Supplementary Material

Highly Efficient DSSCs Sensitized using NIR Responsive Bacteriopheophytine-a and its Derivatives Extracted from Rhodobacter Sphaeroides Photobacteria

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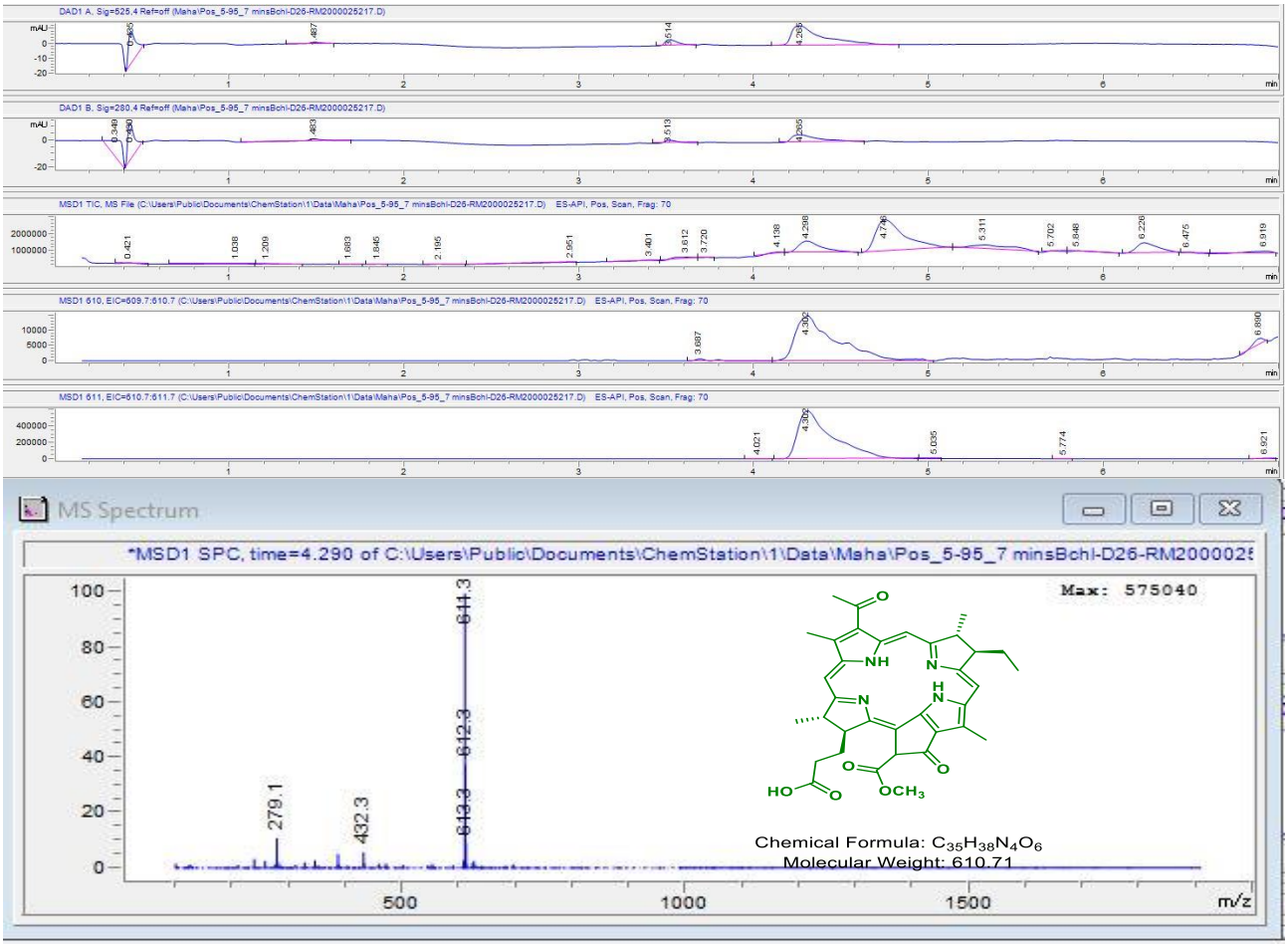
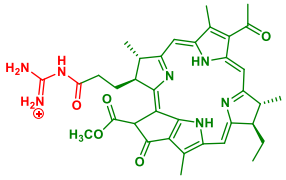


Figure S1. LCMS of bacteriochlorophyll-a (Bchl).



