Supporting Information

for

Amyloid-Like Peptide Nanofiber Templated Titania Nanostructures as Dye Sensitized Solar Cell Anodic Materials

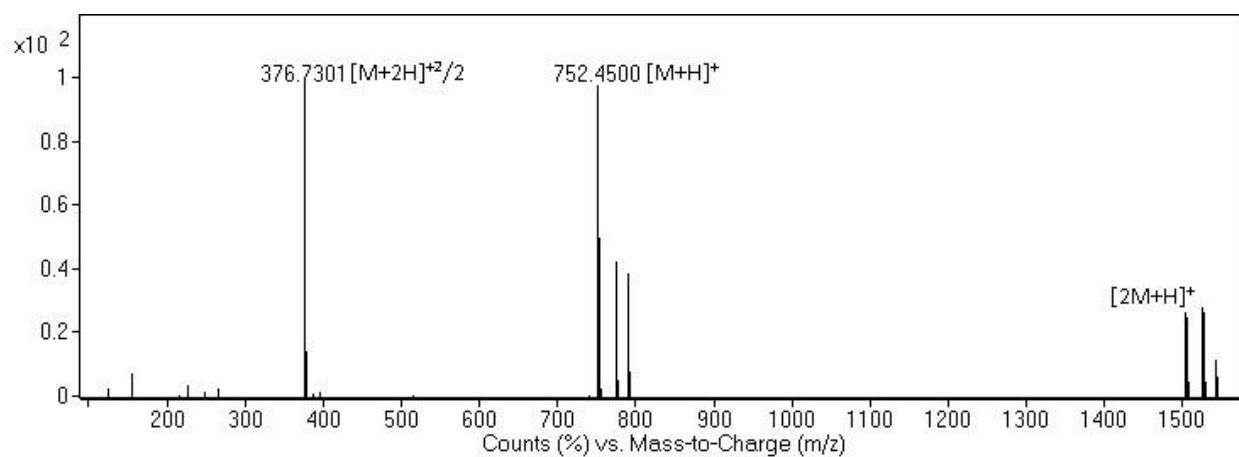*Figure S1. Mass spectrum of Ac-KFFAAK-Am (Peptide-1) molecule. MS: (m/z) calculated 751.4381, [M+H]+ found 752.4500, [M+2H]+2/2 found 376.7301.*

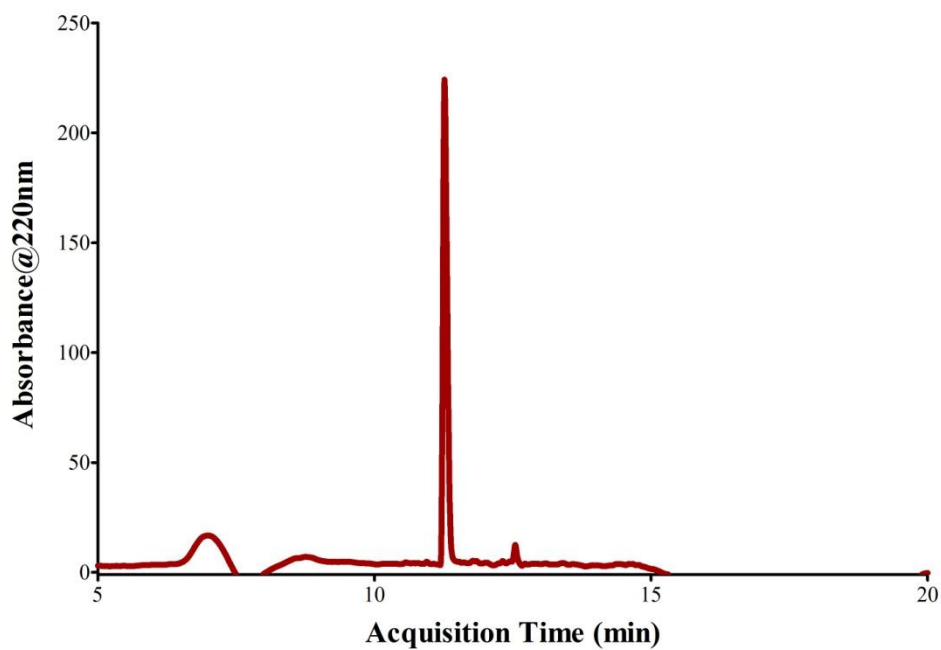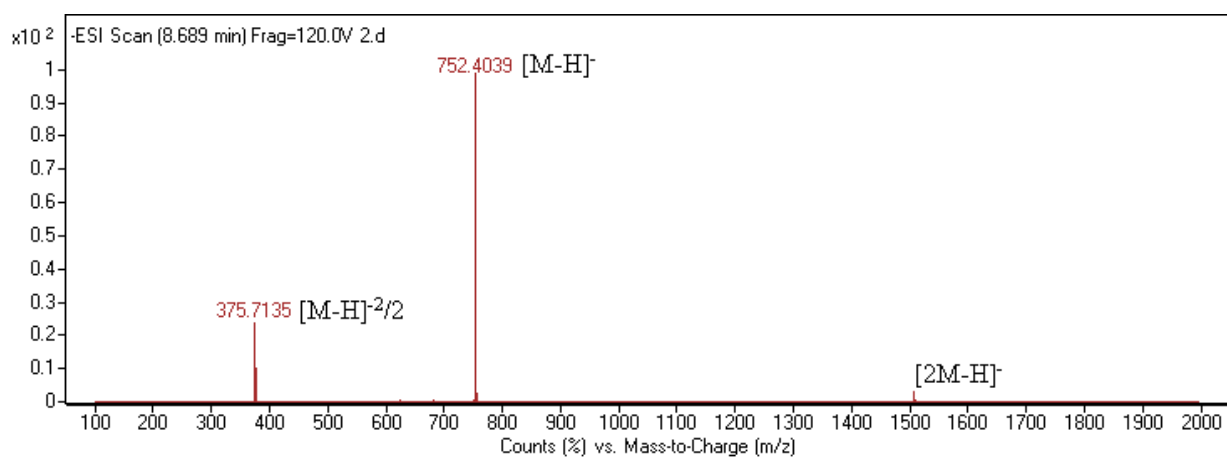**Figure S2.** *Liquid chromatogram of Ac-KFFAAK-Am peptide.*

