

## SUPPORTING INFORMATION

# Subphthalocyanine-polymethine cyanine conjugate: An all organic panchromatic light harvester that reveals charge transfer

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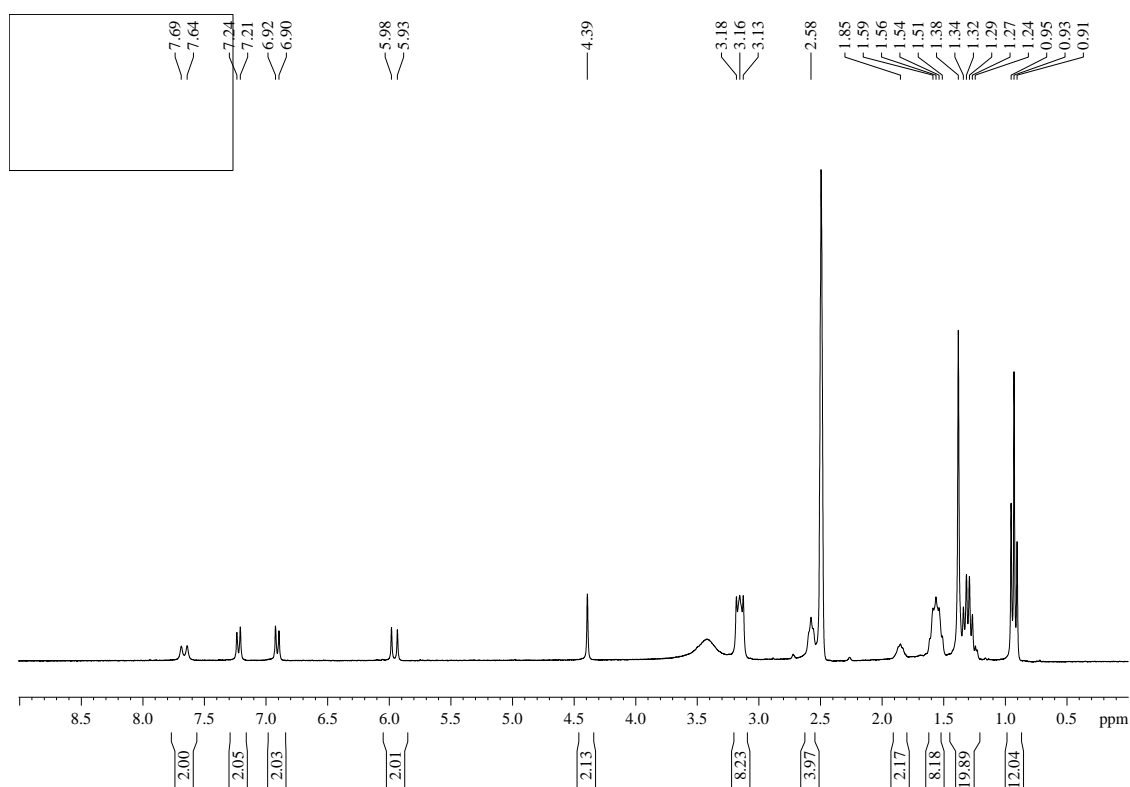
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- Characterization of compounds **1** and **4** S2
- Complementary spectroscopic data and energy diagrams of compounds **1** (SubPc-cyanine), **2** (SubPc) and **4** (cyanine) S6



