Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.

Supporting Information

High Efficiency Solid-State Dye-Sensitized Solar Cells using Cobalt(II/III) Redox Mediator

Xiao Li Zhang[a*], Wenchao Huang[b], Anna Gu[c], Wanchun Xiang[c*], Fuzhi Huang[d], Zheng Xiao Guo[e], Yi-Bing Cheng[b,d*], Leone Spiccia[f]

[a]*School of Materials Science and Engineering, and State Centre for International Cooperation on Designer Low-Carbon & Environmental Materials, Zhengzhou University, 450001, China;*

[b] *Department of Materials Science and Engineering, Monash University, Melbourne VIC 3800, Australia;*

[c] *State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology, Luoshi Road, Wuhan, China, 430070;*

[d] *State key laboratory of advanced technologies for materials synthesis and processing, Wuhan University of Technology, Luoshi Road, Wuhan, China, 430070;*

[e] *Department of Chemistry, University College London, 20 Gordon Street, London, WC1H 0AJ, UK;*

[f]*Department of Chemistry, Monash University, Melbourne VIC 3800, Australia;*

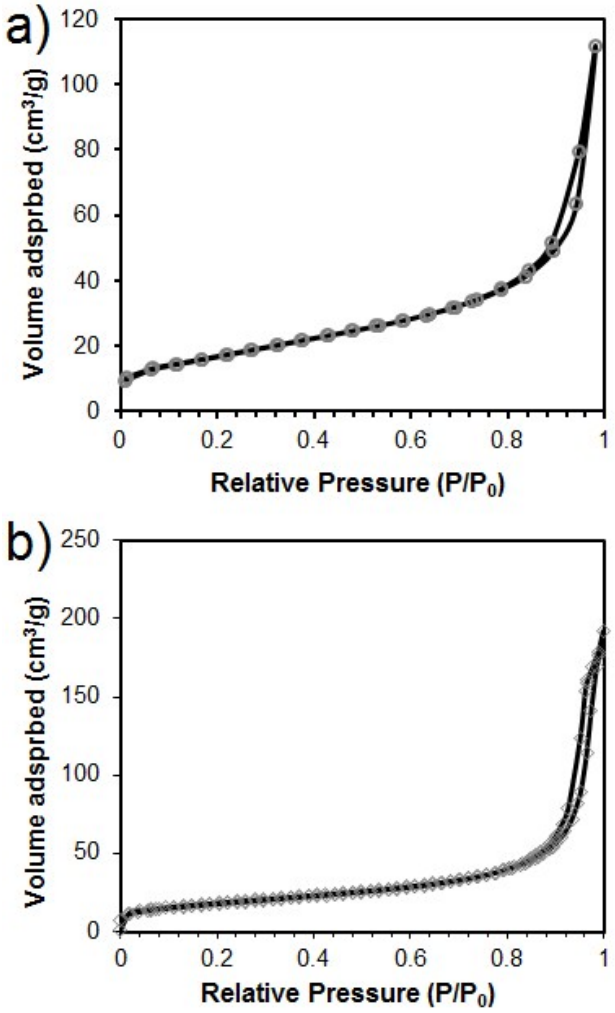

Figure S1. Nitrogen sorption isotherms of CCIC-30nm and Degussa P25 TiO_2 nanoparticles.

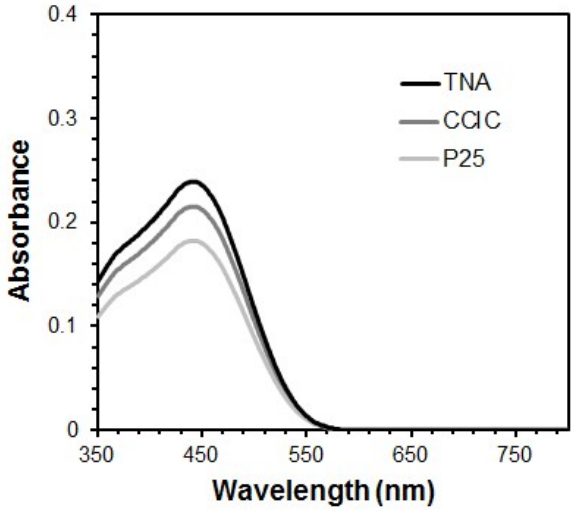

Figure S2. Absorbance spectra of the dye detached from sensitized photoanodes prepared using TNA, CCIC-30nm and P25 nanoparticles of same film thickness.

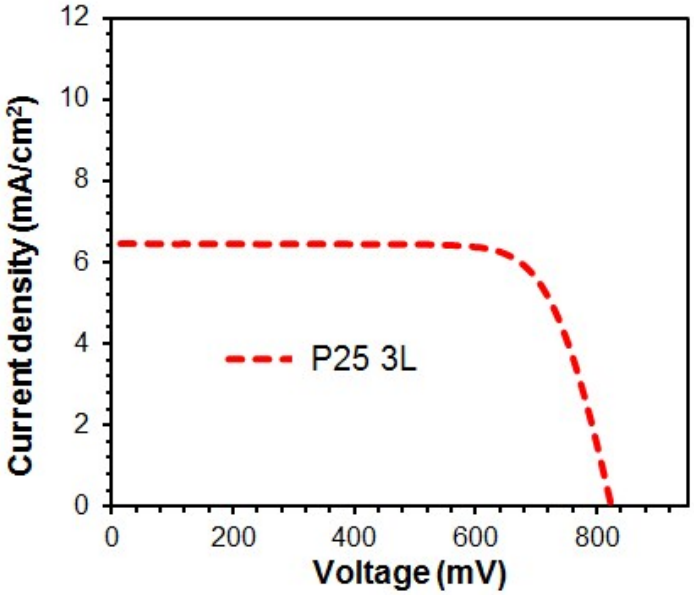

Figure S3. I-V curves of sensitized photoanode films prepared from P25.