Figure S3. *Mass spectrum of Ac-EFFAAE-Am (Peptide-2) molecule. MS: (m/z) calculated 753.3334, [M-H]⁻ found 752.4039, [M-2H]⁻²/2 found 375.7135.*
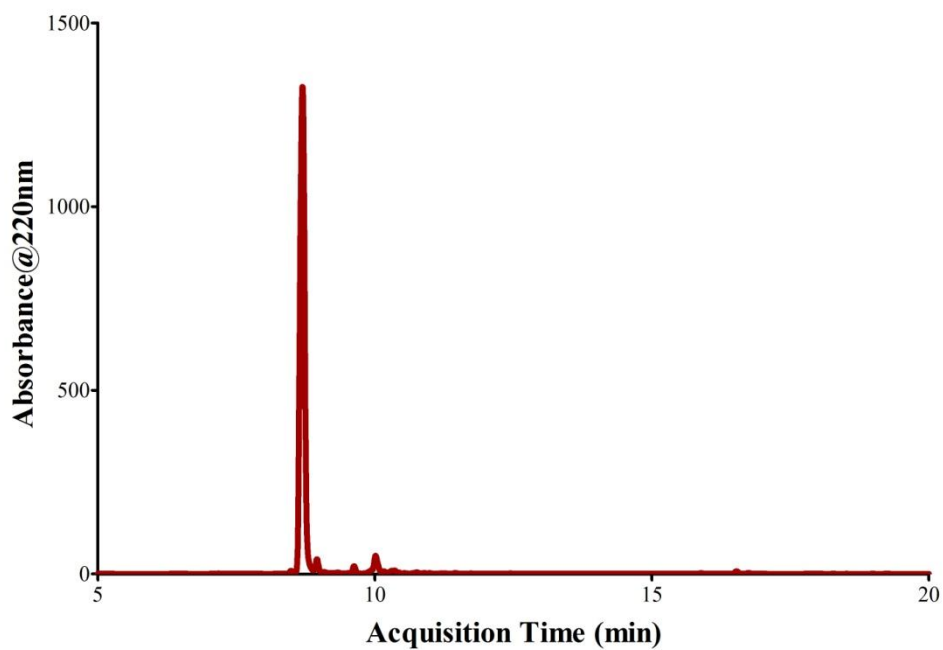
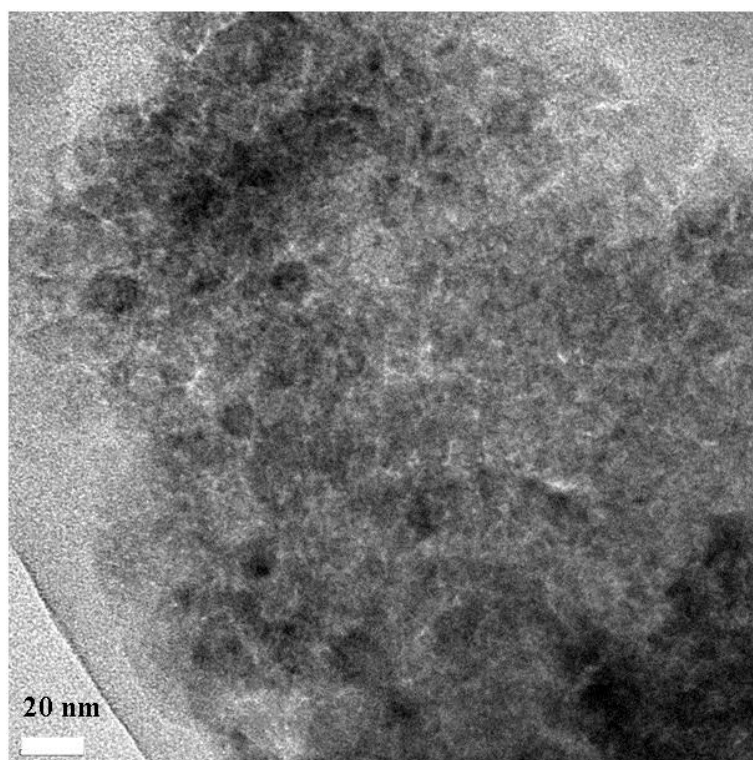**Figure S4.** *Liquid chromatogram of Ac-EFFAAE-Am peptide.*

