

Supporting Information

**Photoinduced charge carrier dynamics of Zn-Porphyrin-TiO₂ electrodes
– the key role of charge recombination for solar cell performance**

Hiroshi Imahori,^{*,%,†,#} Soonchul Kang,^{†,%} Hironobu Hayashi,[†] Mitsutaka Haruta,^{\$} Hiroki Kurata,^{\$} Seiji Isoda,^{\$} Sophie E. Canton,[&] Yingyot Infahsaeng,[&] Arunkumar Kathiravan,[&] Torbjörn Pascher,[&] Pavel Chábera, Arkady P. Yartsev,[&] and Villy Sundström^{*,&}

[%]Institute for Integrated Cell-Material Sciences (iCeMS), Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan

[†]Department of Molecular Engineering, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan

[#]Fukui Institute for Fundamental Chemistry, Kyoto University, Sakyo-ku, Kyoto 606-8103, Japan

^{\$}Institute for Chemical Research, Kyoto University, Uji, Kyoto 611-0011, Japan

[&]Department of Chemical Physics, Lund University, Box 124, SE-22100 Lund, Sweden

E-mail: imahori@scl.kyoto-u.ac.jp; villy.sundstrom@chemphys.lu.se

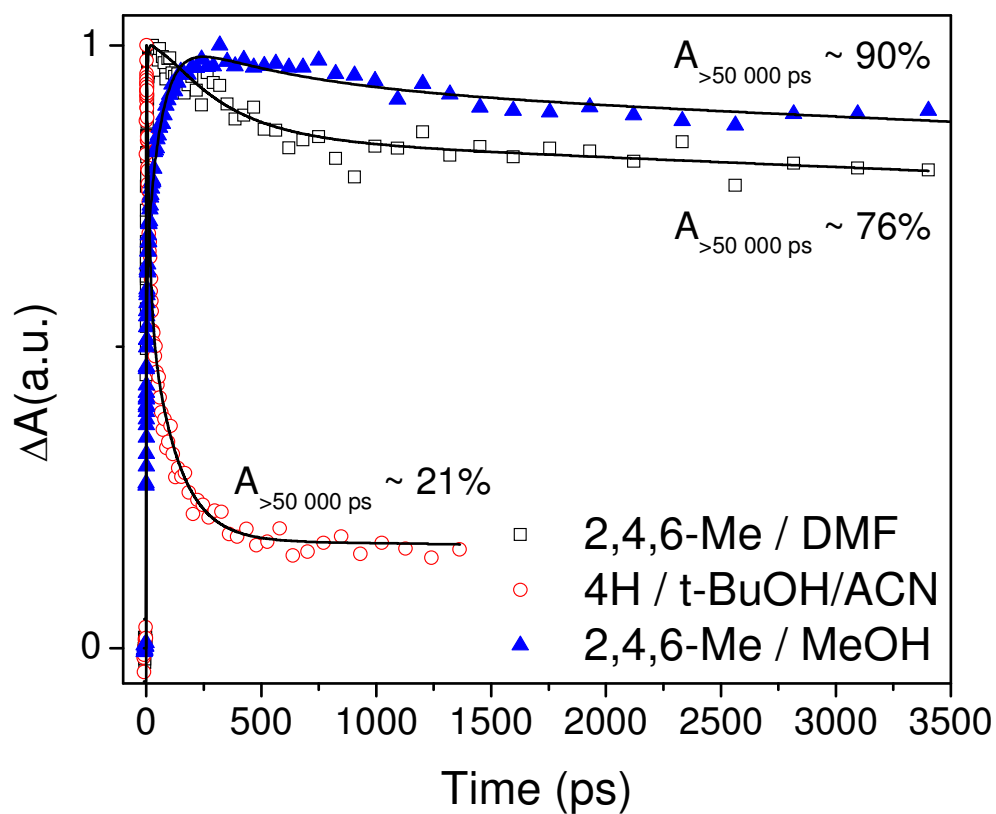


Figure S1. a) Long delay line kinetics (at 660 nm) of **2,4,6-Me** on TiO_2 sensitized in MeOH (closed, blue triangle) and DMF (open, black square) and of **4-H** on TiO_2 sensitized in *t*-BuOH/ACN (open, red circle) for 12 hours. All kinetics are normalized to maxima and solid black lines represent fits of the kinetics.

