

Supplementary materials

Photocatalytic Investigation of Aerosol-Assisted Atmospheric Pressure Plasma Deposited Hybrid TiO₂ Containing Nanocomposite Coatings

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Nanoparticles TiO₂ P25 characterization

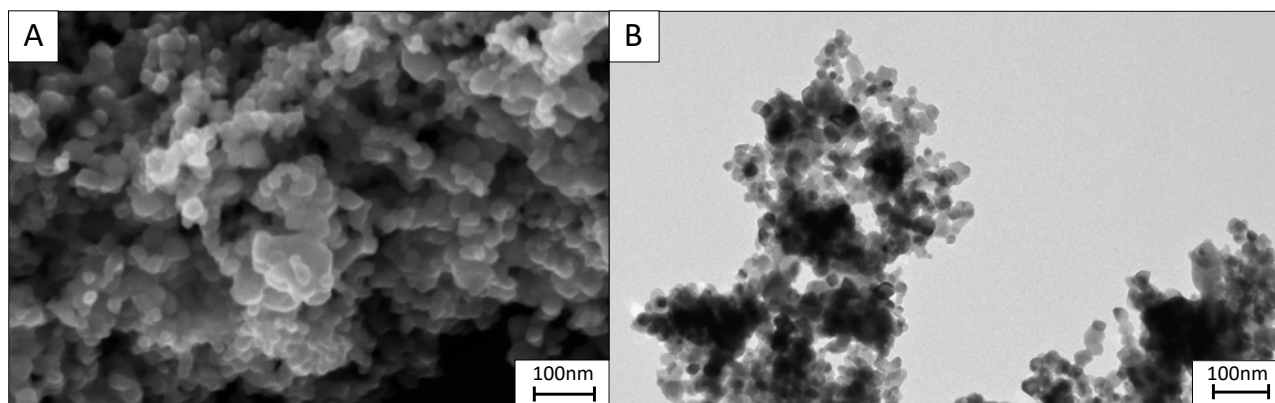


Figure S1 Images of TiO₂ P25 (Evonik) acquired by A) scanning electron microscopy (SEM) at 300kx magnification and B) transmission electron microscopy (TEM)

Transmission electron microscopy (TEM) analysis was performed by a JEOL JEM-1011 microscope operating at 100 kV. The TEM samples were prepared by casting a drop of TiO₂ methanol solution onto a carbon hollowed TEM grid.

Plasma reactors

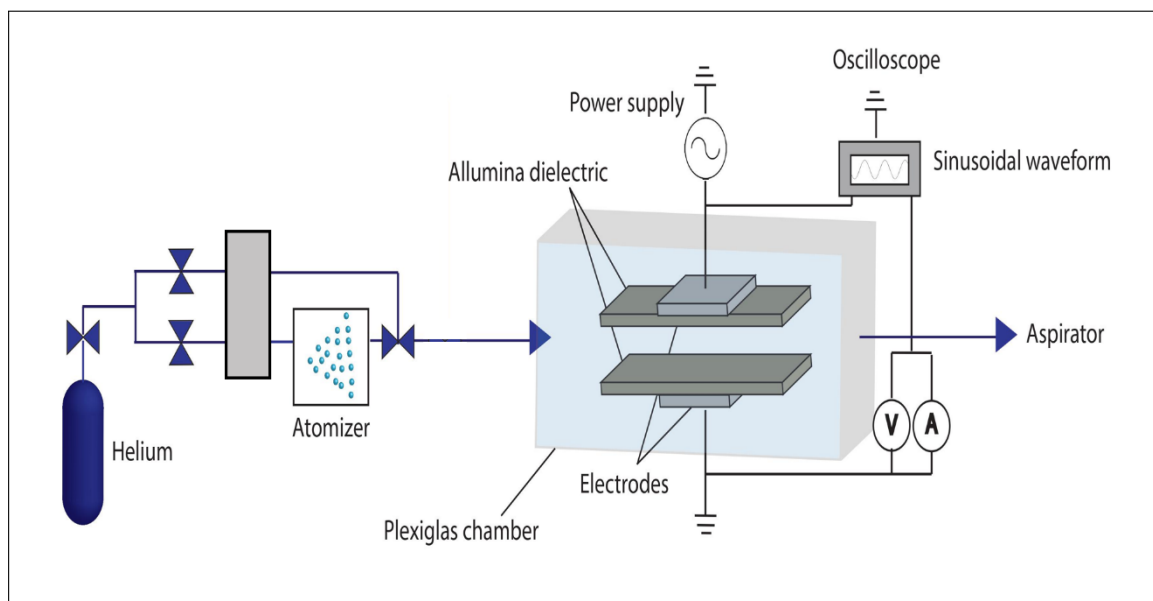


Figure S2 Scheme of the Dielectric Barrier Discharge (DBD) plasma reactor used for the plasma deposition. [1]

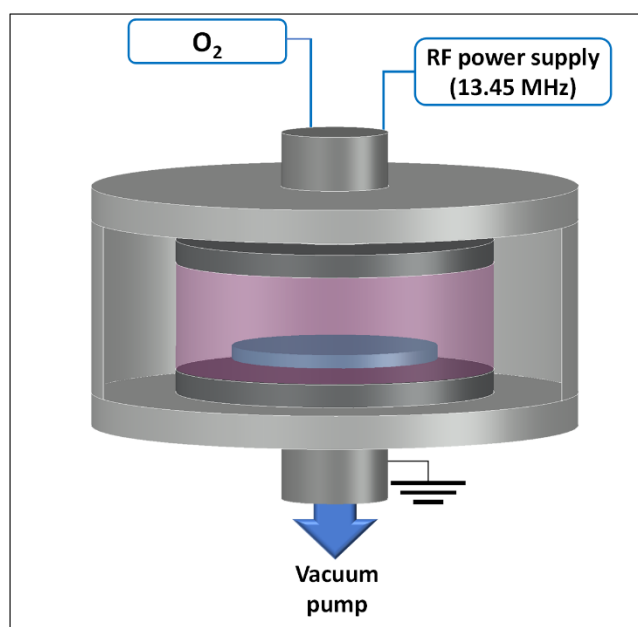


Figure S3 Scheme of the low pressure plasma reactor used for the plasma post-deposition treatment. [2]

