

Photocatalytic Hydrogen Evolution Over Cyanine Sensitized Ag/ TiO₂

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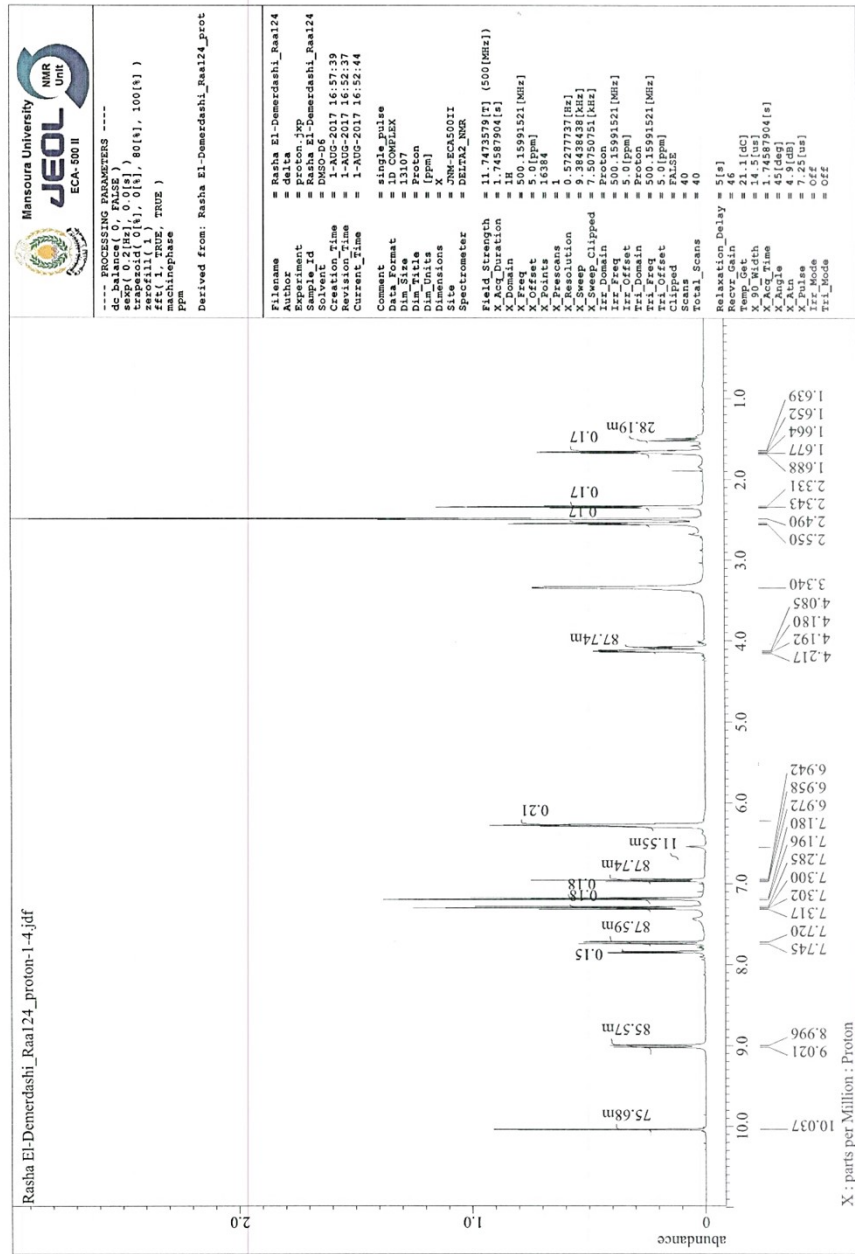


Figure S1(b): ^1H NMR of compound 4 (C1)

