

SUPPORTING INFORMATION

Manuscript title: **Highly emissive hand-shaped π -conjugated alkynylpyrenes: synthesis, structures and photophysical properties**

Author(s): Jian-Yong Hu,^{*a,b} Xin-Long Ni,^a Xing Feng,^a Masanao Era,^a Mark R. J. Elsegood,^c Simon J. Teat,^d and Takehiko Yamato^{*a}

Contents (S1 to S7 are the page numbers)

S1 – Title, authors and description of supporting information content.

S2 – ¹H NMR spectra of **4a** (Fig. 1) and **4b** (Fig. 2)

S3 – ¹³C NMR spectra of **4b** (Fig. 3) and ¹H NMR spectra of **4c** (Fig. 4)

S4 – ¹³C NMR spectra of **4c** (Fig. 5) and ¹H NMR spectra of **6** (Fig. 6)

S5 – ¹³C NMR spectra of **6** (Fig. 7), and TGA curves of **4a-c** and **6** (Fig. 8)

S6 – Cyclic voltammograms (CV) of **4a-c** and **6** (Fig. 9), and the effect of concentration on the fluorescent emission spectra of **4c** (Fig. 10)

S7 – Photoluminescence (PL) spectra of **4a-c** in 1wt.-%-doped PMMA films (Fig. 11)

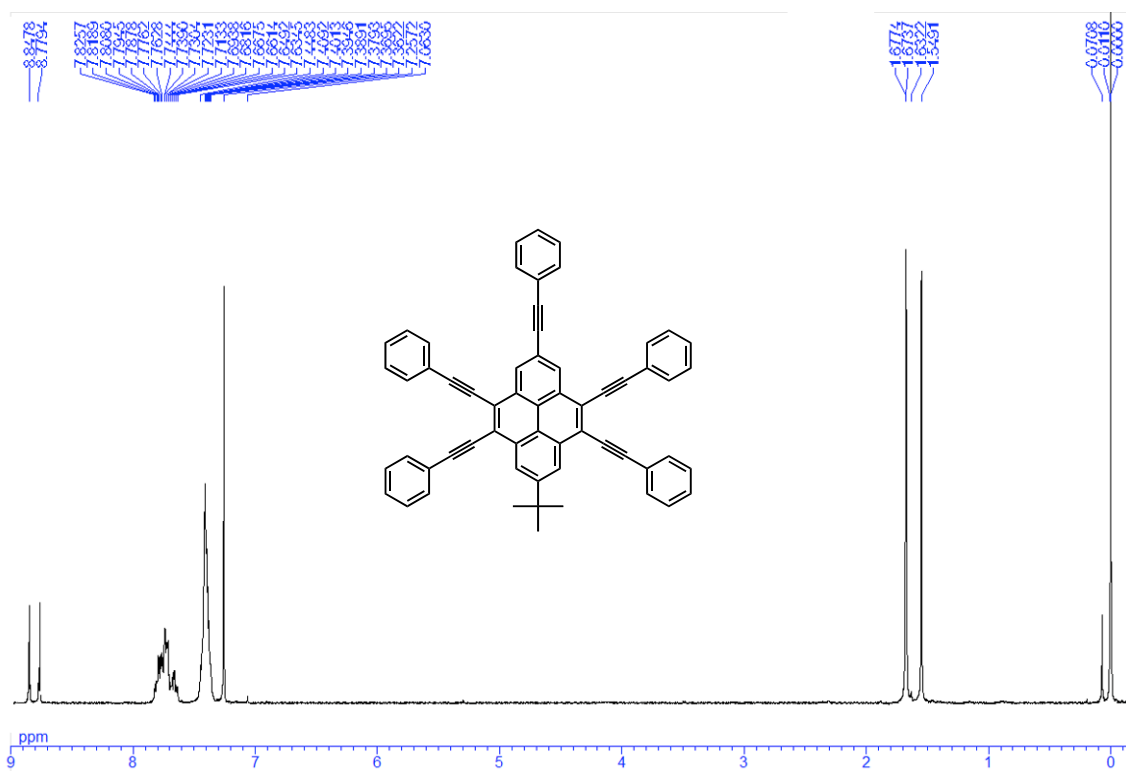


Fig. 1. ¹H NMR spectra of **4a** in CDCl₃ (300 MHz) at 25 °C.