Coating characterization

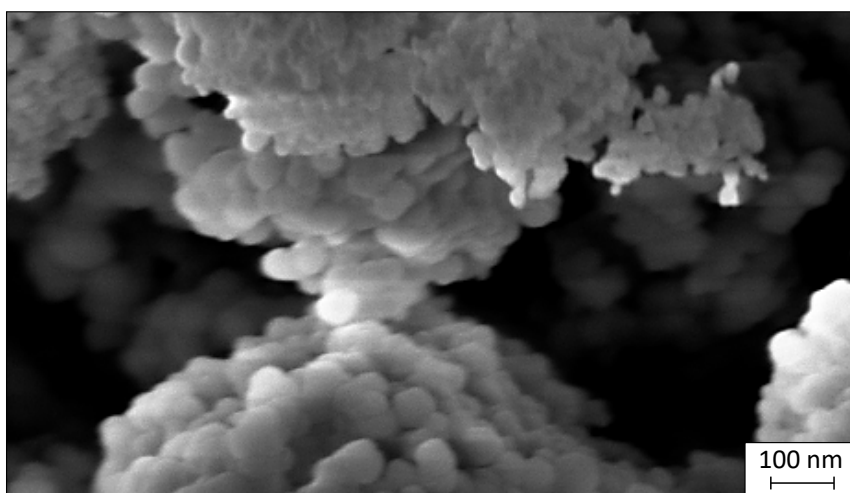


Figure S4 SEM image at 100kx magnification of PD20m coating.

Test of the photocatalytic activity of the prepared coatings

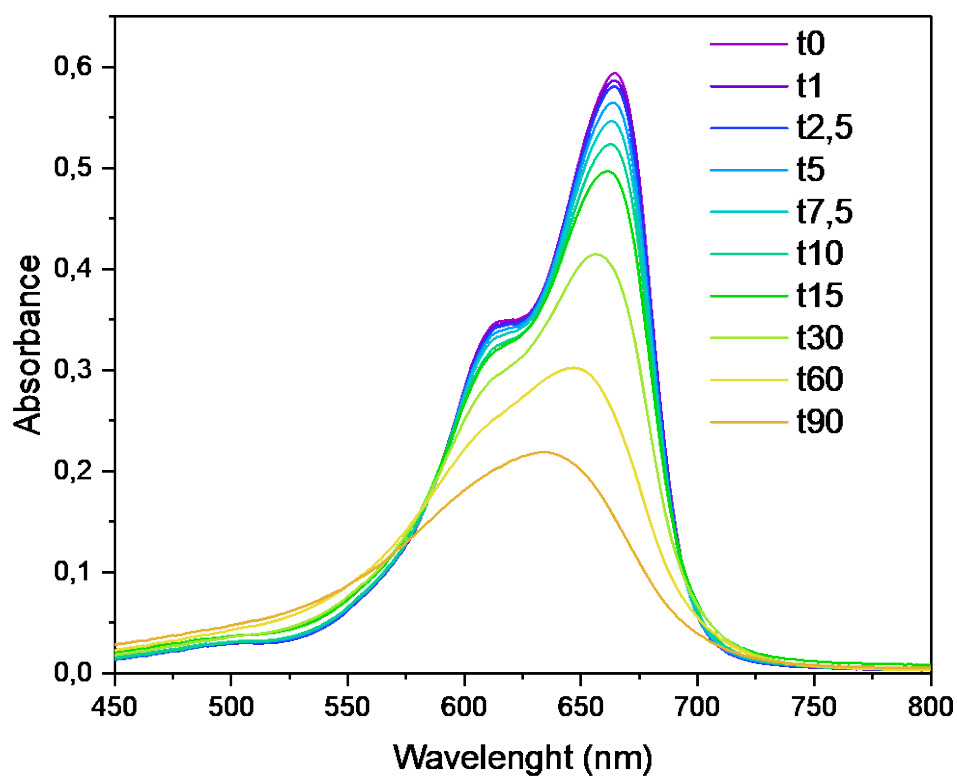


Figure S5 Absorbance spectra for $10^{-5} M$ methylene blue (MB) over time (90 minutes in total) of exposure to UV light and contact with PD20m-P as a representative time evolution.

References

1. Lo Porto, C.; Palumbo, F.; Buxadera-Palomero, J.; Canal, C.; Jelinek, P.; Zajickova, L.; Favia, P. On the Plasma Deposition of Vancomycin-Containing Nano-Capsules for Drug-Delivery Applications. *Plasma Process. Polym.* **2018**, *15* (5), 1700232. <https://doi.org/10.1002/ppap.201700232>.
2. Lo Porto, C.; Palumbo, F.; Somma, S.; Masiello, M.; Moretti, A.; Fracassi, F.; Favia, P. Plasma-Assisted Deposition of Fungicide Containing Coatings for Encapsulation and Protection of Maize Seeds. *Plasma Process. Polym.* **2019**, *16* (6), 1900022. <https://doi.org/10.1002/ppap.201900022>.