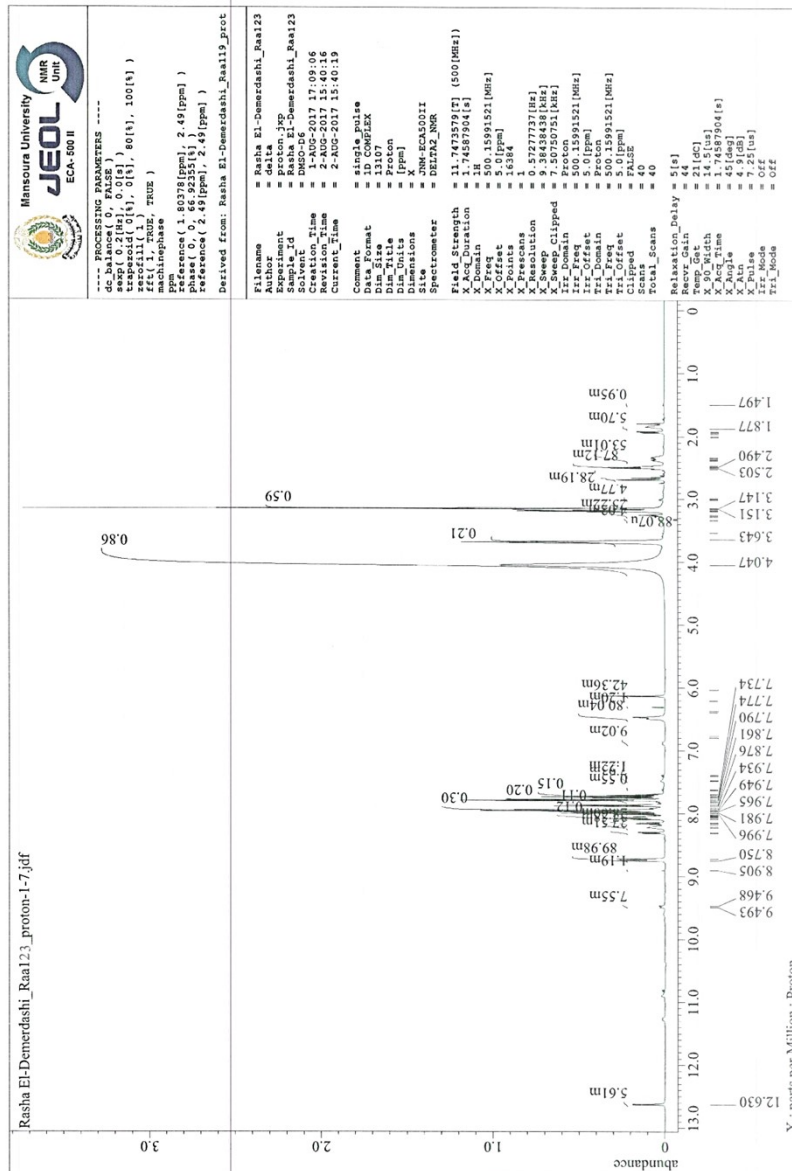


Figure S1(c): ¹H NMR of compound 5 (C2)

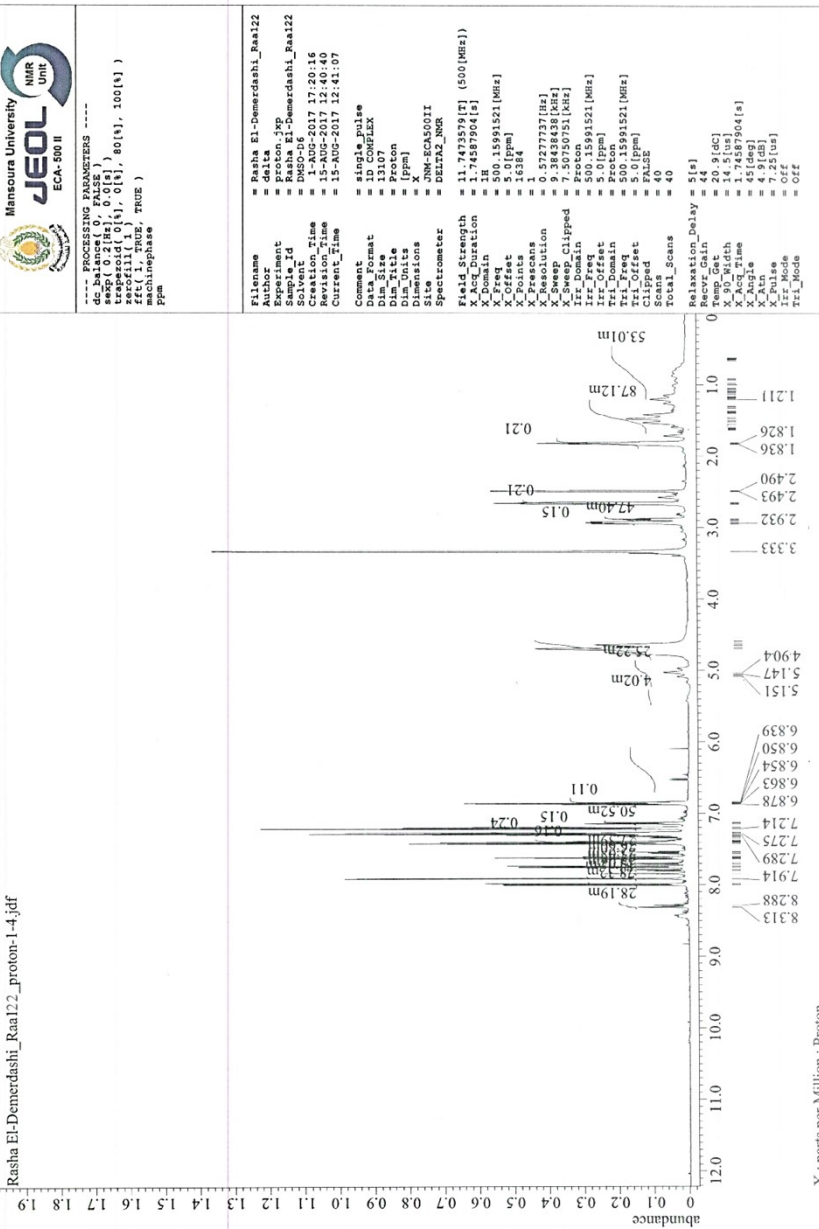


Figure S1(d):¹ H NMR of compound 6 (C4)

