

Supplementary Information for

Natural-photosynthesis-inspired photovoltaic cells using carotenoid aggregates as electron donor and chlorophyll derivatives as electron acceptors†

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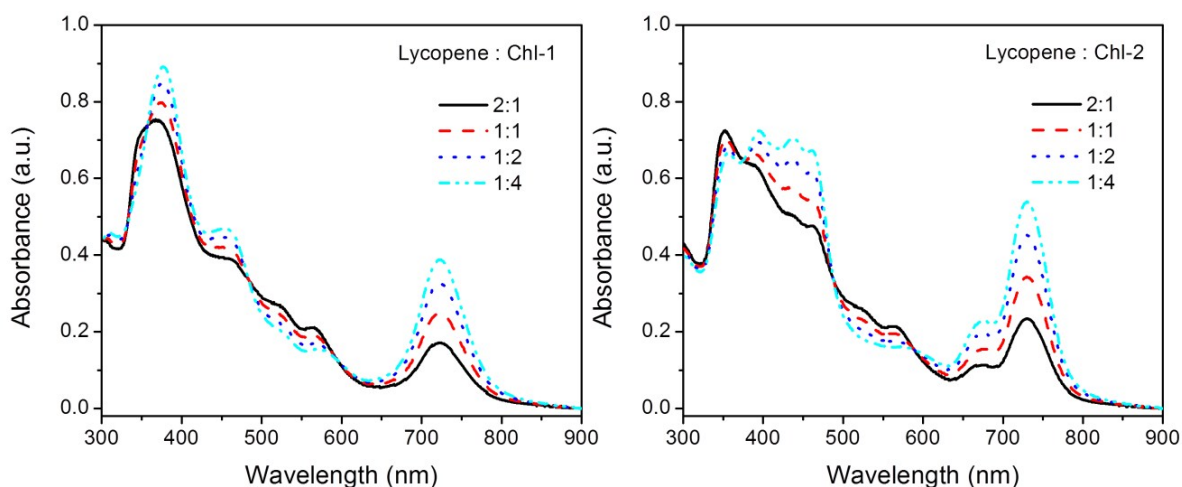


Fig. S1 Absorption spectra of lycopene: Chl blend films with varied ratios.

Table S1 OPV performance of devices with the structure of ITO/ 5 nm MoO₃/ Active layer/ Buffer/ 100 nm Al. (Ref: Y.-W. Wang, S.-i. Sasaki, T. Zhuang, H. Tamiaki, J.-P. Zhang, T. Ikeuchi, Z. Hong, J. Kido and X.-F. Wang, *Org. Electron.*, 2013, 14, 1972-1979)

Active layer/ Buffer	J_{sc} (mA/cm ²)	V_{oc} (V)	FF	PCE (%)
Lycopene: Chl-1 1: 4/ 20 nm Ca	5.2×10^{-2}	0.55	0.26	7.4×10^{-3}
Lycopene: Chl-2 1: 4/ 20nm Ca	2.3×10^{-1}	0.85	0.23	4.5×10^{-2}
80 nm Chl-1/ 10 nm BCP	1.1×10^{-2}	0.11	0.26	3.0×10^{-4}
80 nm Chl-2/ 10 nm BCP	8.2×10^{-2}	0.96	0.26	2.0×10^{-2}