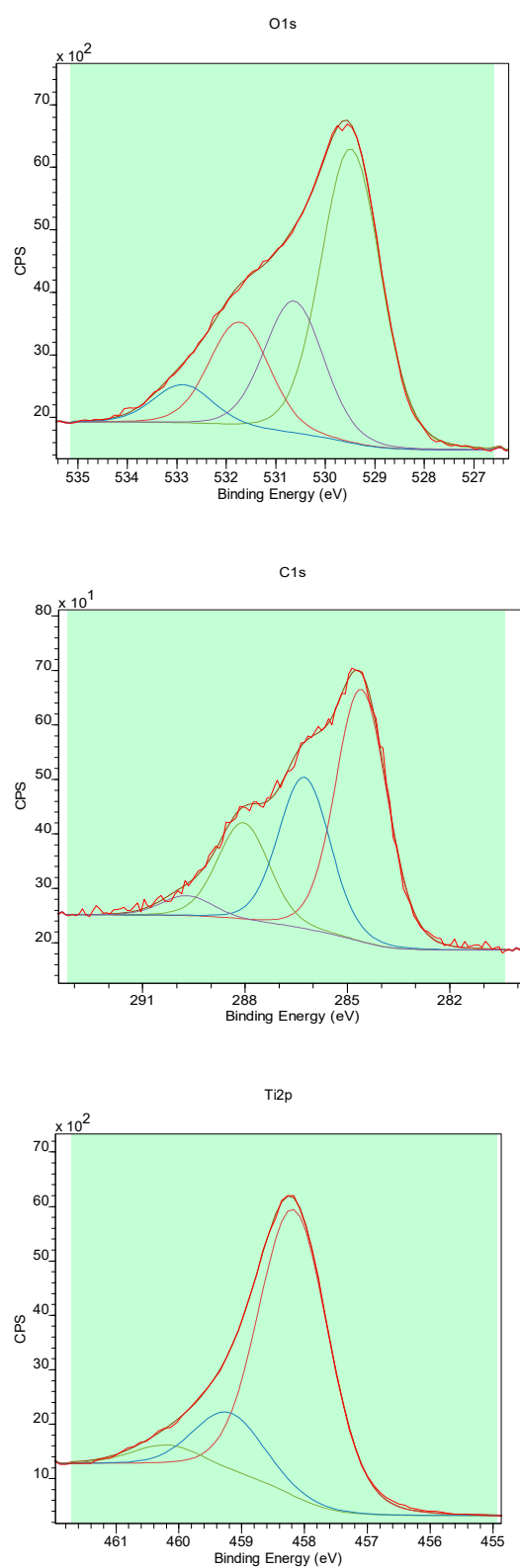
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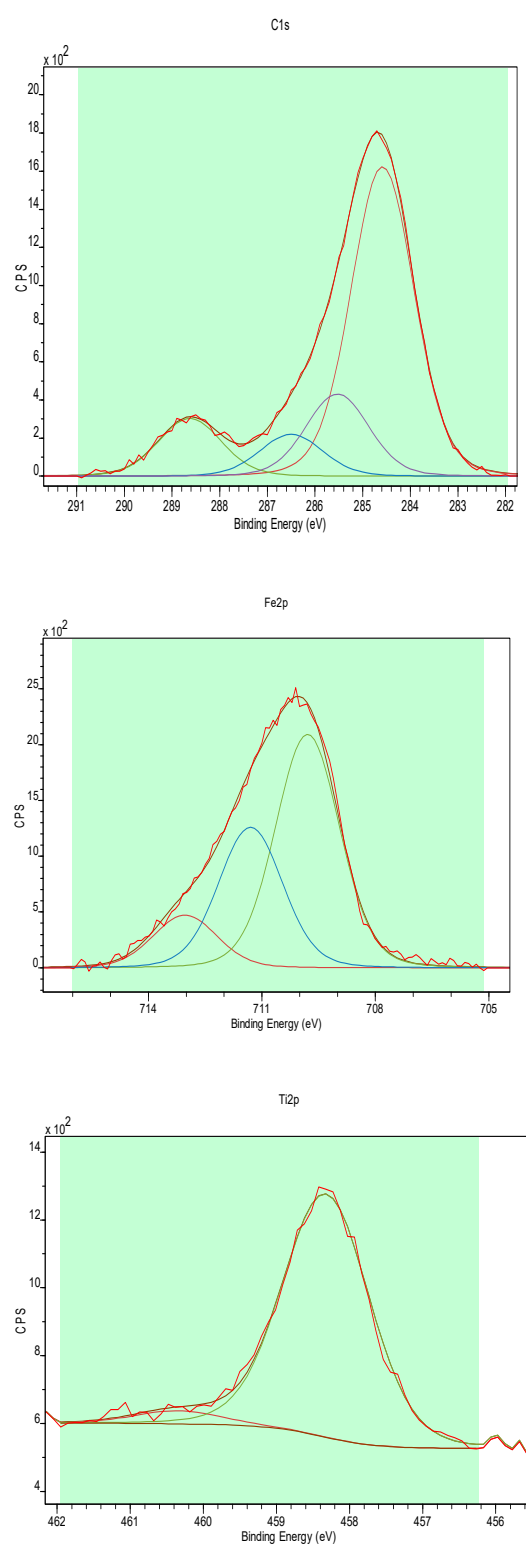
**Figure S1.** (a) SEM image of FeGOTi, (b) oxygen-mapping by SEM-EDX, (c) iron-mapping by SEM-EDX, (d) titanium-mapping by SEM-EDX.