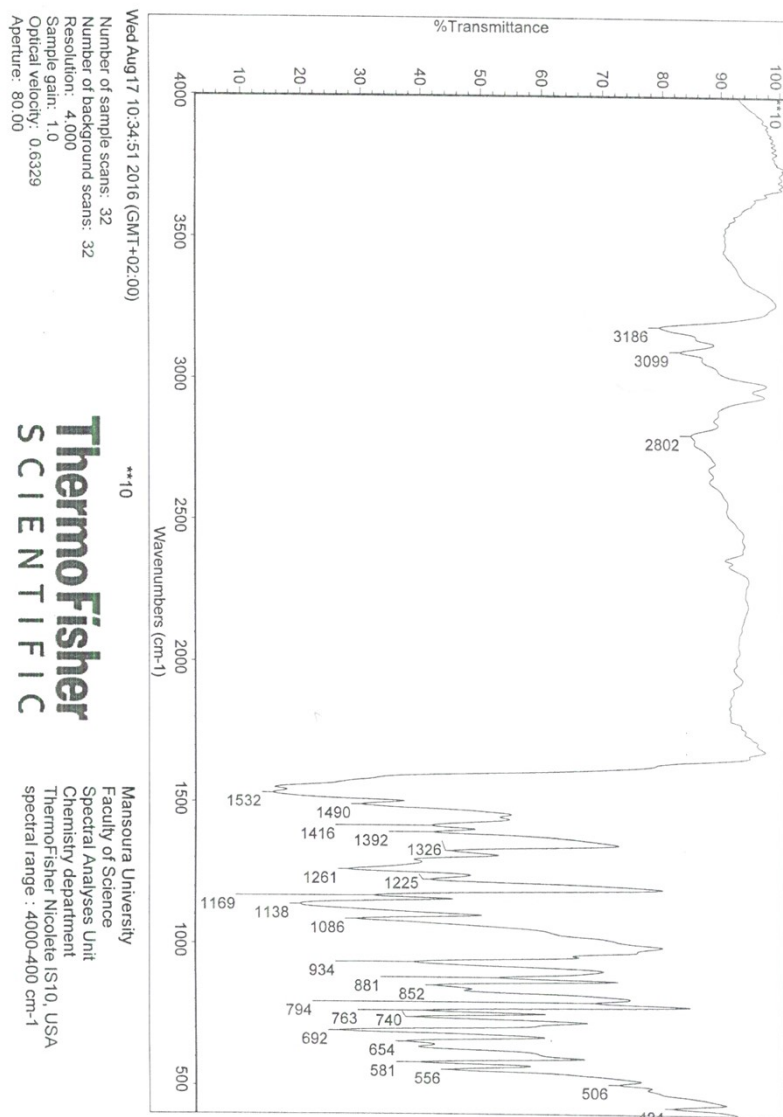


Figure S1(e):IR spectrum of compound 3 (C3)

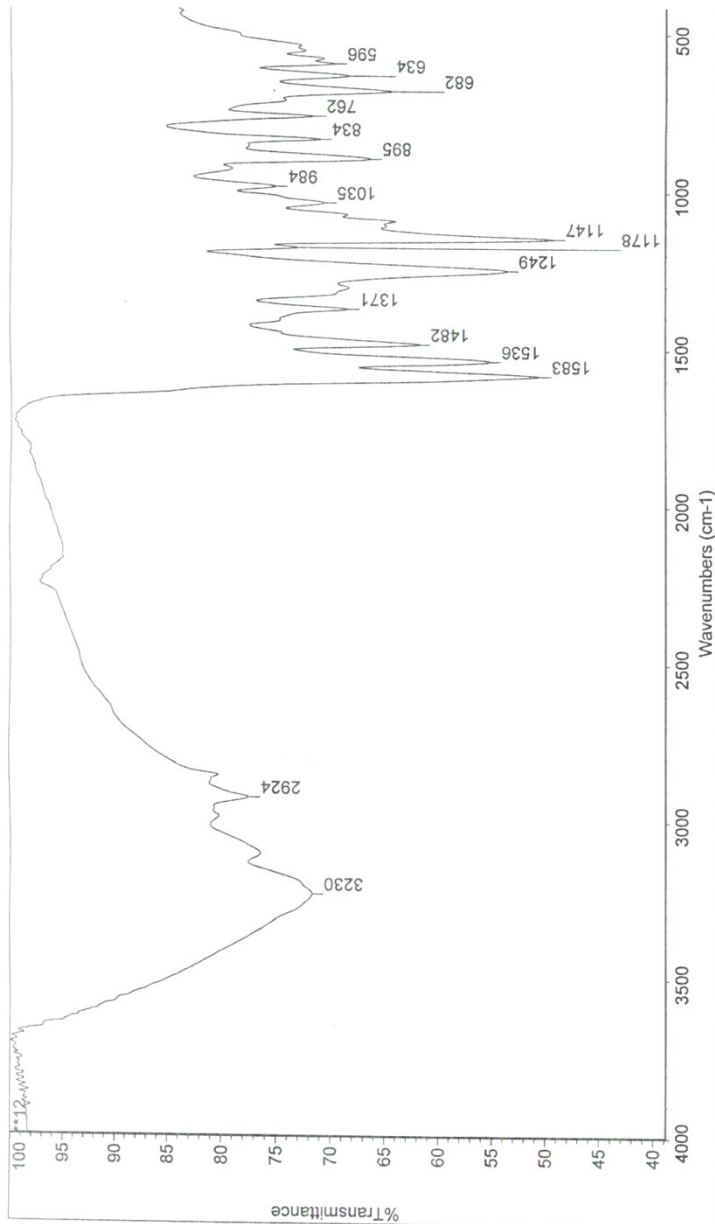


Figure S1(f):IR spectrum of compound 6 (C4)

