Electronic Supplementary Information

Mechanofluorochromic properties of fluorescent molecules based on dicyanomethylene-4*H*-pyran and indole isomer containing different alkyl chains *via* alkene module

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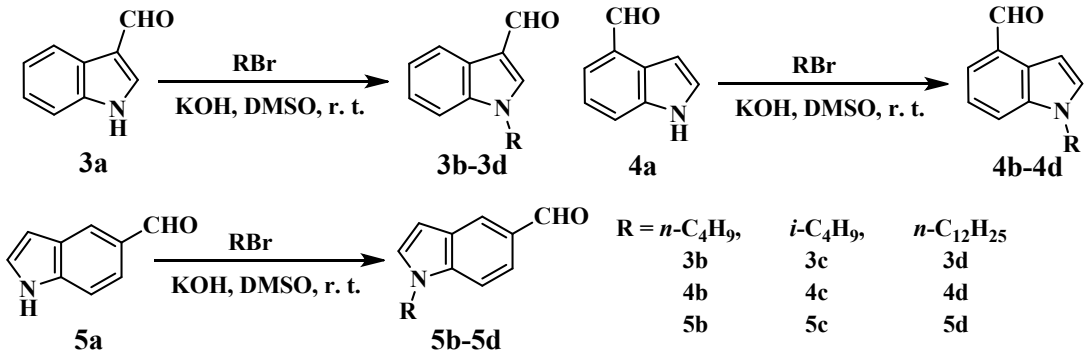

Scheme S1 Synthetic routes of *N*-substituted indolecarboxaldehydes **3b-3d/4b-4d/5b-5d**.

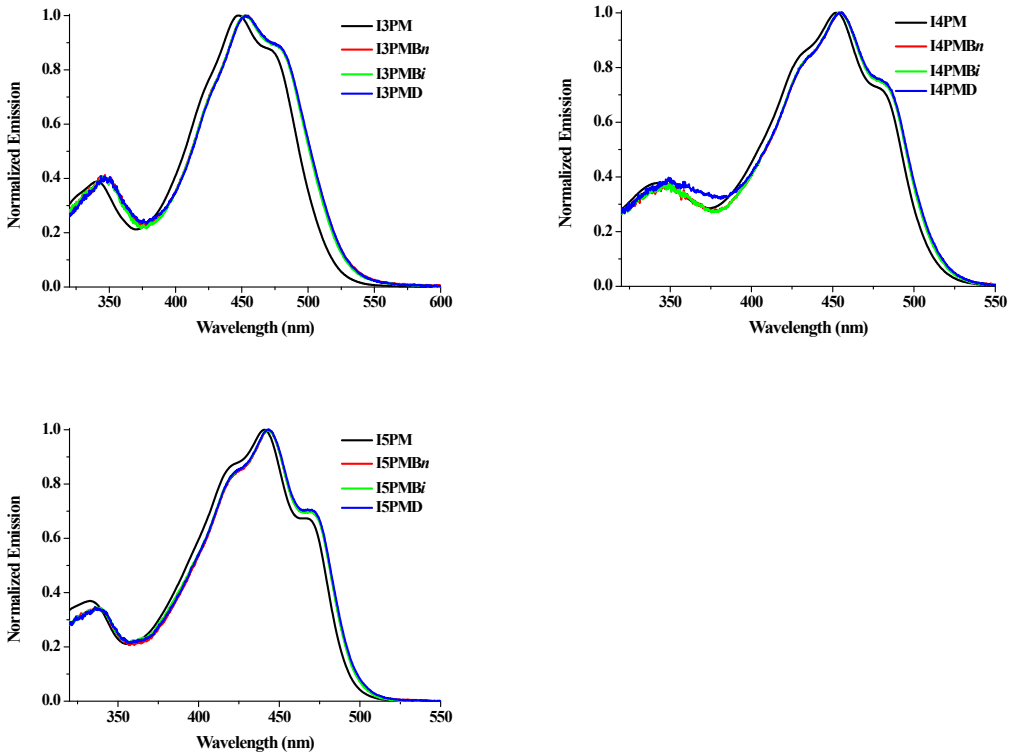

Fig. S1 Normalized UV-vis absorption spectra of IPM derivatives in THF solution at 1×10^{-5} mol/L.

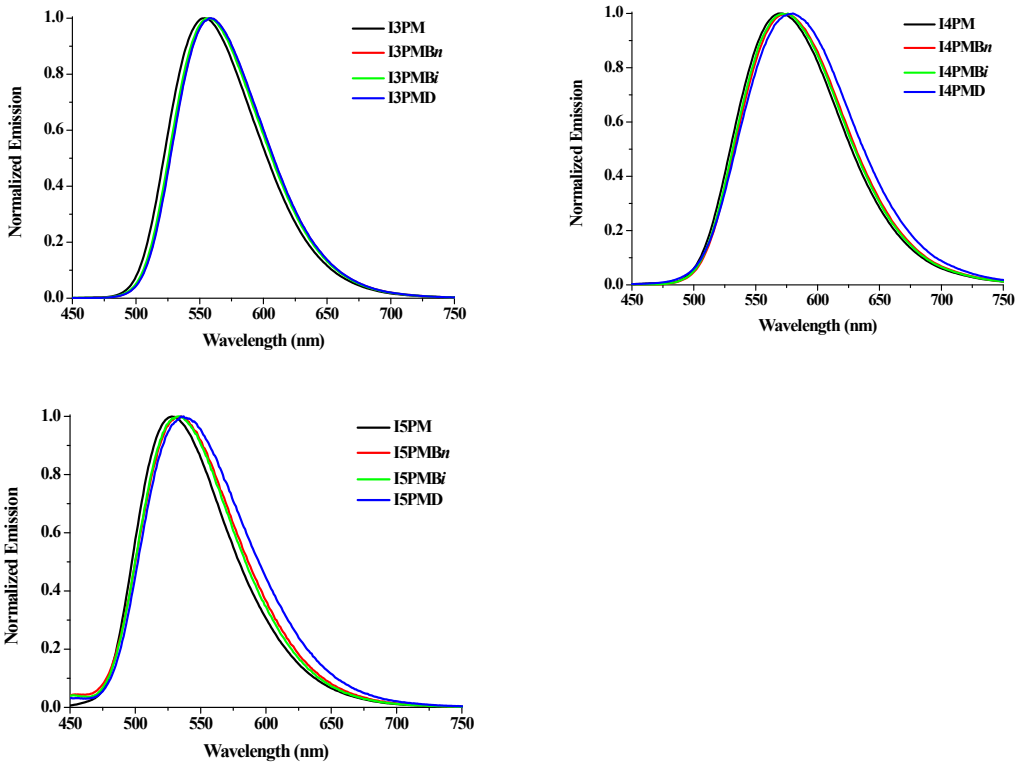

Fig. S2 Normalized fluorescence spectra (b) of IPM derivatives in THF solution at 1×10^{-5} mol/L.

Table S1 Photophysical properties of IPM derivatives in THF solution (s = shoulder peak).

Compound	λ_{abs} (nm)	λ_{em} (nm)
I3PM	341, 447, 476 (s)	554
I3PMB*n*	347, 453, 482 (s)	558
I3PMB*i*	346, 452, 482 (s)	557
I3PMD	347, 454, 483 (s)	559
I4PM	343, 428 (s), 452, 483 (s)	570
I4PMB*n*	346, 427 (s), 454, 486 (s)	574
I4PMB*i*	345, 429 (s), 455, 486 (s)	574
I4PMD	348, 429 (s), 456, 487 (s)	580
I5PM	333, 416 (s), 441, 468	529
I5PMB*n*	337, 417 (s), 444, 470	535
I5PMB*i*	337, 418 (s), 443, 470	534
I5PMD	336, 418 (s), 443, 470	536

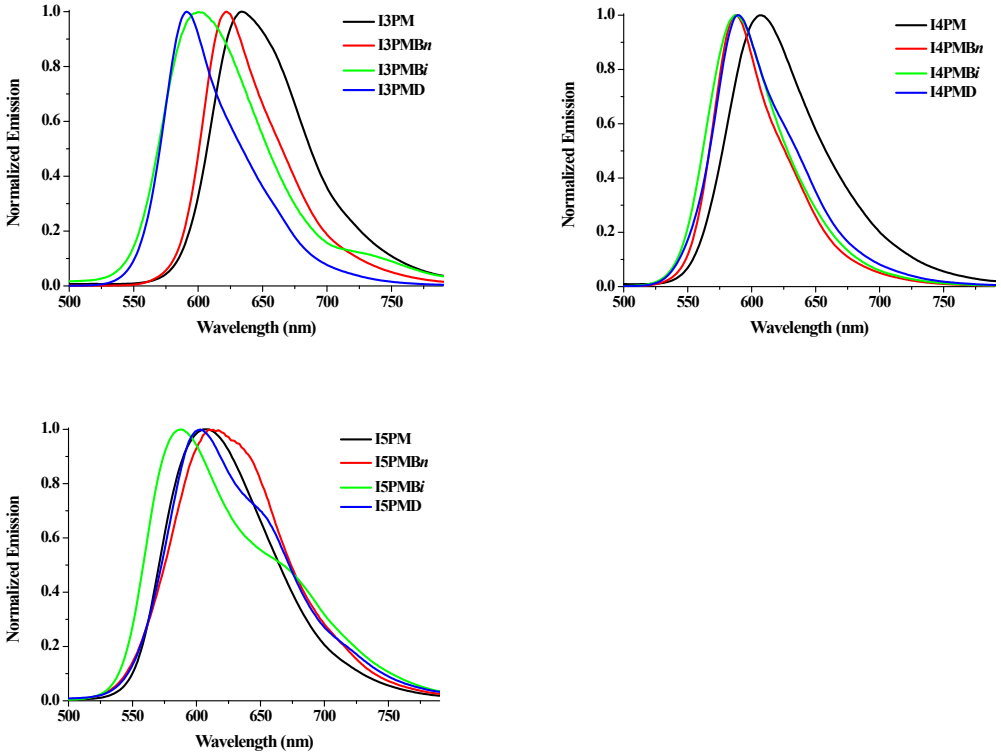

Fig. S3 Normalized fluorescence spectra of the original samples of IPM derivatives in solid state.

