

Supporting Information

For

Formation of a Hybrid Compound Composed of a Saddle-Distorted Tin(IV)-Porphyrin and a Keggin-Type Heteropolyoxometalate to Undergo Intramolecular Photoinduced Electron Transfer

Atsutoshi Yokoyama,[†] Takahiko Kojima,^{‡,*} Kei Ohkubo,[†] Motoo Shiro,[§] and Shunichi Fukuzumi^{†,£,*}

*Department of Material and Life Science, Division of Advanced Science and
Biotechnology, Graduate School of Engineering, Osaka University, Suita, Osaka
565-0871, Department of Chemistry, Graduate School of Pure and Applied Sciences,
University of Tsukuba, Tsukuba, Ibaraki 305-8571, X-ray Research Laboratory, Rigaku
Corporation, 3-9-12 Matsubara, Akishima-shi, Tokyo 196-68666, Japan, and
Department of Bioinspired Chemistry, Ewha Womans University, Seoul 120-750, Korea*

[†] Osaka University.

[‡] University of Tsukuba.

[§] Rigaku Corporation

[£] Ewha Womans University.

* To whom correspondence should be addressed.

E-mail: kojima@chem.tsukuba.ac.jp, fukuzumi@chem.eng.osaka-u.ac.jp

X-ray Crystallography. X-ray crystallography on **1 and **2**:** Refinements on F^2 were performed for all reflections. The weighted R factor (R_w) and goodness of fit (S) are based on F^2 , and the conventional R factor (R) on F , with F set to zero for negative F^2 . The threshold expression of $F^2 > 2\sigma(F^2)$ was used only for calculating R factors (gt) etc. and was not relevant to the choice of reflections for refinement. R factors based on F^2 are statistically about twice as large as those based on F , and R factors based on all data are even larger. Since the methanol molecule in **2** was disordered, its carbon atom was refined isotropically with occupancies of 0.5. Crystallographic data are summarized in Table S1.

Table S1. X-ray Crystallographic Data for **1** and **2**

	1	2
Formula	C ₉₇ H ₆₉ Cl ₅ N ₄ O ₄ Sn	C ₁₀₀ H ₈₀ N ₄ O ₈ Sn
F. W.	1650.59	1584.44
Crystal system	monoclinic	triclinic
Space group	<i>P</i> 2 ₁ / <i>n</i>	<i>P</i> −1
<i>T</i> , K	183	180
<i>a</i> , Å	25.106(7)	11.4345(5)
<i>b</i> , Å	16.854(4)	12.6971(7)
<i>c</i> , Å	37.347(9)	14.1793(8)
α , deg	–	103.943(2)
β , deg	92.653(3)	101.911(2)
γ , deg	–	93.635(2)
<i>V</i> , Å ³	15786(7)	1941.0(2)
<i>Z</i>	8	1
No. of reflections	104400	15908
No. of observations	28696	8777
No. of parameters	2016	511
<i>R</i> 1 ^{<i>a</i>} (<i>I</i> > 2.0 σ (<i>I</i>))	0.087	0.039
<i>R</i> _w ^{<i>b</i>} (all data)	0.182	0.097
GOF	1.096	1.080