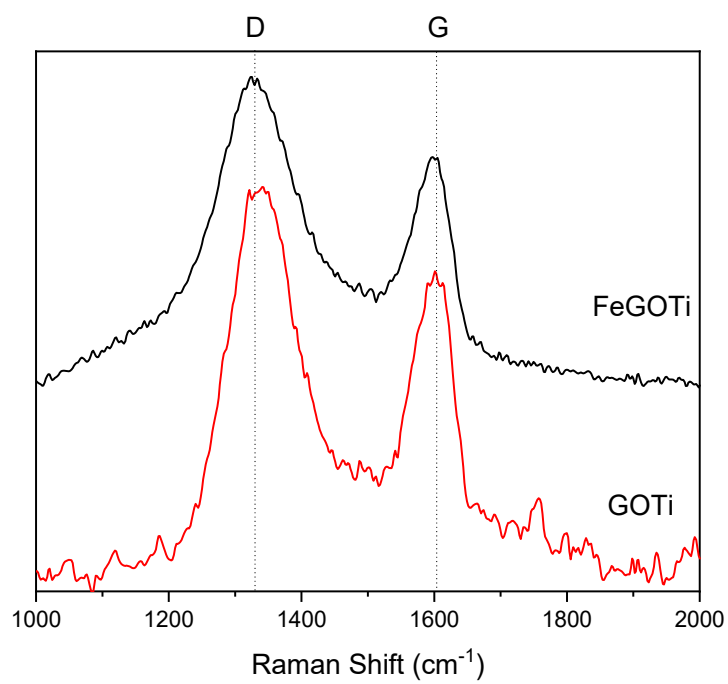
**Figure S2.** XPS of synthesized  $\text{TiO}_2$  catalyst.