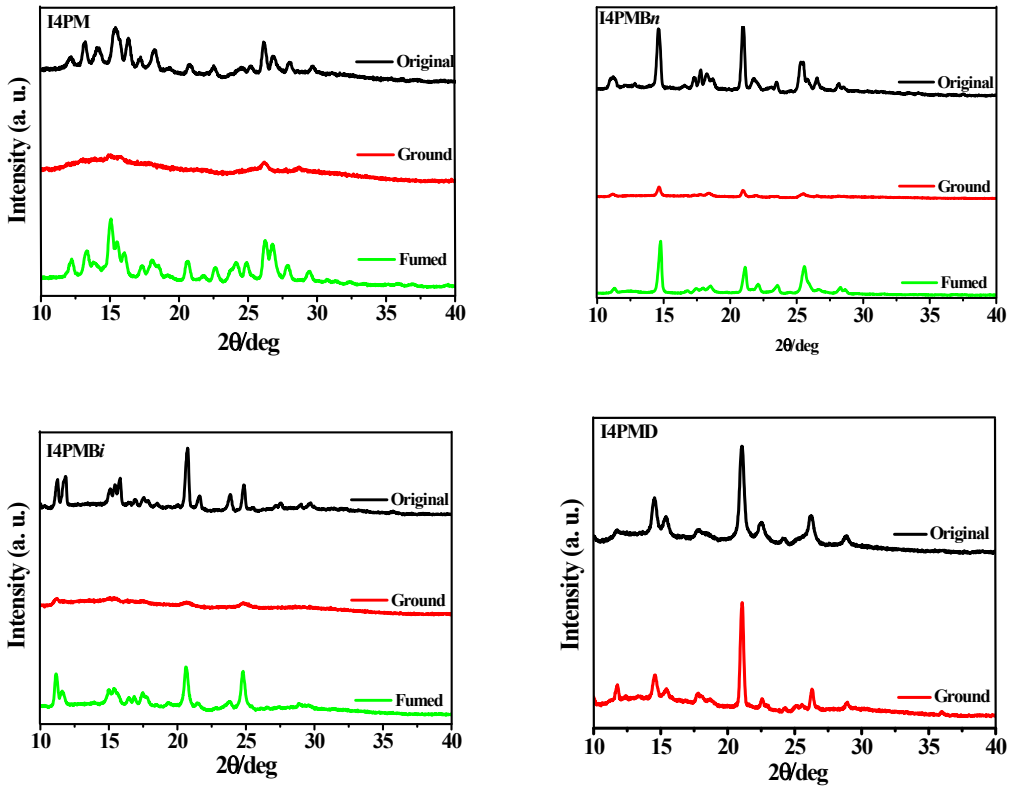

Fig. S4 XRD curves of the solid samples of **I4PM** derivatives under various conditions.

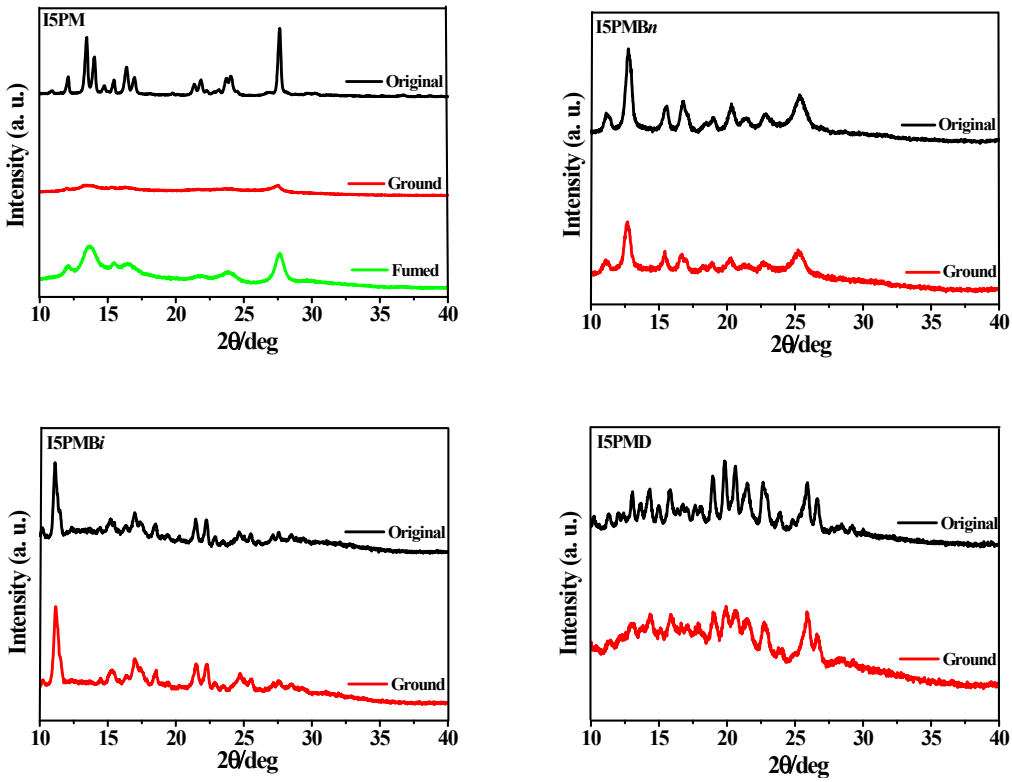

Fig. S5 XRD curves of the solid samples of **I5PM** derivatives under various conditions.

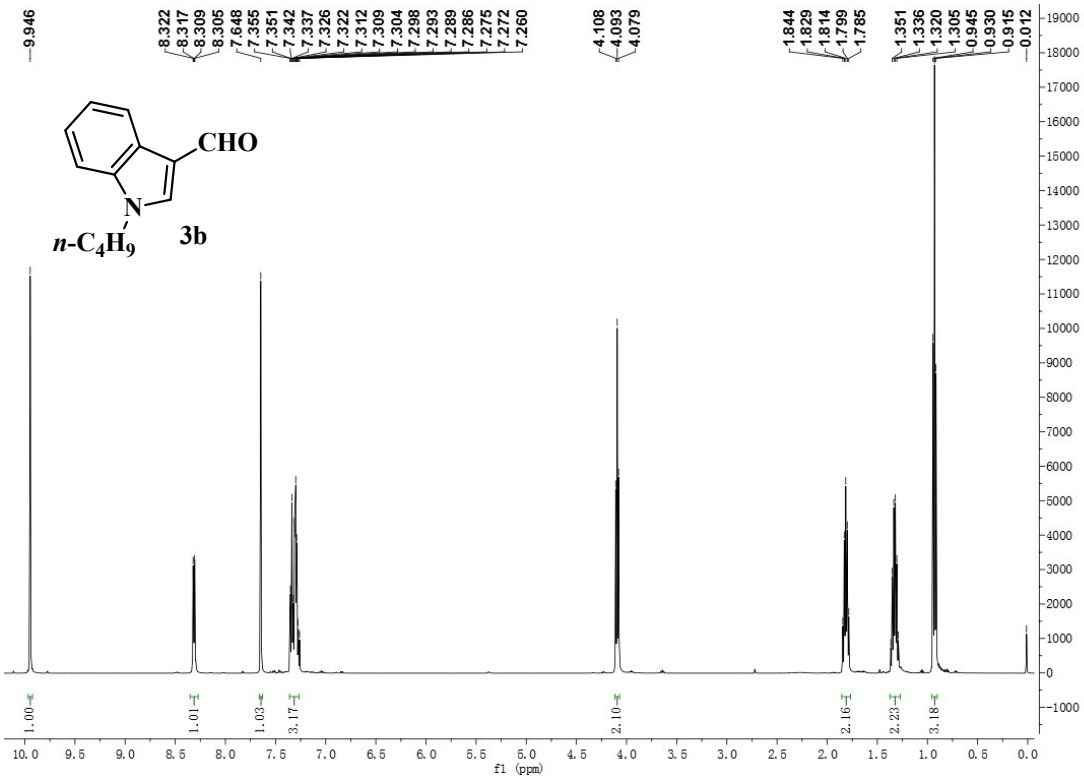

Fig. S6 ^{1}H NMR of **3b** ($CDCl_3$, 500 MHz).

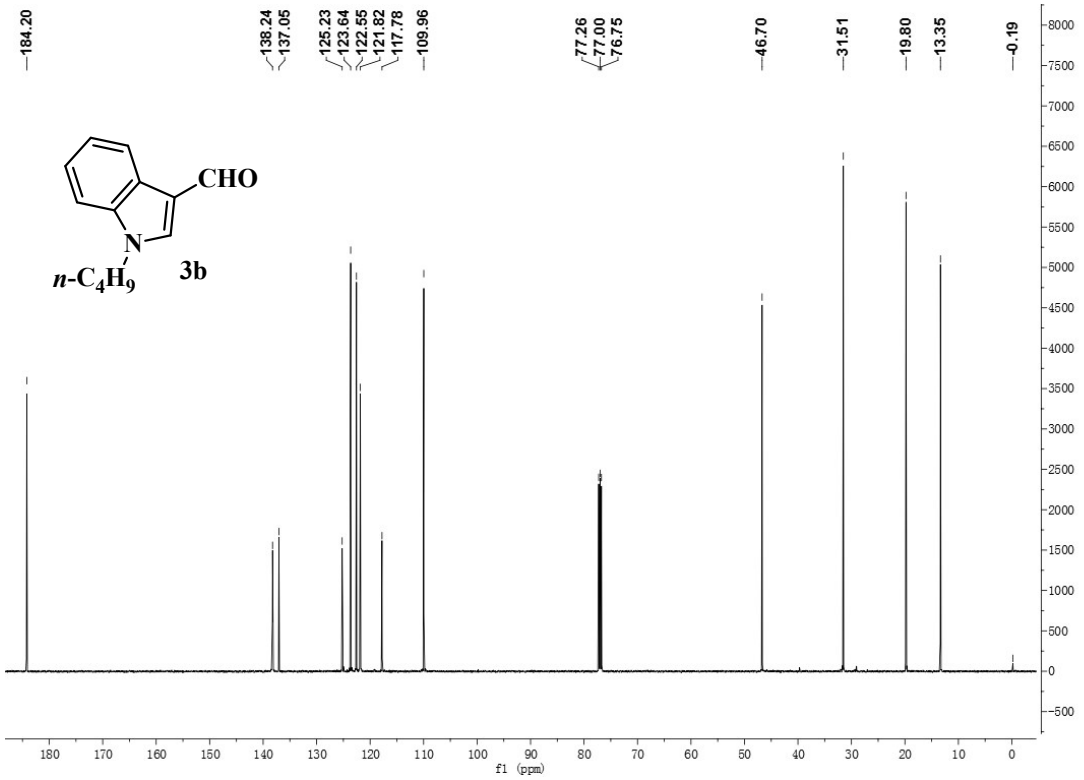

Fig. S7 ^{13}C NMR of **3b** ($CDCl_3$, 125 MHz).