**Figure S1.** <sup>1</sup>H-NMR (DMSO-*d*<sub>6</sub>, 300 MHz) of **4**

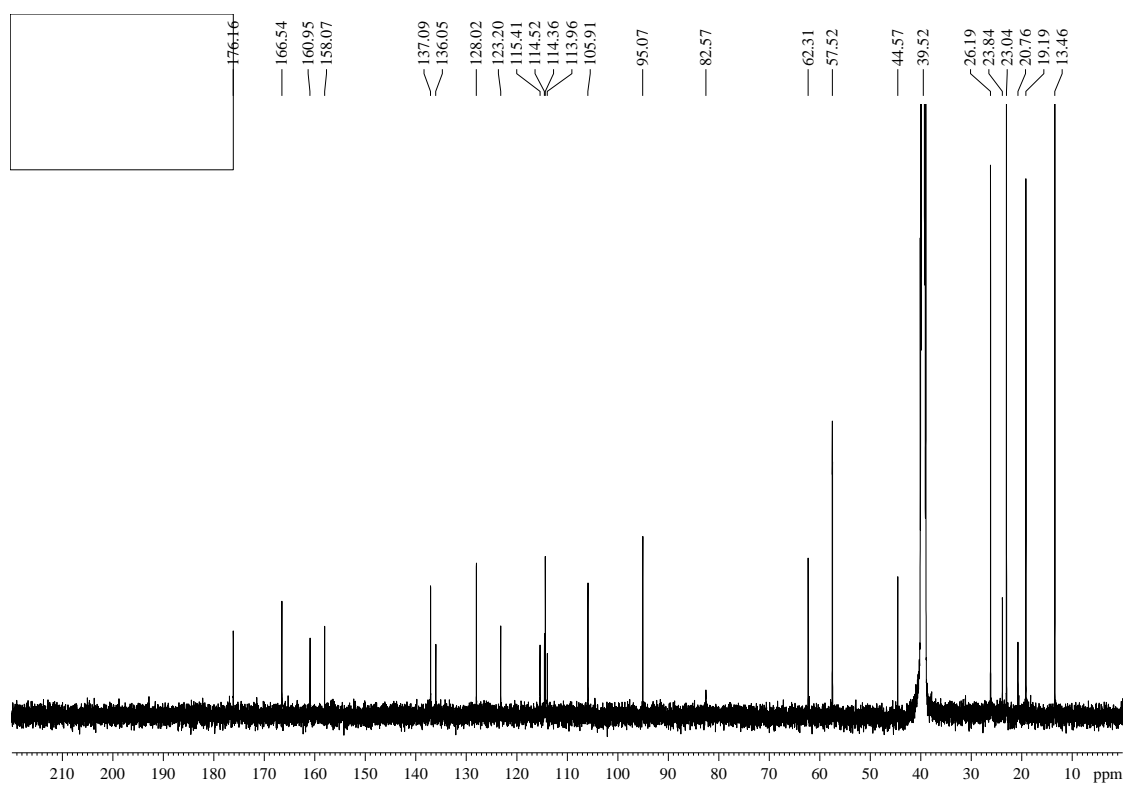


Figure S2.  $^{13}\text{C}$  NMR of **4**

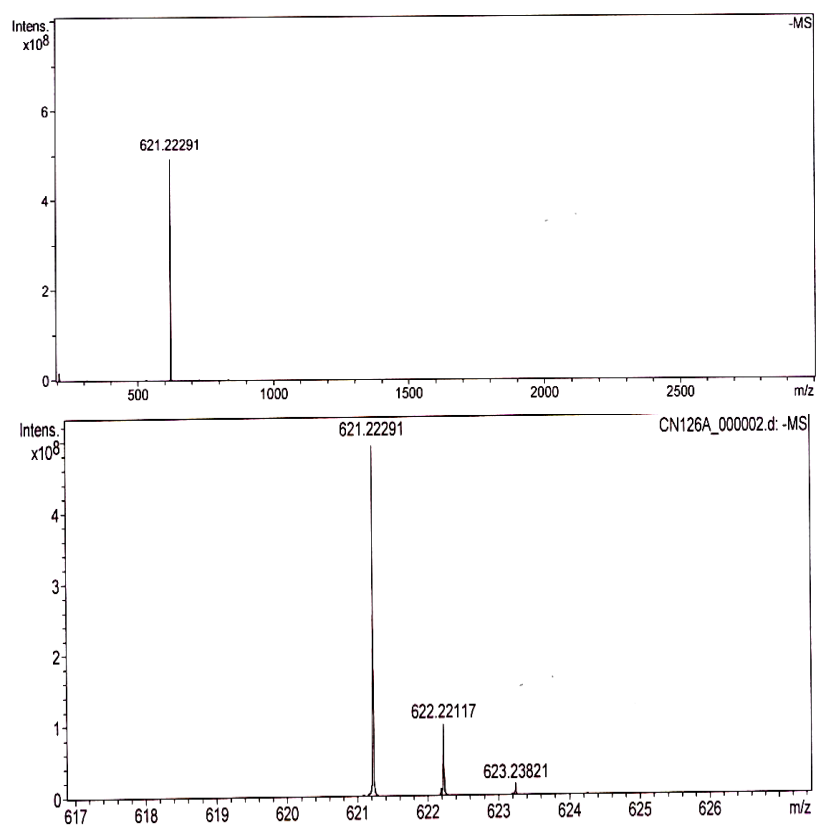
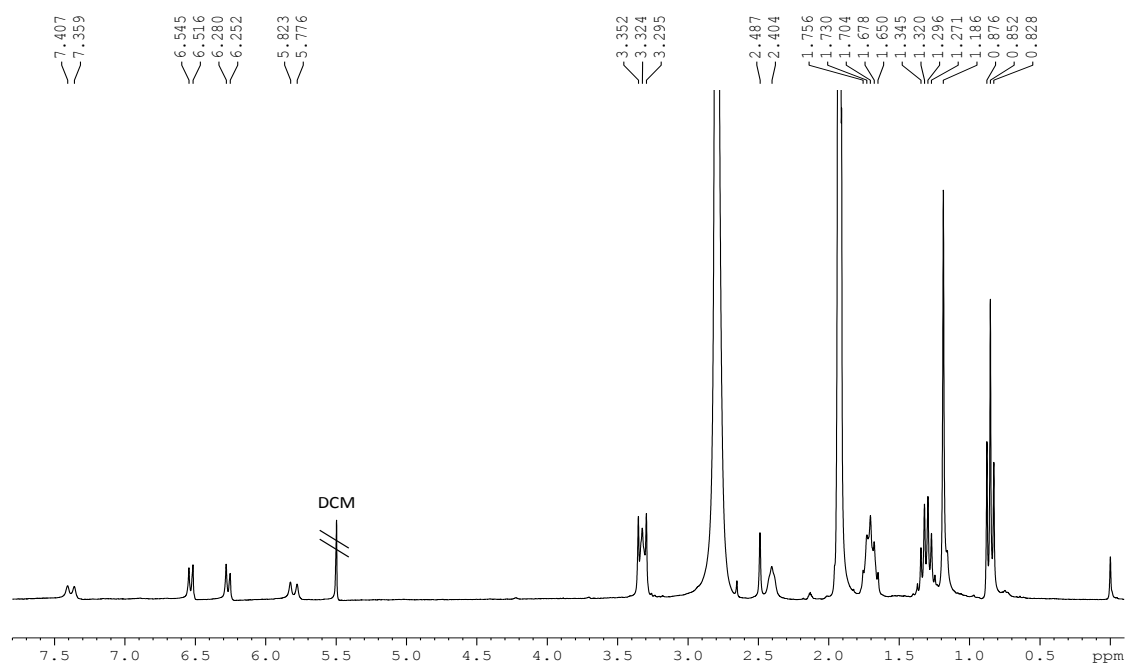
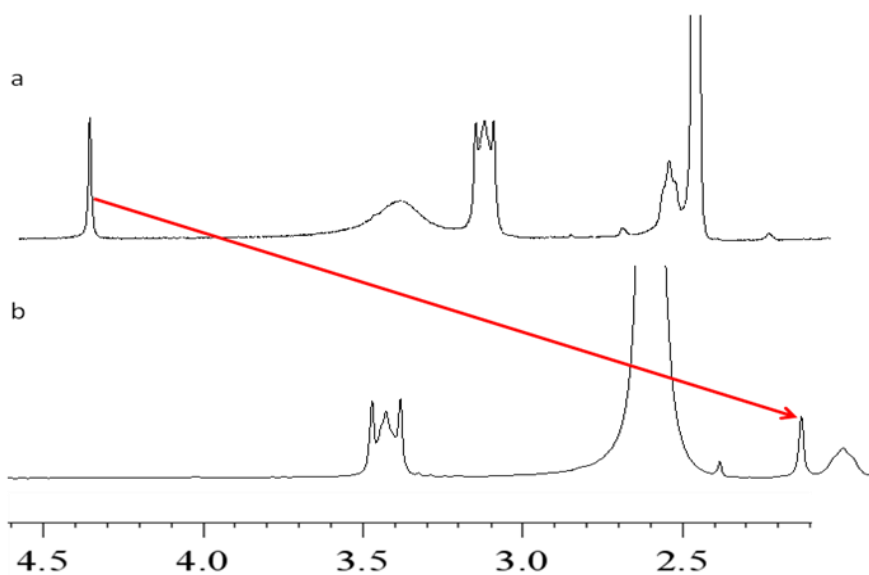


Figure S3. HR-MS of **4**



**Figure S4.**  $^1\text{H-NMR}$  (acetone- $d_6$ , 300 MHz) of **1** (DCM: Dichloromethane)



**Figure S5.**  $^1\text{H-NMR}$  spectra of **4** (a) and **1**(b) – the signal of the benzylic protons is affected by the subphthalocyanine ring current causing an upfield shift from 4.39 (**4**) to 2.49 (**1**) ppm.