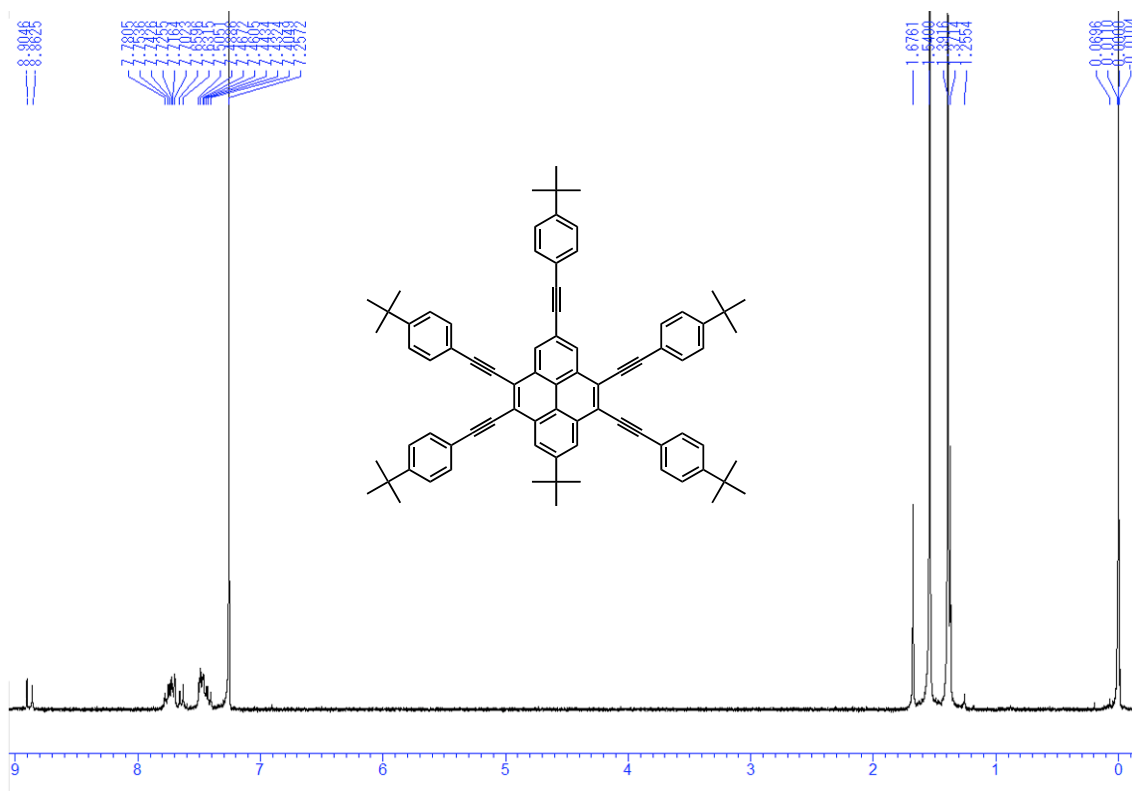


Fig. 2. ¹H NMR spectra of **4b** in CDCl₃ (300 MHz) at 25 °C.