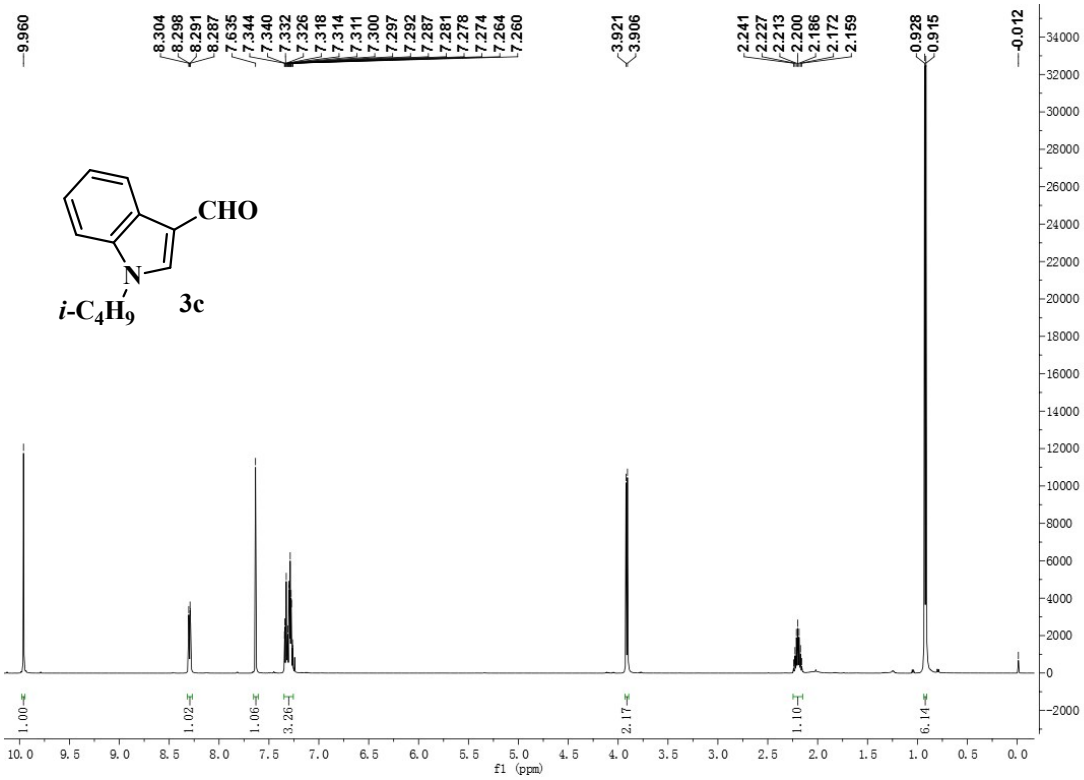

Fig. S8 ^{1}H NMR of **3c** ($CDCl_3$, 500 MHz).

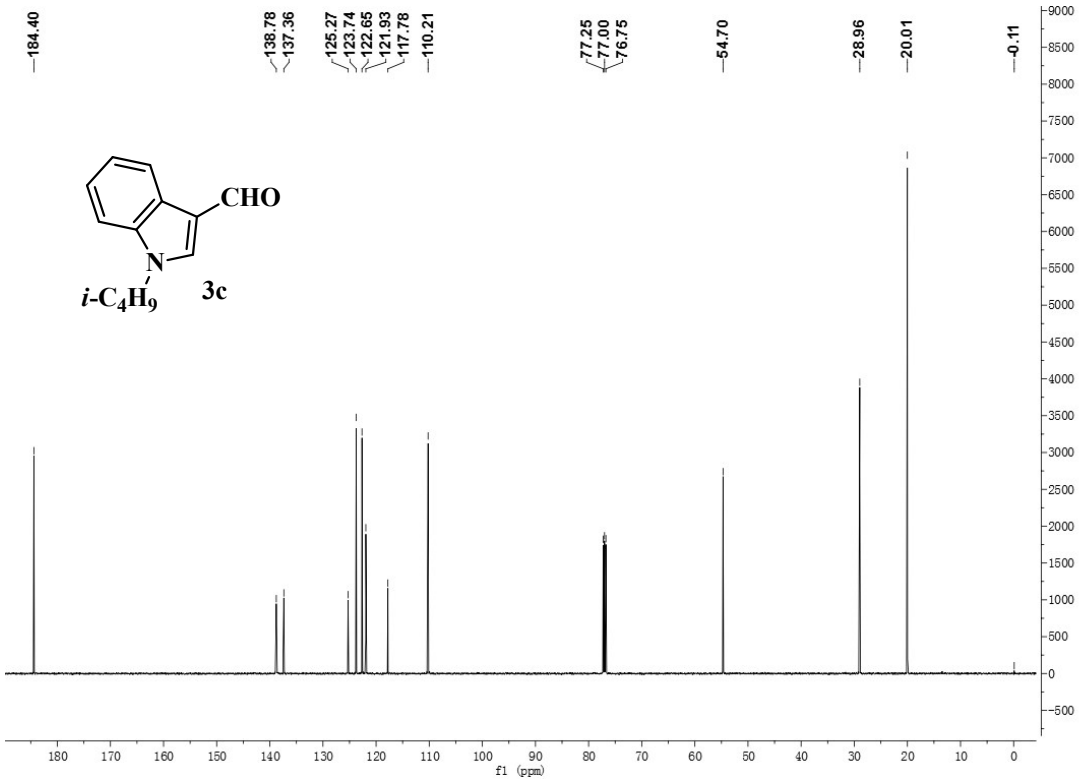

Fig. S9 ^{13}C NMR of **3c** ($CDCl_3$, 125 MHz).

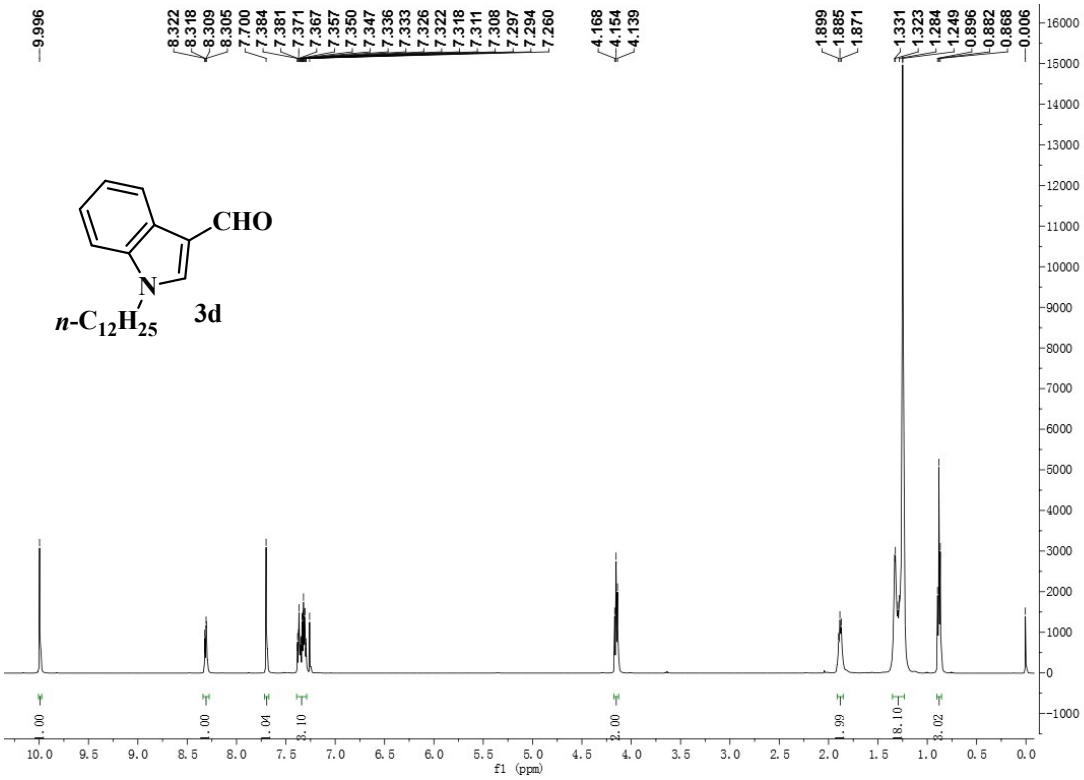

Fig. S10 ^{1}H NMR of **3d** ($CDCl_3$, 500 MHz).

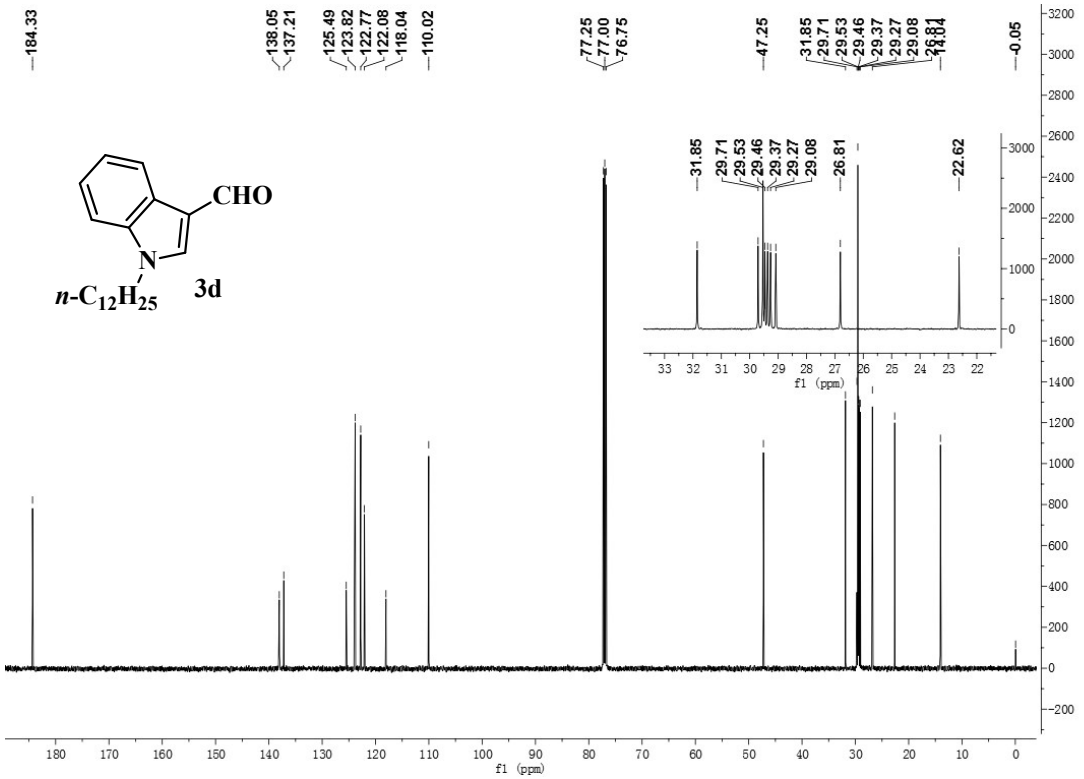

Fig. S11 ^{13}C NMR of **3d** ($CDCl_3$, 125 MHz).

