Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Electronic Supplementary Information:

Dependence of photoinduced bending behavior of diarylethene crystals on irradiation wavelength of ultraviolet light

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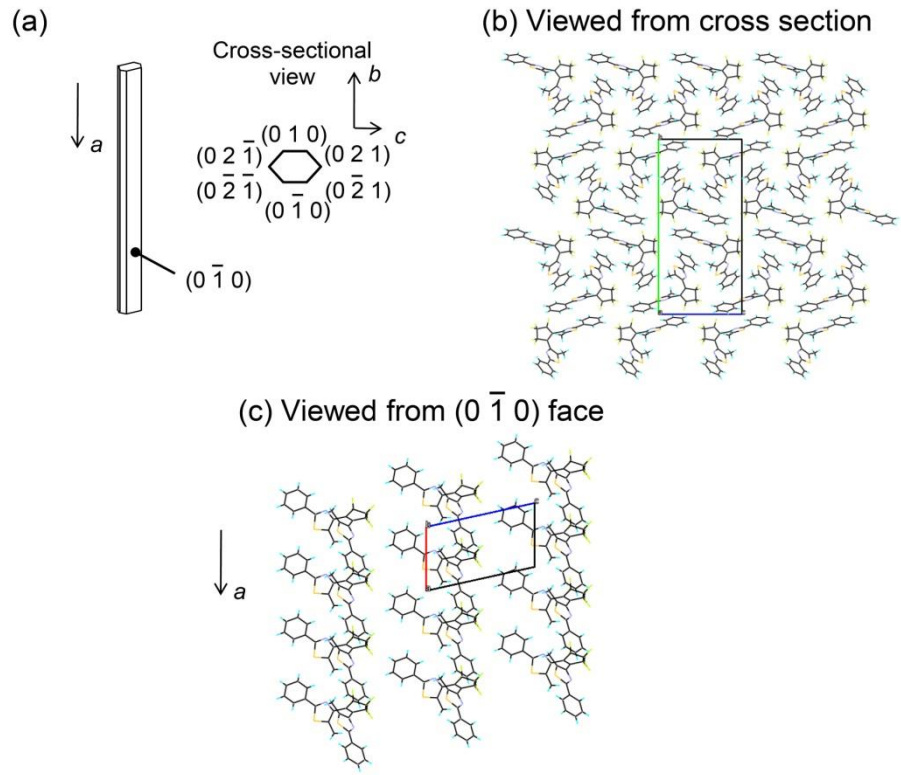

Fig. S1 (a) Crystal shape of **1a** and the molecular packing diagrams viewed from (b) cross section and (c) (0 $\bar{1}$ 0) face.

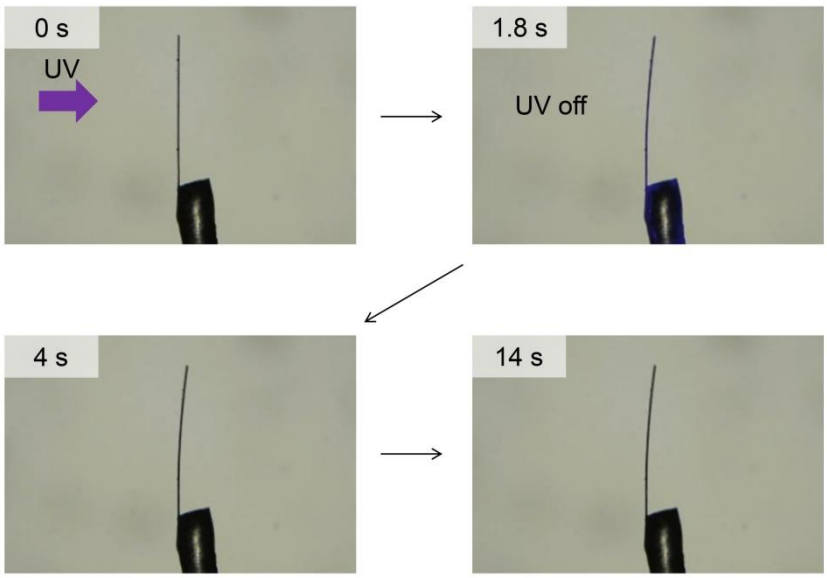

Fig. S2 Photoinduced bending behavior of crystal **1a**. When the crystal was irradiated with 380 nm light for 1.8 s from left side, the light was turned off. The bent crystal could maintain its shape even after turned off.

