Electronic Supplementary Material (ESI) for Photochemical & Photobiological Sciences

Singlet Oxygen Sensitizing Materials Based on Porous Silicone: Photochemical Characterization, Effect of Dye Reloading and Application to Water Disinfection with Solar Reactors

Francisco Manjón, Montserrat Santana-Magaña, David García-Fresnadillo* and Guillermo Orellana*

Supplementary information

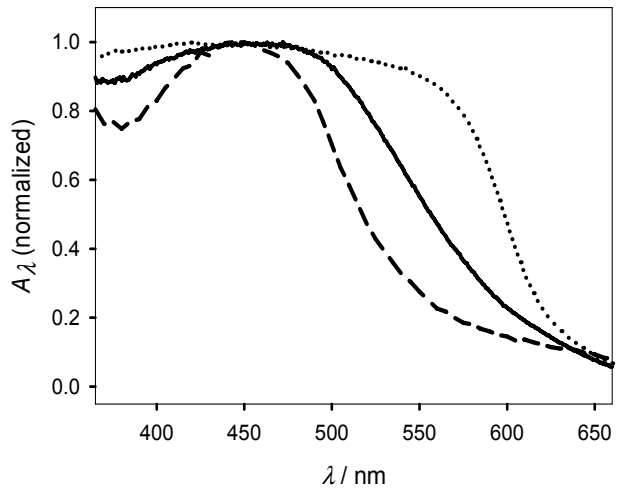

Figure S1. Normalized absorption spectra of RDP/pSil (- - -), RDP/pSil-r (—) and solid RDP photosensitizer (·····).

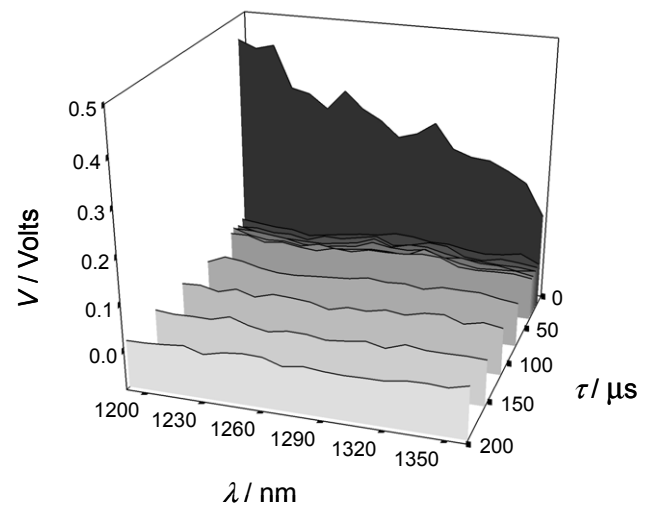

Figure S2. Background signal in a time window of 200 µs generated by 532-nm laser excitation of the blank pSil polymer showing the absence of any $^1O_2$ emission under the same conditions used for exciting the photosensitizing materials.

Bacteria culturing, procedures and evaluation of photodisinfection experiments

Fresh liquid bacteria cultures were prepared by inoculating an aliquot into Luria-Bertani (LB) broth (Pronadisa, Madrid, Spain) and incubated overnight at 37 ºC with constant rocking under aerobic conditions. Aliquots of this culture were inoculated daily into fresh medium and incubated aerobically overnight at 37 ºC. Bacterial growth was monitored by recording the absorbance at 600 nm. Microorganisms in their *stationary growth* phase were used for the disinfection testing experiments.

To evaluate the disinfection efficiency, samples of the mineral water (AQUAVIVA, AquaService, Madrid, Spain) inoculated with the selected bacteria or after treatment for a certain period of time in the microrreactor and the solar reactor were plated on LB broth agar and incubated at 37 ºC for 20 h before (manual) colony counting. Serial dilutions of the samples were carried out when necessary. In order to minimize quantification errors, samples were plated 16 times on a Petri dish with an inoculation volume of 10 µL each. Error bars were statistically determined from the data of 32 replicates (two dishes), at 95% confidence level. All the experiments were run at least twice.