

Dye-sensitized solar cells: spectroscopic evaluation of dye loading on TiO₂

by Elisa Dell'Orto, Luisa Raimondo, Adele Sassella and Alessandro Abbotto

Electronic Supplementary Information (ESI)

Fig S1 Example of the fitting results of the absorption spectrum of N719-coated TiO₂ films after 24 h dye-dipping time. The fitting procedure has been adopted for determining the area of the 540 nm band of N719-coated TiO₂ films.

Fig S2 Integrated area of the absorption spectra in the spectral range 460 ÷ 800 nm of N719 adsorbed into TiO₂ films vs. dipping time (inset: enlargement from 5 s to 7 h).

Fig S3 Absorption spectra of the desorbed solution for dipping time of 3 h and a freshly prepared solution of the N719 sensitizer (2.0×10^{-6} M) in the same hydroalcoholic NaOH solution (0.1 M NaOH in H₂O/EtOH 1:1).

Fig S4 Integrated area of the absorption spectra over the UV-Vis spectral range (277÷800 nm) of desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) vs. dipping times of the original films.

Fig S5 Integrated area of the of the absorption peak centered at about 510 nm of desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) vs. dipping times of the original films. The error bars are enclosed in the symbols.

Fig S6 Example of the fitting results of the absorption spectrum of the desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) for dipping time of 3 h of the original film.

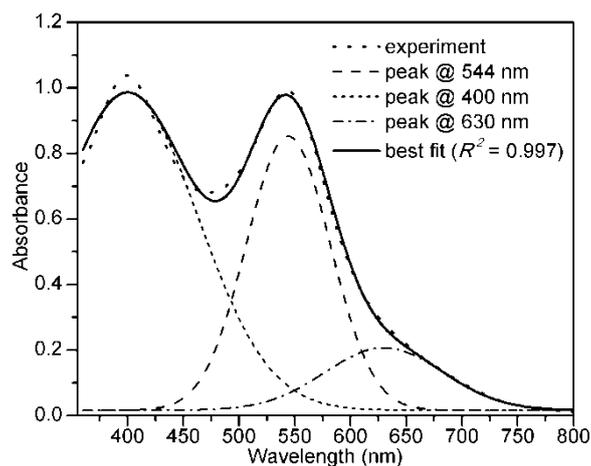


Fig S1 Example of the fitting results of the absorption spectrum of N719-coated TiO₂ films after 24 h dye-dipping time. The fitting procedure has been adopted for determining the area of the 540 nm band of N719-coated TiO₂ films.

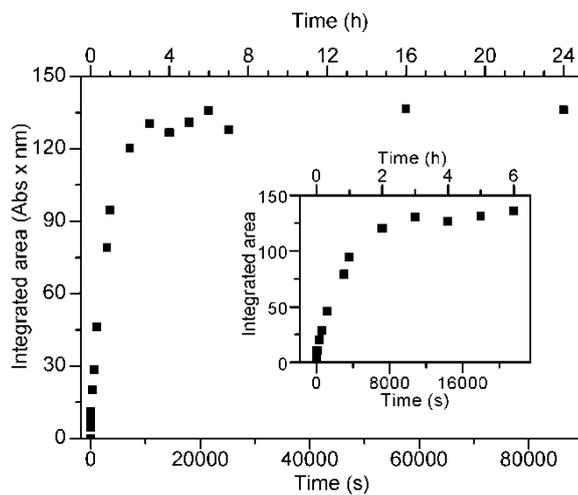


Fig S2 Integrated area of the absorption spectra in the spectral range 460 ÷ 800 nm of N719 adsorbed into TiO₂ films vs. dipping time (inset: enlargement from 5 s to 7 h).

