

Electronic Supplementary Information

Porphyrin functionalized Bismuth Ferrite for enhanced solar light photocatalysis

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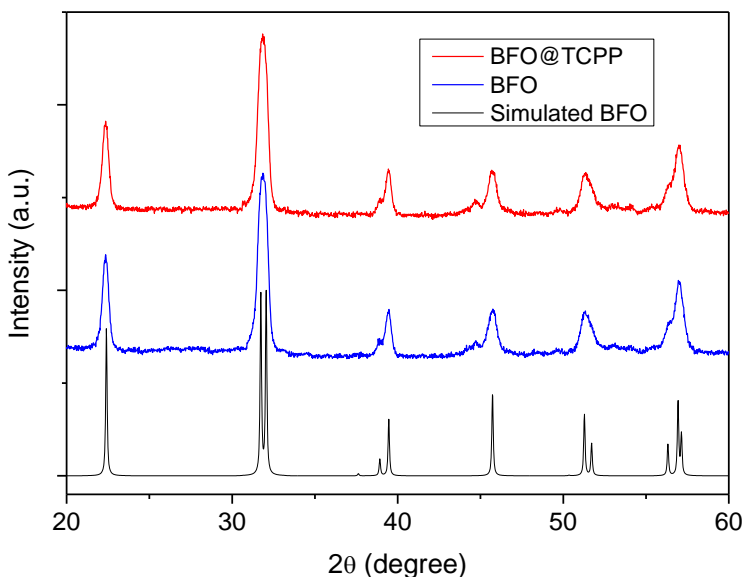


Figure S1. XRD patterns of bare BFO (blue line) and TCPP-functionalized BFO (red line) powders. The simulated spectrum calculated from ICDD data (Card No 20-0169) of the BFO rhombohedral structure (space group R3c) was also added at the bottom (black line).

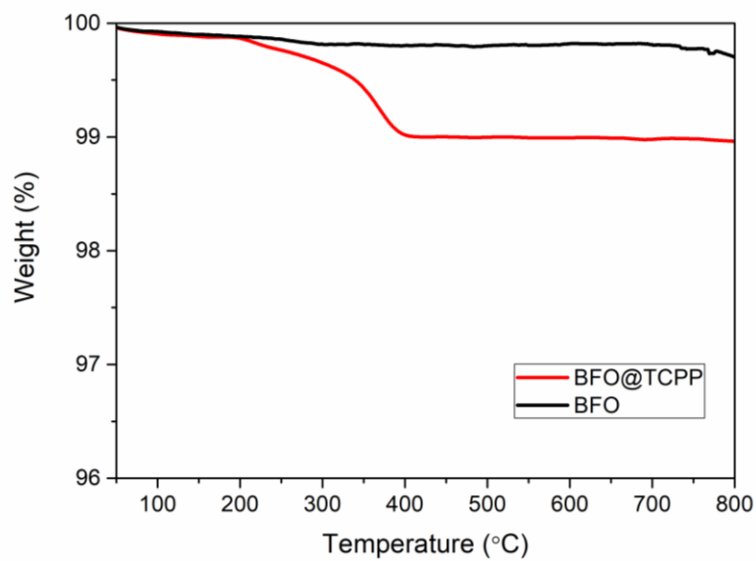


Figure S2. TGA curves of bare BFO (black line) and TCPP-functionalized BFO (red line) powders.