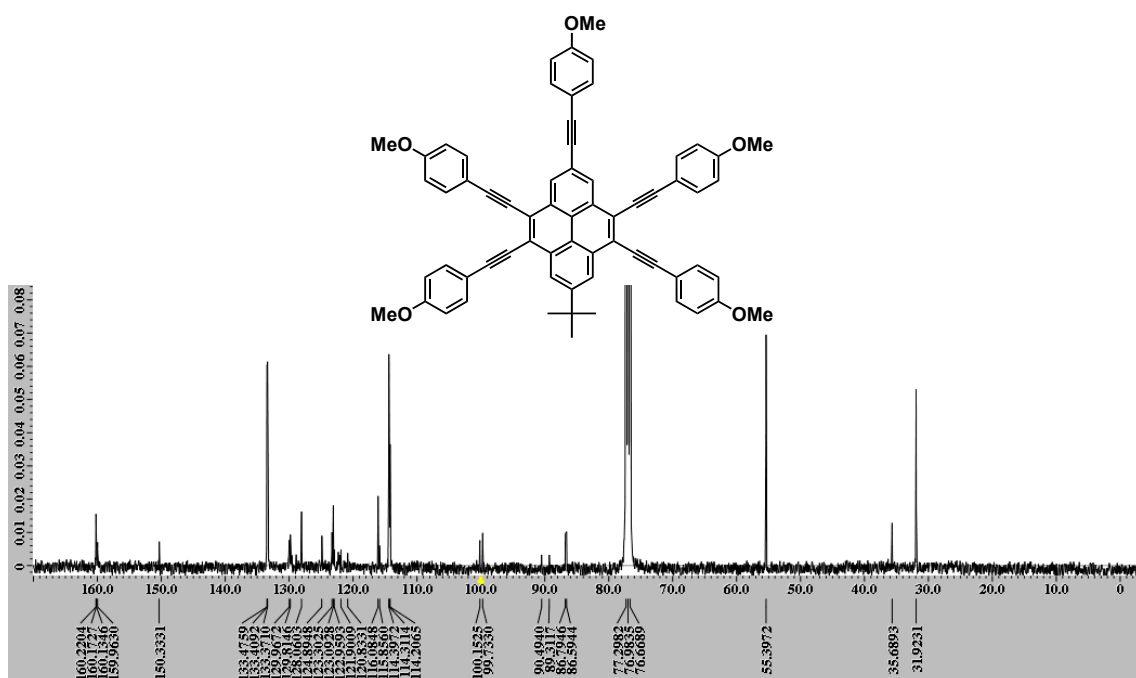


Fig. 5. ¹³C NMR spectra of 4c in CDCl₃ (300 MHz) at 60 °C.

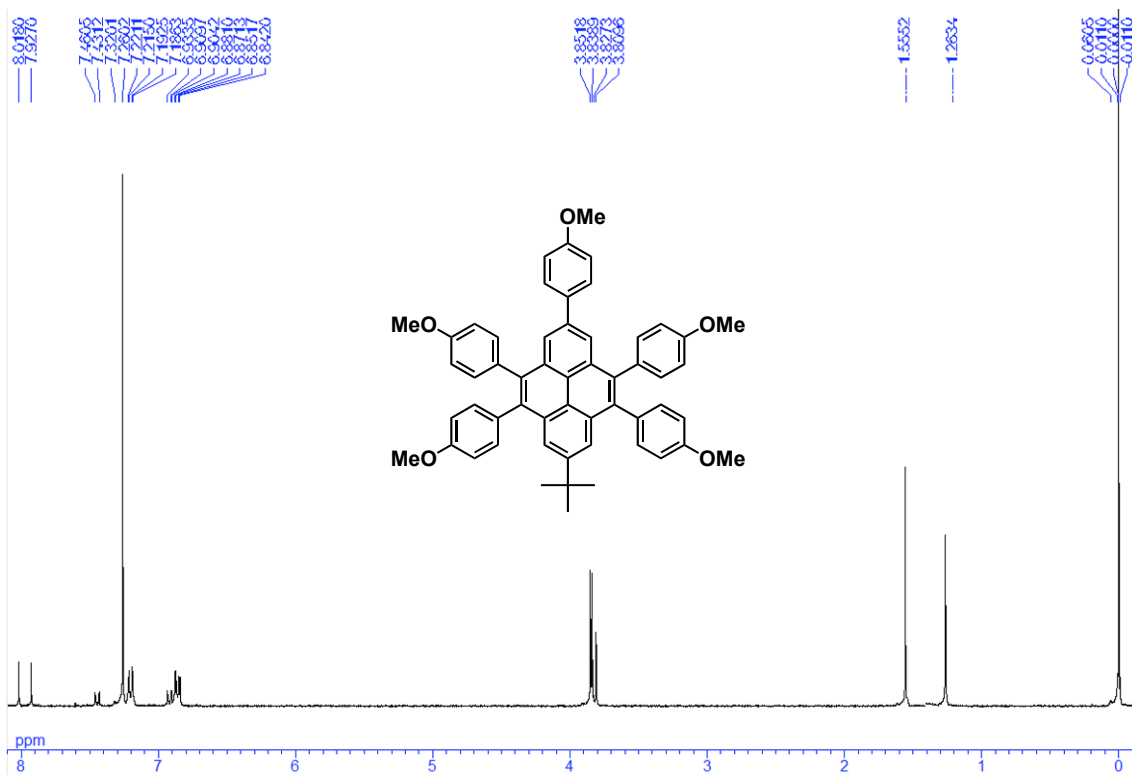


Fig. 6. ¹H NMR spectra of 6 in CDCl₃ (300 MHz) at 25 °C.