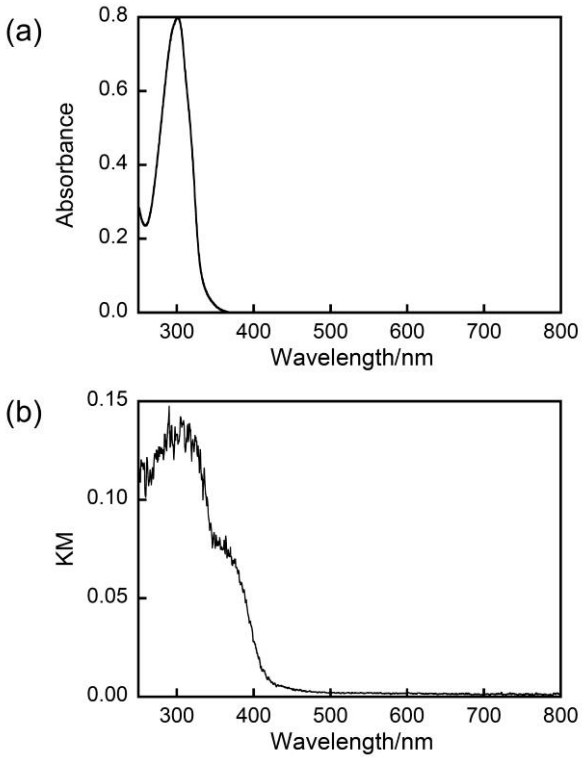

Fig. S3 (a) Absorption spectrum of diarylethene **1a** in *n*-hexane and (b) diffuse reflectance spectrum of the powder crystals of diarylethene **1a**.

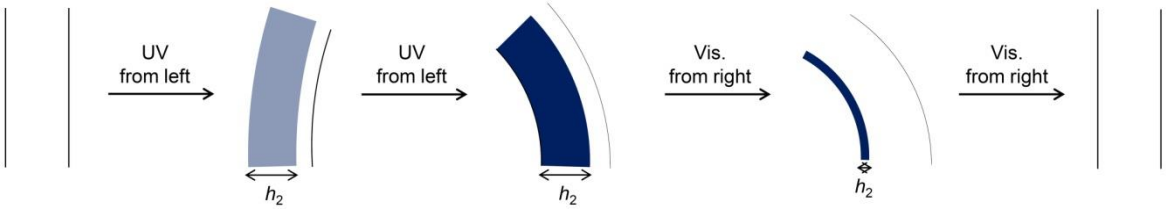

Fig. S4 Shematic illustration of the mechanism for the further bending upon irradiation with visible light.