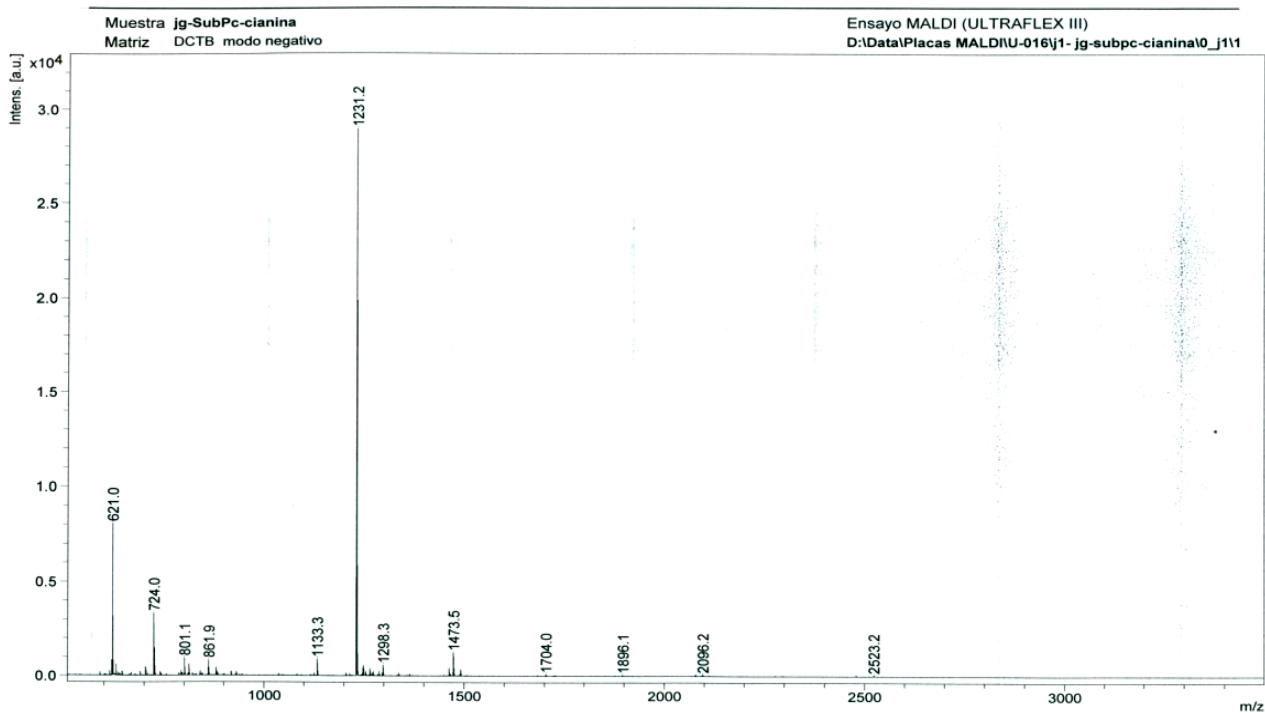


Figure S6. MS (MALDI, DCTB) of 1

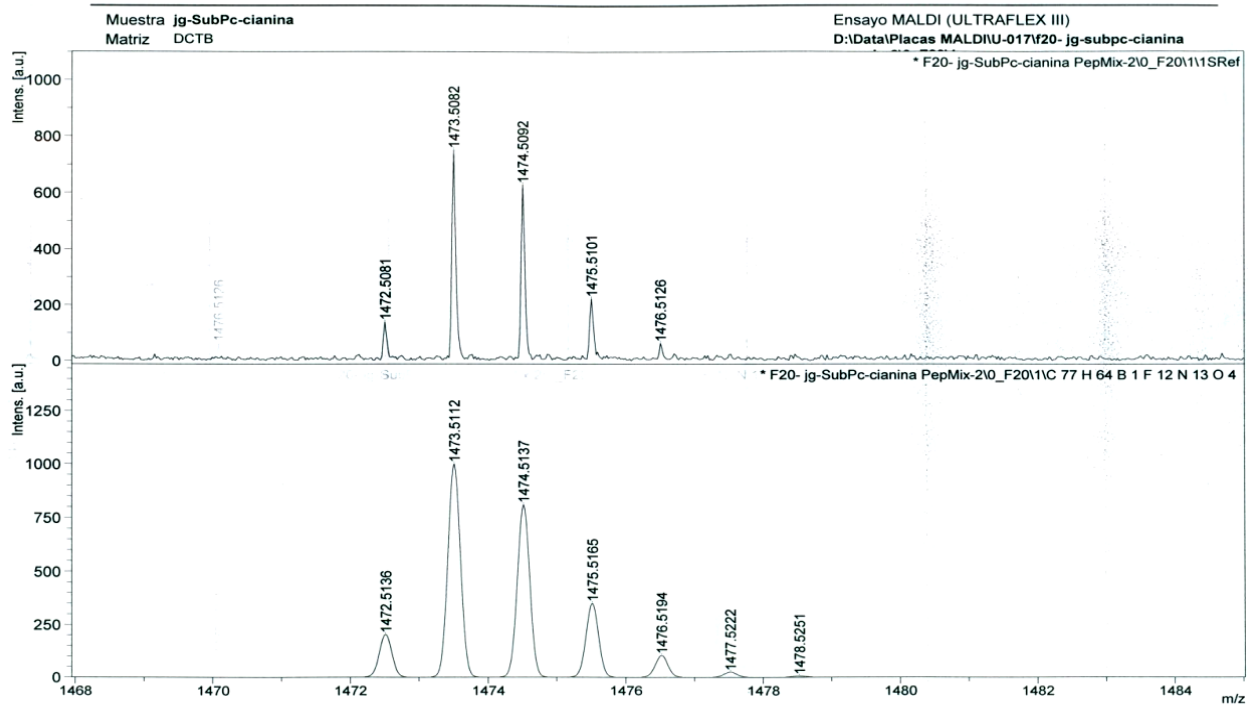