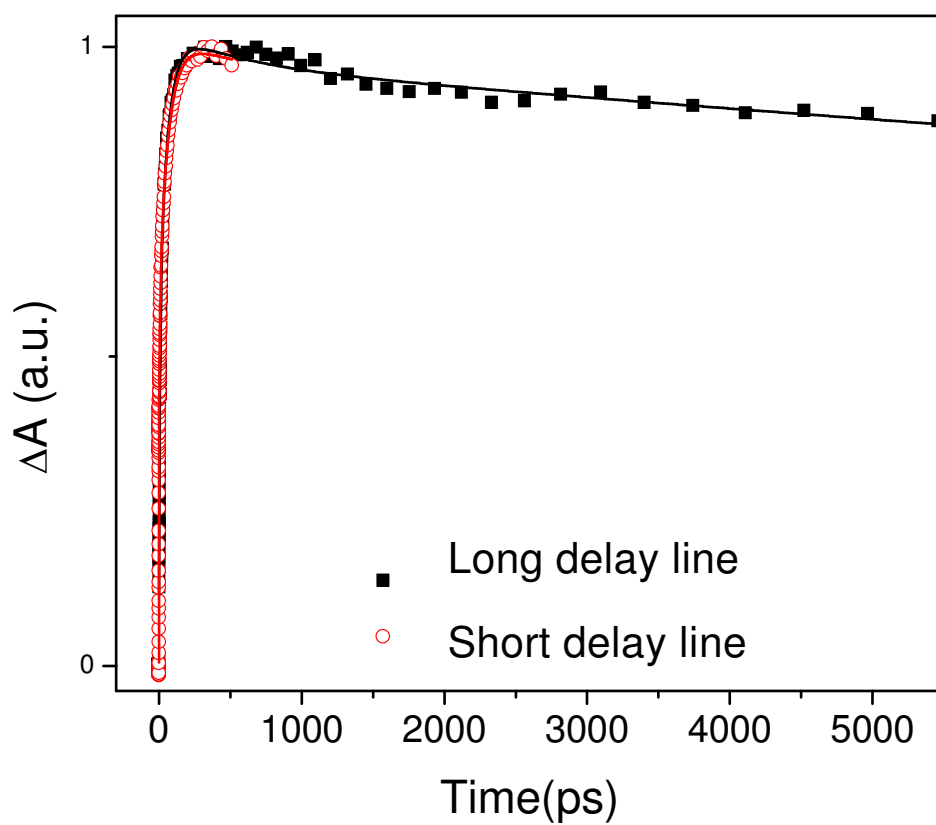


Figure S1. b) Comparison of long (full, black square) and short (open, red circle) delay line measurements of **2,4,6-Me** on TiO_2 sensitized in MeOH for 1 h. All kinetics are normalized and solid black line represents fits of the kinetics.

