Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information Section

Photo-Electrochemical properties of Quantum Rods Studied by Scanning Electrochemical Microscopy

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This supplementary information part provides additional experiments on (1) the organization of the QR when deposited on a glass plate by drop casting and a slow drying and (2) SECM responses when using different mediators and in presence or without MeOH acting as a hole scavenger (Experiments shown on Figure 4).

1. STM images of the quantum rods film.

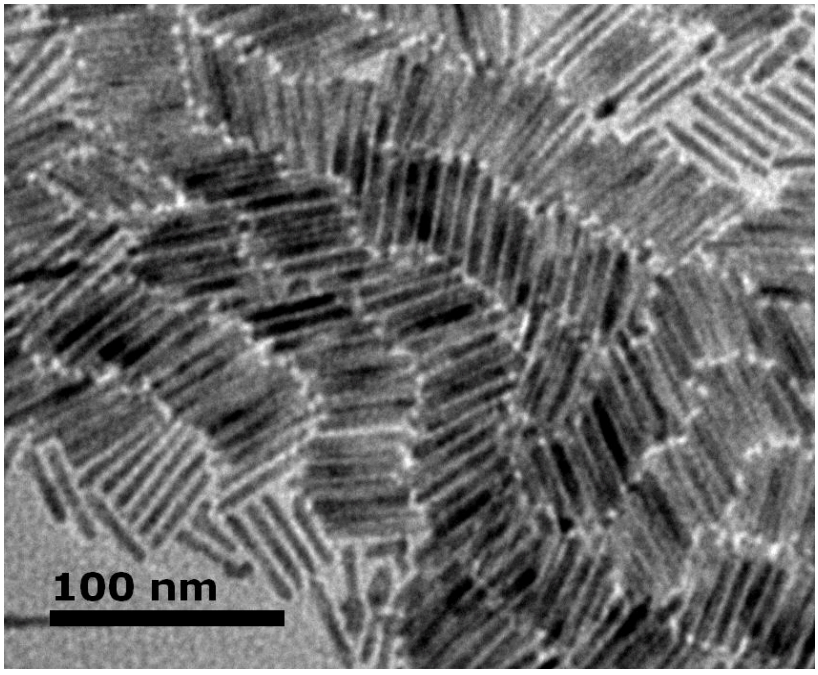

Figure S1. TEM image of a film of CdSe/CdS quantum rods (QR) resulting from the slow drying from a liquid suspension and showing the organization.

