Electronic Supplementary Material (ESI) for RSC Advances.

Synthesis of micrometer-sized hierarchical rutile TiO_2 flowers and their application in dye sensitized solar cells

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S1. SEM image of rutile TiO_2 flowers synthesized at 180 °C (quenched sample)

S2. EDS spectrum for TiO_2 flowers

S3. TEM images of nanorod clusters of TiO_2 flowers

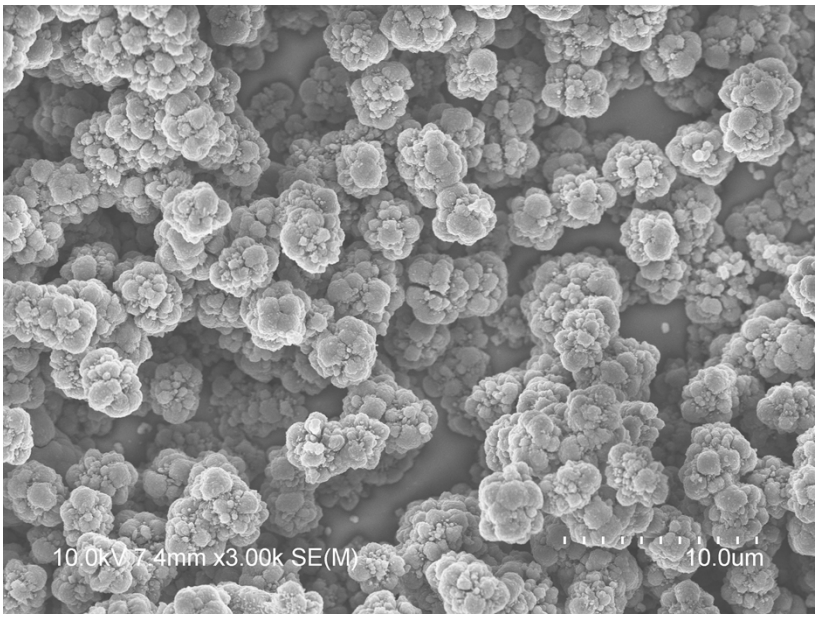
S4. Surface roughness values of TiO_2 flowers thin films from optical profilometry

S5. Diffused reflectance spectra of samples T1, T2 and T3

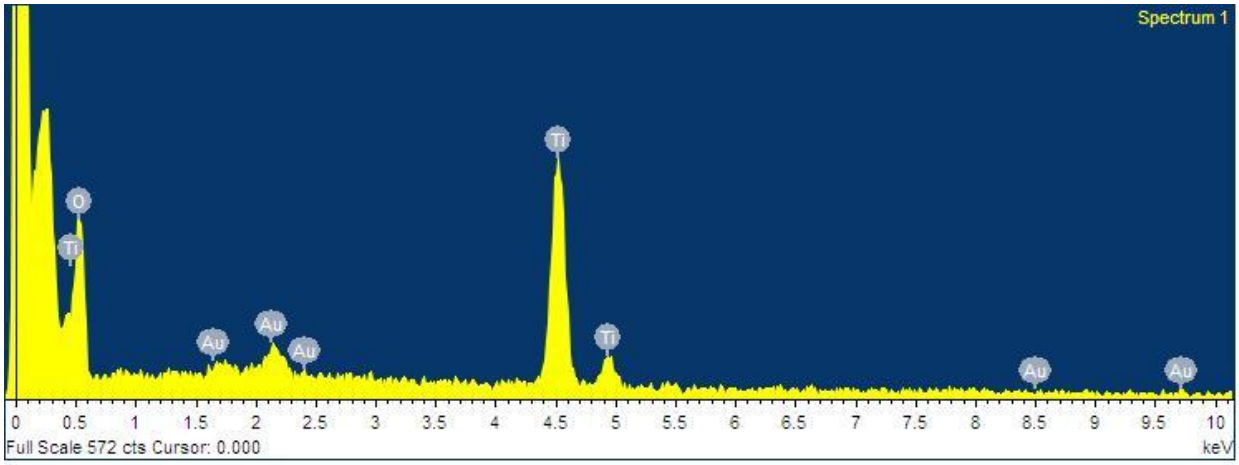
S6. Bode plots of DSSC photoanodes of TiO_2 flowers prepared at 180, 210 °C and anatase TiO_2 nanoparticles (TNP)