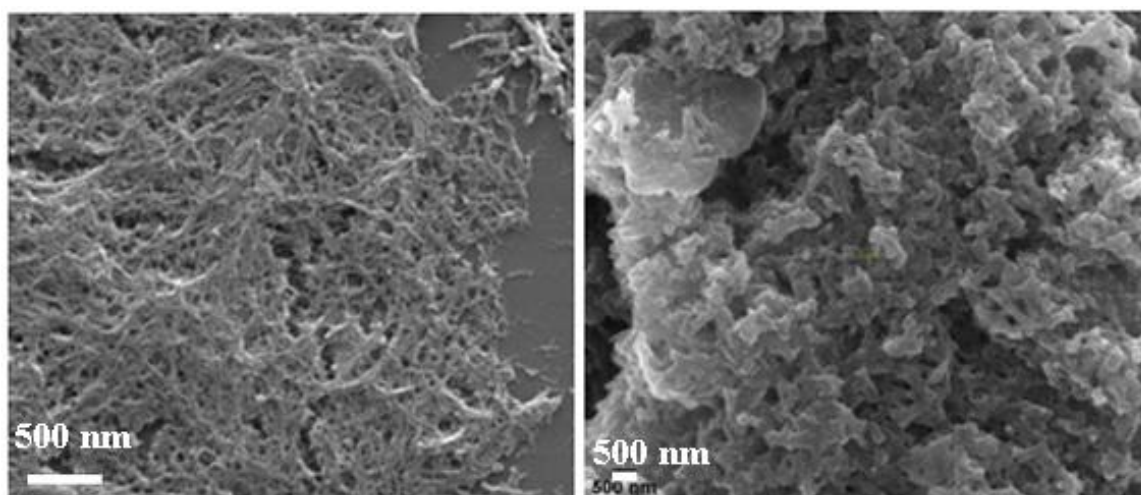**Figure S4.** *TEM image of template-free synthesized titania.*