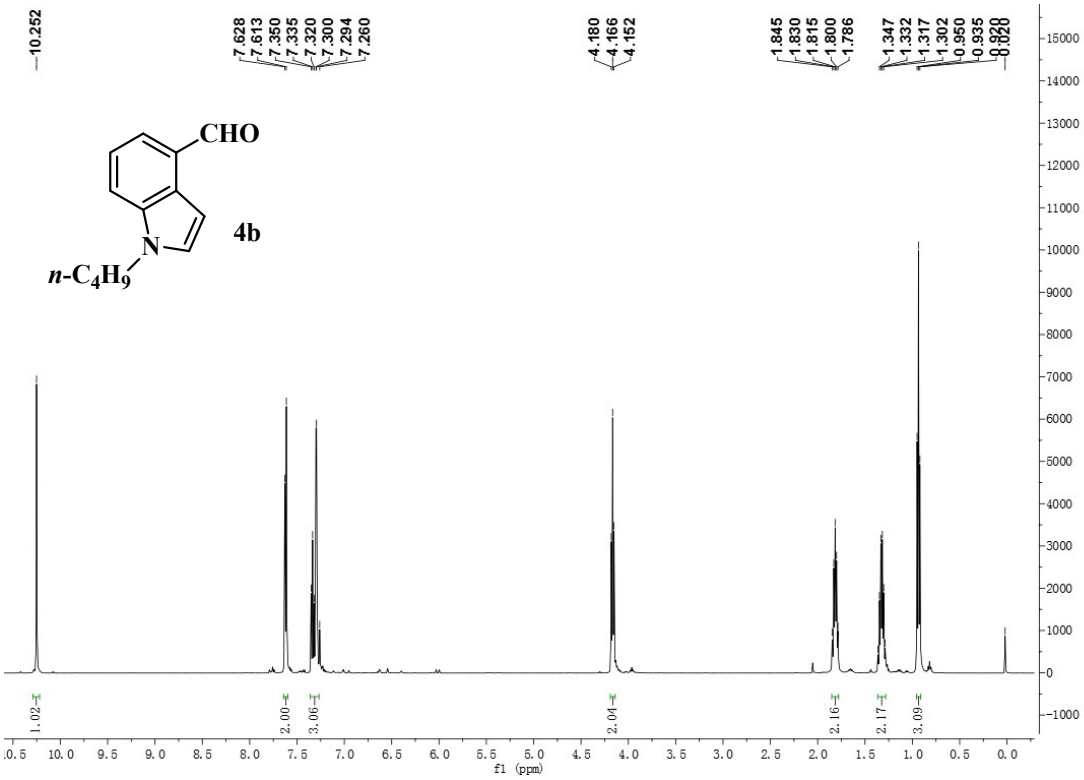

Fig. S12 ^{1}H NMR of **4b** ($CDCl_3$, 500 MHz).

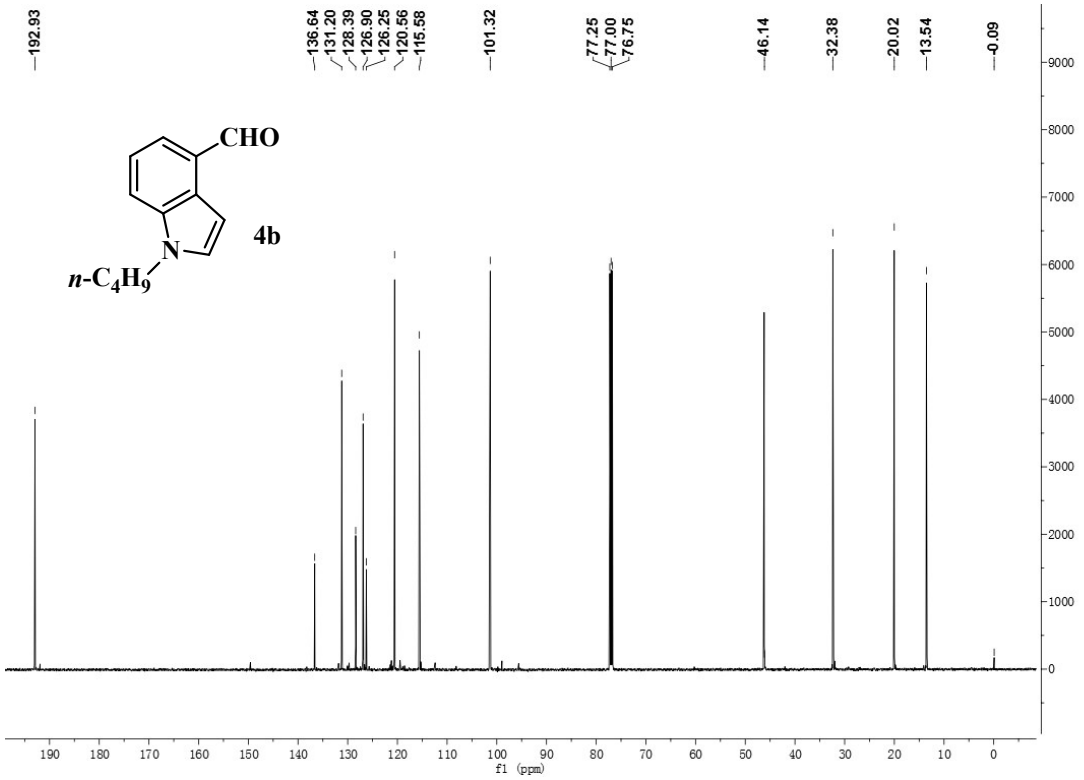

Fig. S13 ^{13}C NMR of **4b** ($CDCl_3$, 125 MHz).

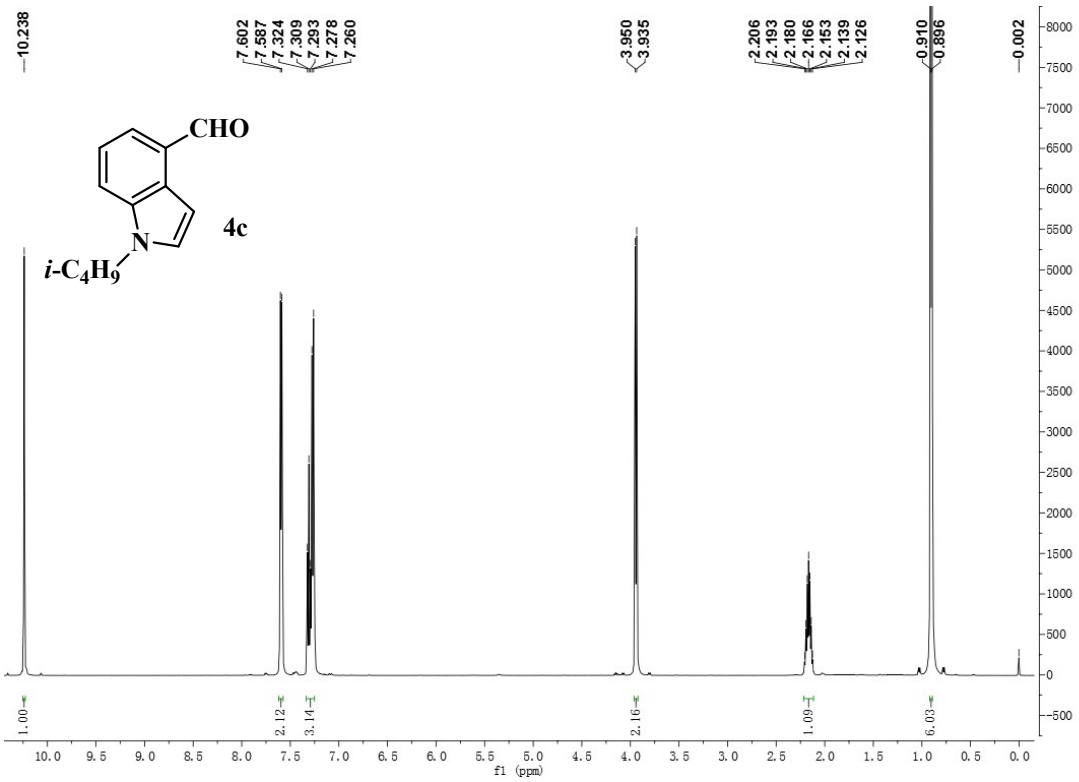

Fig. S14 ^{1}H NMR of **4c** ($CDCl_3$, 500 MHz).