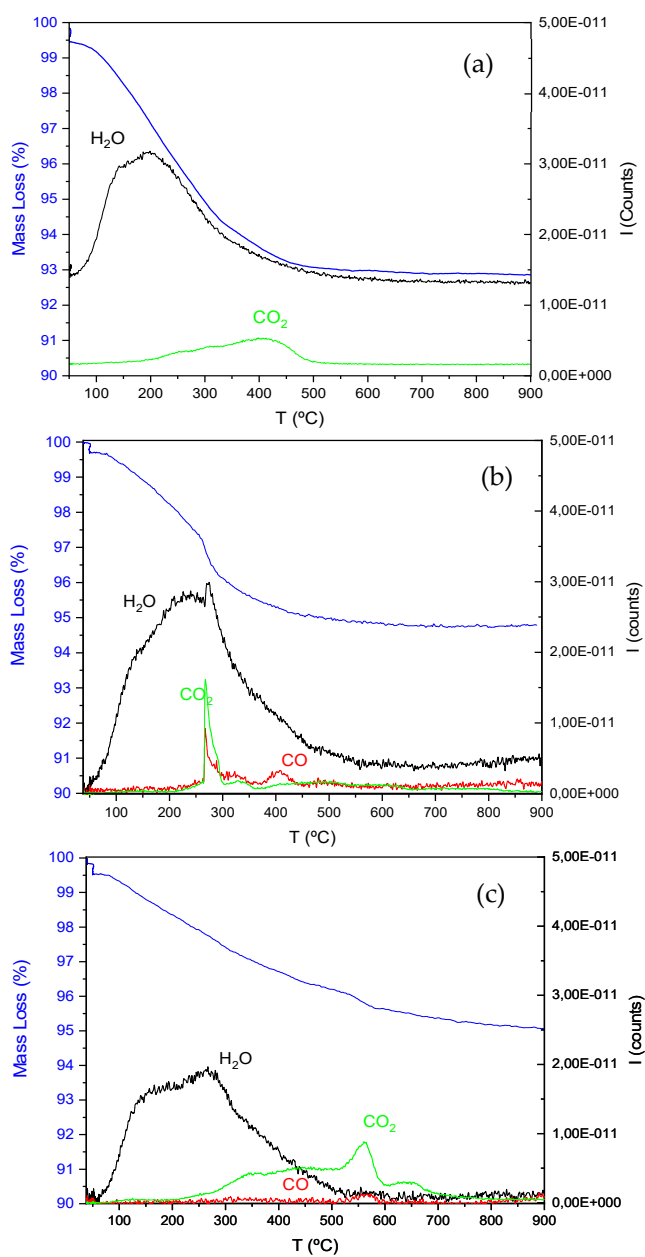
**Figure S3.** XPS of synthesized GOTi catalyst.



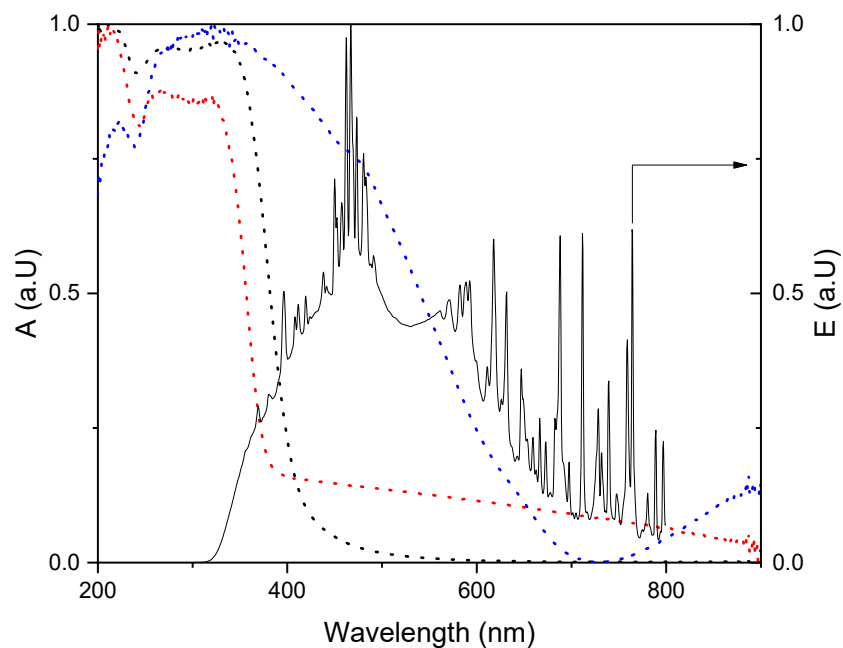
**Figure S4.** XPS of synthesized FeGOTi catalyst.