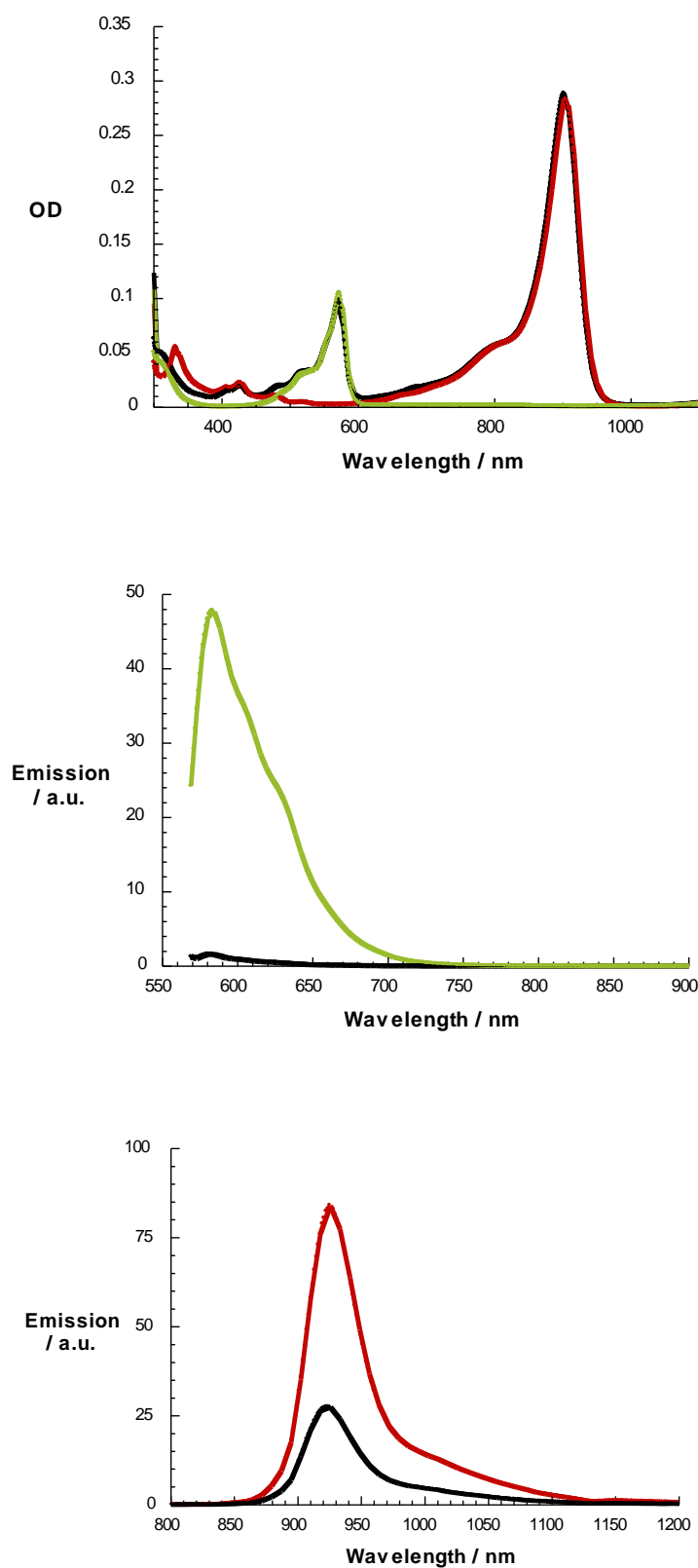
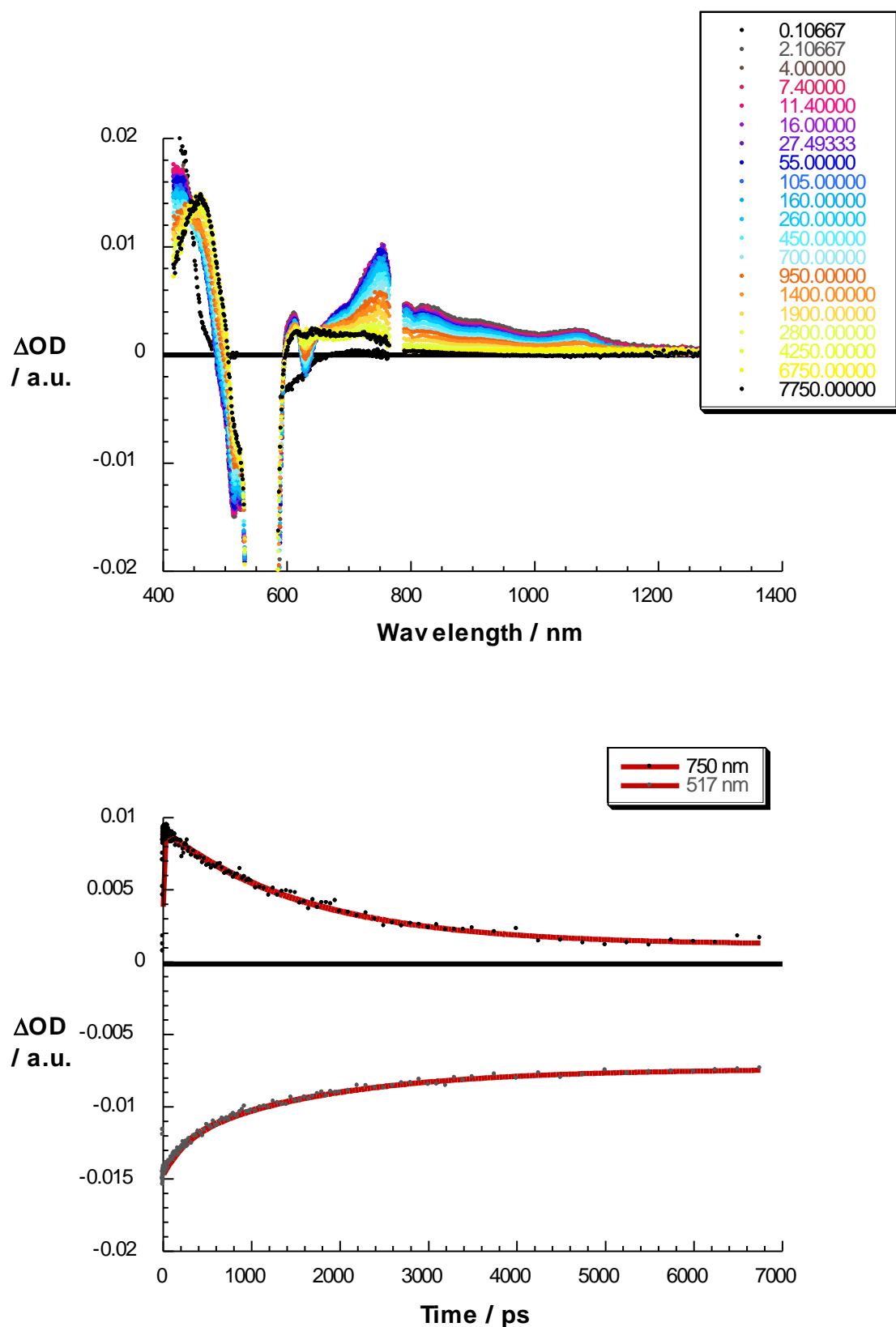