S7. Amount of adsorbed N719 dye concentration in TiO_2 flowers synthesized at 180 ºC, 210 ºC and TNP films

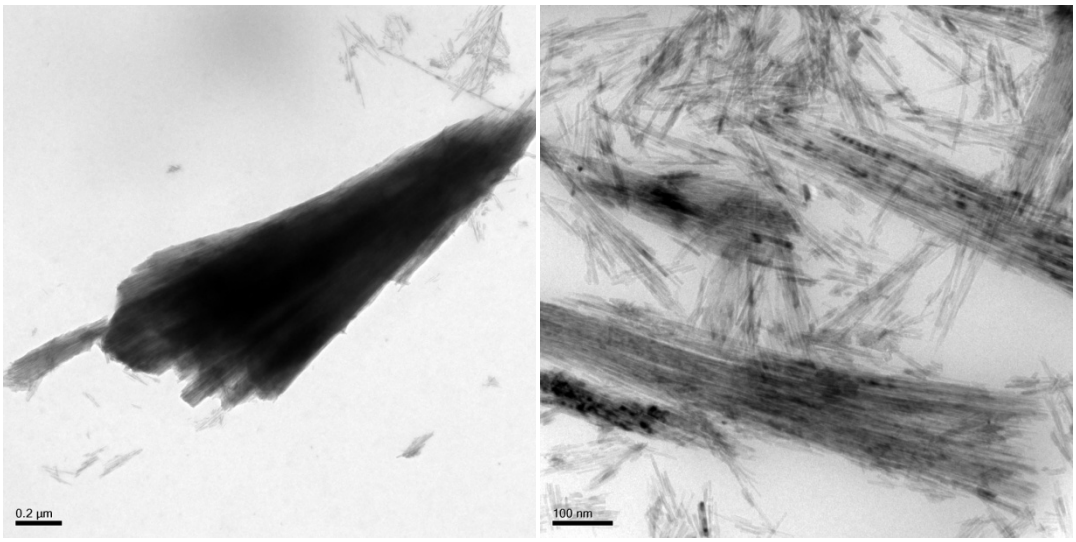
S8. Amount of adsorbed N719 dye concentration in TiO_2 flowers synthesized in various cooling conditions



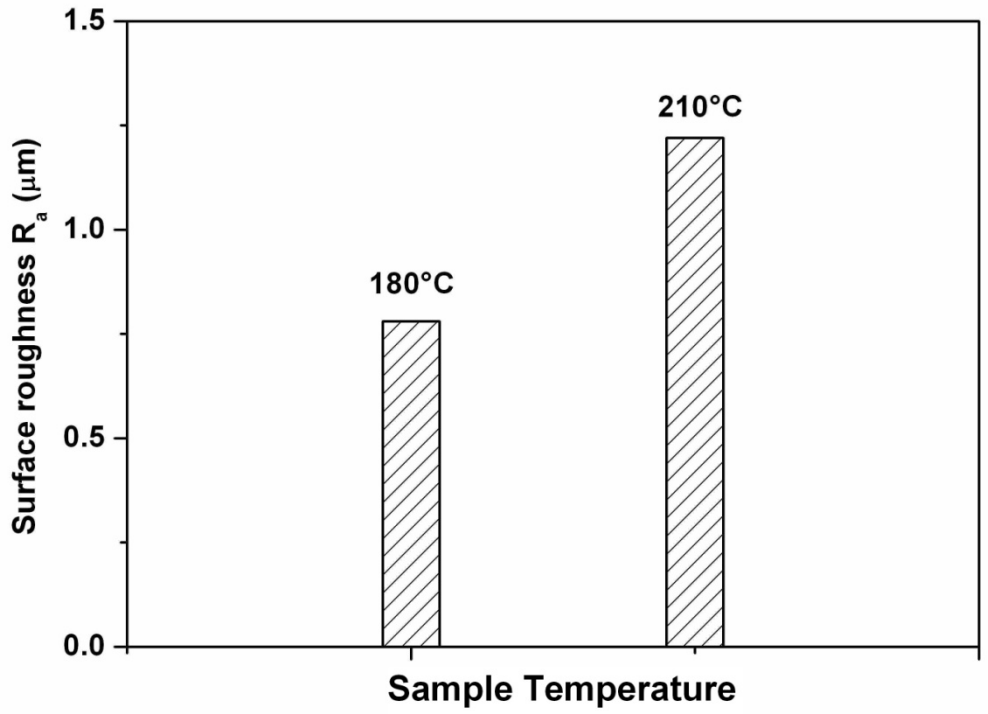
S1. SEM image of rutile TiO_2 flowers synthesized at 180°C (quenched sample)