Figure S5. *SEM images of calcined one-dimensional titania structures on FTO. a) Peptide 1 templated titania nanotube network ,b) peptide 2 templated nanowire network.*
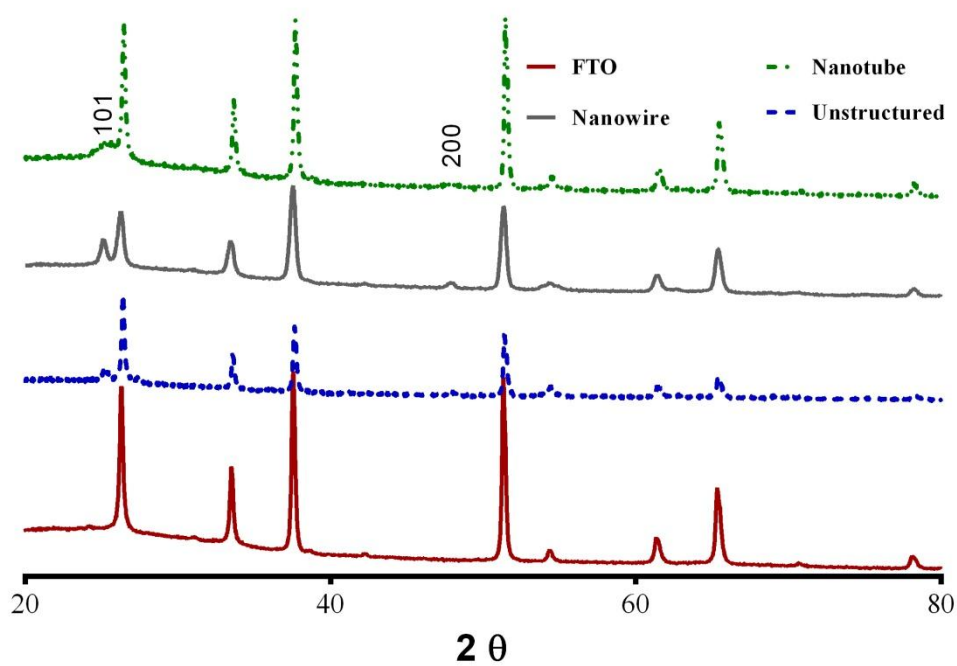

Figure S6. *XRD spectra of template-free TiO$_2$(blue), peptide 1templated TiO$_2$ (green), peptide 2 templated TiO$_2$ (grey) on FTO and FTO only (red).*
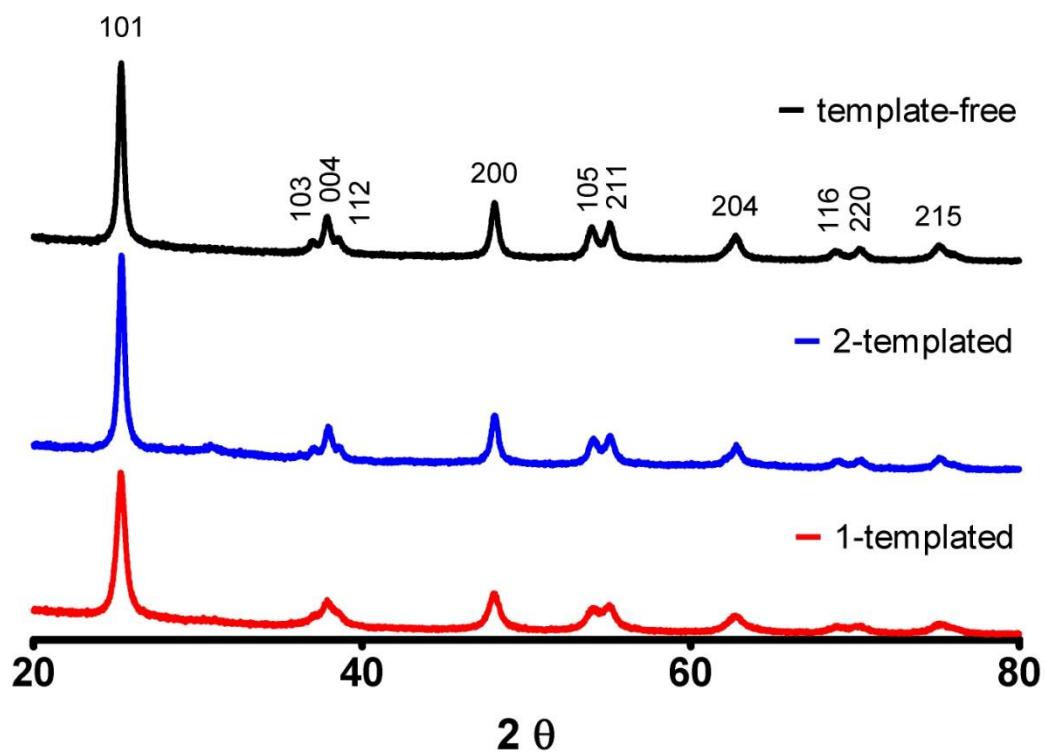
Figure S8. XRD spectra of template-free TiO_2 (black), peptide 1 templated TiO_2 (blue), peptide 2 templated TiO_2 (red) powders.