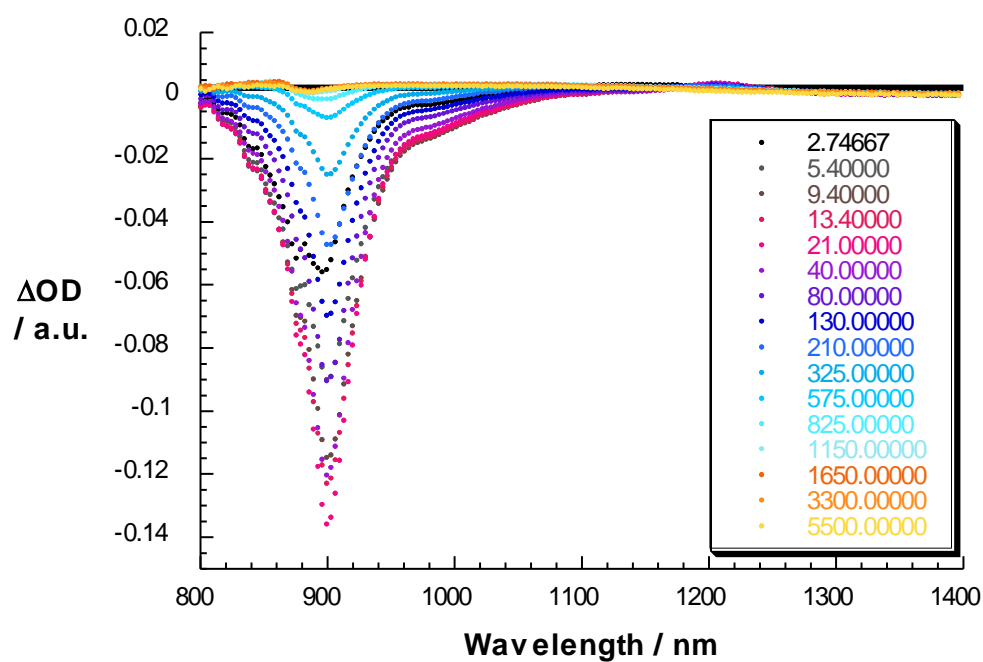
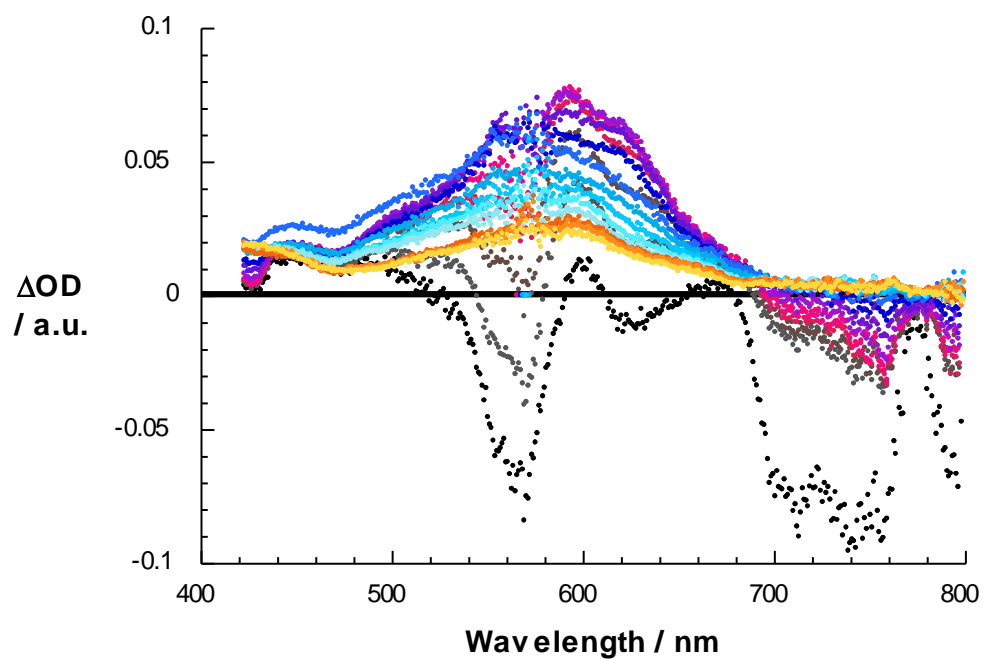
Figure S7. HRLSI-MS of 1