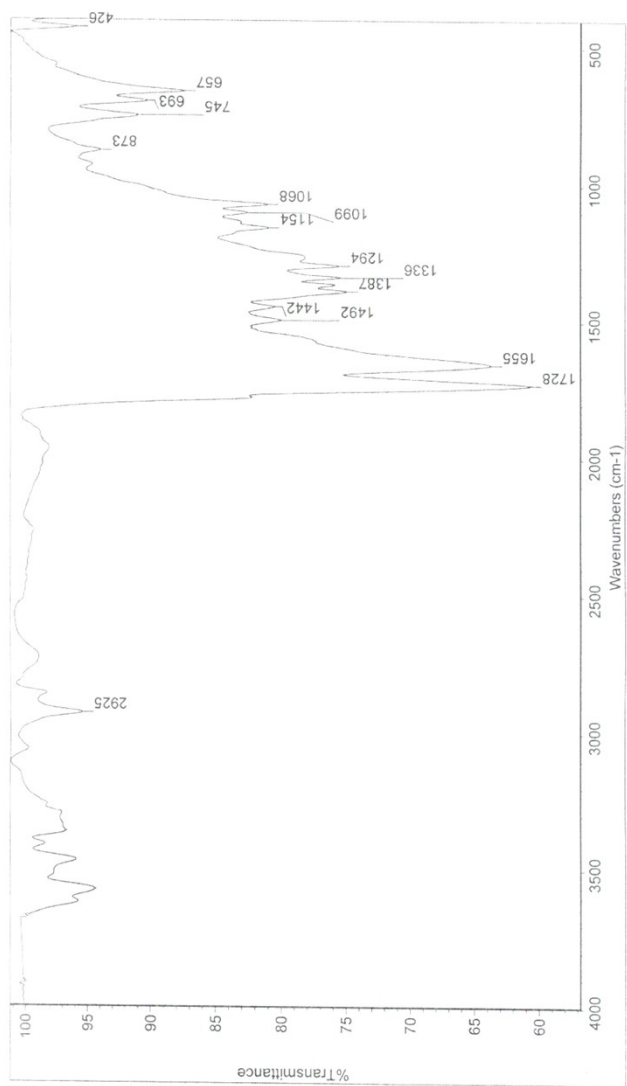
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Number of sample scans: 32
 Number of background scans: 32
 Resolution: 4.000
 Sample gain: 1.0
 Optical velocity: 0.6329
 Aperture: 80.00

Mansoura University
 Faculty of Science
 Spectral Analyses Unit
 Chemistry department
 ThermoFisher Nicolette IS10, USA
 spectral range : 4000-400 cm⁻¹

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Sat Sep 10 13:22:05 2016 (GMT+02:00)

Number of sample scans: 32
Number of background scans: 32
Resolution: 4.000
Sample gain: 1.0
Optical velocity: 0.6329
Aperture: 80.00

Mansoura University
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spectral range : 4000-400 cm⁻¹

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Figure S1(g):IR spectrum of compound 4 (C1)