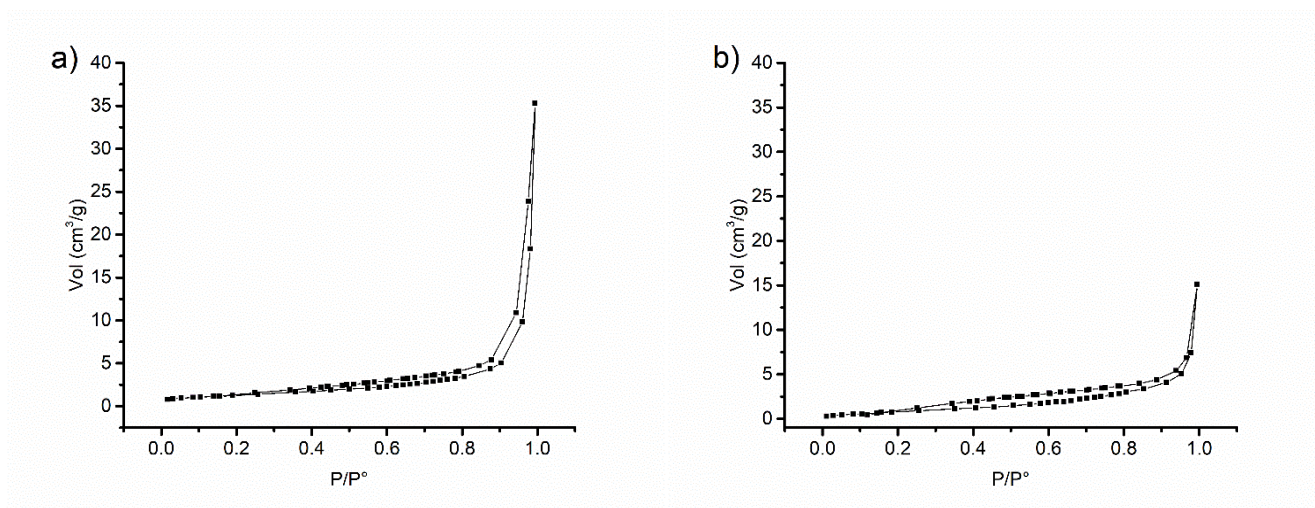


Figure S3. N₂ adsorption isotherms of (a) BFO and (b) TCPP@BFO powders.

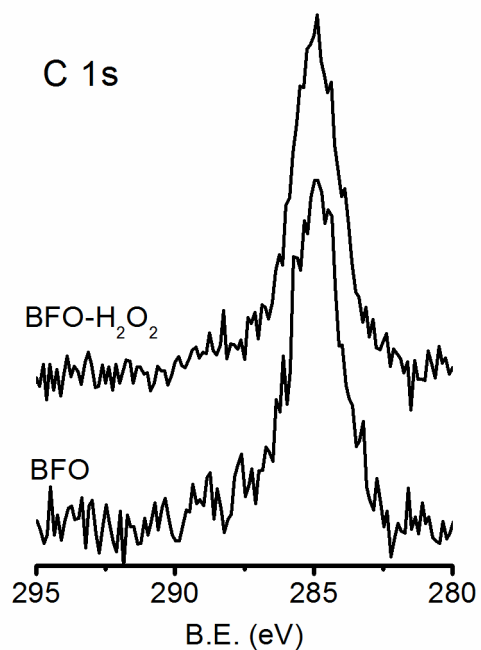


Figure S4. C 1s XPS region of bare BFO (bottom) and BFO-H₂O₂ (upper).