$$^a R1 = \sum ||F_o| - |F_c|| / \sum |F_o|.$$

$$^b R_w = [\sum (w(F_o^2 - F_c^2)^2) / \sum w(F_o^2)^2]^{1/2}.$$

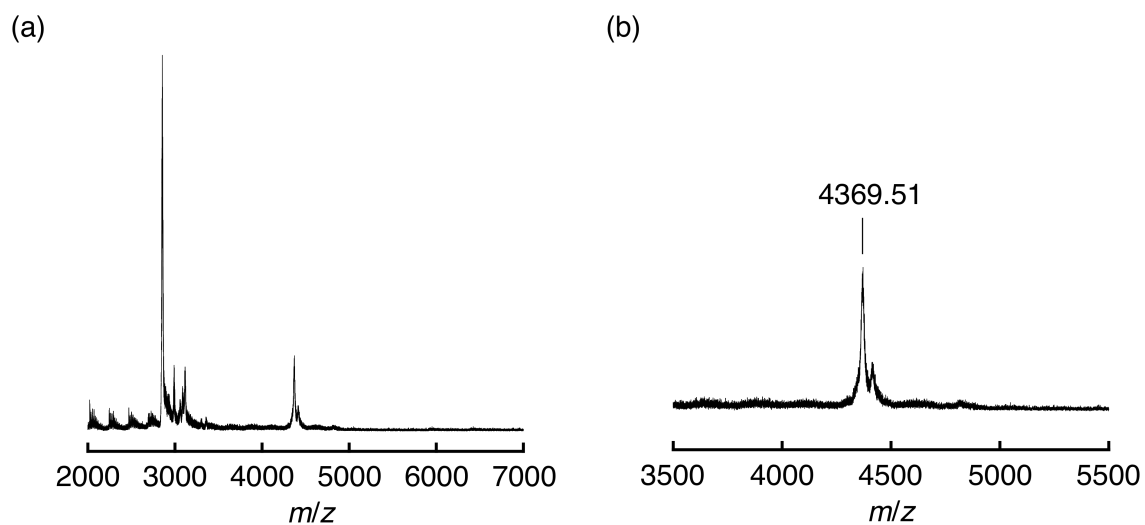


Figure S2. Full range of MALDI-TOF-MS spectrum of conglomerate made of **2** and **3** ($m/z = 4369.51$) in CH_2Cl_2 (linear negative mode, matrix = α -cyano-4-hydroxycinnamic acid (CHCA)).

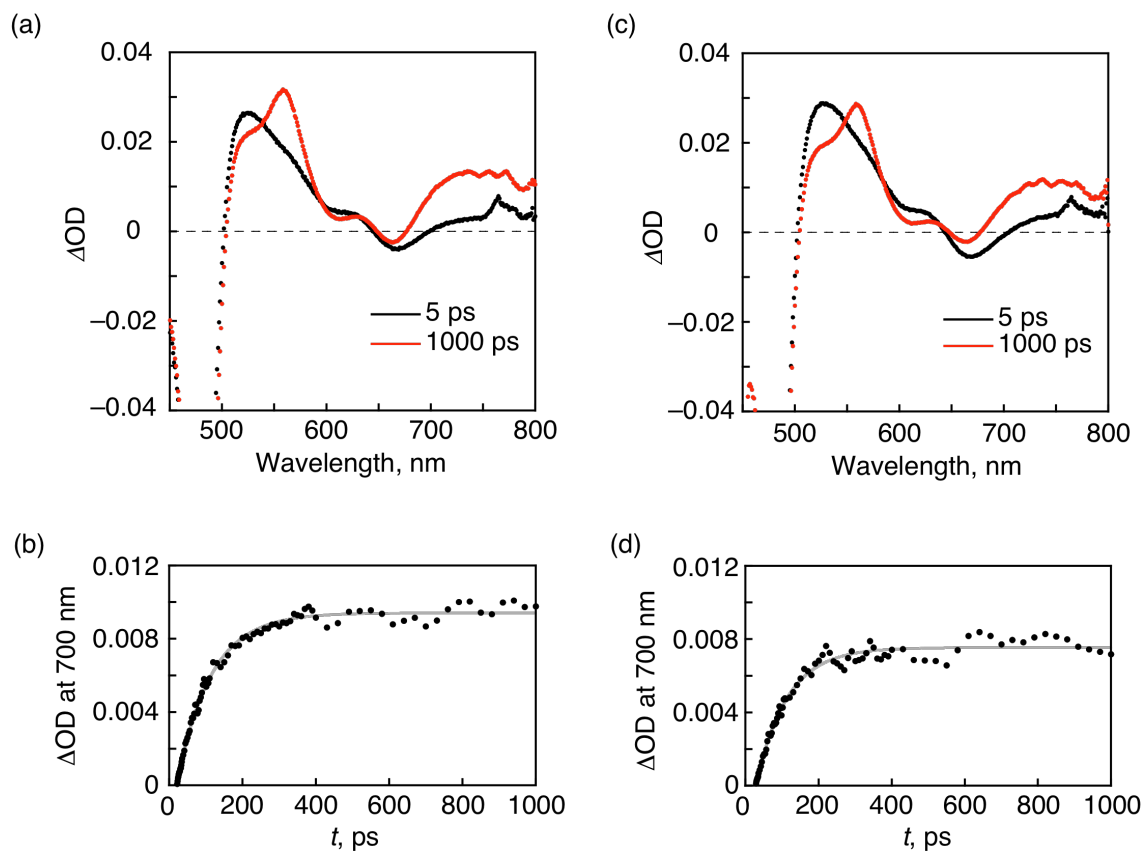


Figure S3. (a) Femtosecond transient absorption spectra of **1** (4.0×10^{-5} M) at 5 (black) and 1000 ps (red) after laser excitation at 430 nm and (b) time profile of ΔOD at 700 nm. (c) Femtosecond transient absorption spectra of **1** (4.0×10^{-5} M) with **3** (1.2×10^{-2} M) at 5 (black) and 1000 ps (red) after laser excitation at 430 nm and (b) time profile of ΔOD at 700 nm.