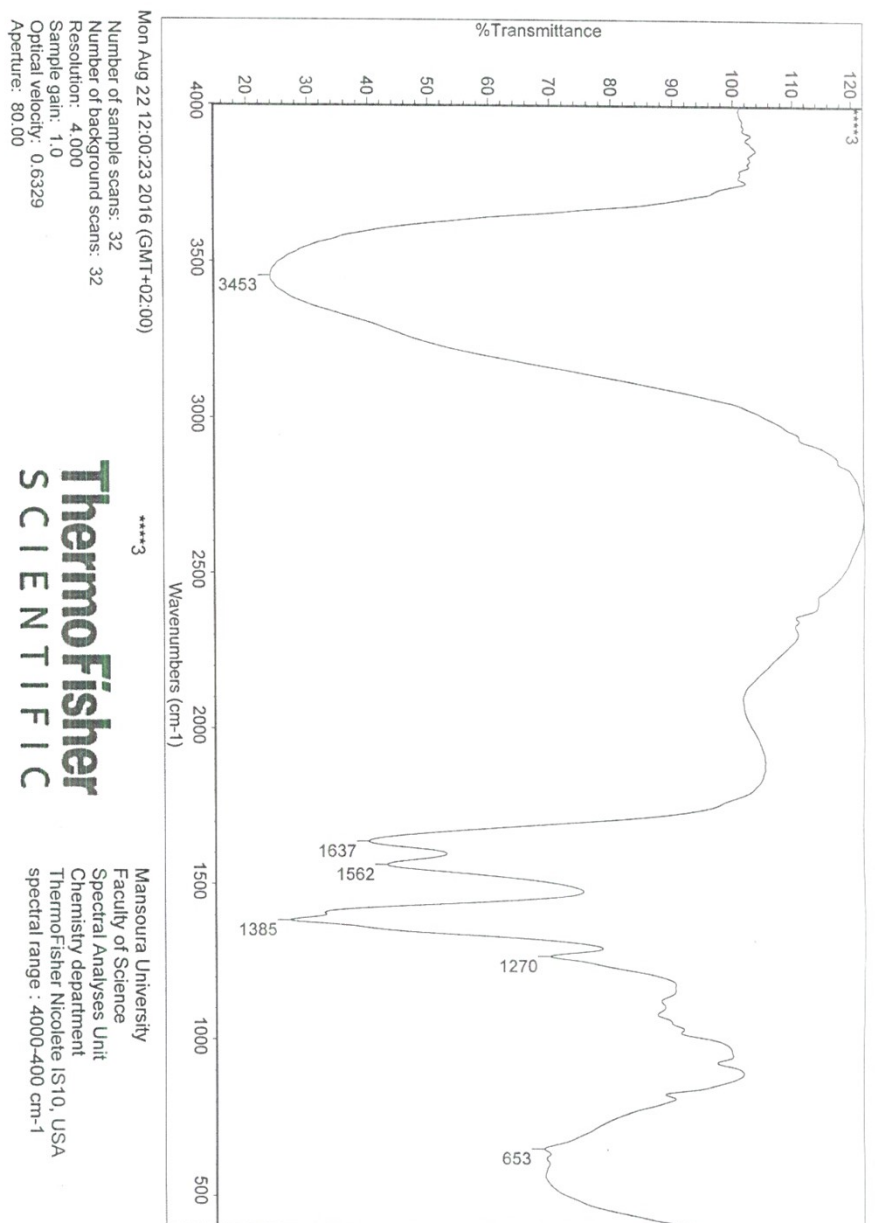


Figure S1(h):IR spectrum of compound 5 (C2)

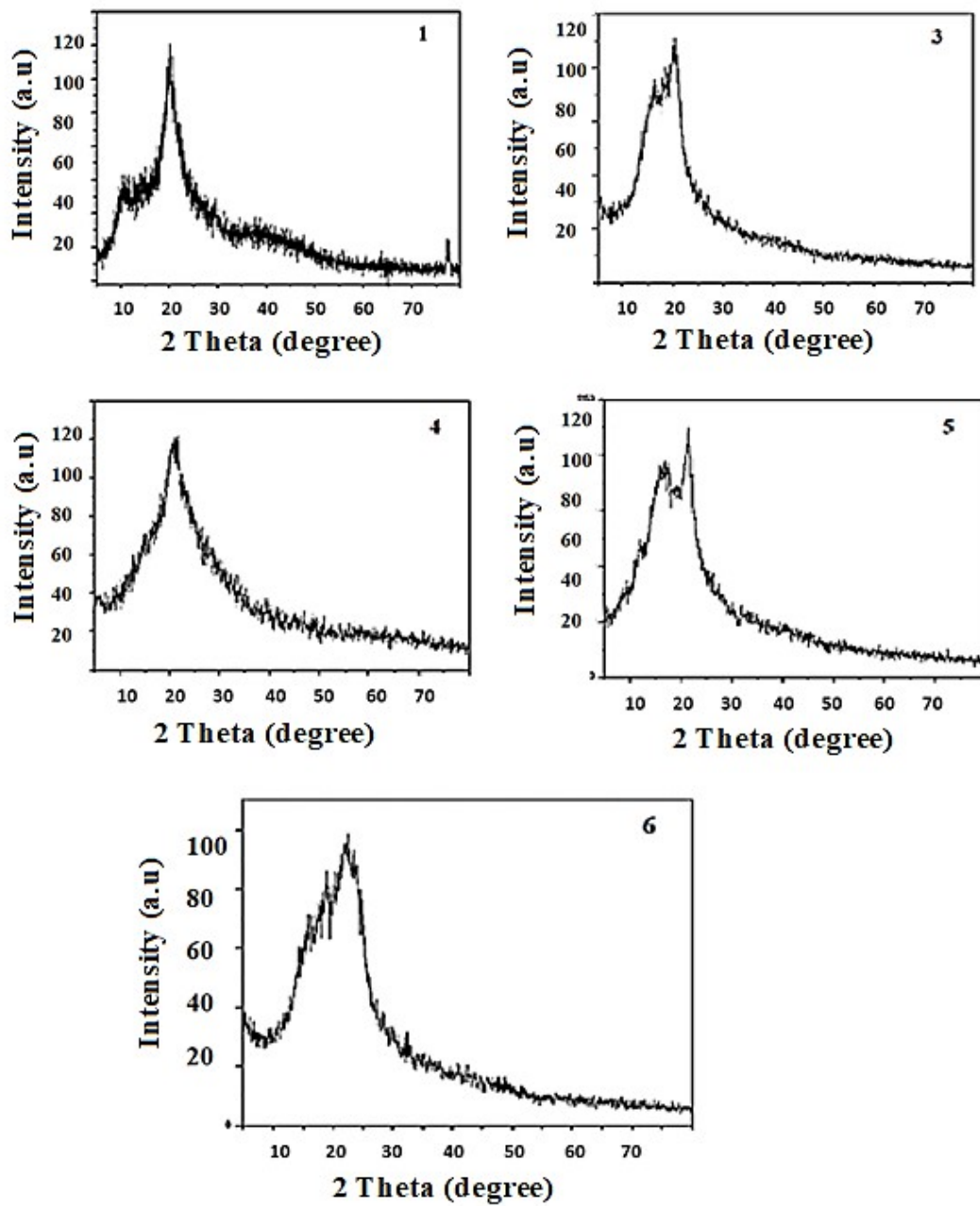


Figure S2: Crystallinity model of polymethinecyanine dye 1, 3, 4, 5 and 6.