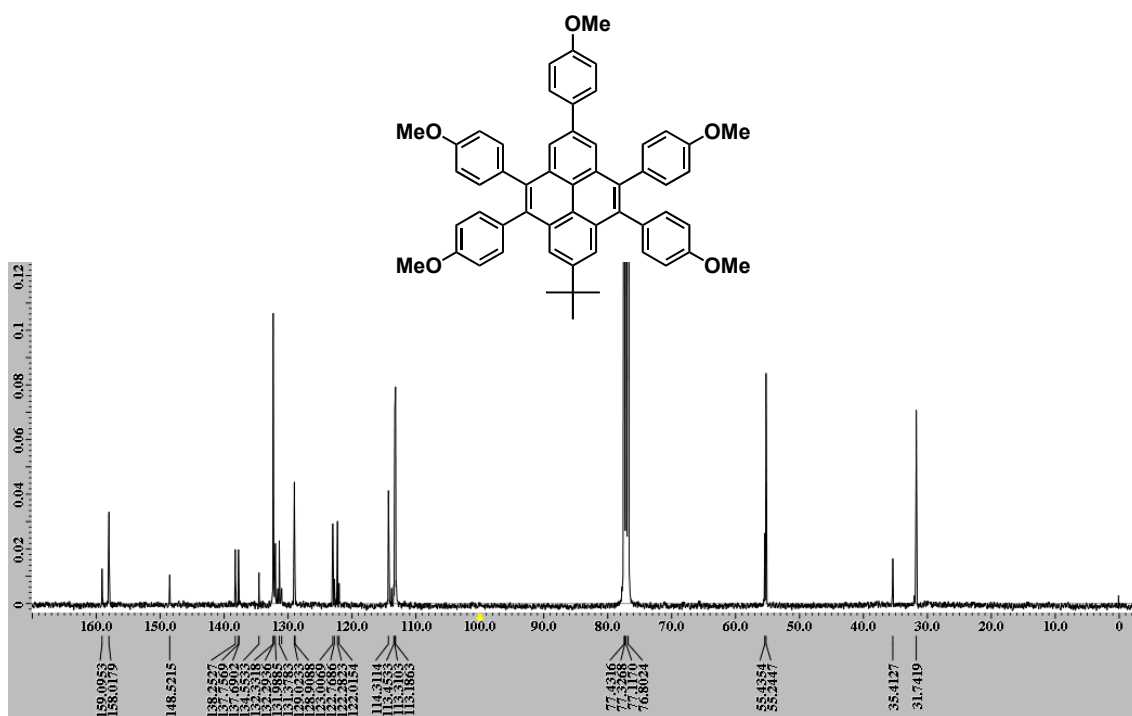


Fig. 7. ^{13}C NMR spectra of **6** in CDCl_3 (300 MHz) at 25 °C.

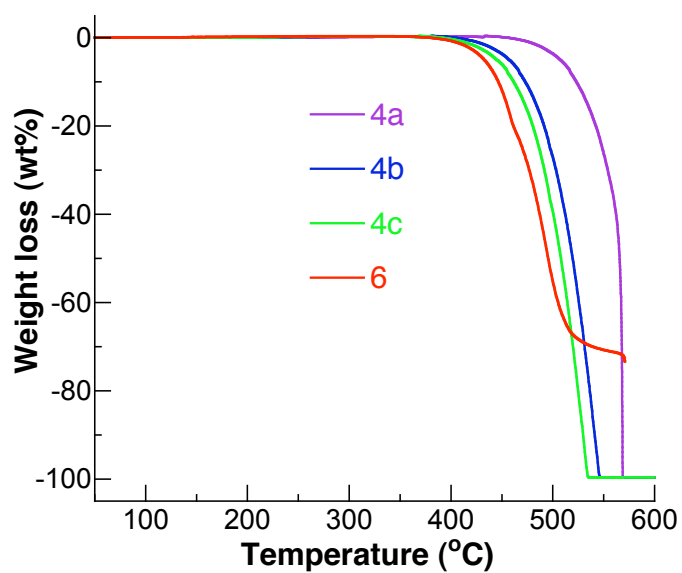


Fig. 8. TGA curves of the hand-shaped molecules **4a-c** and **6** at the heating rate of $10^{\circ}\text{C min}^{-1}$ under nitrogen atmosphere.