Gua-Bhcl (3)

Chemical Formula: $C_{36}H_{42}N_7O_5^+$

Molecular Weight: 652.78

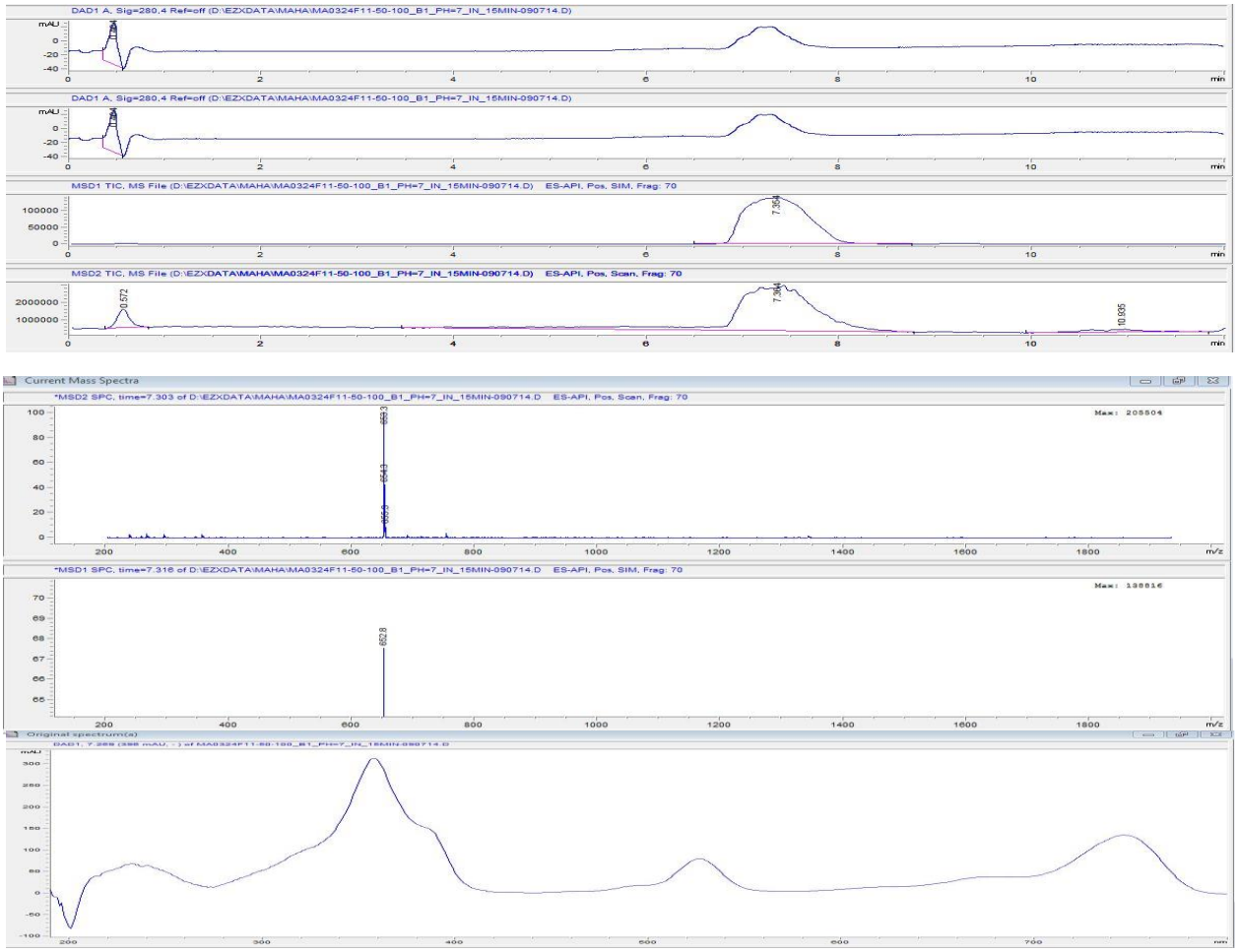
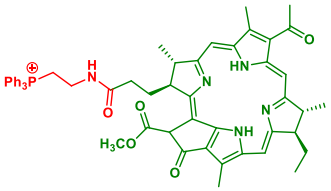


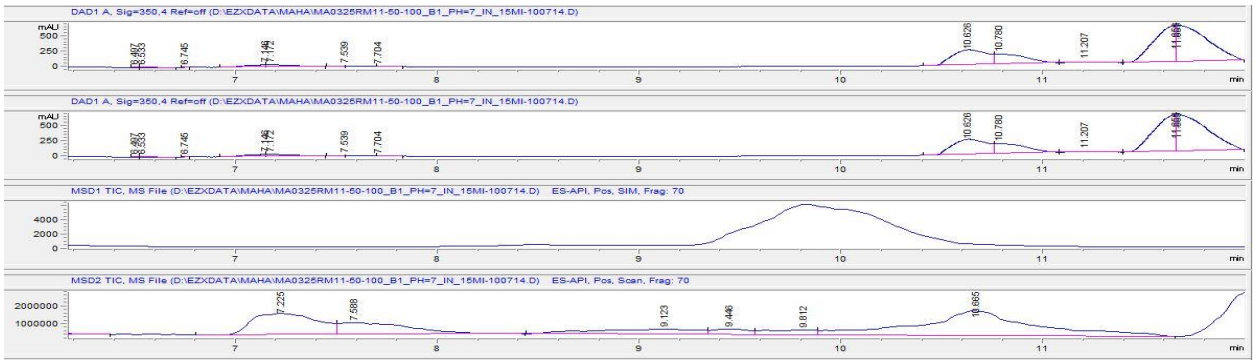
Figure S2. LCMS of Gua-Bhcl.



