

Supplementary Materials: Photoelectrocatalytic Degradation of Paraquat by Pt Loaded TiO₂ Nanotubes on Ti Anodes

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Figure S1. The photo of Ti/TiO₂-500 photoanode.



Figure S2. Experimental setup used for anodic oxidation.

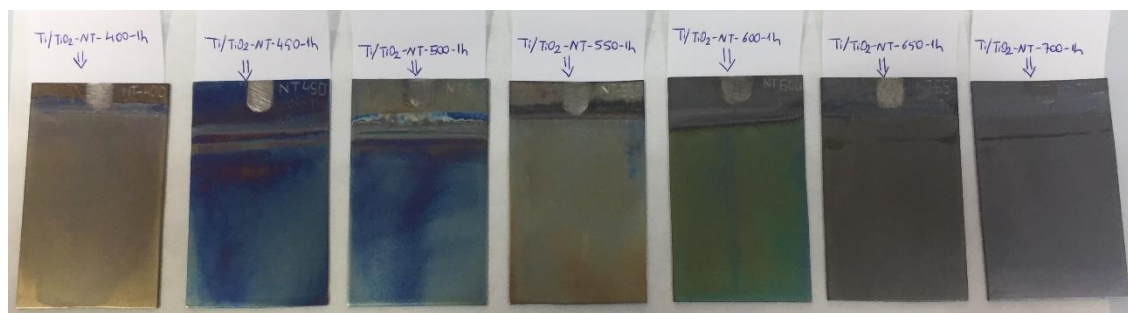


Figure S3. The photos of Ti/TiO₂NTHF-X-Y photoanodes.

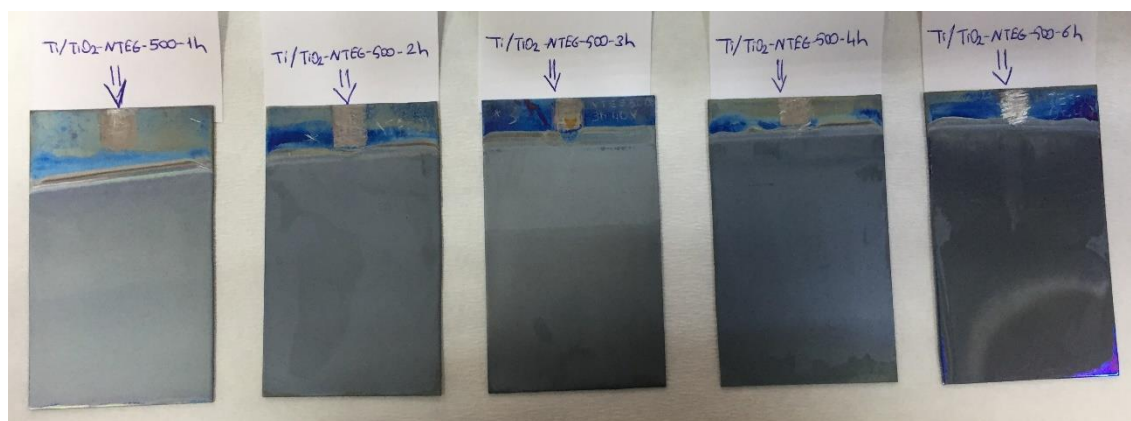


Figure S4. The photos of Ti/TiO₂NTEG-X-Y photoanodes.