2. Repeated SECM cycle measurements using ferrocene as mediator.

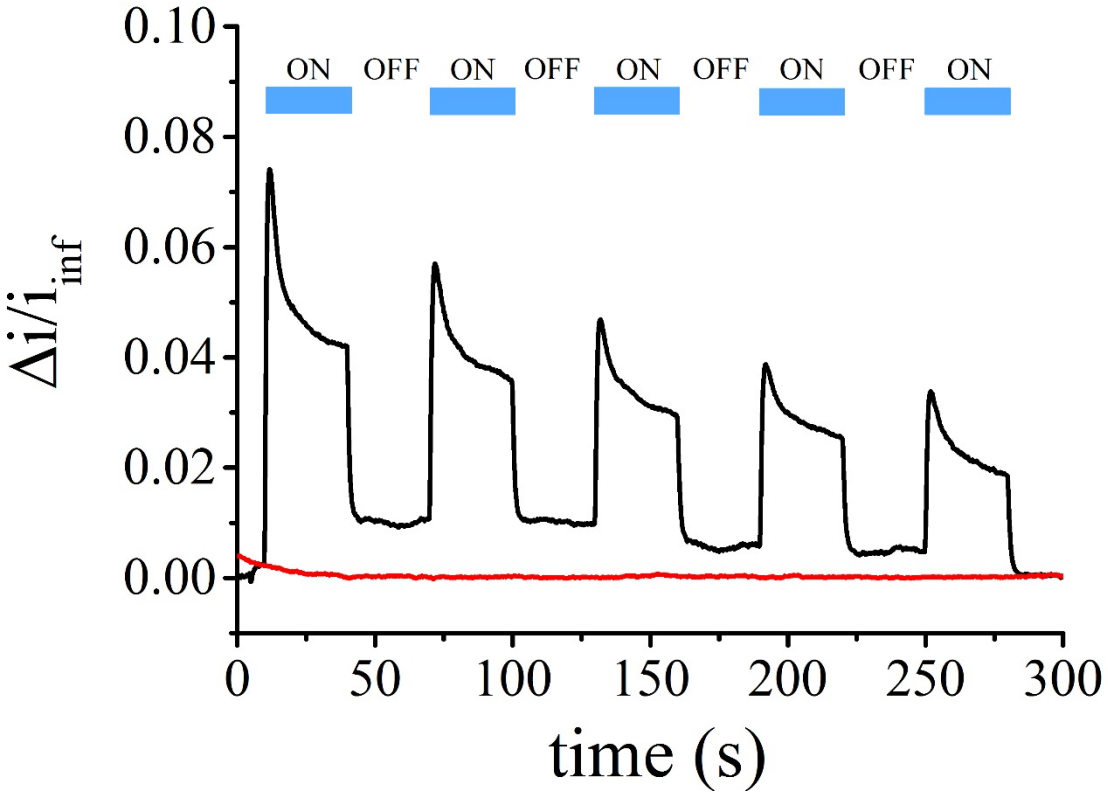

Figure S2. SECM normalized differential photocurrents $\Delta i/i_{inf}$ recorded at a gold disk microelectrode (a = 6 µm) and the distance tip-surface is around 5 µm. The surface is an insulating glass plate without (red curve) and with deposited QRs (black curve). Sample is examined in a 10^{-3} mol L^{-1} ferrocene solution in MeCN:MeOH (99:1) + 0.1 mol L^{-1} nBu$_4$NPF$_6$. $\Delta i/i_{inf}$ is obtained after correction from the tip dark current (i.e. current without light before experiment) and normalized versus the tip diffusional current i_{inf} (i.e. when the tip is at infinite distance from the sample).

3. SECM investigations performed with different mediators

3a. In acetonitrile with 1% MeOH acting as hole scavenger.