TPP-Bhcl (4)

Chemical Formula: $C_{55}H_{57}N_5O_5P^+$

Molecular Weight: 899.06



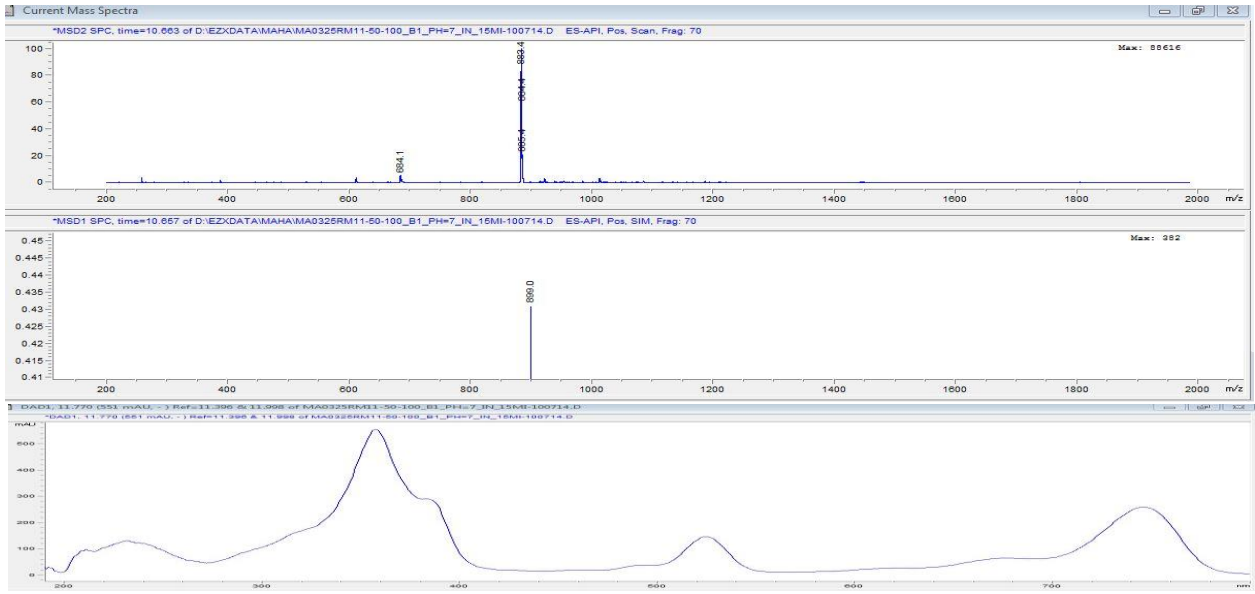


Figure S3. LCMS of 2AETPPH-Bhcl.

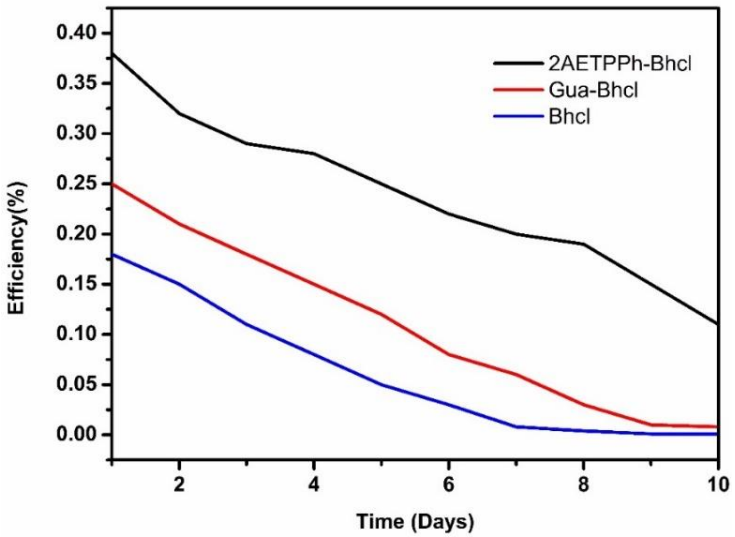


Figure S4. Stability of the DSSCs sensitized with different dyes.

Table S1 Comparative photovoltaic performance of DSSCs sensitized using natural dyes

Source	J_{SC} (mA cm^{-2})	V_{OC} (V)	FF	PCE (%)	Ref
Saraca asoca (flowers)	0.29	0.51	0.51	0.09	35
Lantana repens (flowers)	0.45	0.69	0.34	0.12	36
Nymphaea pubescens Willd. (flowers)	0.85	0.52	0.63	0.28	37
Mitragyna speciose (leaves)	1.20	0.52	36.7	0.23	38
Canna lily yellow (flowers)	0.43	0.56	0.40	0.12	39
Indigofera tinctorial (leaves)	0.37	0.48	0.63	0.11	40
Strobilanthes cusia (leaves)	0.003	0.28	0.25	0.01	41
Bhcl (from sea algae)	0.97	0.52	0.56	0.18	This work
Gua-Bhcl (derived from Bhcl)	0.99	0.60	0.60	0.25	This work
2AETPPh-Bhcl (derived from Bhcl)	1.03	0.63	0.75	0.38	This work