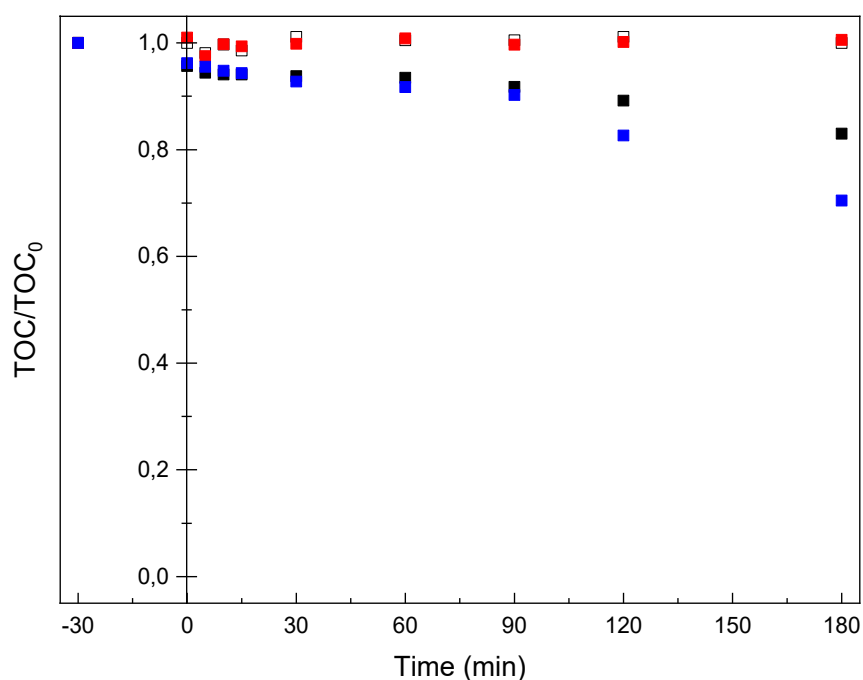
**Figure S5.** Raman spectra of the catalyst.



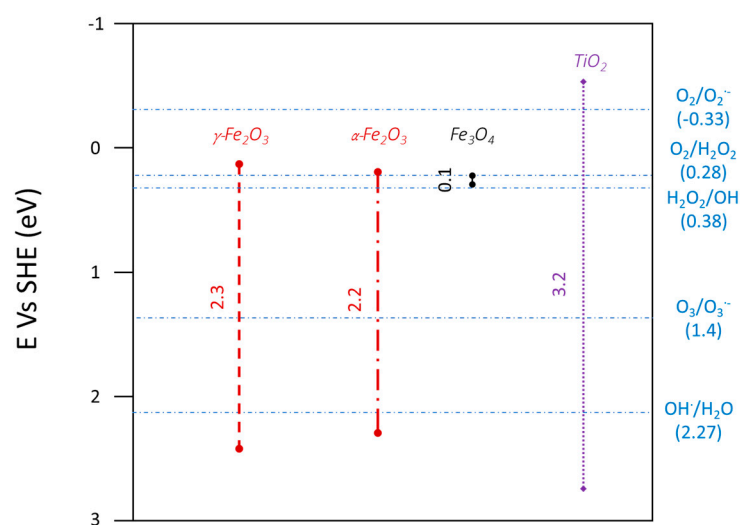
**Figure S6.** TGA and MS detected for the catalysts: TiO<sub>2</sub> (a), GOTi (b) and FeGOTi (c).