MBET summary

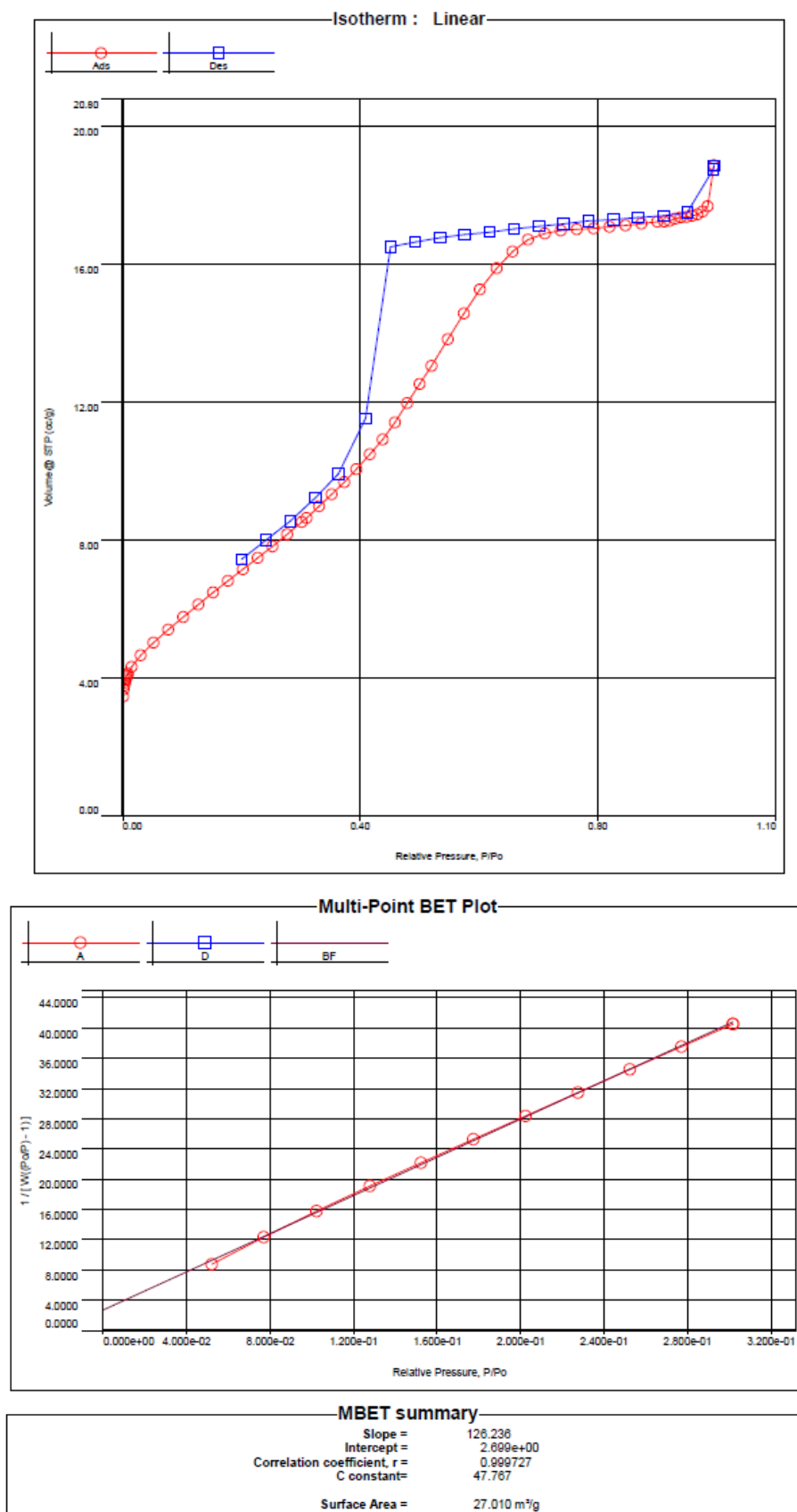|	
Slope =	126.236
Intercept =	2.699e+00
Correlation coefficient, r =	0.999727
C constant=	47.767
Surface Area =	27.010 m²/g