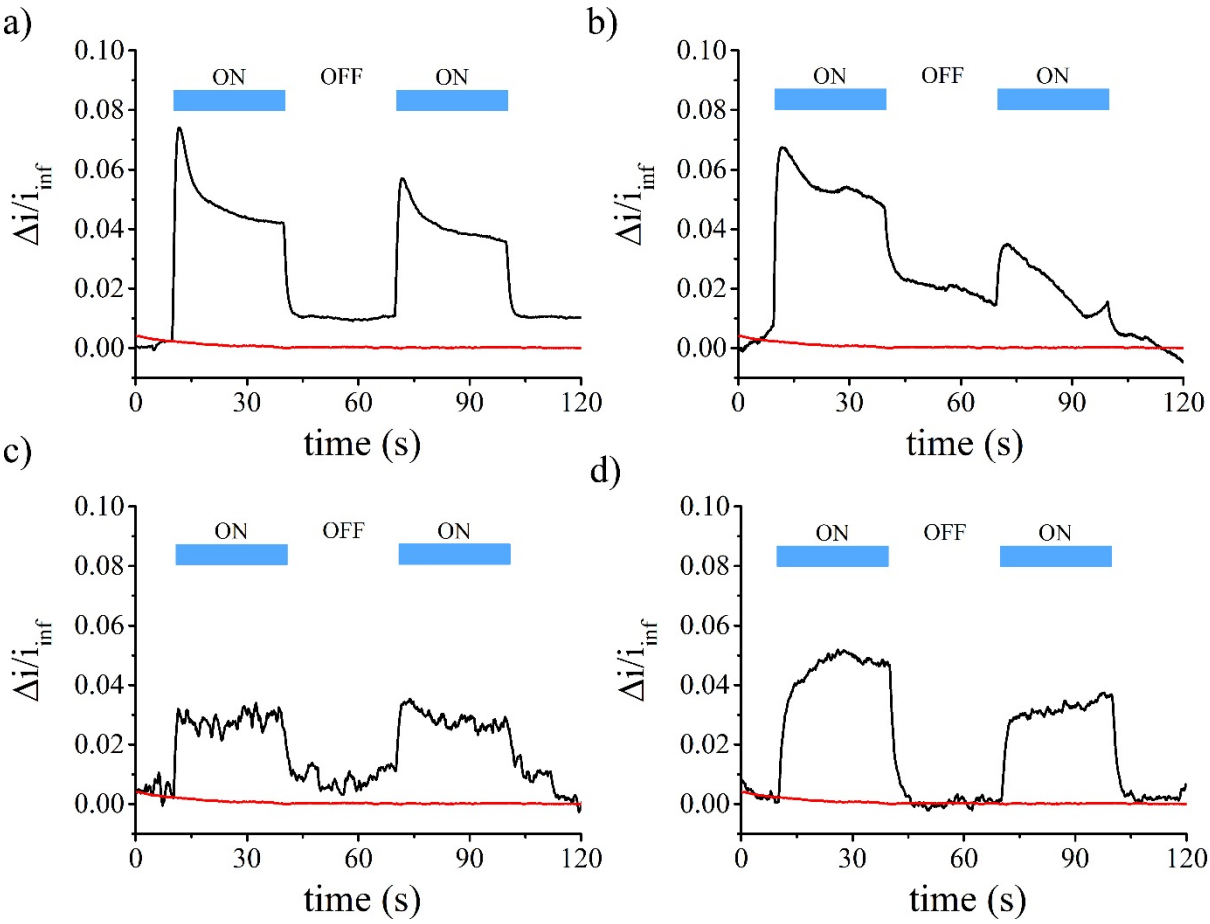

Figure S3. SECM normalized differential photocurrents $\Delta i/i_{inf}$ recorded at a gold disk microelectrode (a = 6 µm) and the distance tip-surface is around 5 µm. The surface is an insulating glass plate without (red curves) and with deposited QRs (black curves). Sample is examined in a 10^{-3} mol L^{-1} (a) ferrocène, (b) ferrocenedimethanol, (c) dimethylferrocene and (d) decamethylferrocene solution in MeCN:MeOH (99:1) + 0.1 mol L^{-1} nBu$_4$NPF$_6$. $\Delta i/i_{inf}$ is obtained after correction from the tip dark current (i.e. current without light before experiment) and normalized versus the tip diffusional current i_{inf} (i.e. when the tip is at infinite distance from the sample).

3.b. In neat Acetonitrile.

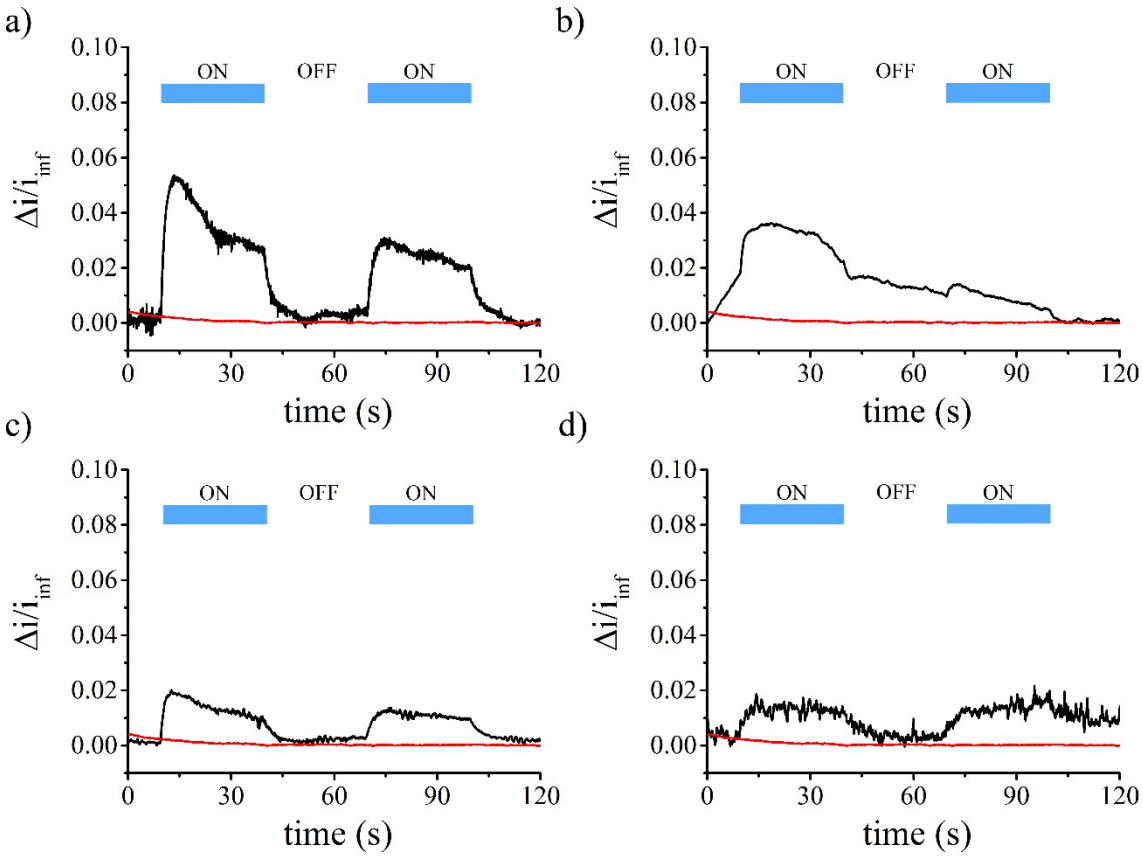

Figure S4. SECM normalized differential photocurrents $\Delta i/i_{inf}$ recorded at a gold disk microelectrode (a = 6 µm) and the distance tip-surface is around 5 µm. The surface is an insulating glass plate without (red curves) and with deposited QRs (black curves). Sample is examined in a 10^{-3} mol L^{-1} (a) ferrocène, (b) ferrocenedimethanol, (c) dimethylferrocene and (d) decamethylferrocene solution in dry MeCN + 0.1 mol L^{-1} nBu$_4$NPF$_6$. $\Delta i/i_{inf}$ is obtained after correction from the tip dark current (i.e. current without light before experiment) and normalized versus the tip diffusional current i_{inf} (i.e. when the tip is at infinite distance from the sample).