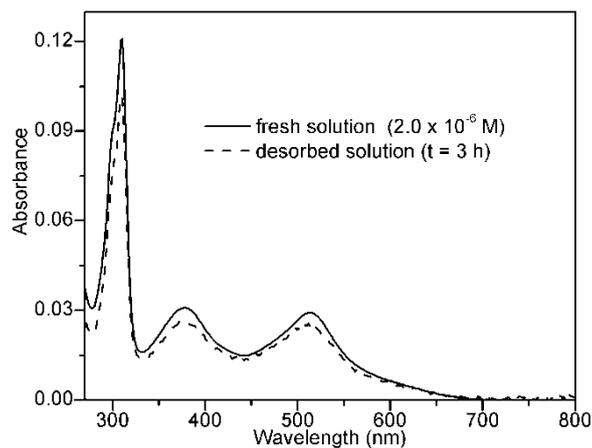


Fig S3 Absorption spectra of the desorbed solution for dipping time of 3 h and a freshly prepared solution of the N719 sensitizer (2.0×10^{-6} M) in the same hydroalcoholic NaOH solution (0.1 M NaOH in H₂O/EtOH 1:1).

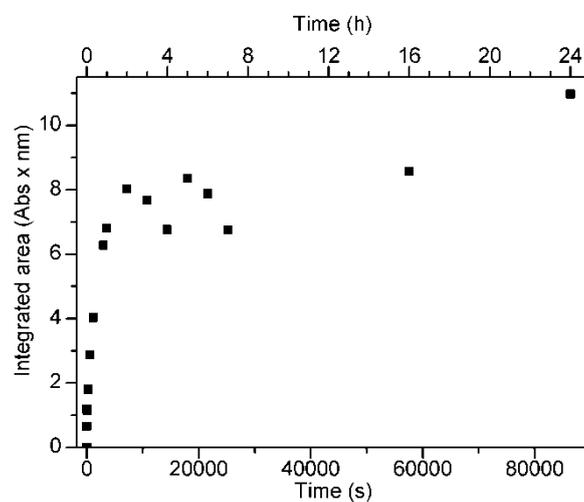


Fig S4 Integrated area of the of the absorption spectra over the UV-Vis spectral range (277÷800 nm) of desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) vs. dipping times of the original films.

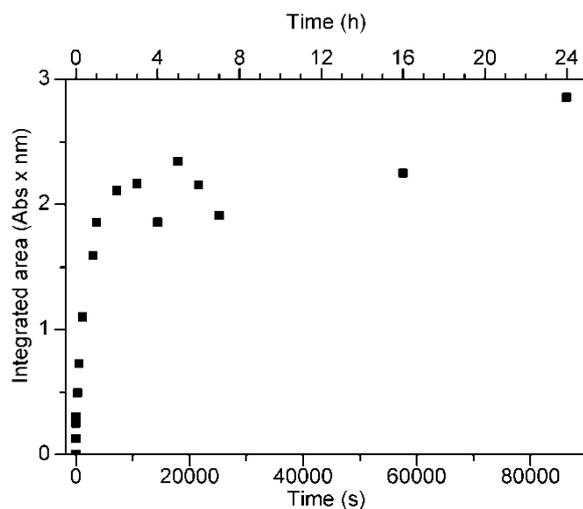


Fig S5 Integrated area of the absorption peak centered at about 510 nm of desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) vs. dipping times of the original films. The error bars are enclosed in the symbols.

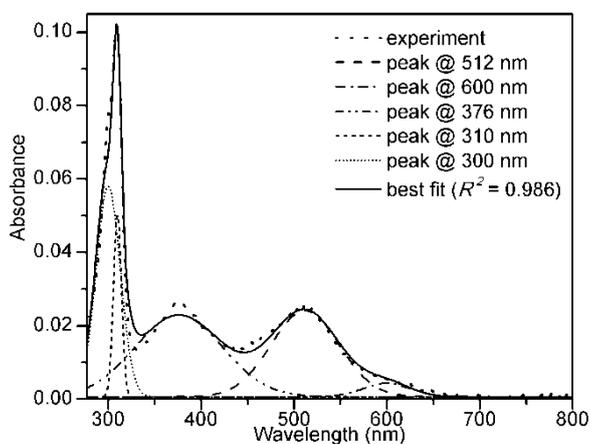


Fig S6 Example of the fitting results of the absorption spectrum of the desorbed N719 (0.1 M NaOH in H₂O/EtOH 1:1) for dipping time of 3 h of the original film.