Figure S9. *a) The isothermal histogram and, b) Multi-Point BET analysis based on the histogram of template-free TiO₂.*
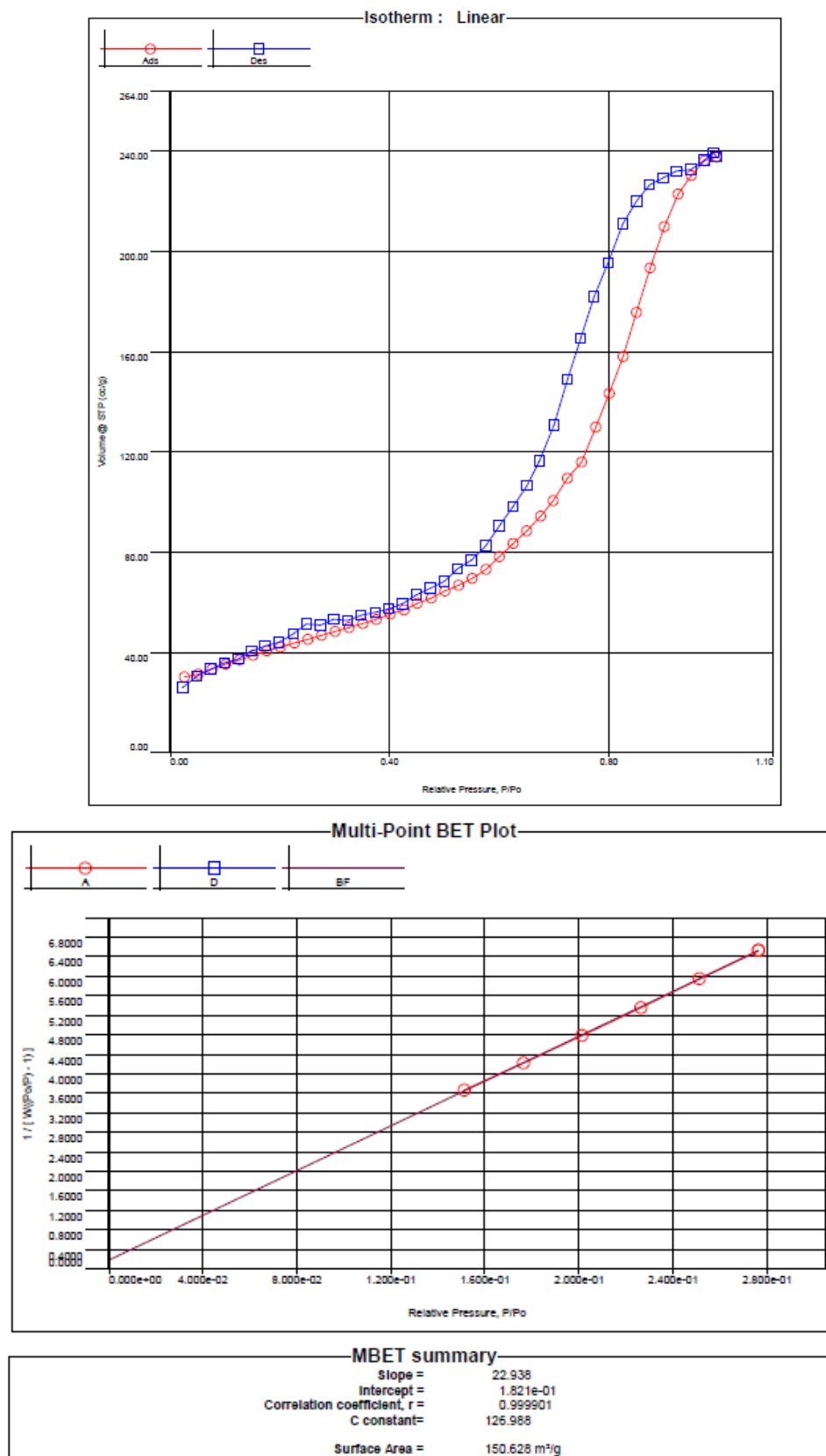
Figure S10. *a) The isothermal histogram and, b) Multi-Point BET analysis based on the histogram of peptide1 templated TiO$_2$ nanotube network.*