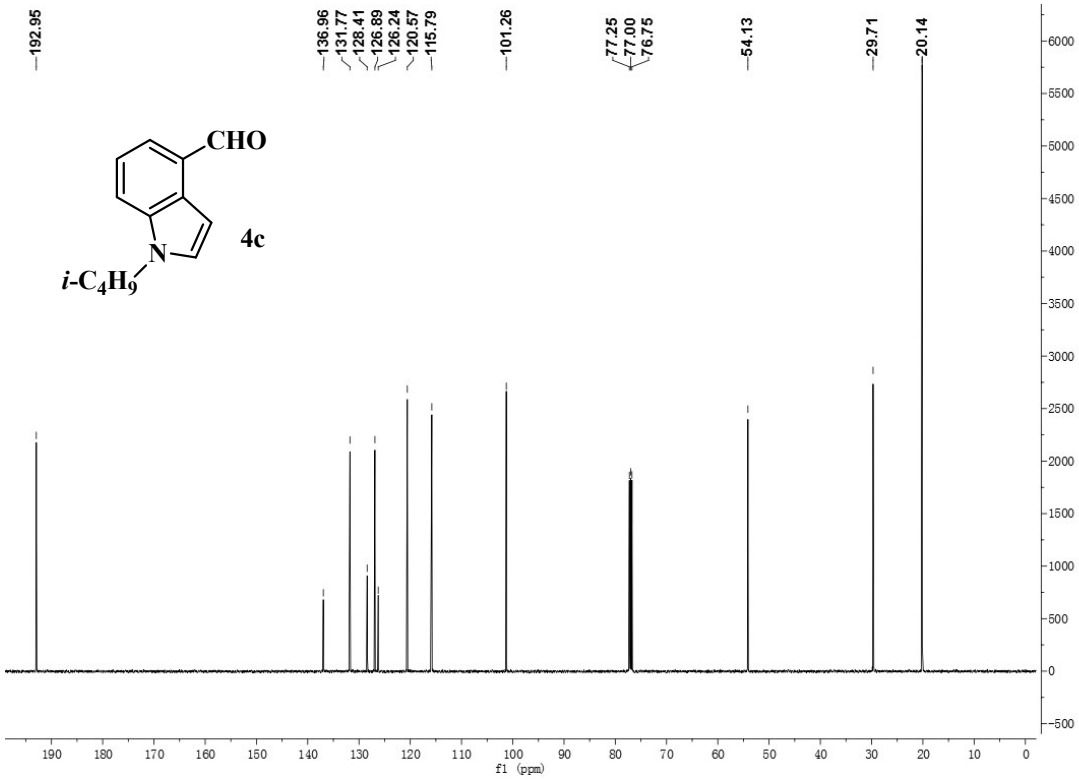

Fig. S15 ^{13}C NMR of **4c** ($CDCl_3$, 125 MHz).

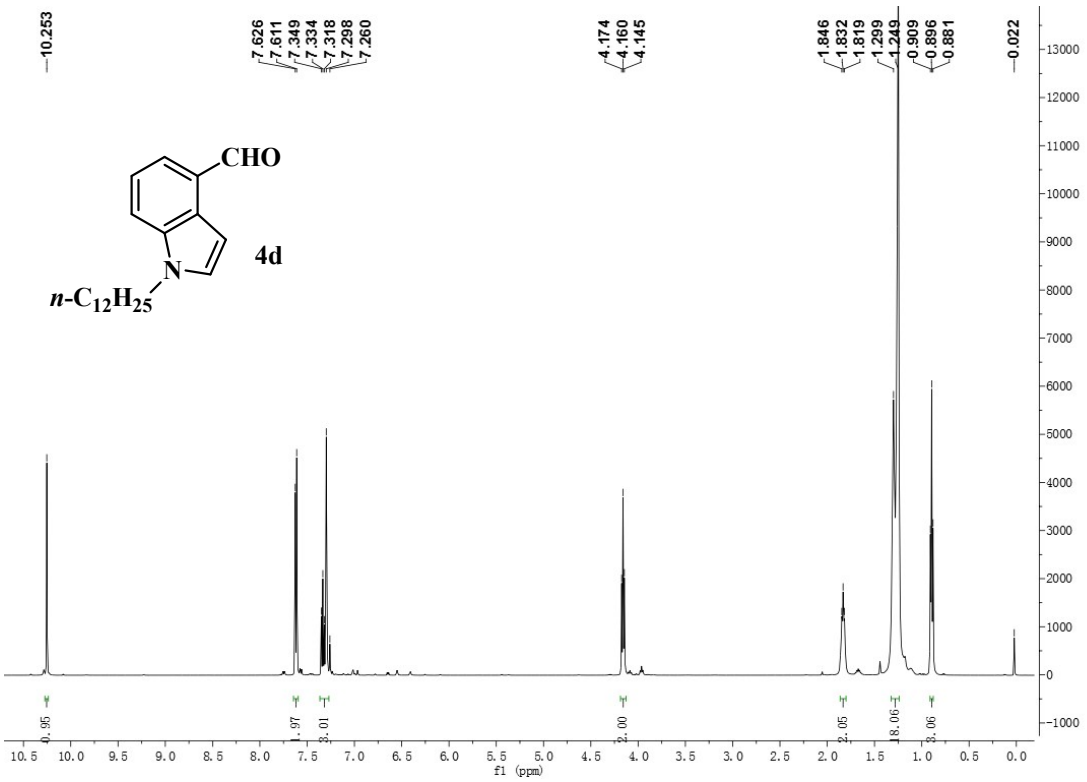

Fig. S16 ^{1}H NMR of **4d** ($CDCl_3$, 500 MHz).

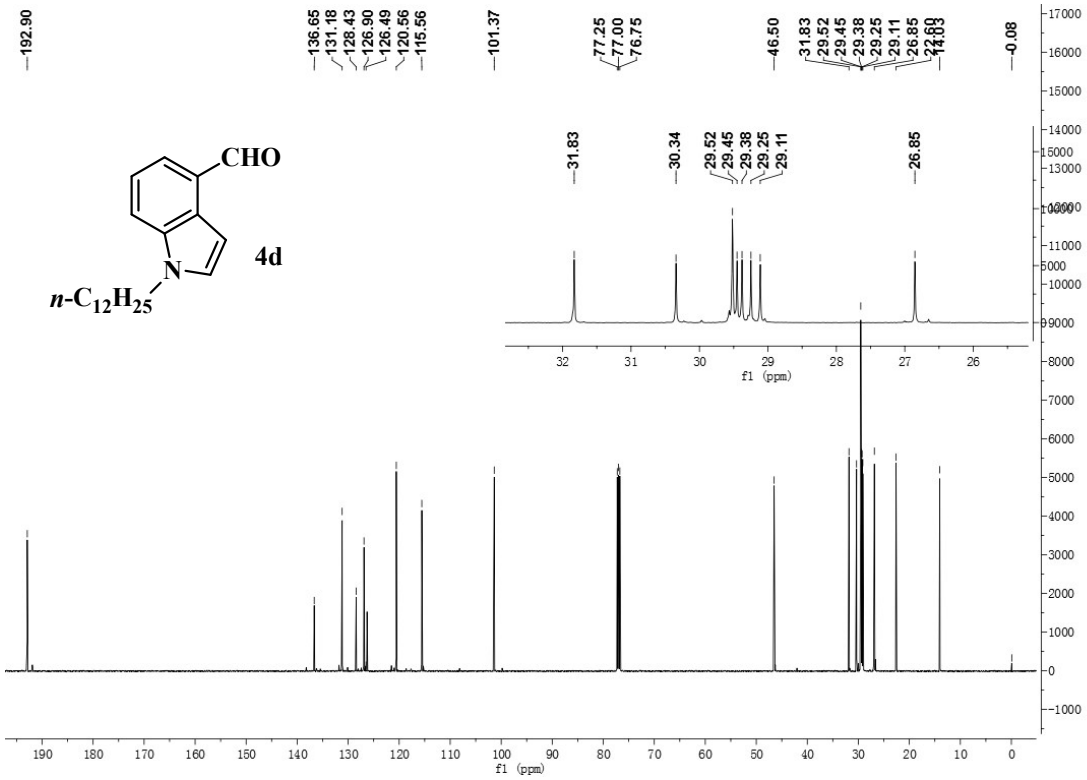

Fig. S17 ^{13}C NMR of **4d** ($CDCl_3$, 125 MHz).

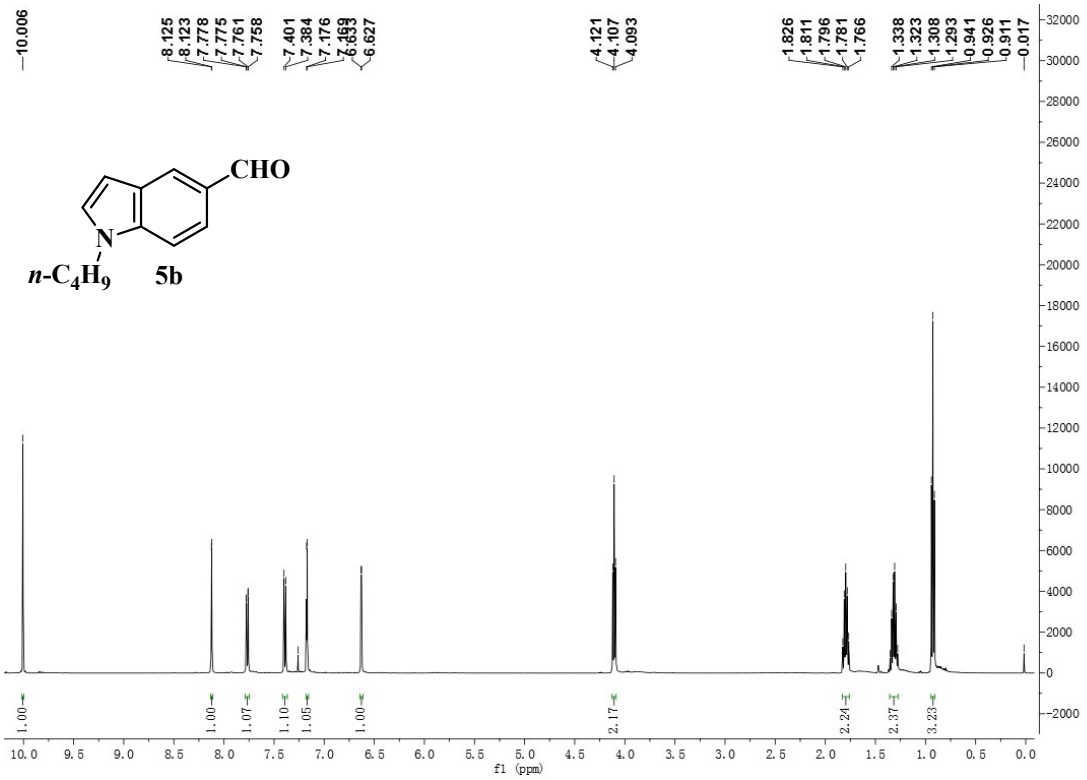

Fig. S18 ^{1}H NMR of **5b** ($CDCl_3$, 500 MHz).