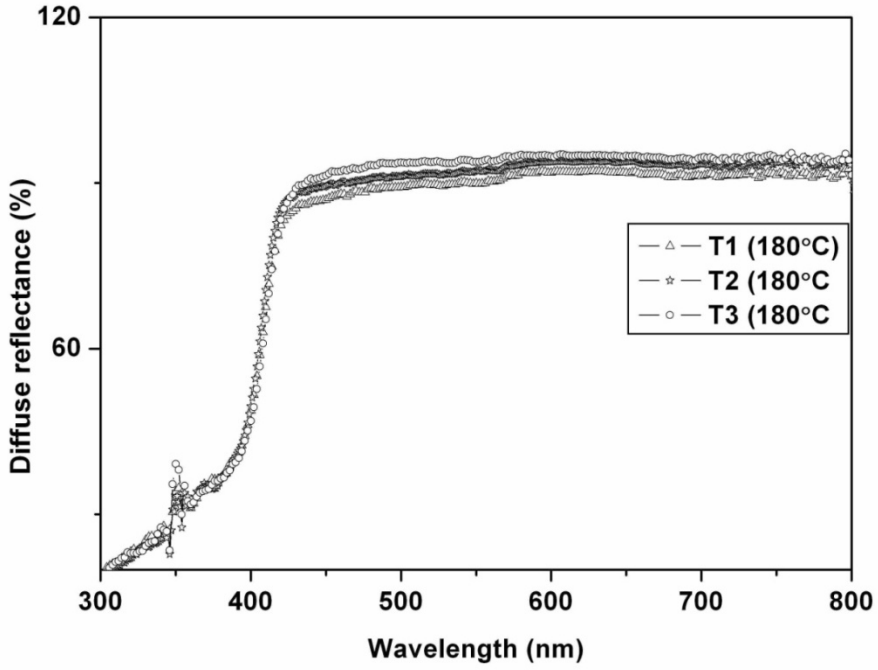
S2. EDS spectrum for TiO_2 flowers



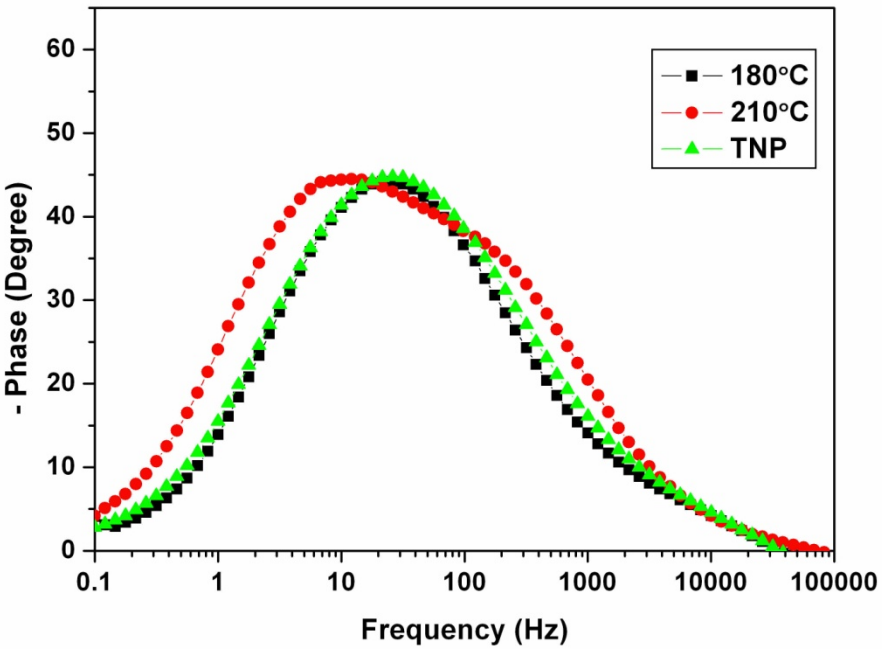
S3. TEM images of nanorod clusters