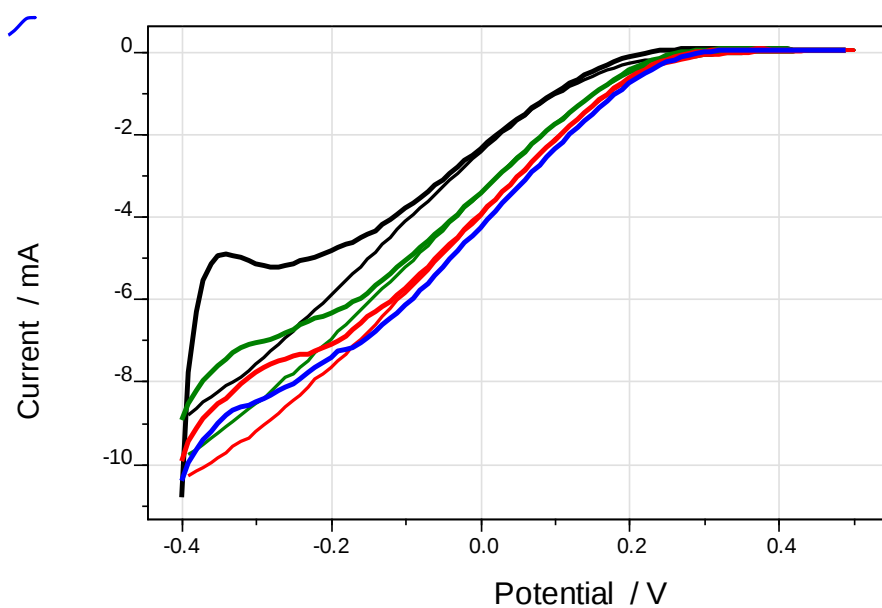


Figure S5. Voltammograms obtained during Pt nanoparticle loading on Ti/TiO₂NTEG-3h-500 electrode by CV until 4 cycles. The first cycle is black, the second is green, the third is red and the fourth is blue.

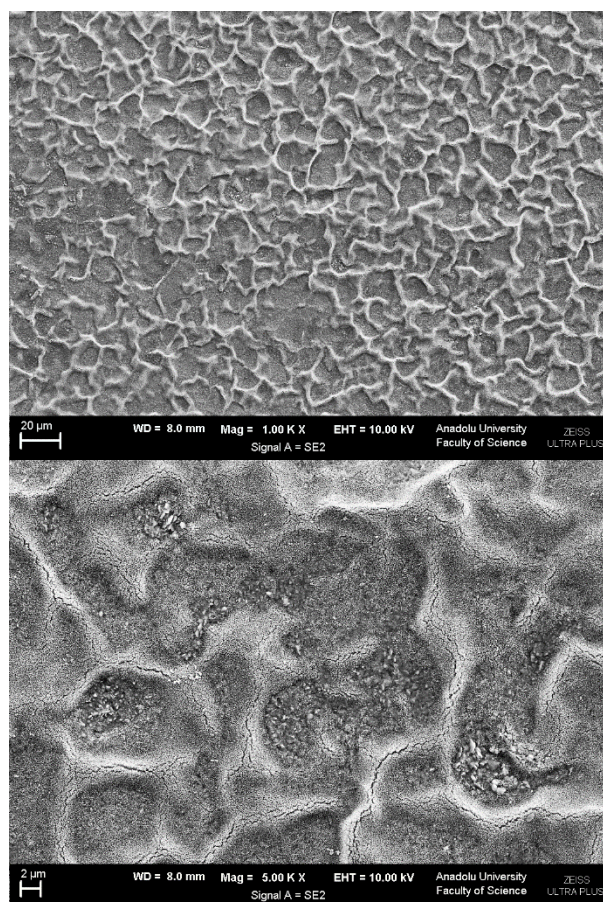


Figure S6. SEM images of Ti/TiO₂NTHF-6h-650 photoanode (magnification: 1000× (a), and 5000× (b)).

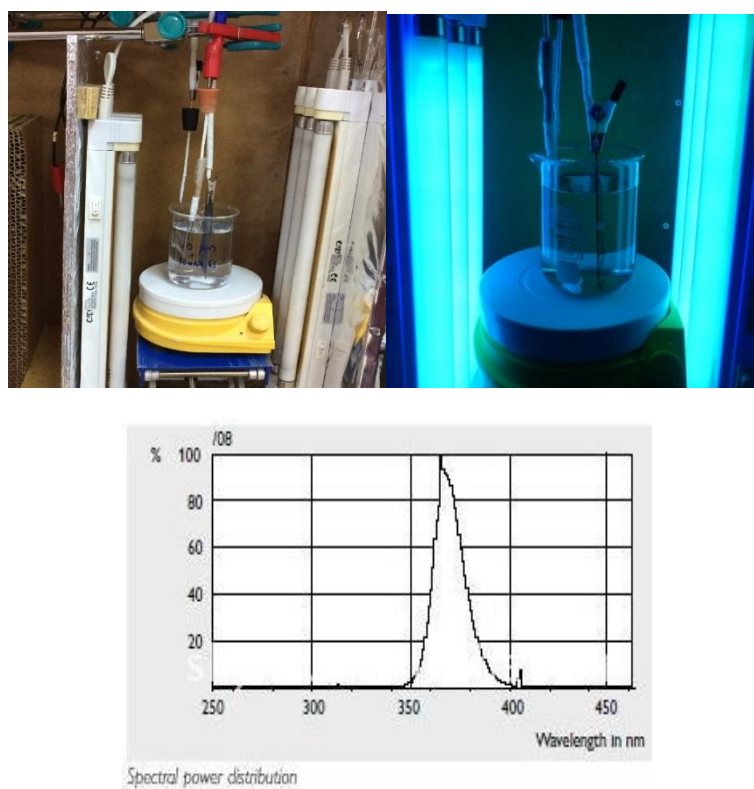


Figure S7. PEC experiment system (up) and the spectra of the used UV fluorescent lamp (below).