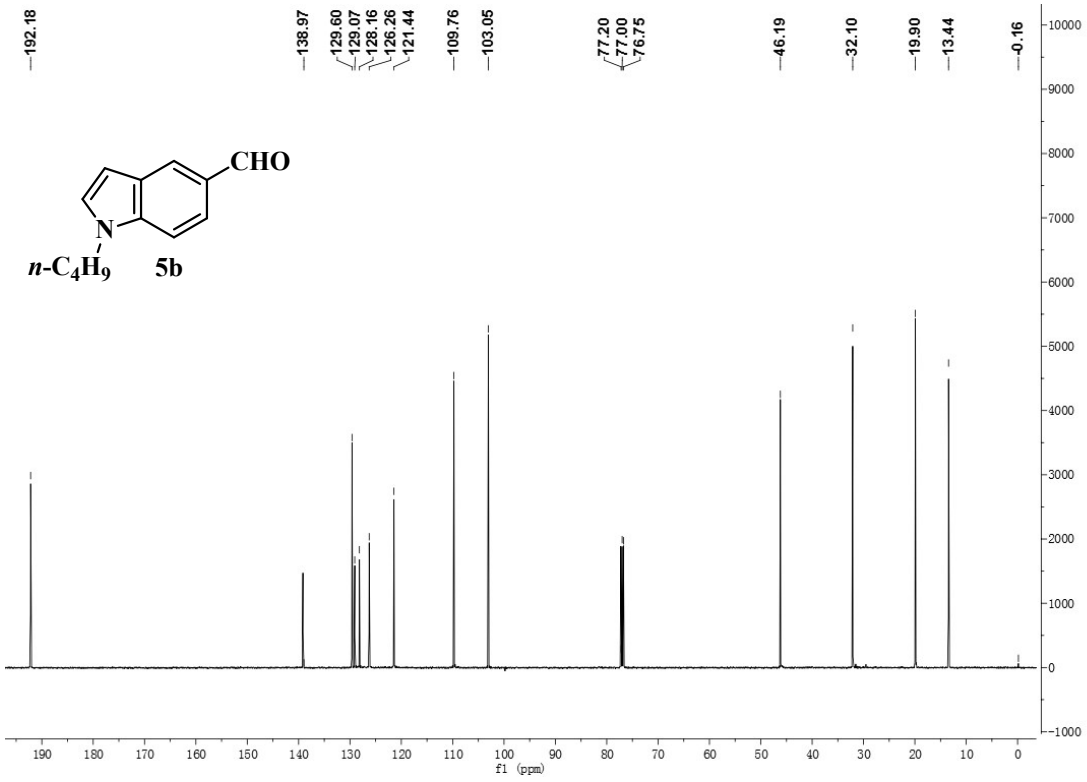

Fig. S19 ^{13}C NMR of **5b** ($CDCl_3$, 125 MHz).

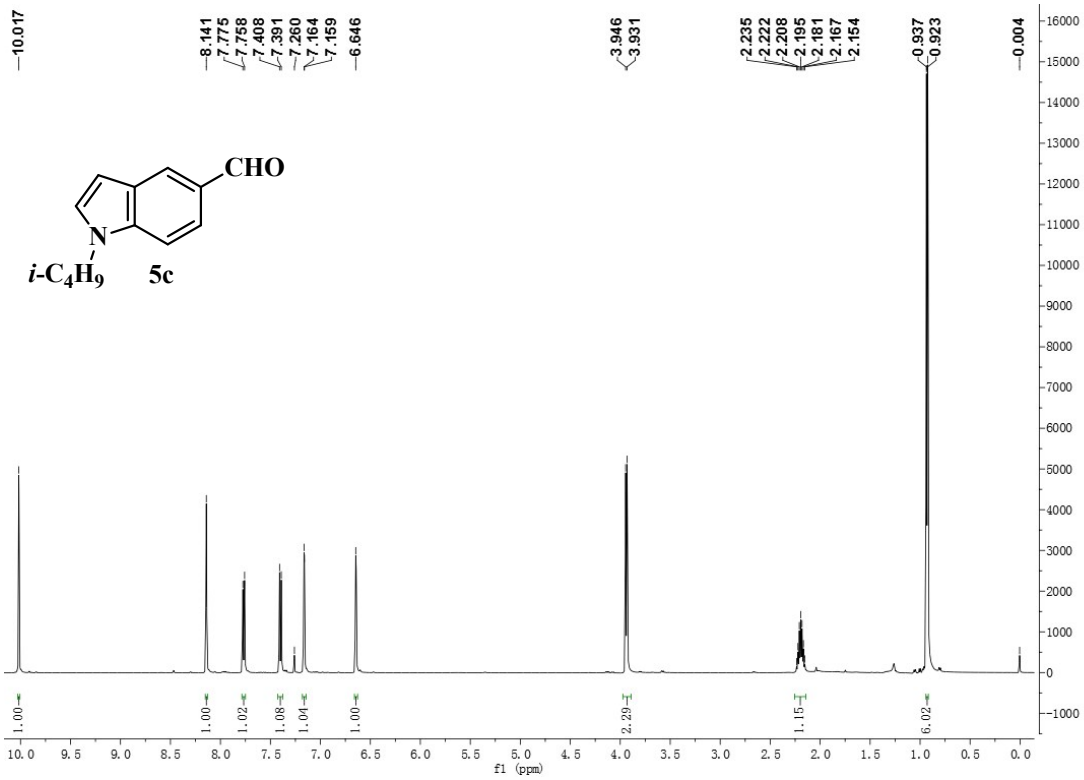

Fig. S20 ^{1}H NMR of **5c** ($CDCl_3$, 500 MHz).

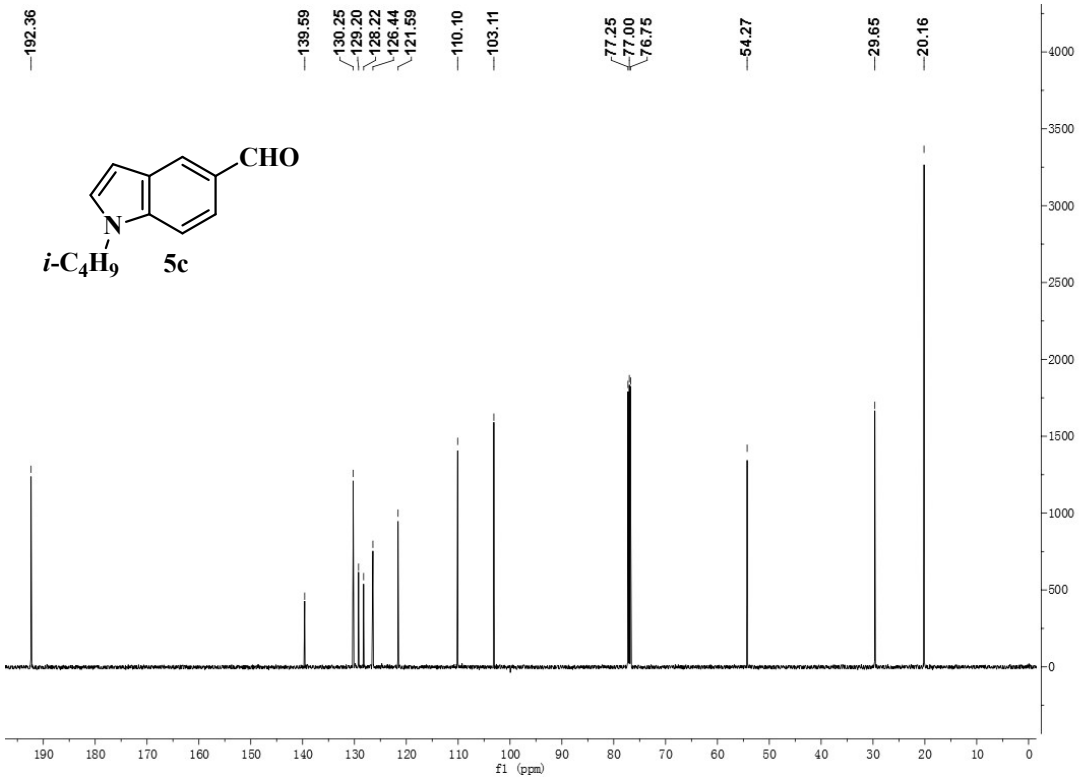

Fig. S21 ^{13}C NMR of **5c** ($CDCl_3$, 125 MHz).

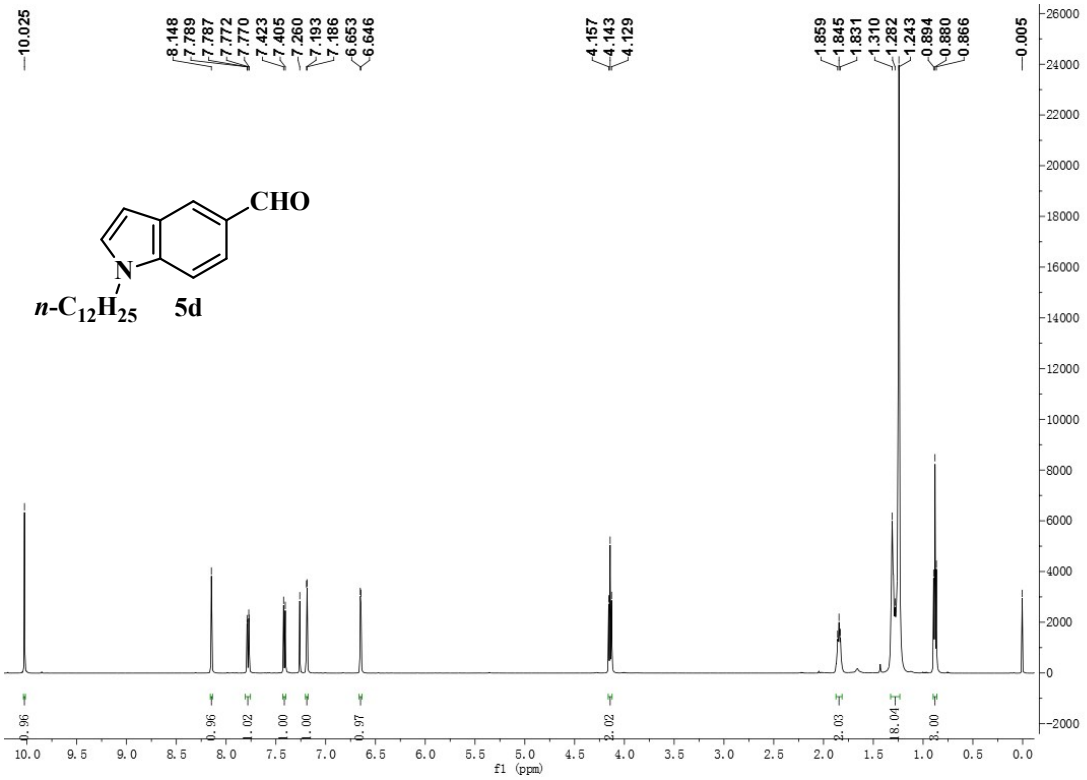

Fig. S22 ^{1}H NMR of **5d** ($CDCl_3$, 500 MHz).

