# Supplementary Materials: Design of Novel Photocatalytic Films for the Protection of Architectural Surfaces via the Incorporation of Green Photocatalysts

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**Table S1.** Mix design of the concrete and lime mortars treated with the proposed nanocomposite FX-C with $TiO_2$-Cdots.

| **Concrete Composition (%w/w)** | | |
|---|---|---|
| Cement | 9814 CEM II/B-LL 32,5N | 19.6 |
| Coarse aggregates | 9738 Medium NORDIA limestone | 40.2 |
| Fine aggregates | 9737 Sand NORDIA limestone | 40.2 |
| **Lime mortar Composition (%w/w)** | | |
| Natural Hydraulic Lime (NHL 3.5) | | 15 |
| Metakaolin (Argical –M1000, Imerys Group) | | 10 |
| Carbonaceous sand 0-4 mm | | 47.81 |
| Quartz sand 0–7 mm | | 15.94 |
| Coarse-grained carbonaceous sand 2–5 mm | | 11.25 |

**Table S2.** Protective agent uptake on concrete, limestone and lime mortar specimens.

| **Specimen** | **Protective Agent Uptake (gr/m$^2$)** |
|---|---|
| Concrete | 108.33 |
| Limestone | 75.10 |
| Lime mortar | 136.91 |