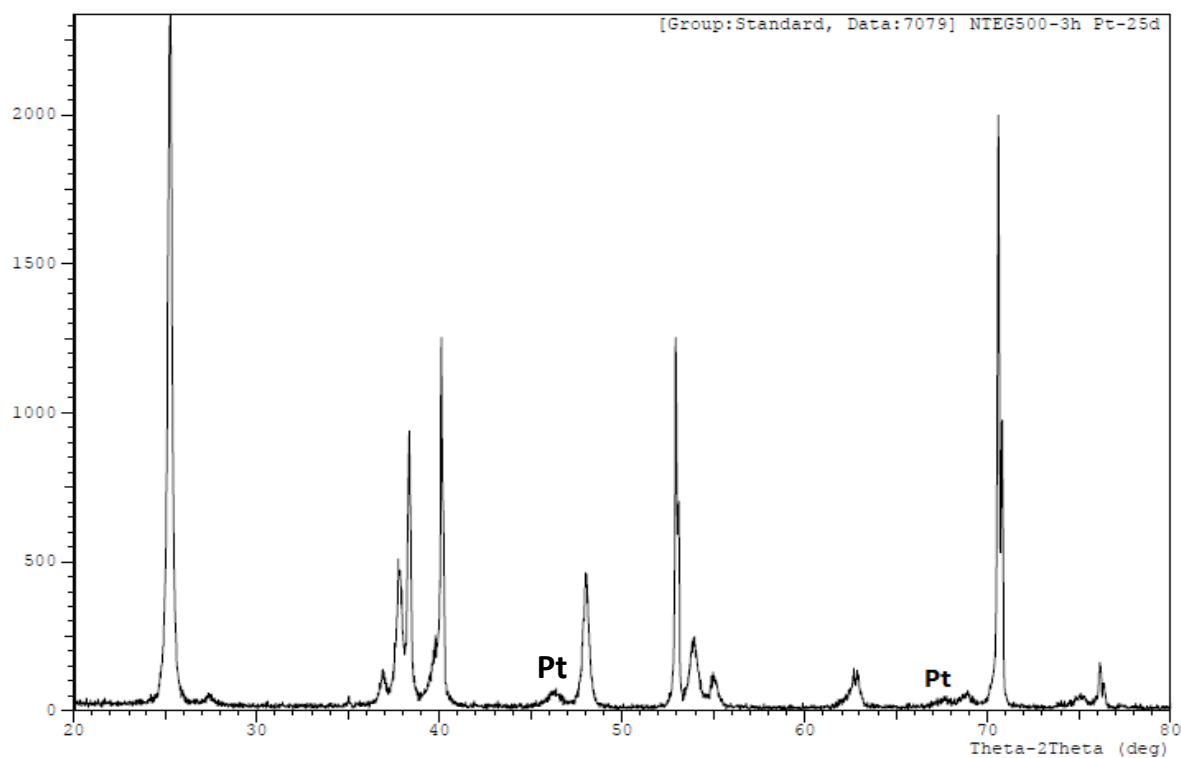


Figure S8. XRD patterns of Ti/TiO₂NTEG500-3h-Pt-25cycles electrode.

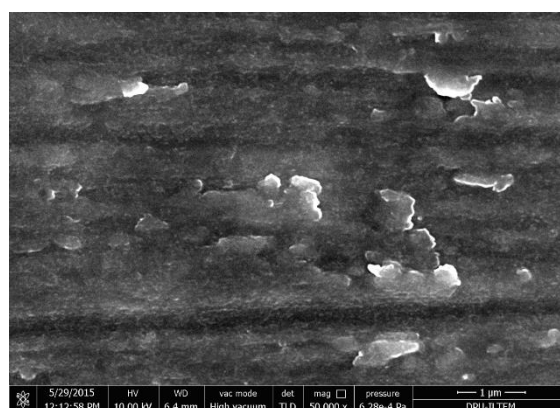


Figure S9. SEM image of Ti/TiO₂-500 photoanode. Magnification: 50000×. Reprinted with permission from [1]. Copyright 2017 Elsevier.

