Supporting Information

Disproportionation-induced solid-state fluorescence
in 6,13-dihydropentacenes

Tomoyuki Tajima,*a Rai Sanda,a Katsuya Nishihara,a Hitoshi Shirai,a Yasuhiro Okuda, b Akihiro Orita, b
and Yutaka Takaguchi*a

*aGraduate School of Environmental Science, Okayama University, Tsushima-Naka 2-1-1, Kita-ku,
Okayama 700-8530, Japan

bDepartment of Applied Chemistry and Biotechnology, Okayama University of Science, 1-1 Ridai-cho,
Kita-ku, Okayama 700-0005, Japan
Fig. S1. $^1$H NMR spectrum of 3a after heating at 250 °C.

Fig. S2. $^1$H NMR spectrum of 3a after heating at 250 °C upon exposure to air.
**Fig. S3.** The differential scanning calorimetry (DSC) DSC (Differential Scanning Calorimetry) measurement of 3a (scan rate = 10 °C/min).

**Fig. S4.** Apparent fluorescence color change of a 3b with the increasing temperature and polarized optical microscopy images of 3b.
**Fig. S5.** Fluorescence spectra of a thin film of 3a with increasing temperature.

**Fig. S6.** Fluorescence spectra of 3a in CHCl₃ solution as function of concentration (λₑₓ = 275 nm).
**Fig. S7.** ORTEP drawings of 3b (thermal ellipsoids at 50% probability).

**Fig. S8.** ORTEP drawings of 3c (thermal ellipsoids at 50% probability).
Fig. S9. Fluorescence spectra of solid of 3b upon photoirradiation ($\lambda_{ex} > 300$ nm).

Fig. S10. XRD pattern of 3a after annealing at 230 °C (orange line), at 230 °C (green line), and before annealing (blue line).
Fig. S11. FT-IR spectrum of 2.
Fig. S12. $^1$H NMR spectrum of 3a in CDCl$_3$.

Fig. S13. $^1$H NMR spectrum of 3a in CDCl$_3$. 
Fig. S14. $^1$H NMR spectrum of 3b in CDCl$_3$.

Fig. S15. $^{13}$C NMR spectrum of 3b in CDCl$_3$. 
Fig. S16. $^1$H NMR spectrum of 3c in CDCl$_3$.

Fig. S17. $^{13}$C NMR spectrum of 3c in CDCl$_3$. 