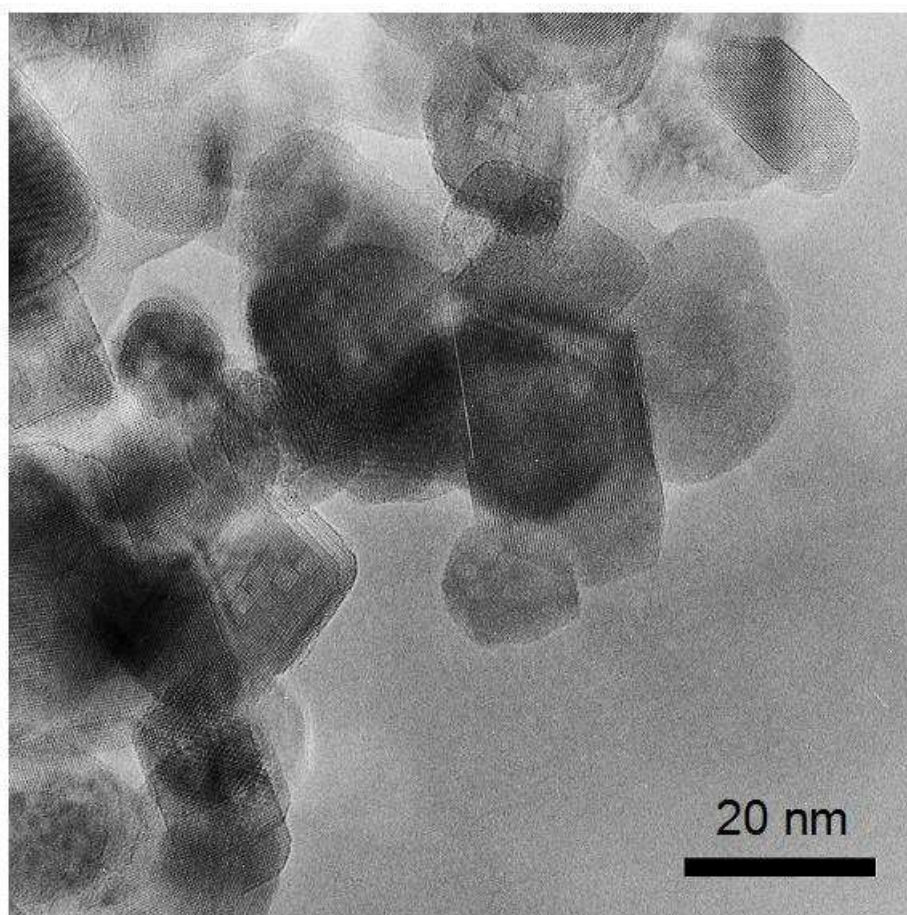


Figure S2. TEM images of TiO₂ nanoparticles without porphyrins.

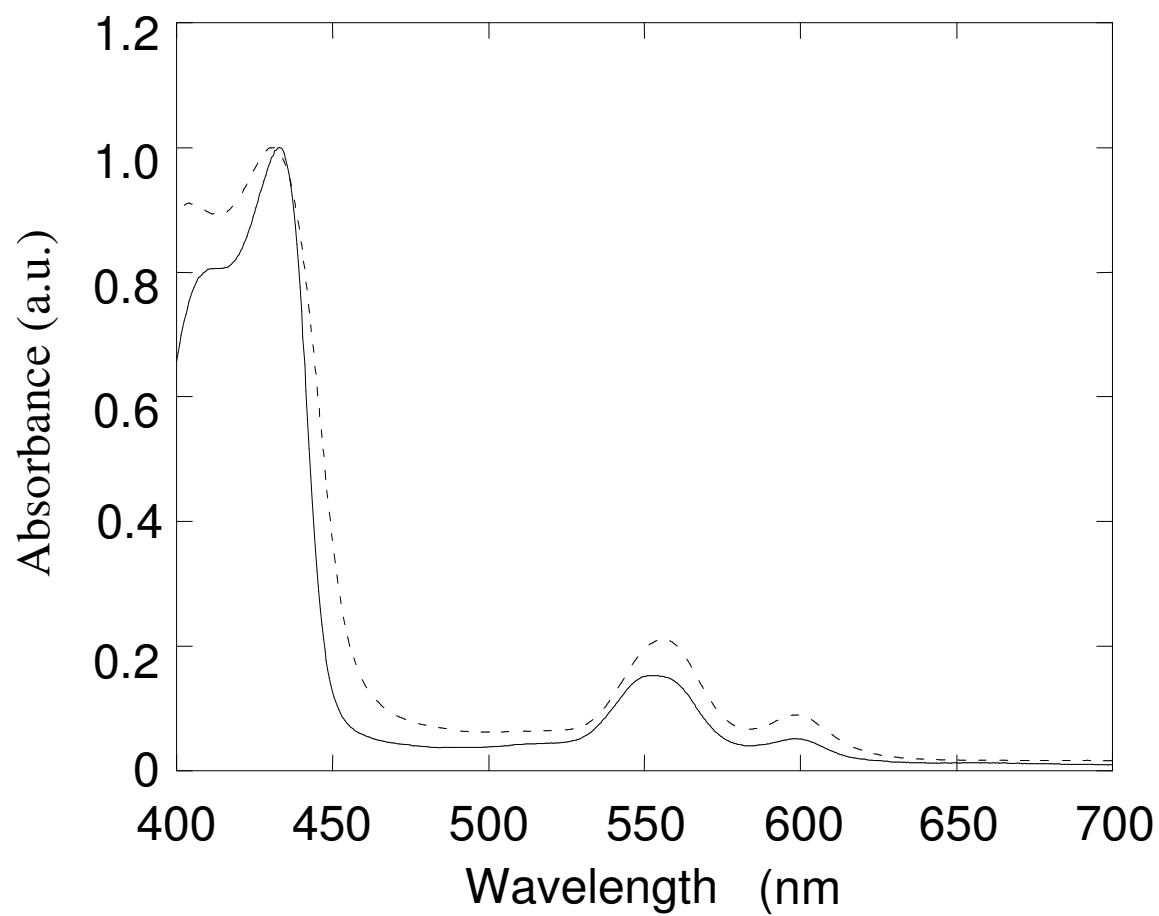


Figure S3. UV-visible absorption spectra of **2,4,6-Me/TiO₂** (solid line) and **4-H/TiO₂** (dashed line) electrodes sensitized in *t*-BuOH/ACN for 1h. The spectra are normalized.