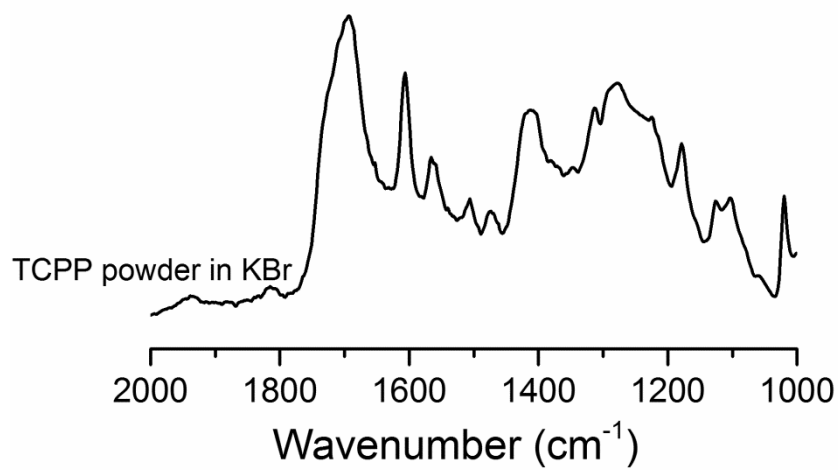


Figure S5. FTIR spectrum in the 2000-1000 cm⁻¹ range of TCP powder in KBr

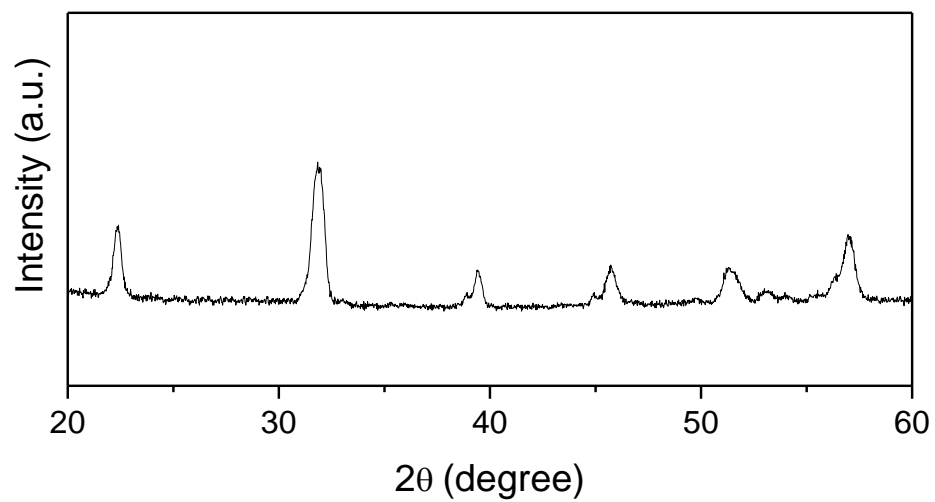


Figure S6. XRD patterns of TCPF-functionalized BFO powders after four degradation cycles of MB degradation.