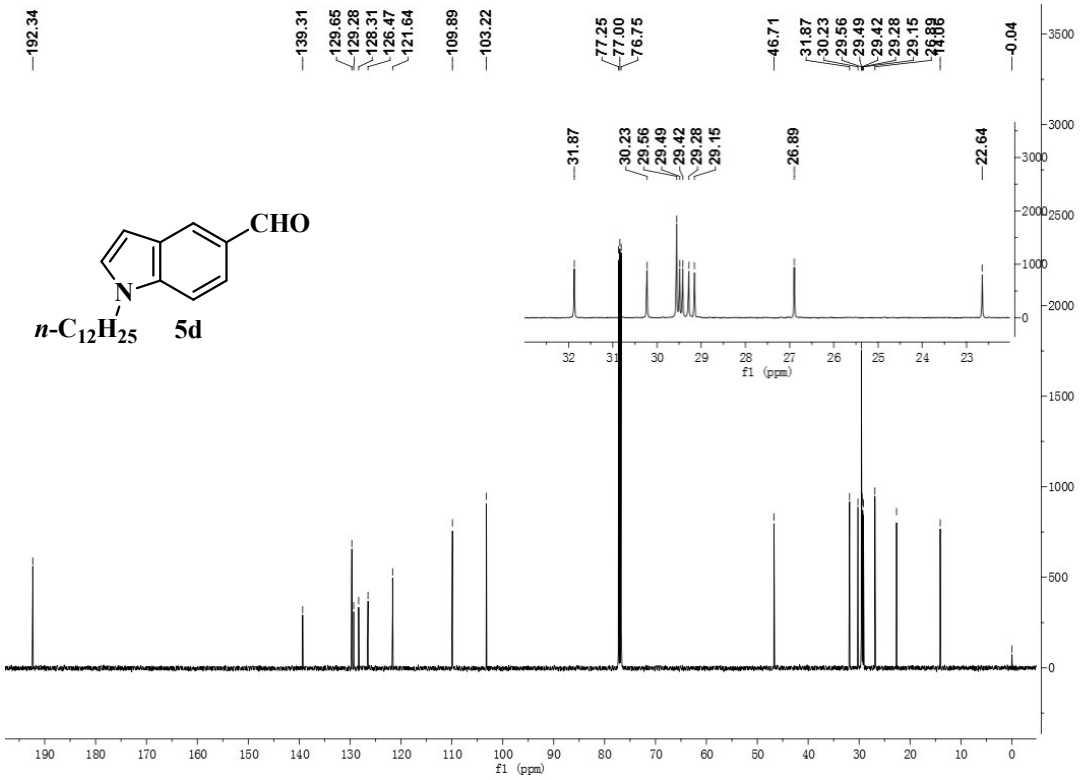

Fig. S23 ^{13}C NMR of **5d** ($CDCl_3$, 125 MHz).

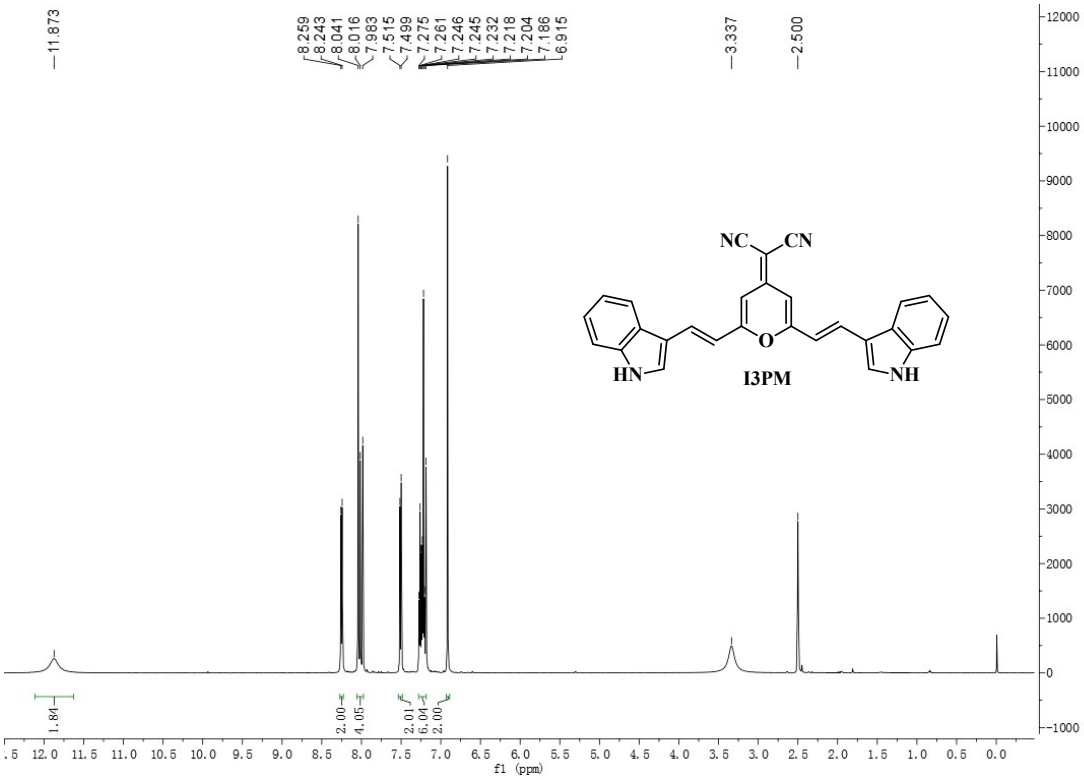

Fig. S24 ^{1}H NMR of **I3PM** (DMSO-d_6, 500 MHz).

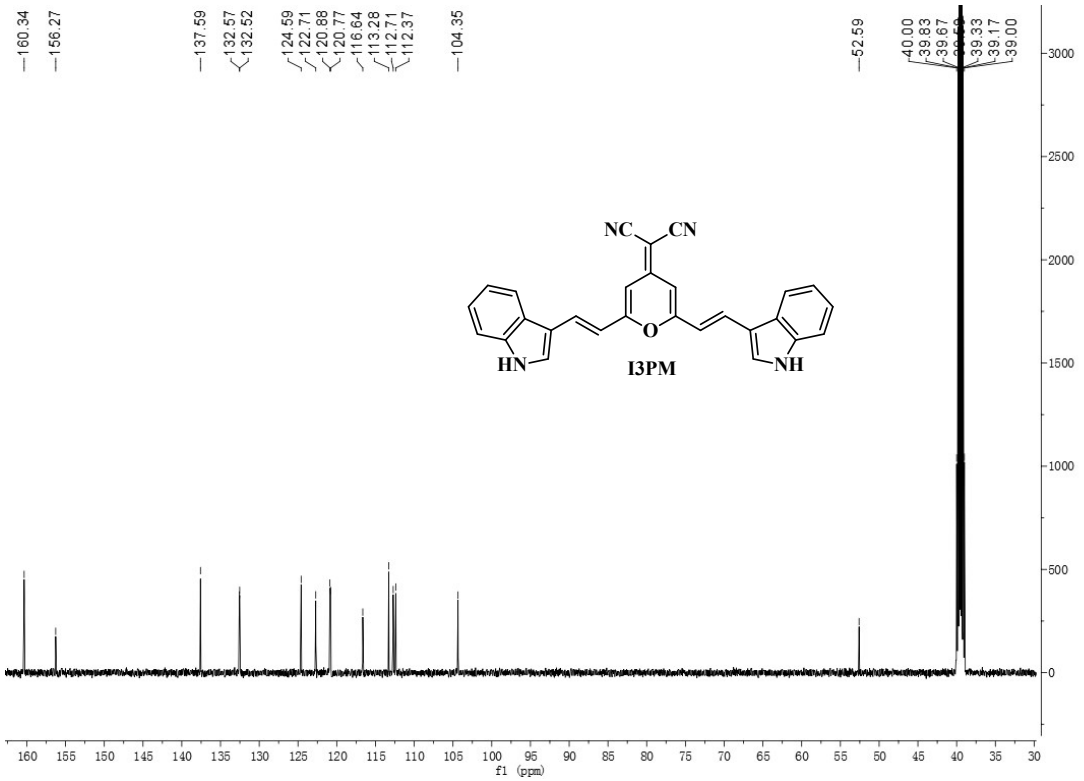

Fig. S25 ^{13}C NMR of **I3PM** (DMSO-d_6, 125 MHz).