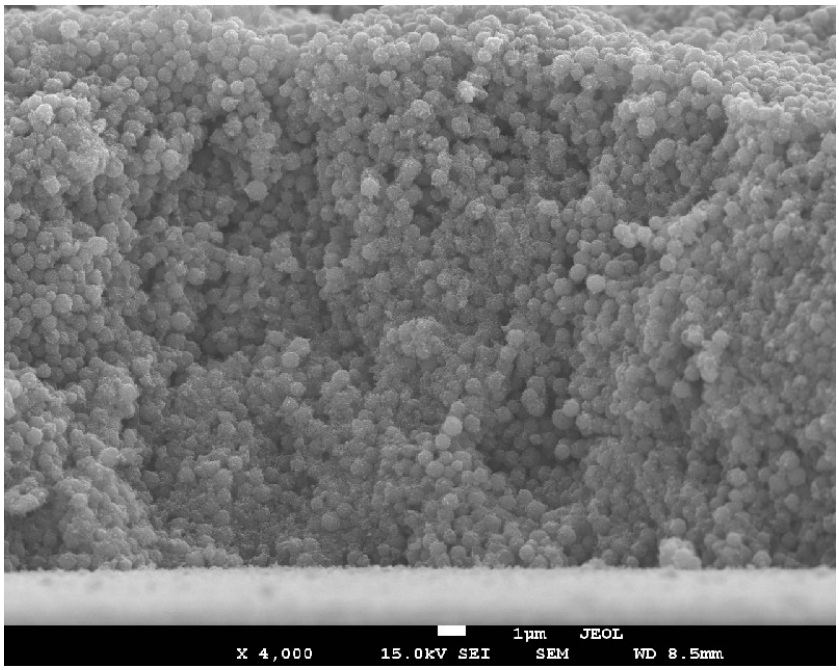

Figure S4. SEM cross-section of the photoanode electrodes prepared from mesoporous TNA.

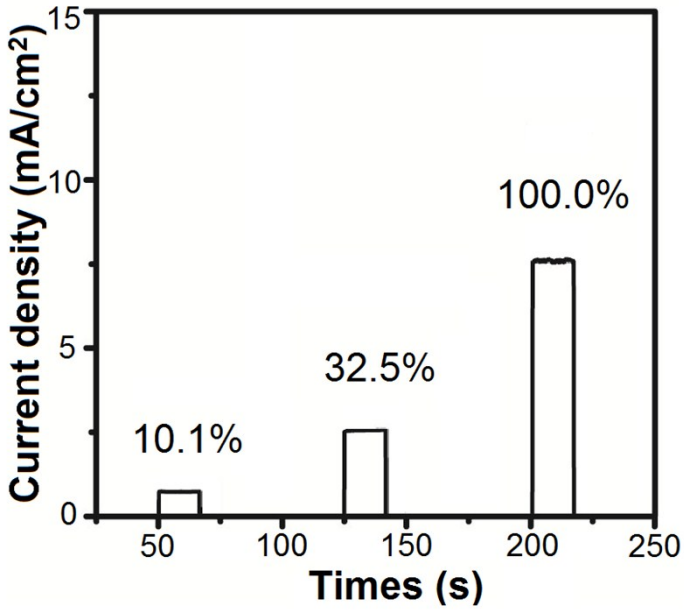

Figure S5. Photocurrent transient plots of sensitized photoanode films based on P25 nanoparticles measured under varying illumination intensities: 10.1%, 32.5% and 100% of AM 1.5 simulated light.

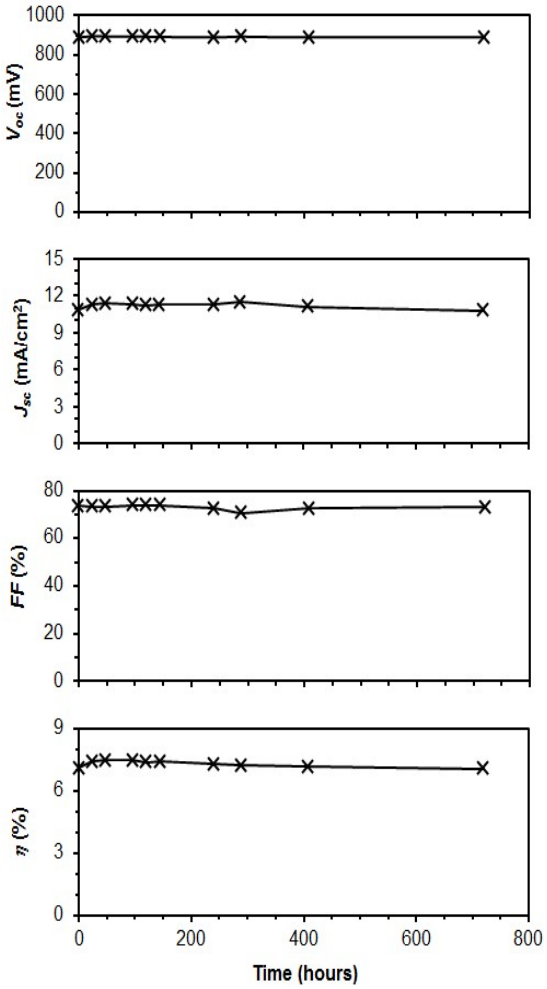

Figure S6. Performance stability testing of sensitized photoanode films prepared from nanoparticles (CCIC).