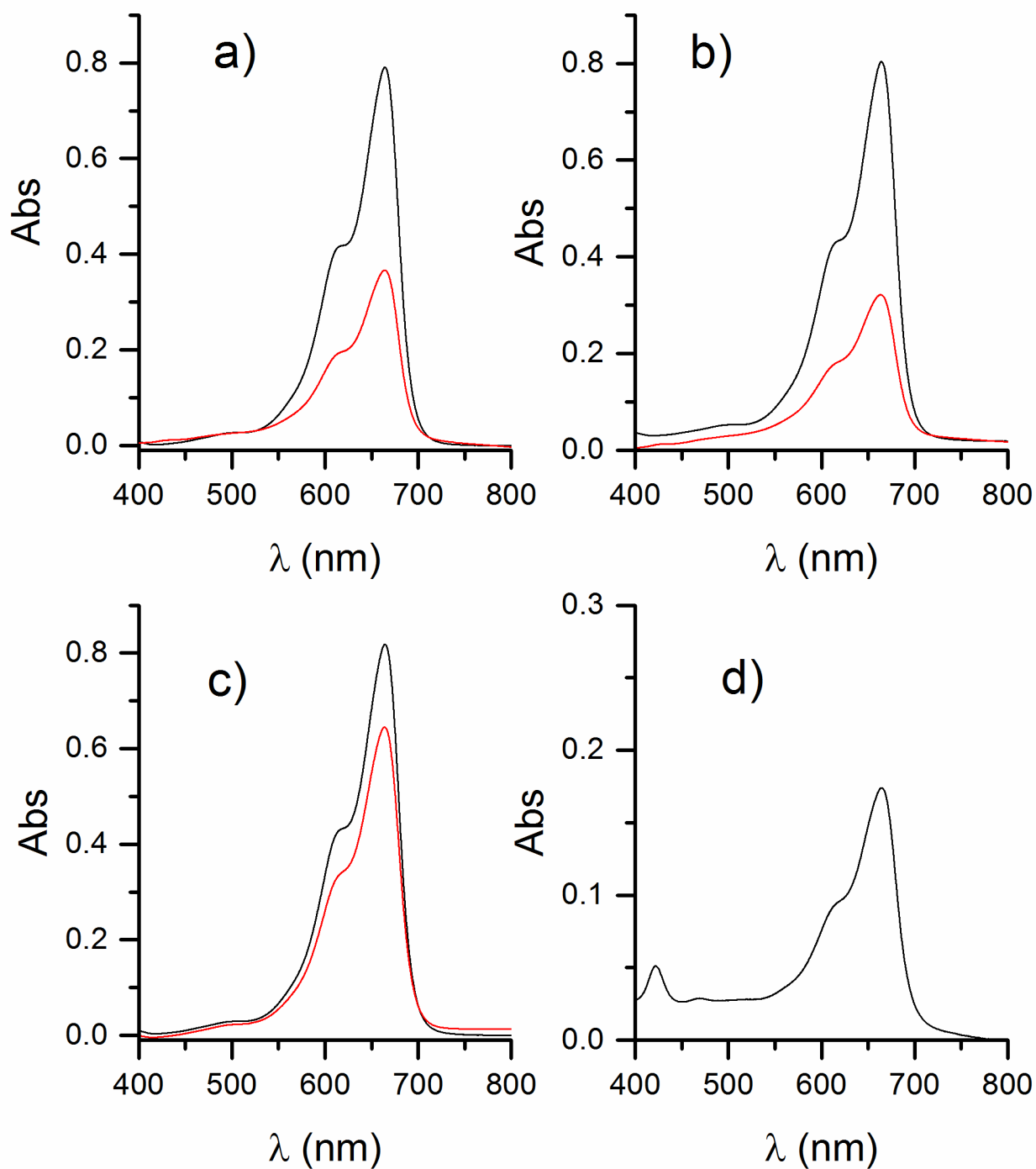


Figure S7. UV-Vis spectra of MB solution (10^{-5} M) at a) pH=7, b) pH=12 and c) pH=3 at the beginning (black line) and after 240 min (red line) of the photocatalytic process in the presence of TCPP@BFO. d) The UV-Vis spectrum of a solution of MB (2×10^{-6} M) and free TCPP (2×10^{-7} M) is reported as reference.

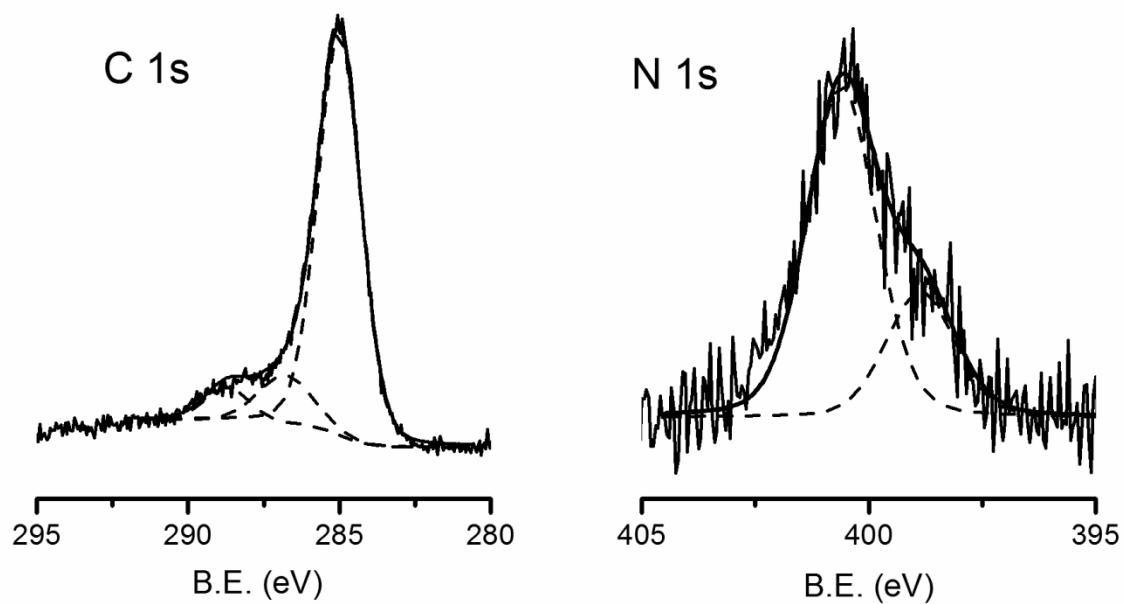


Figure S8. C1s (left) and N1s (right) XPS spectral regions of TCPP@BFO after the photocatalytic process at pH 3. Similar spectra are obtained after the photocatalytic process at pH 7.