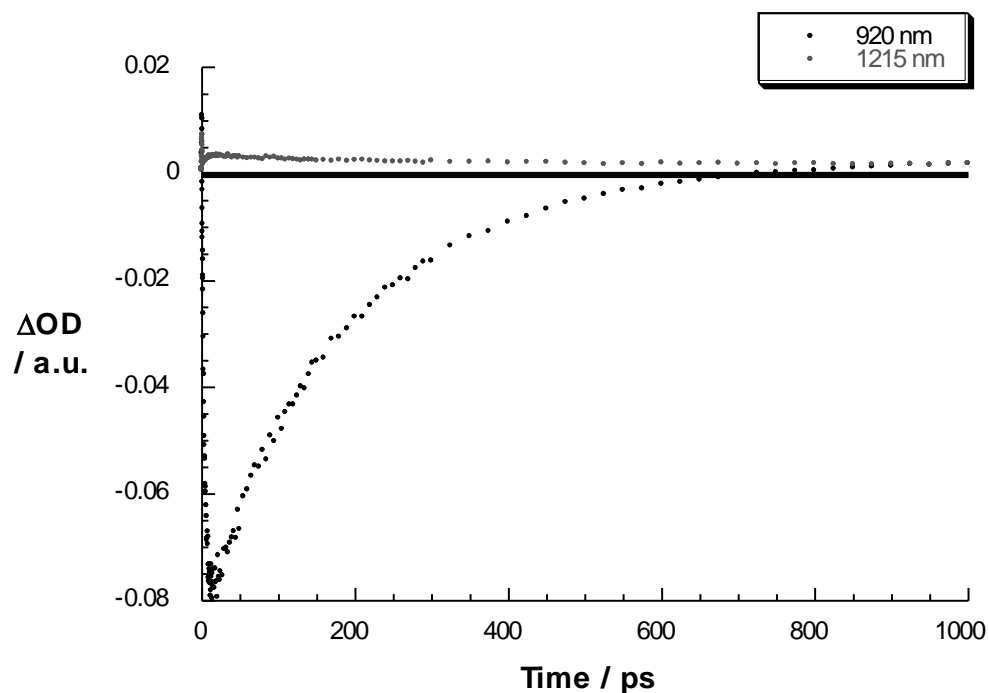
**Figure S8.** Upper part – Absorption spectra of the SubPc-cyanine **1** (black spectrum), cyanine **4** (red spectrum), and SubPc **2** (green spectrum) in benzonitrile. Central part – Emission spectra of the SubPc-cyanine **1** (black spectrum) and SubPc **2** (green spectrum) in benzonitrile, excited at 560 nm. Lower part – Emission spectra of the SubPc-cyanine **1** (black spectrum) and cyanine **4** (red spectrum) in benzonitrile, excited at 800 nm.