of TiO_2 flowers



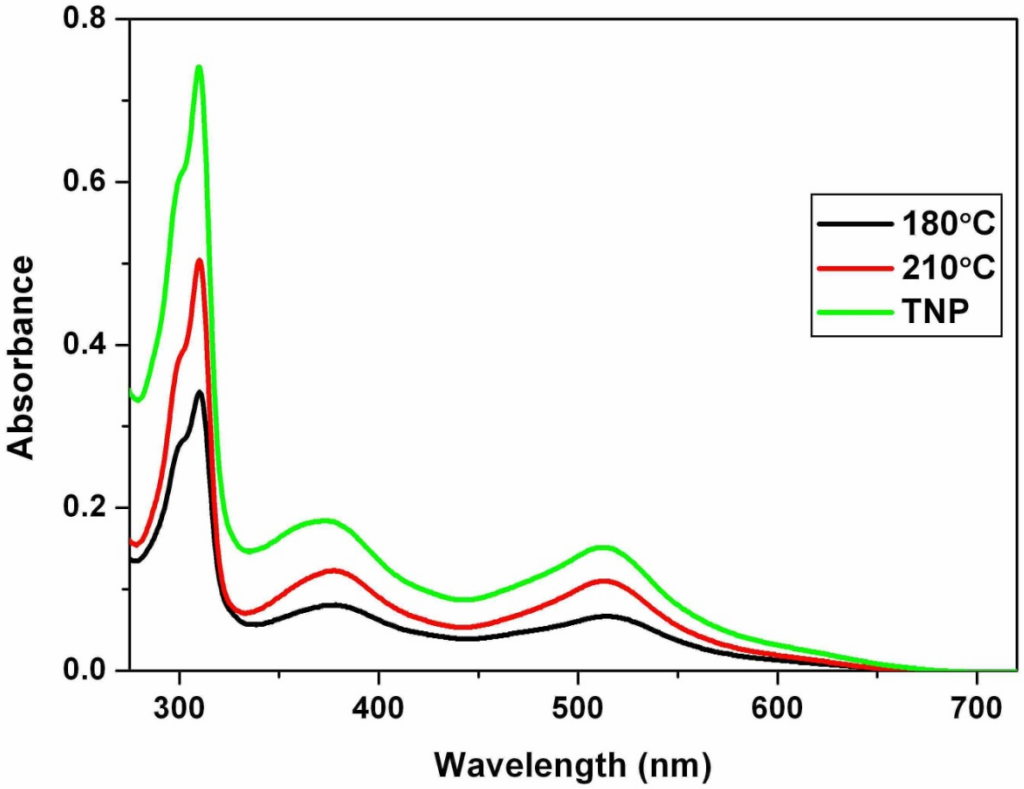
S4. Surface roughness values of TiO_2 flowers thin films from optical profilometry