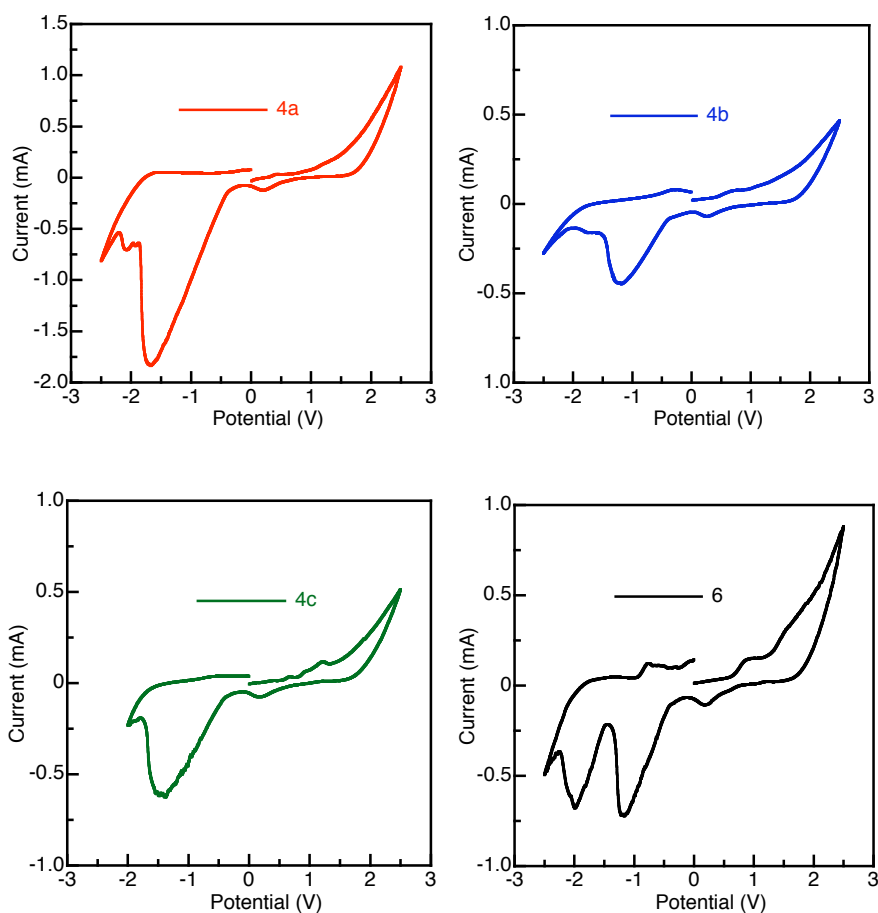


Fig. 9. Cyclic voltammograms (CV) of the compounds **4a-c** and **6** recorded from a CH₂Cl₂ solution on a platinum plate electrode at a scan rate of 50 mV s⁻¹.

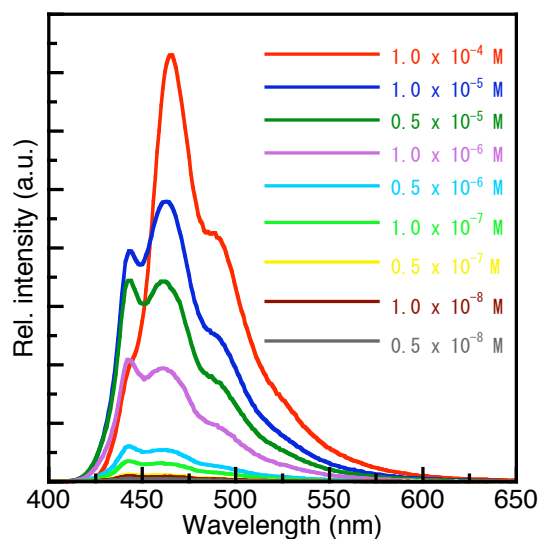


Fig. 10. Effect of concentration on the fluorescence emission spectra of **4c**, recorded in CHCl₃ at room temp. from 0.5×10^{-8} M to 1.0×10^{-4} M. $\lambda_{\text{ex}} = 342$ nm

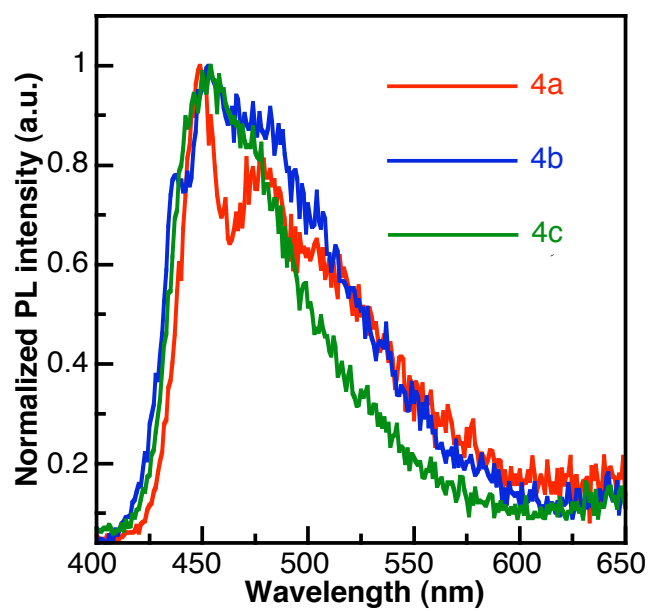


Fig. 11. Photoluminescence (PL) spectra of the hand-shaped compounds **4a-c** in thin films doped into PMMA at the 1wt.% level.