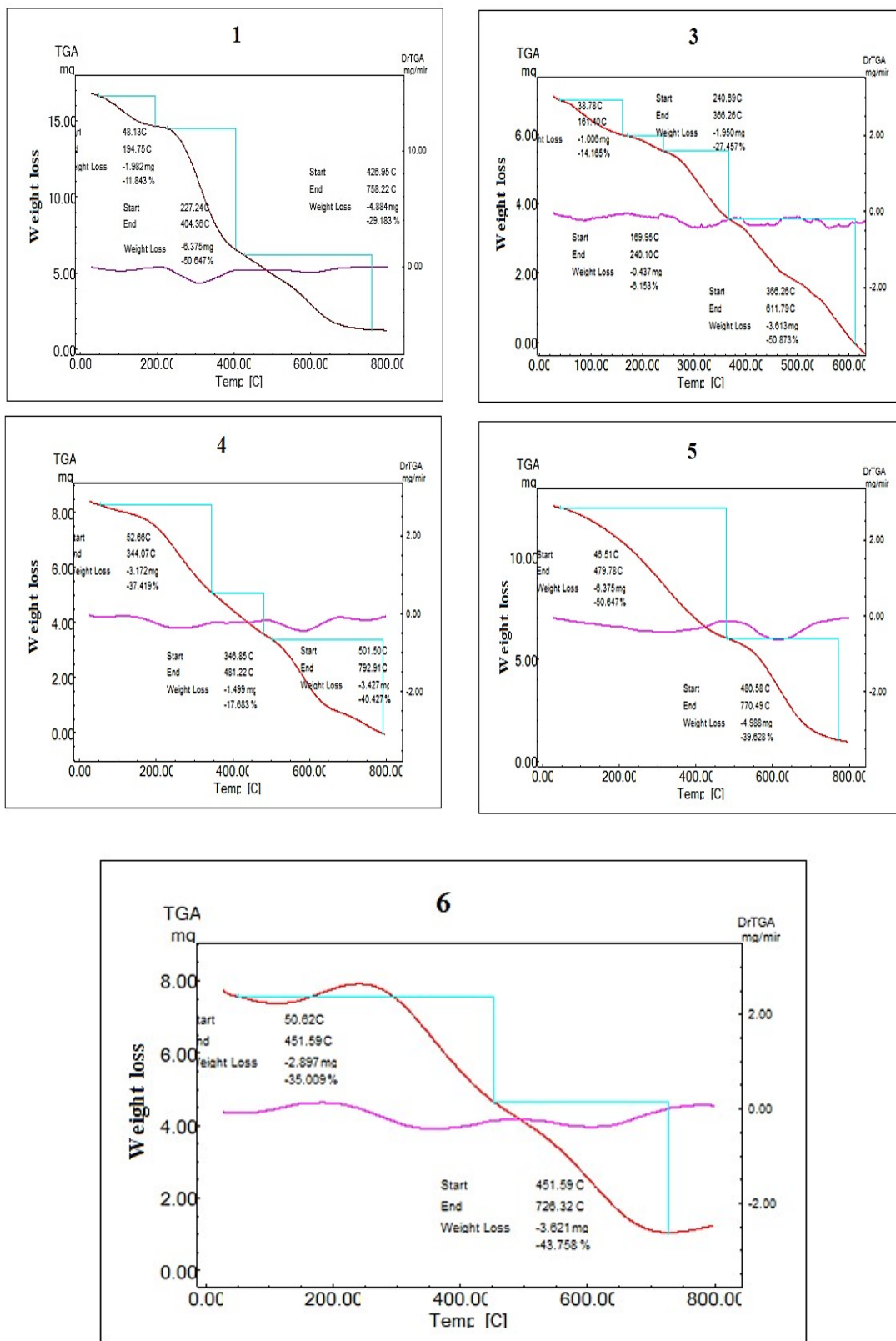


Figure S3: Thermal stability of the novel photosensitizers.