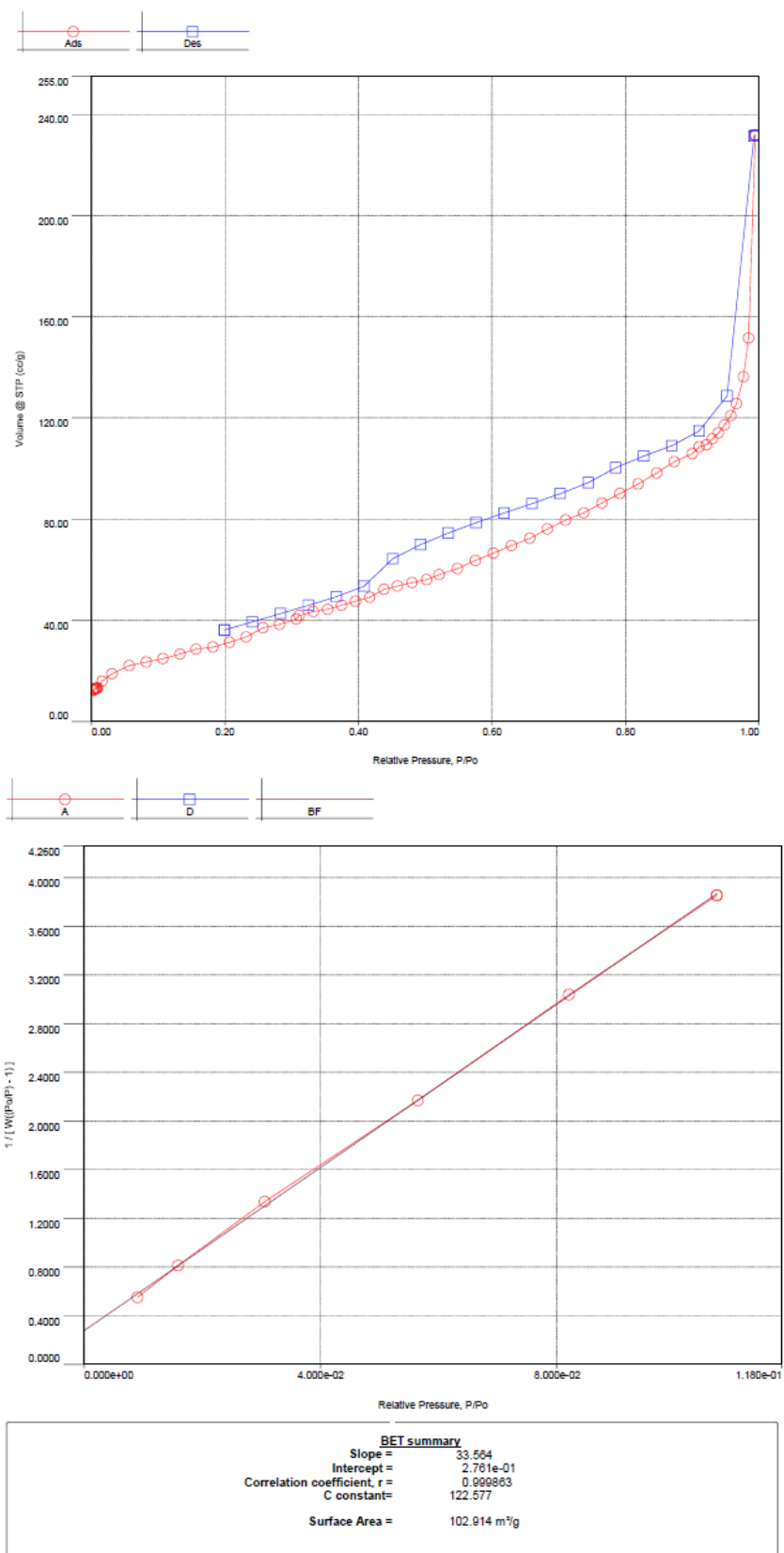
Figure S7. a) The isothermal histogram and, b) Multi-Point BET analysis based on the histogram of peptide 2 templated TiO$_2$ nanowire network.
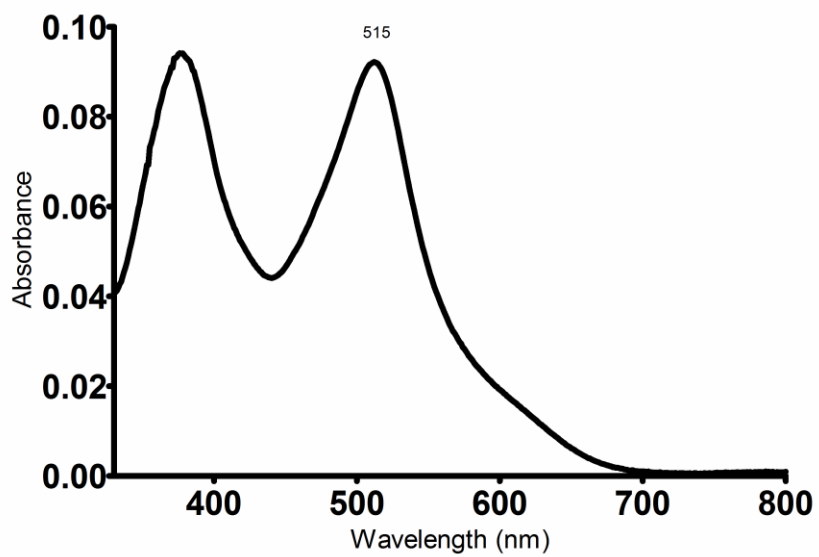
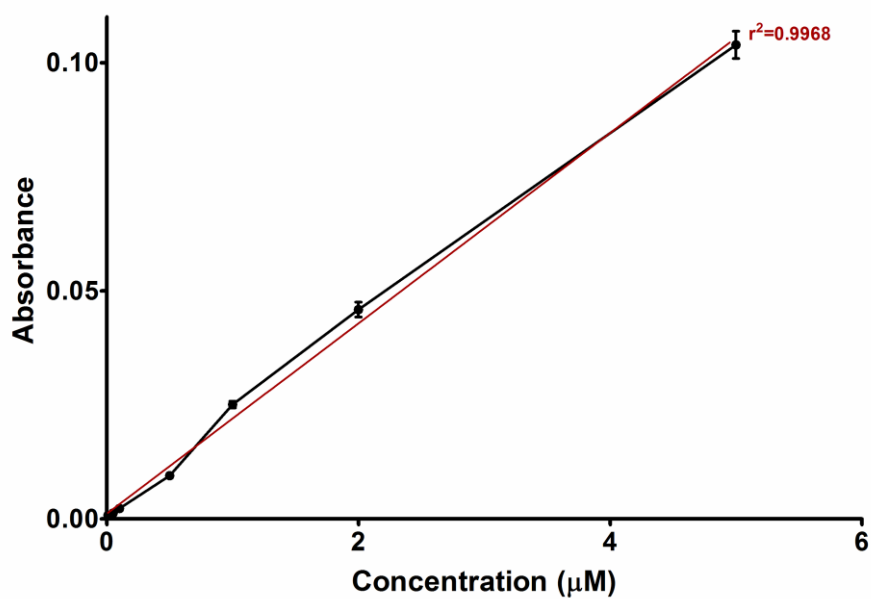**Figure S8.** *UV-Vis absorption spectrum of N719 sensitizer dye.*