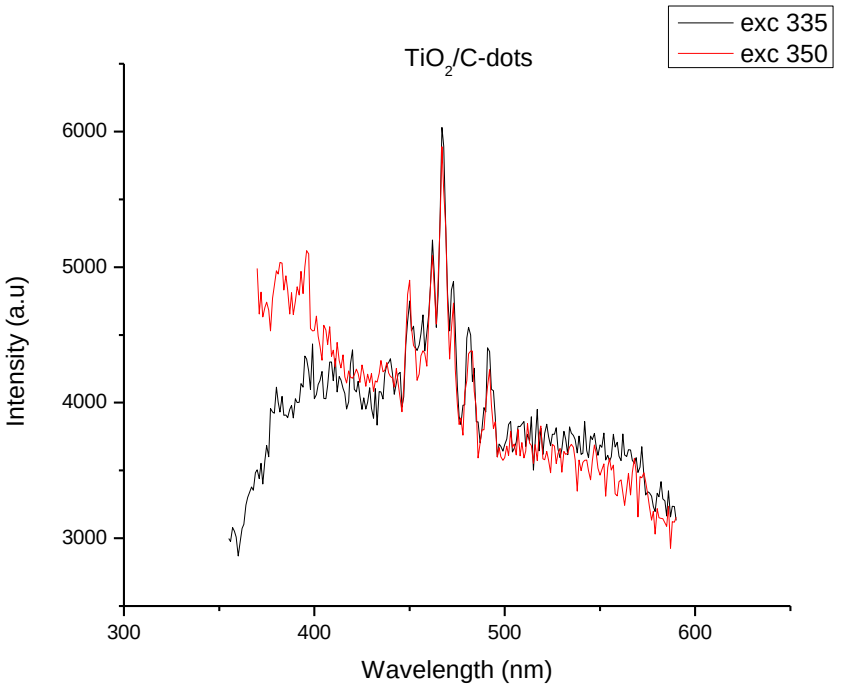


**Figure S1.** Fluorescence spectra of $TiO_2$/C-dots.

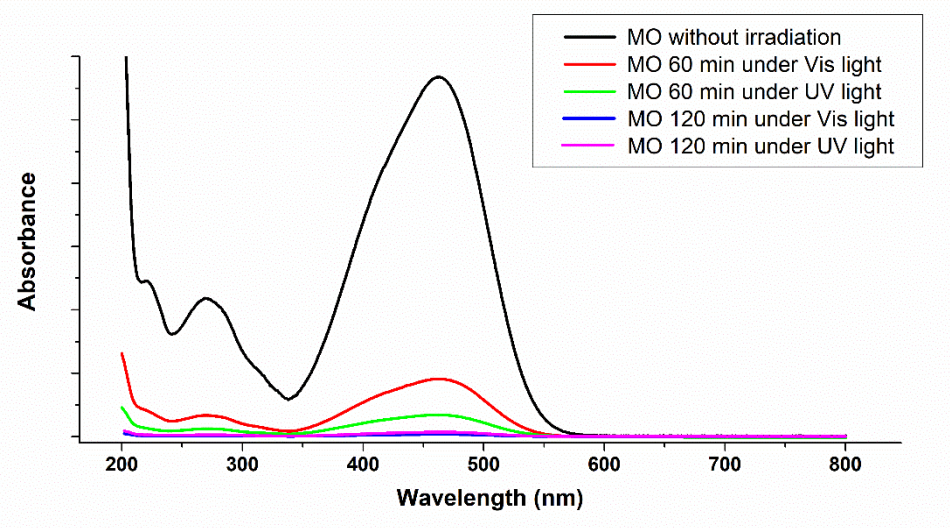


**Figure S2.** $TiO_2$/C-dots: UV-Vis spectra of MO before (black line) and after 180 min irradiation with UV (green line) and Vis (red line).

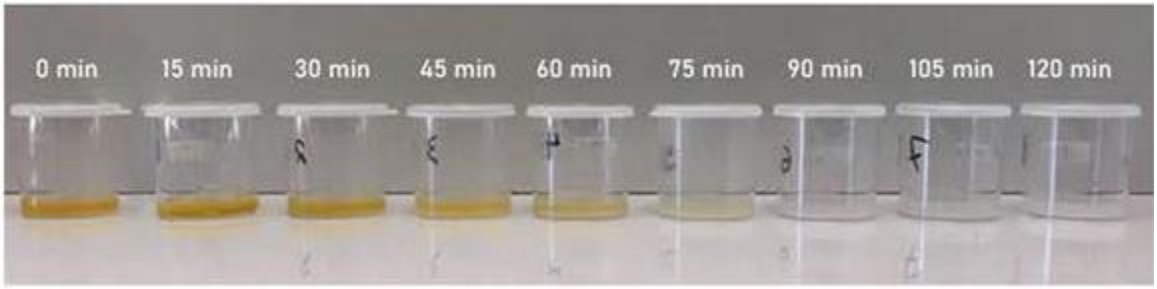


**Figure S3.** $TiO_2$/C-dots: Macroscopic image of Methylene Orange photodegradation by UV.


**Figure S4.** $TiO_2$/C-dots: Macroscopic image of Methylene Orange photodegradation by Vis.

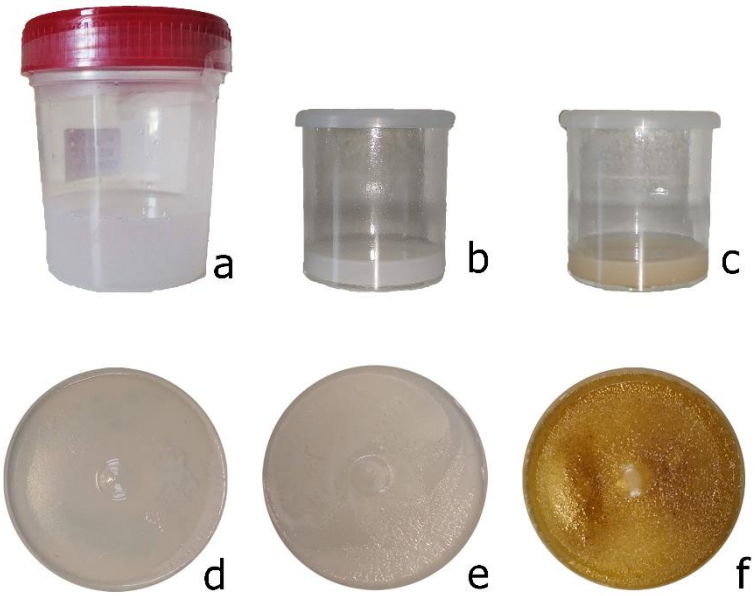


**Figure S5.** FX-C (**a**,**d**), FX-C with $TiO_2$ (**b**,**e**), FX-C with $TiO_2$/C-dots (**c**,**f**) in the form of sol and xerogel, respectively. Xerogels' diameter is about 30 mm.