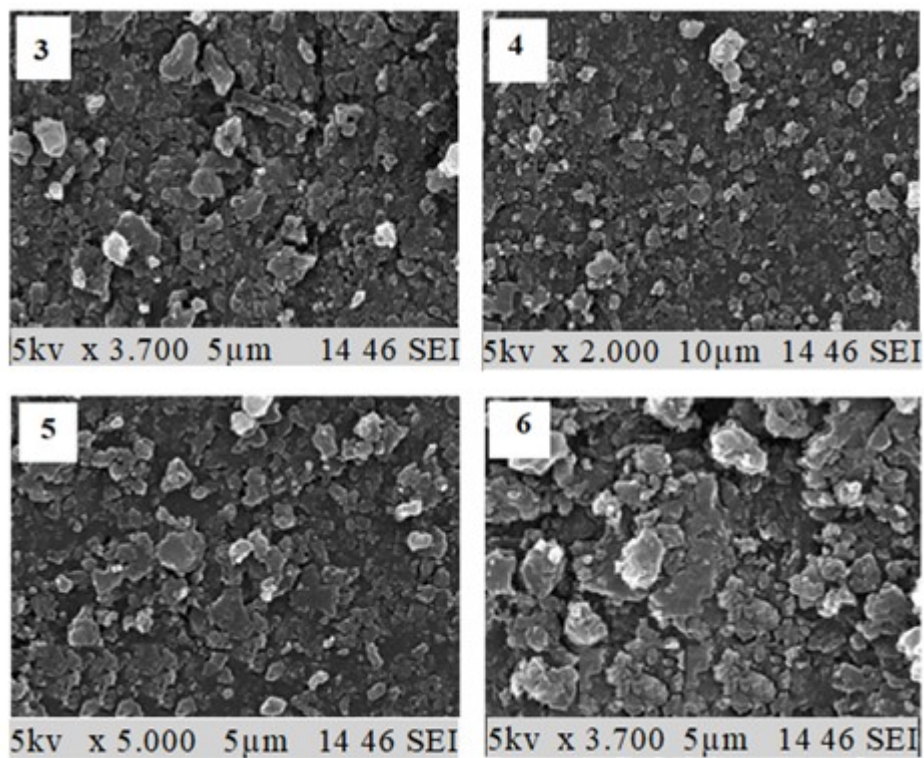


Figure S4: Porosity of polymethine cyanine dyes 3, 4, 5 and 6.

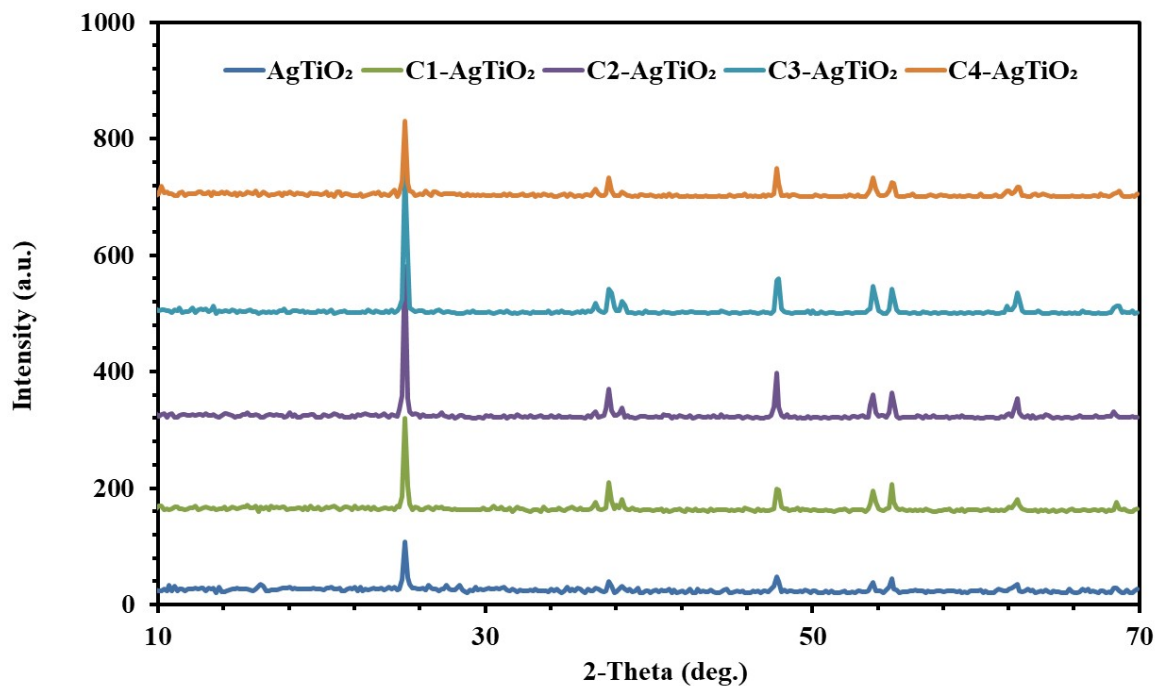


Figure S5: XRD patterns of Ag/TiO₂ and sensitized Ag/TiO₂ samples.

Table S1: The particle size of all the samples before and after sensitization by cyanine obtained from XRD data.

The sample	Particle size, nm
Ag/ TiO ₂	48.4
C1-Ag/ TiO ₂	85.6
C2-Ag/ TiO ₂	94.4
C3-Ag/ TiO ₂	104.6
C4-Ag/ TiO ₂	71.1