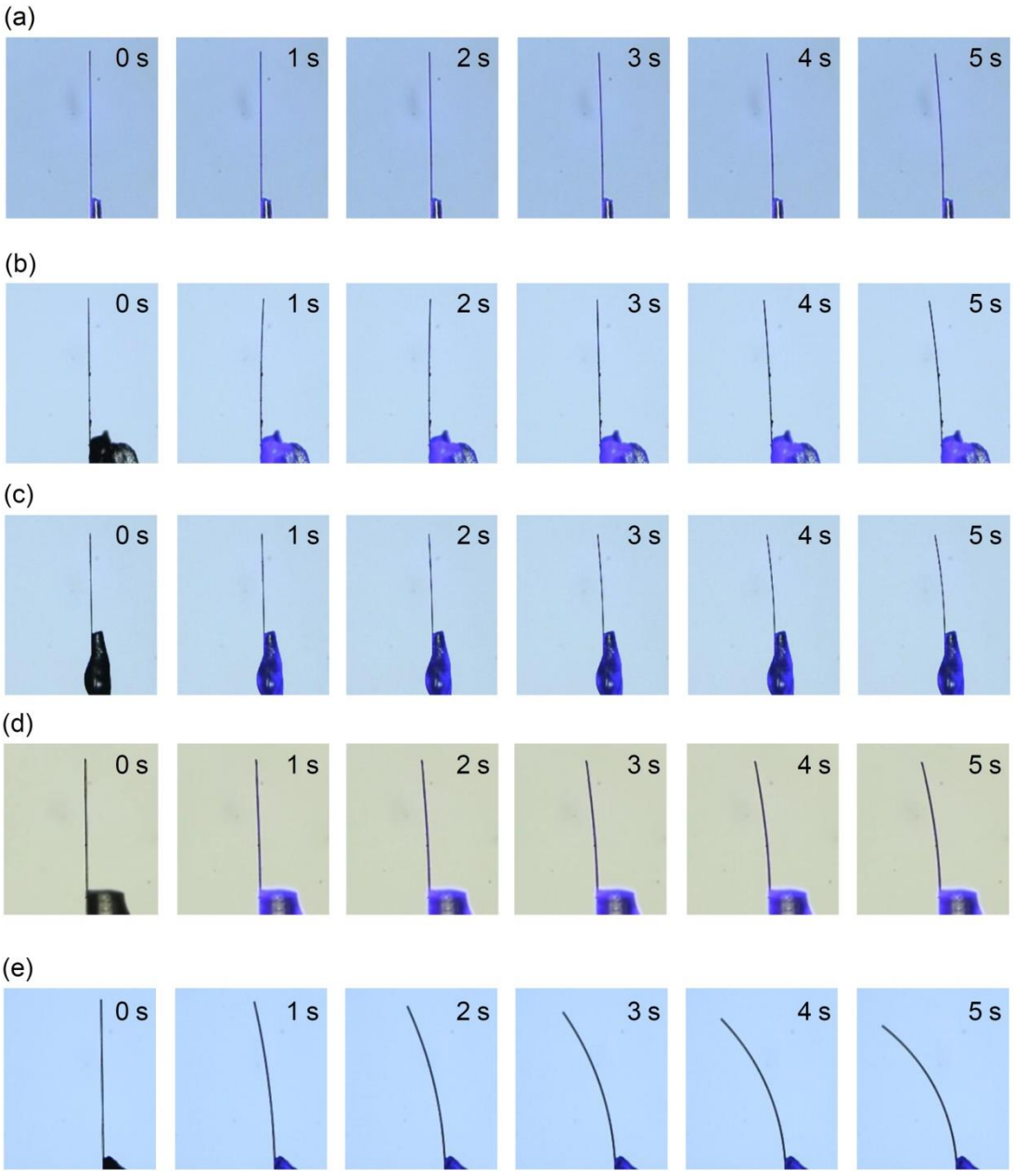

Fig. S5 Photoinduced bending behavior of the crystal **1a** relative to the irradiation time with 380 nm light from left side for crystal thicknesses of (a) 2.9, (b) 4.3, (c) 5.5, (d) 7.6, and (e) 10.3 μm.

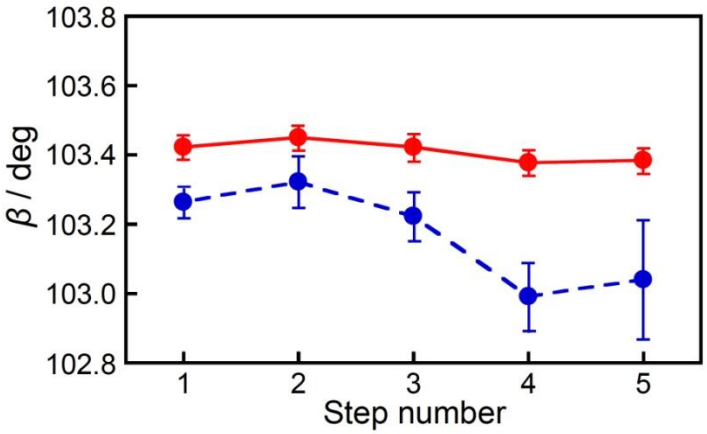

Fig. S6 Change in the β-angle of the unit cell relative to the step of irradiation with 380 nm light. The blue and red circles indicate the angle at each step upon irradiation with 380 nm light and that without UV light irradiation, respectively.

Table S1 Change in the cell parameters of the unit cell as a control experiment before UV irradiation. The value in the parenthesis expresses the standard deviation.

Step number	a / Å	b / Å	c / Å	β / °	V / Å^3
1	7.34(2)	26.42(9)	12.73(5)	103.42(4)	2402(1)
2	7.35(2)	26.45(9)	12.74(4)	103.44(4)	2409(1)
3	7.34(2)	26.42(9)	12.73 (5)	103.42(4)	2402(1)
4	7.33(2)	26.40(8)	12.72(4)	103.38(4)	2395(1)
5	7.33(2)	26.37(9)	12.71(4)	103.38(4)	2390(1)

Table S2 Change in the cell parameters of the unit cell upon irradiation with 380 nm light. The value in the parenthesis expresses the standard deviation.

Step number	a / Å	b / Å	c / Å	β / °	V / Å^3
1	7.33(3)	26.40(10)	2.72(5)	103.26(4)	2396(1)
2	7.35(3)	26.49(15)	12.75(7)	103.32(7)	2415(2)
3	7.40(4)	26.77(16)	12.87(8)	103.22(7)	2483(2)
4	7.31(5)	26.53(23)	12.76(11)	102.99(10)	2412(3)
5	7.29(9)	26.74(36)	12.84(19)	103.04(17)	2441(5)