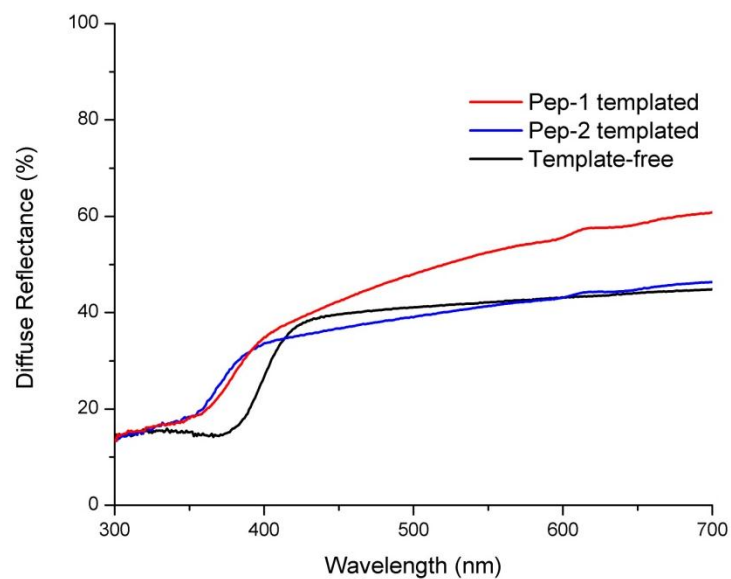**Figure S9.** *Concentration and absorbance graph of N719.*

Figure S 14. *Diffuse reflectance spectra of TiO$_2$ materials.*

Table S1. *Relative efficiencies of different devices normalized to dye and titania amounts.*

Sample	Peptide-1 templated TiO$_2$	Peptide-2 templated TiO$_2$	Template-free TiO$_2$
% Efficiency /(Conc$_{Dye}$x Conc$_{TiO2}$)	3.59	2.18	1.00