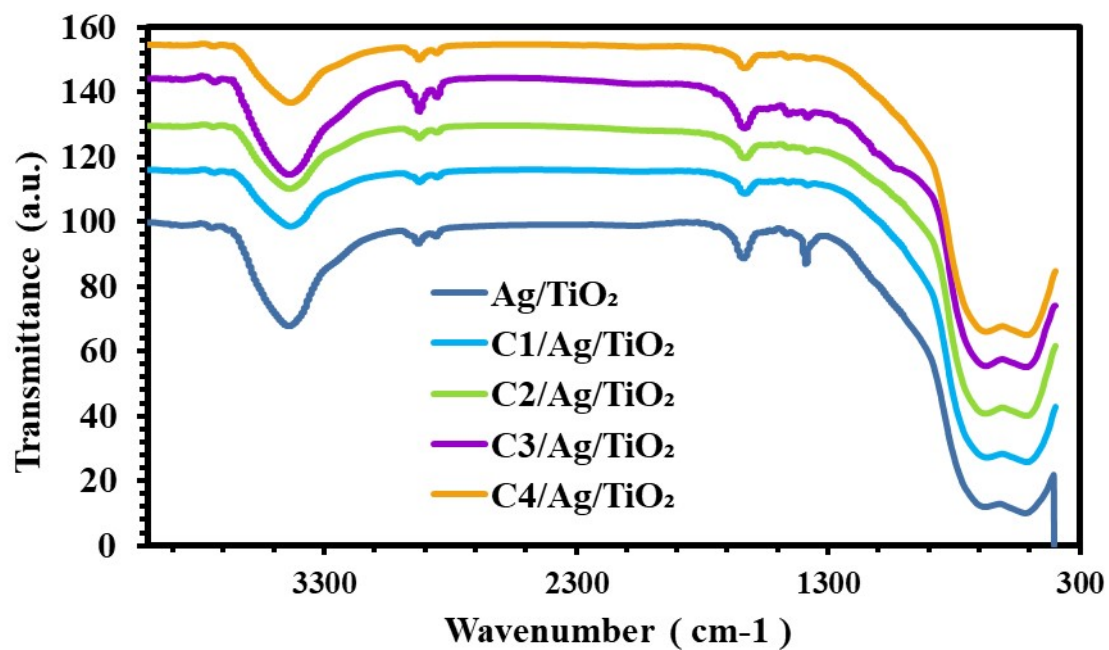


Figure S6: FTIR spectra of Ag/TiO₂ and Cyanine sensitized samples.

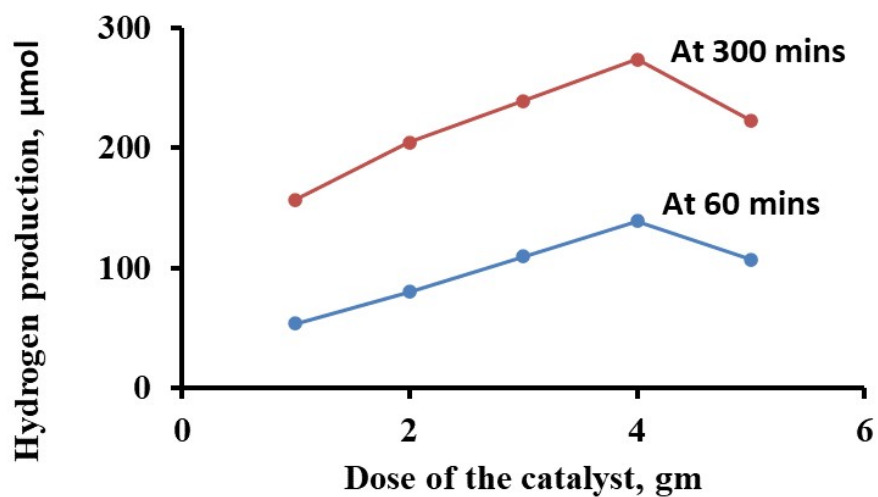


Figure S7: The effect of the dose of the C2/Ag/TiO₂ at 60 mins and 300 mins.

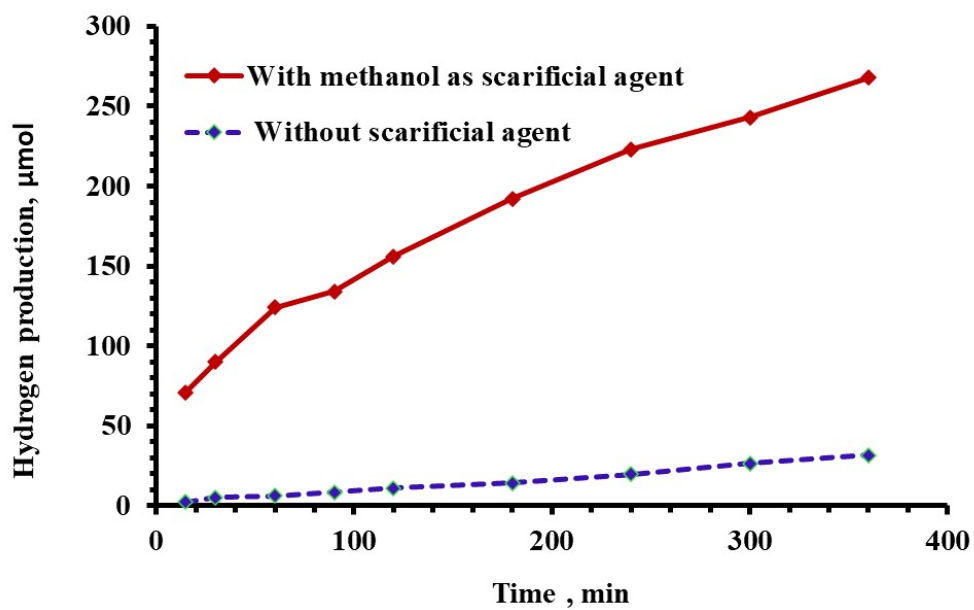


Figure S8: The effect of methanol as sacrificial molecule on the hydrogen 3 production over C2/Ag/TiO₂.