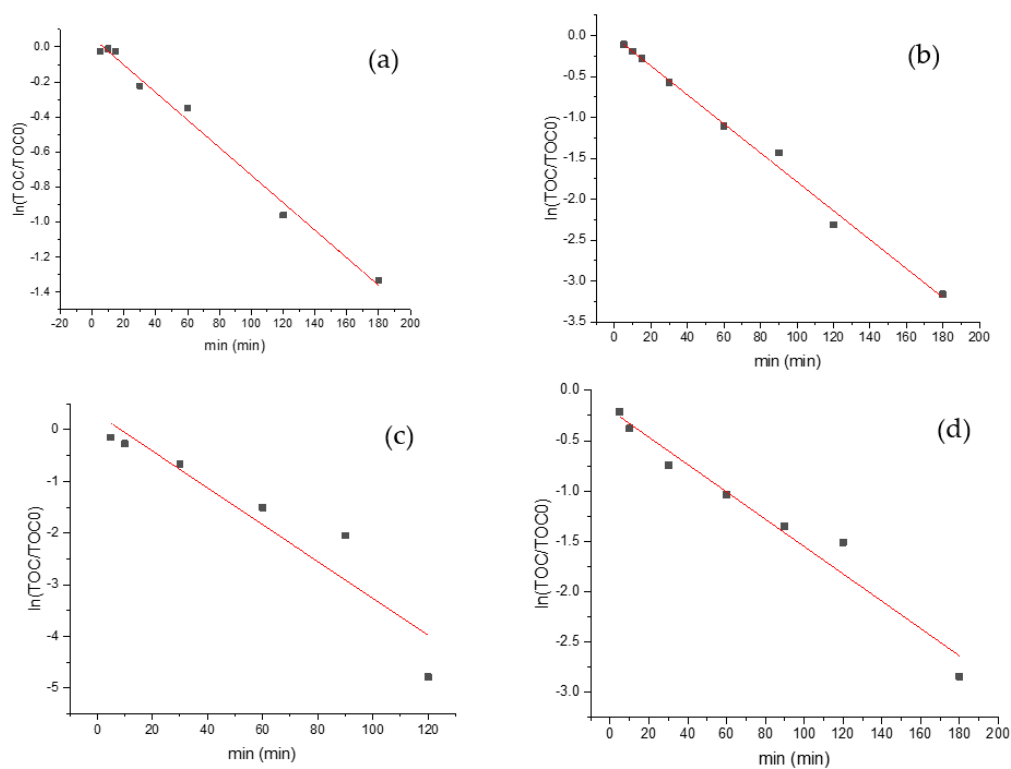
**Figure S7.** Comparison of normalized UV-Vis absorption spectra ( $A$ ; a.u.) of  $\text{TiO}_2$  (Black dots), GOTi (Red dots) and FeGOTi (Blue dots) and normalized irradiance collected for the light source employed in this work ( $E$ ; a.u.).



**Figure S8.** Variation of  $\text{TOC}/\text{TOC}_0$  with time from ozone-free primidone photolysis and photocatalysis experiments: **photolysis** (blank symbols), bare  $\text{TiO}_2$  (Black symbols), GOTi (Blue symbols) and FeGOTi (Red symbols). Conditions: Gas flow rate:  $35 \text{ L h}^{-1}$ , Initial  $\text{TOC} = 6.6 \text{ mg L}^{-1}$  Catalyst dosage:  $0.25 \text{ g L}^{-1}$ , agitation speed  $700 \text{ rpm}$ .