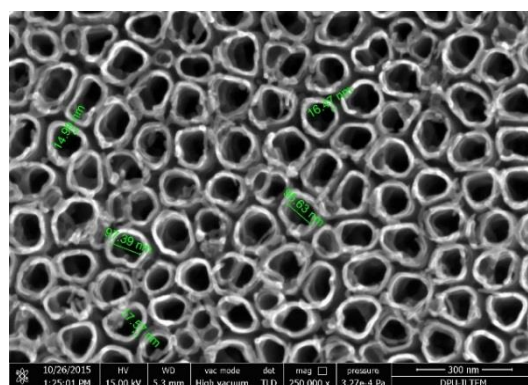


Figure S10. SEM image of Ti/TiO₂NTHF-1h-500 photoanode (magnification: 250000×). Reprinted with permission from [1]. Copyright 2017 Elsevier.

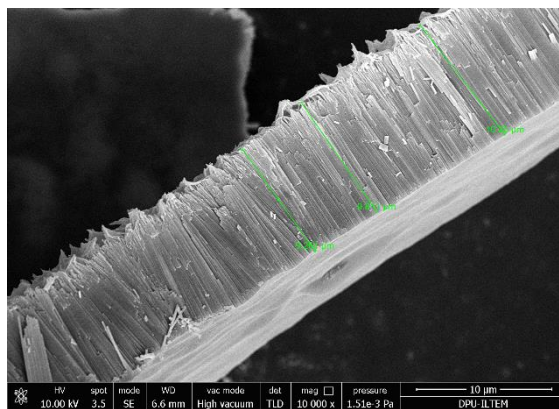


Figure S11. SEM images of Ti/TiO₂NTEG-4h-500 photoanode. Cross section view (magnification: 10000×).

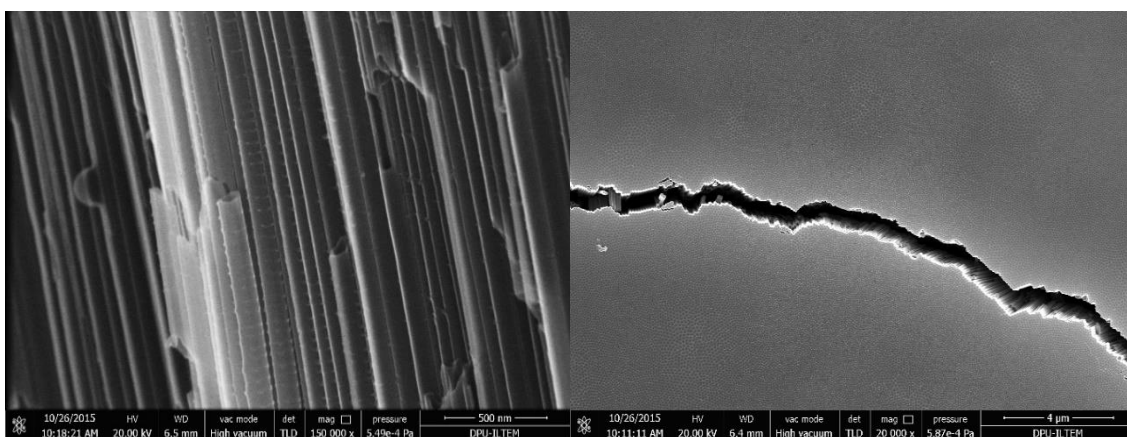


Figure S12. SEM images of Ti/TiO₂NTEG-6h-500 photoanode. Cross section view (magnification: 150000X). Bottom view (magnification: 20000×).

