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Supporting Information:

Photoinduced stepwise bending behavior of photochromic diarylethene crystals

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Contents:

Experimental Section

- **Figure S1.** Crystal shape of **1a** (a) and molecular packing diagrams viewed from cross section (b), $(1\ 0\ \overline{1})$ face (c), and $(0\ 0\ \overline{1})$ face (d).
- **Figure S2.** Photographs of crystal **1a** before and after UV light irradiation, viewed from $(0\ 0\ \overline{1})$ face (a) and absorption spectra of the colored crystal under polarized light (b), and polar plots of absorbance at 590 nm (c).
- **Figure S3.** Change in the curvature relative to irradiation time with UV light in each cycle.
- **Figure S4.** Photograph of the manual bending of crystal **1a**.
- **Figure S5.** Melting behavior of crystal **1a** at a heating rate of $1 \, ^{\circ}$ C min⁻¹.
- **Figure S6.** Melting behavior of crystal **1a** after many cycles of alternating irradiation with UV and visible light at a heating rate of 1 °C min⁻¹.
- **Figure S7.** DSC curves of crystal **1a** (a) before and (b) after several cycles, and (c) many cycles of alternating irradiation with UV and visible light at a heating rate of 5 °C min⁻¹.
- **Table S1.** X-ray crystallographic data of **1a**. [S1]
- **Video S1.** Photoinduced stepwise bending behavior of crystal **1a**. The movie was taken in the real time.
- **Video S2.** Photoinduced stepwise bending behavior of crystal **1a** after 100 repeating cycles in the first step. The bent crystal returned to the initial straight crystal upon irradiation with visible light. The movie is fast-forwarded as much as 16 times on the way.
- **Video S3.** Crystal bending behavior of crystal **1a** when UV light was turned on and off on the way in the second step. The movie is fast-forwarded as much as twice.

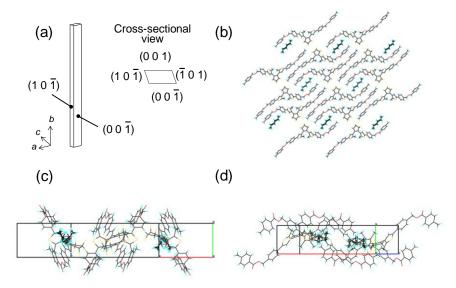


Figure S1. Crystal shape of **1a** (a) and molecular packing diagrams viewed from cross section (b), $(1\ 0\ \overline{1})$ face (c), and $(0\ 0\ \overline{1})$ face (d).

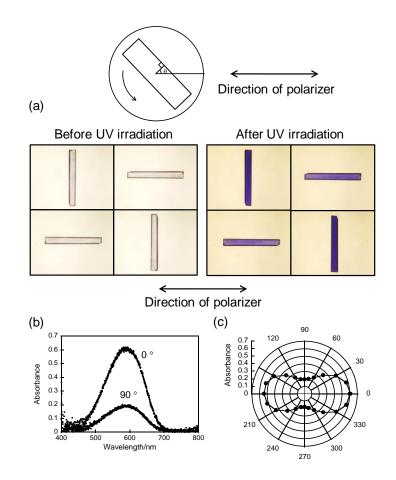


Figure S2. Photographs of crystal **1a** before and after UV light irradiation, viewed from $(0\ 0\ \overline{1})$ face (a) and absorption spectra of the colored crystal under polarized light (b), and polar plots of absorbance at 590 nm (c).

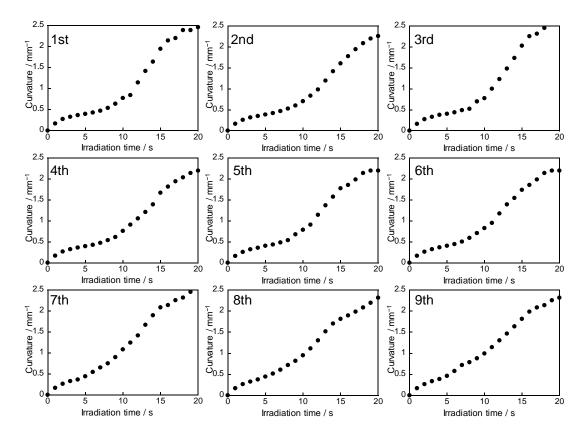


Figure S3. Change in the curvature relative to irradiation time with UV light in each cycle.

