Nanoscale

ARTICLE

Supporting Information

Titania Nanobundle Networks as Dye-Sensitized Solar Cells Photoanodes

Cunku Dong,^{*a,b*} Wanchun Xiang,^{*a*} Fuzhi Huang,^{*c*} Dongchuan Fu,^{*c*} Wenchao Huang,^{*c*} Udo Bach,^{*c,d,e*} Yi-Bing Cheng,^{*c*} Xin Li^{*b*,*} and Leone Spiccia^{*a*,*}

^a School of Chemistry, Monash University, Victoria 3800, Australia.

Email: leone.spiccia@monash.edu

^b Department of Chemistry, Harbin Institute of Technology, Harbin 150090, China.

Email: lixin@hit.edu.cn

^c Department of Materials Engineering, Monash University, Victoria 3800, Australia

^d Commonwealth Scientific and Industrial Research Organization, Materials Science and Engineering, Flexible

Electronics Theme, Clayton South, Victoria 3169, Australia

^e Melbourne Centre for Nanofabrication, 151 Wellington Road, Clayton, VIC 3168, Australia

Table S1	. Photovoltaic	performance of	of TiO ₂ NN-base	d DSCs prepa	ared with o	different thic	knesses of	f the
active tita	ania layer							

Film thickness	$V_{ m oc}$	$J_{ m sc}$			
(µm)	(mV)	(mA/cm ²)	Fill Factor	η(%)	
3.0±0.1	895±5	11.73±0.06	0.74 ± 0.03	7.70±0.03	
6.0±0.1	894±4	10.35±0.12	0.68±0.02	6.35±0.15	
3.0±0.1	833±4	9.08±0.14	0.73 ± 0.01	5.48 ± 0.05	
6.0±0.2	847±4	10.00±0.13	0.72±0.01	6.08±0.16	
9.0±0.2	816±9	10.11±0.20	0.70 ± 0.02	5.80±0.24	
	Film thickness (μm) 3.0±0.1 6.0±0.1 3.0±0.1 6.0±0.2 9.0±0.2	Film thickness V_{oc} (µm)(mV) 3.0 ± 0.1 895 ± 5 6.0 ± 0.1 894 ± 4 3.0 ± 0.1 833 ± 4 6.0 ± 0.2 847 ± 4 9.0 ± 0.2 816 ± 9	Film thickness V_{oc} J_{sc} (µm)(mV)(mA/cm²) 3.0 ± 0.1 895 ± 5 11.73 ± 0.06 6.0 ± 0.1 894 ± 4 10.35 ± 0.12 3.0 ± 0.1 833 ± 4 9.08 ± 0.14 6.0 ± 0.2 847 ± 4 10.00 ± 0.13 9.0 ± 0.2 816 ± 9 10.11 ± 0.20	Film thickness V_{oc} J_{sc} (mW)Fill Factor(µm)(mV)(mA/cm²)Fill Factor 3.0 ± 0.1 895 ± 5 11.73 ± 0.06 0.74 ± 0.03 6.0 ± 0.1 894 ± 4 10.35 ± 0.12 0.68 ± 0.02 3.0 ± 0.1 833 ± 4 9.08 ± 0.14 0.73 ± 0.01 6.0 ± 0.2 847 ± 4 10.00 ± 0.13 0.72 ± 0.01 9.0 ± 0.2 816 ± 9 10.11 ± 0.20 0.70 ± 0.02	



Fig. S1. Recombination resistance (R_{cr}) for DSCs based on TiO₂NN and P25 photoelectrodes MK2 + [Co(bpy)₃]^{2+/3+} electrolytes and N179 + I⁻/I₃⁻ electrolytes

Journal Name



Fig. S2. Electron transport resistance (R_t) for DSCs based on TiO₂NN and P25 photoelectrodes MK2 + [Co(bpy)₃]^{2+/3+} electrolytes and N179 + I⁻/I₃⁻ electrolytes



Fig. S3. Chemical capacitance (C_{μ}) for DSCs based on TiO₂NN and P25 photoelectrodes MK2 + $[Co(bpy)_3]^{2+/3+}$ electrolytes and b) N179 + I^-/I_3^- electrolytes



Fig. S4. Electron diffusion coefficient (D_n) for DSCs based on TiO₂NN and P25 photoelectrodes MK2 + $[Co(bpy)_3]^{2+/3+}$ electrolytes and b) N179 + Γ/I_3^- electrolytes