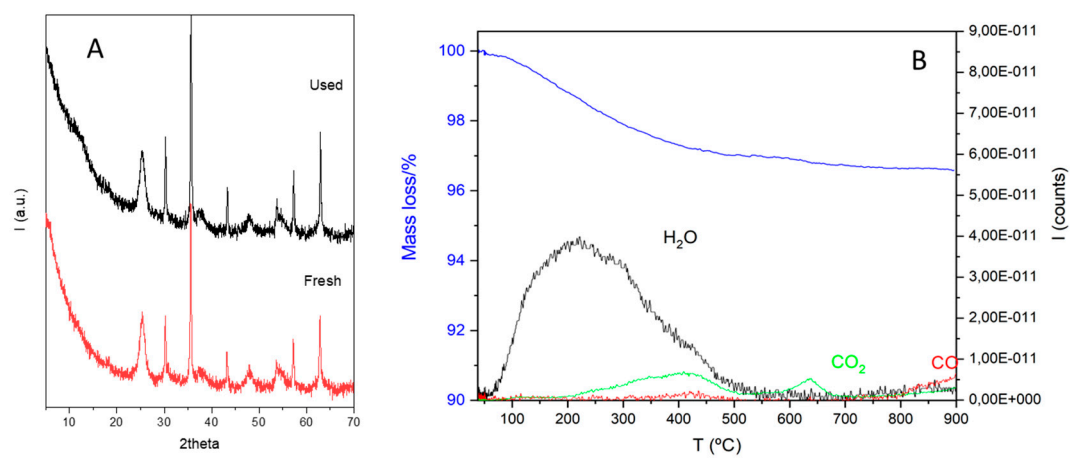


**Figure S9.** Schematic diagram of band positions relative to NHE. Adapted from references <sup>1–3</sup>.

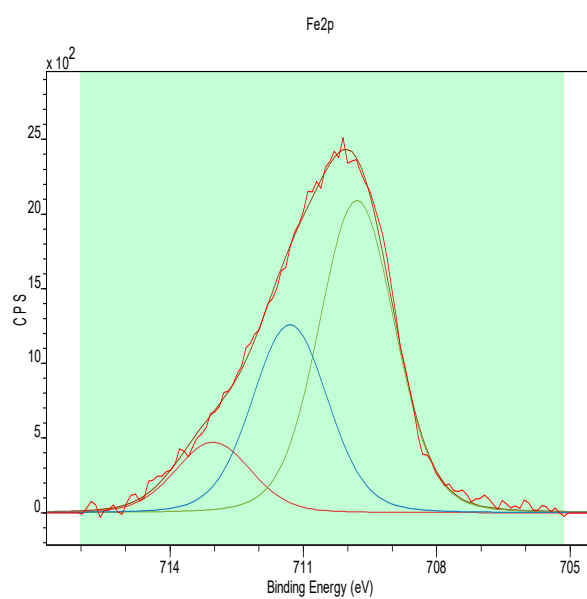


**Figure S10.** Checking apparent first order kinetics for PhOz (a) and PhCatOz (b) with  $\text{TiO}_2$ , (c) with GOTi and (d) with FeGoTi. Experimental conditions as in Figure 3.

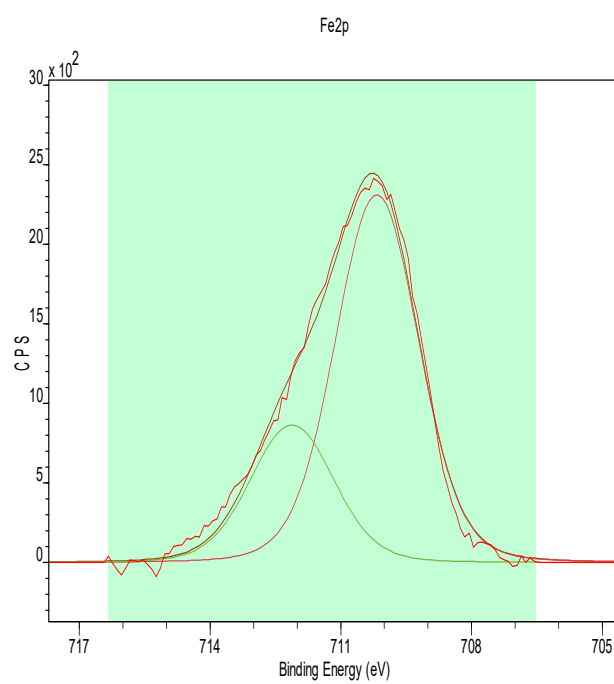




**Figure S11.** Comparison of XRD pattern of Fresh and used FeGOTi (A), TGA and MS detected for the recovered catalyst (B).



(a)



(b)

**Figure S12.** Fe2p XPS of fresh (a) and four times reused (b) FeGOTi catalyst.