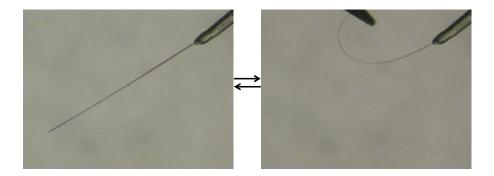


Figure S4. Photograph of the manual bending of crystal 1a.

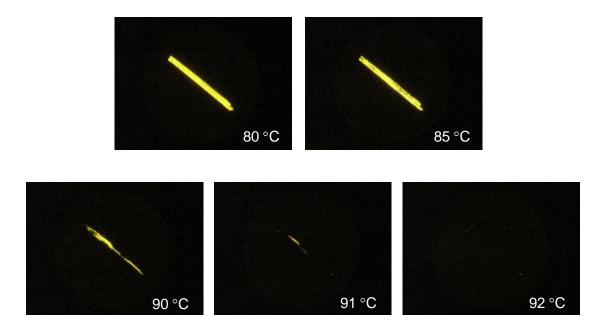


Figure S5. Melting behavior of crystal $\mathbf{1a}$ at a heating rate of 1 °C min⁻¹.

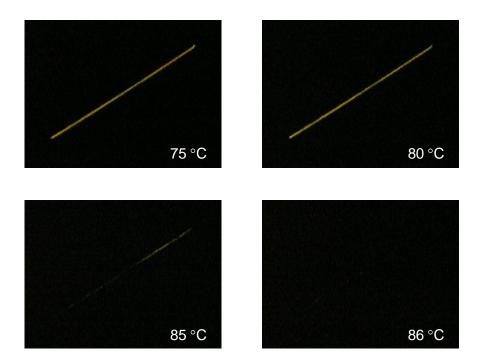


Figure S6. Melting behavior of crystal **1a** after many cycles of alternating irradiation with UV and visible light at a heating rate of 1 °C min⁻¹.

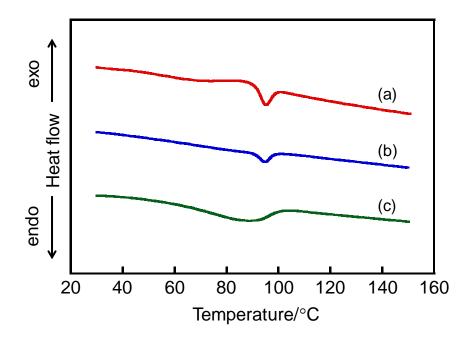


Figure S7. DSC curves of crystal **1a** (a) before and (b) after several cycles, and (c) many cycles of alternating irradiation with UV and visible light at a heating rate of 5 °C min⁻¹.

Table S1. X-ray crystallographic data of **1a**. [S1]

	1a
Empirical formula	C ₄₅ H ₃₄ F ₆ O ₄ S ₂ , C ₃ H ₇
Formula weight	859.93
Temperature	120(2) K
Crystal system	Monoclinic
Space group	P2/n
Unit cell dimensions	a = 21.493(10) Å
	b = 6.174(3) Å
	c = 32.059(15) Å
	$\beta = 98.765(6)^{\circ}$
Volume	$4205(3) \text{ Å}^3$
Z	4
Density	1.358 g/cm^3
Crystal size	$0.36\times0.22\times0.01~\text{mm}^3$
Goodness-of-fit on F^2	1.077
Final $R[I > 2\sigma(I)]$	R1 = 0.0564, wR2 = 0.1231
R (all data)	R1 = 0.0806, wR2 = 0.1346

Reference

S1. D. Kitagawa, C. Iwaihara, H. Nishi, S. Kobatake, Crystals 2015, 5, 551-561.