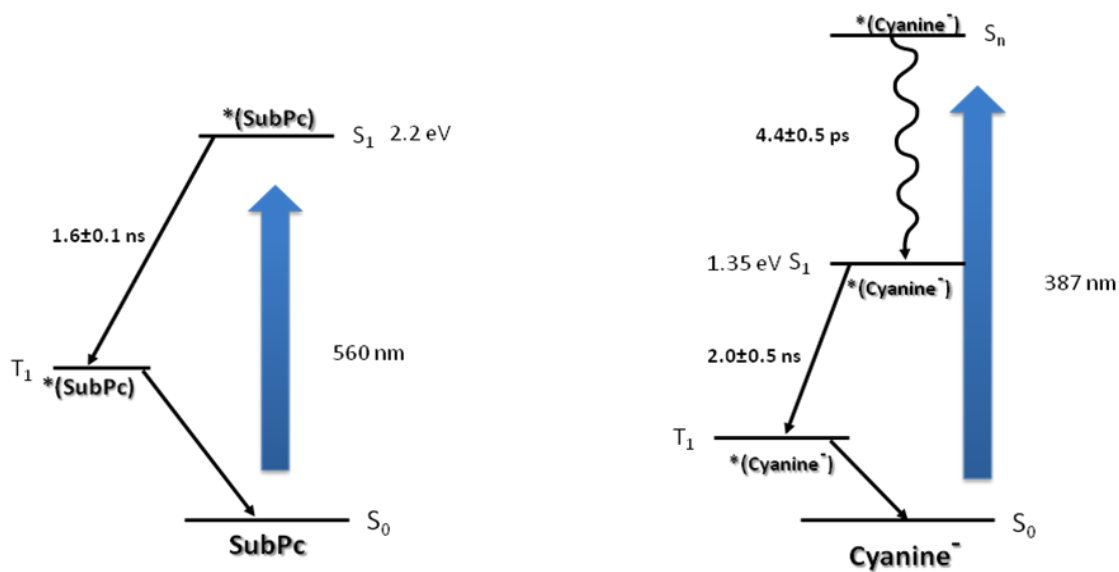
**Figure S9.** Upper part – differential absorption spectra (visible and near-infrared) obtained upon femtosecond flash photolysis (560 nm, 150 nJ) of SubPc **2** in benzonitrile with several time delays between 0 and 7750 ps at room temperature – see figure legend for time evolution. Lower part – time-absorption profile of the spectra at 517 and 750 nm, monitoring the intersystem crossing dynamics.







**Figure S10:** Upper part – differential absorption spectra (visible) obtained upon femtosecond flash photolysis (387 nm, 150 nJ) of SubPc-cyanine **1** in benzonitrile with several time delays between 0 and 5500 ps at room temperature – see figure legend of central part for time evolution. Central part – differential absorption spectra (near-infrared) obtained upon femtosecond flash photolysis (387 nm, 150 nJ) of SubPc-cyanine **1** in benzonitrile with several time delays between 0 and 5500 ps at room temperature – see figure legend for time evolution. Lower part – time-absorption profile of the spectra at 920 and 1215 nm, monitoring the charge separation and charge recombination dynamics.



**Scheme S1.** Left – Energy diagram of the SubPc **2** upon 530 nm excitation. Right – Energy diagram of the Cyanine **4** upon 387 nm excitation.