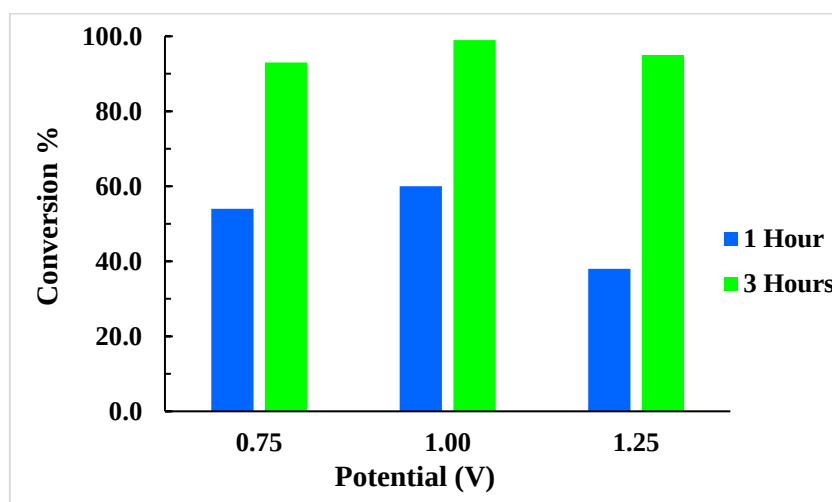


Figure S13. The conversion values for PEC paraquat degradation for 1 (blue) and 3 (green) hours of reaction time at different voltage values in the presence of Ti/TiO₂NTEG-3h-500 electrode.

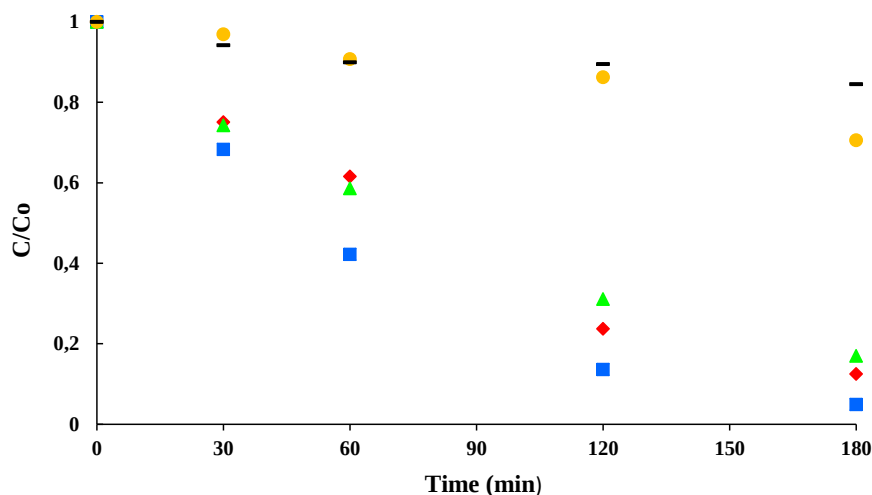


Figure S14. The PEC experiment results of Ti/TiO₂-500 (■), Ti/TiO₂NTHF-1h-500 (●), Ti/TiO₂NTEG-1h-500 (▲), Ti/TiO₂NTEG-3h-500 (■) and Ti/TiO₂NTEG-6h-500 (◆) for paraquat degradation. Applied potential: 1V.

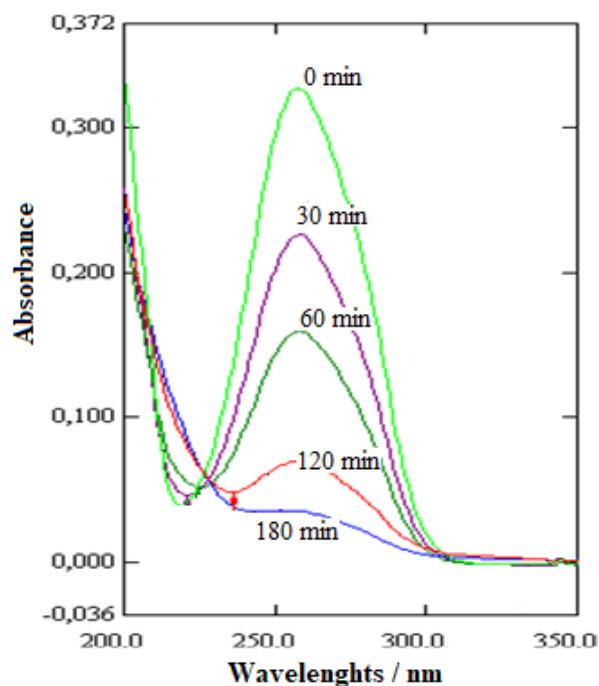


Figure S15. UV-Vis absorbance values of the samples taken from the reaction medium at fixed times during PEC degradation of paraquat (37.4 μ M) at 1 V by using the Ti/TiO₂NTEG-3h-500 photoanode.

References

- Özcan, L.; Yalçın, P.; Alagöz, O.; Yurdakal, S. Selective photoelectrocatalytic oxidation of 5-(hydroxymethyl)-2-furaldehyde in water by using Pt loaded nanotube structure of TiO₂ on Ti photoanodes. *Catal. Today* **2017**, *281*, 205–213.



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