S5. Diffused reflectance spectra of samples T1, T2 and T3

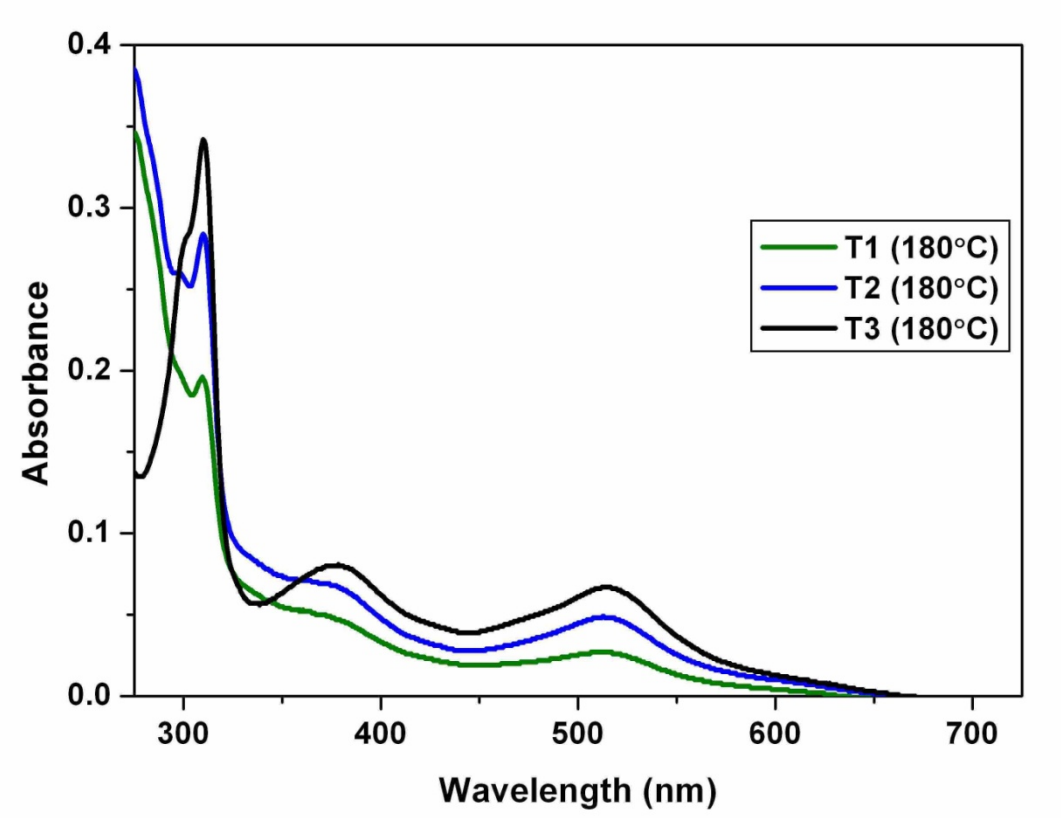


S6. Bode plots of DSSC photoanodes of TiO_2 flowers prepared at 180, 210 °C and TiO_2 nanoparticles (TNP)



Hydrothermal reaction temperature	J_{sc} (mA/cm^2)	V_{oc} (V)	FF	η (%)	Adsorbed N719 dye concentration (x 10^{-6} mol cm^{-2})
180°C	8.14	0.64	0.51	2.66	4.75
210°C	10.04	0.68	0.45	3.07	7.73
TNP	14.86	0.74	0.60	6.59	10.4

S7. Amount of adsorbed N719 dye concentrations in TiO_2 flowers synthesized at 180 ºC, 210 ºC and TNP films



Sample of various cooling condition	J_{sc} (mA/cm^2)	V_{oc} (V)	FF	η (%)	Adsorbed N719 dye concentration (x 10^{-6} mol cm^{-2})
T1 (180°C)	3.83	0.58	0.47	1.05	1.91
T2 (180°C)	5.72	0.61	0.50	1.76	3.26
T3 (180°C)	8.14	0.64	0.51	2.65	4.75

S8. Amount of adsorbed N719 dye concentrations in TiO_2 flowers synthesized in various cooling conditions