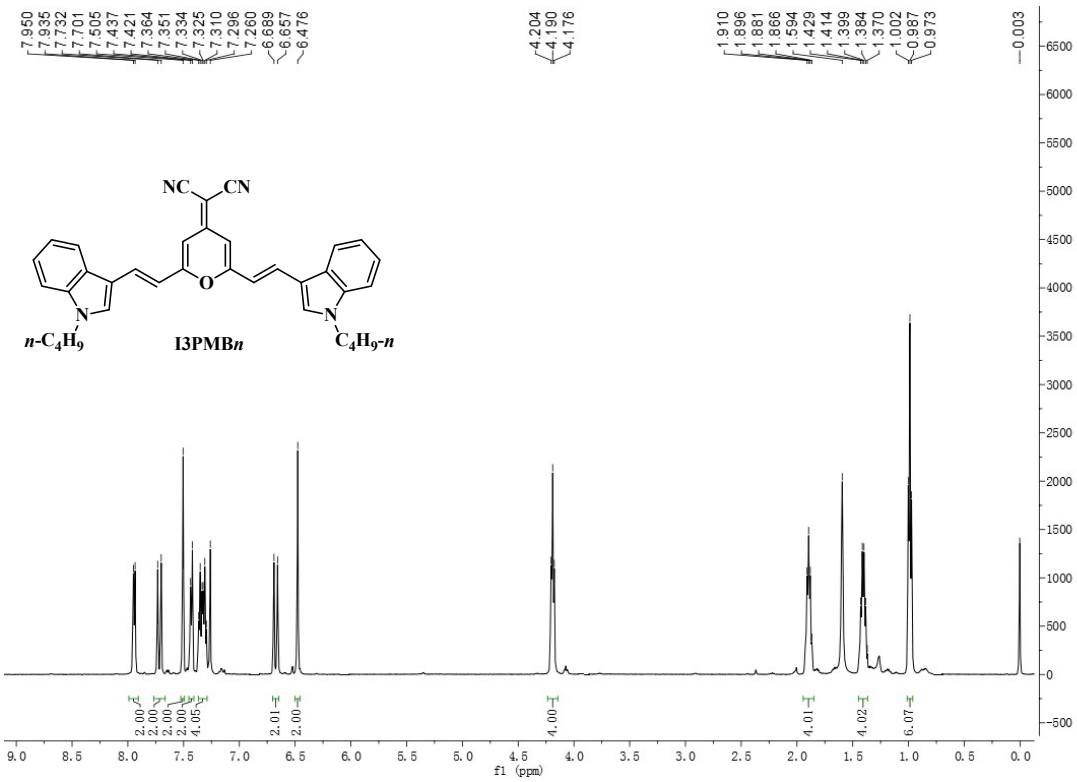

Fig. S26 ^{1}H NMR of **I3PMB*n*** ($CDCl_3$, 500 MHz).

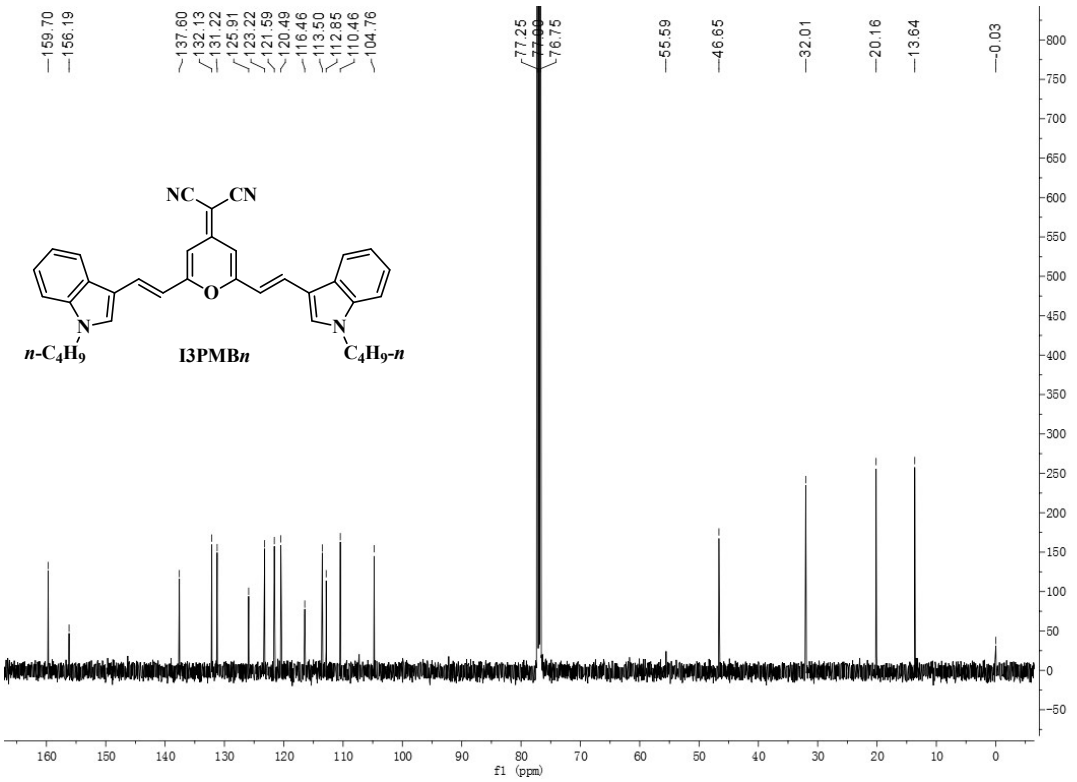

Fig. S27 ^{13}C NMR of **I3PMB*n*** ($CDCl_3$, 125 MHz).

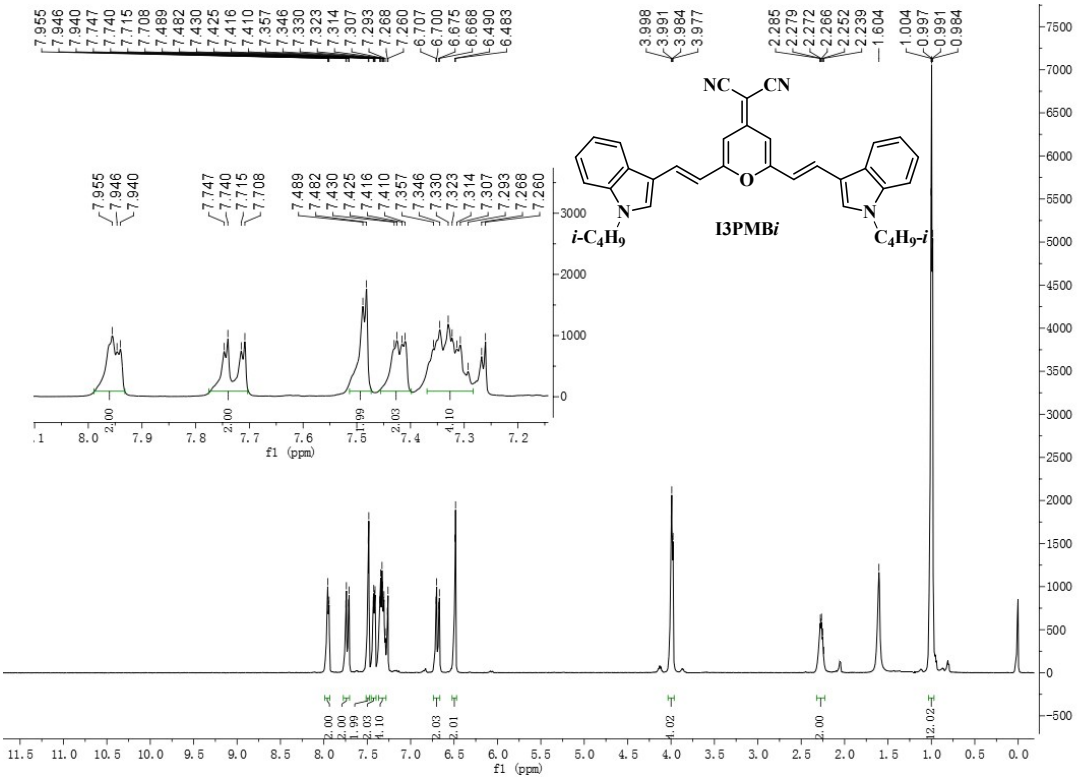

Fig. S28 ^{1}H NMR of **I3PMB*i*** ($CDCl_3$, 500 MHz).

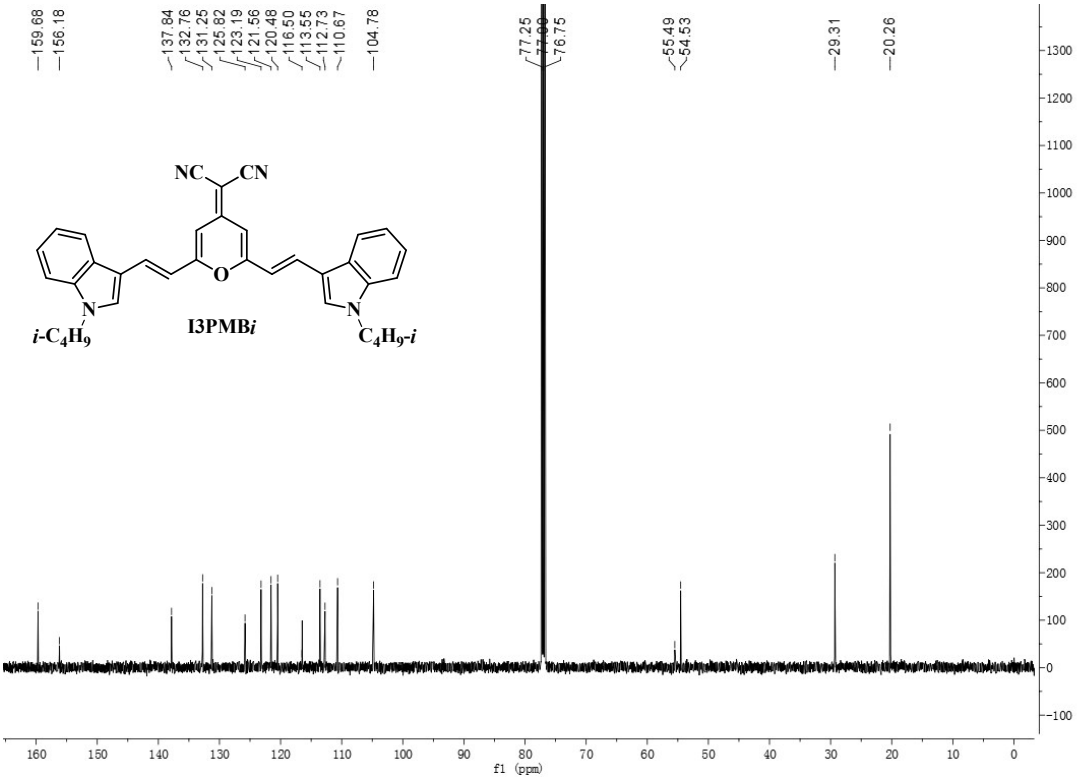

Fig. S29 ^{13}C NMR of **I3PMB*i*** ($CDCl_3$, 125 MHz).

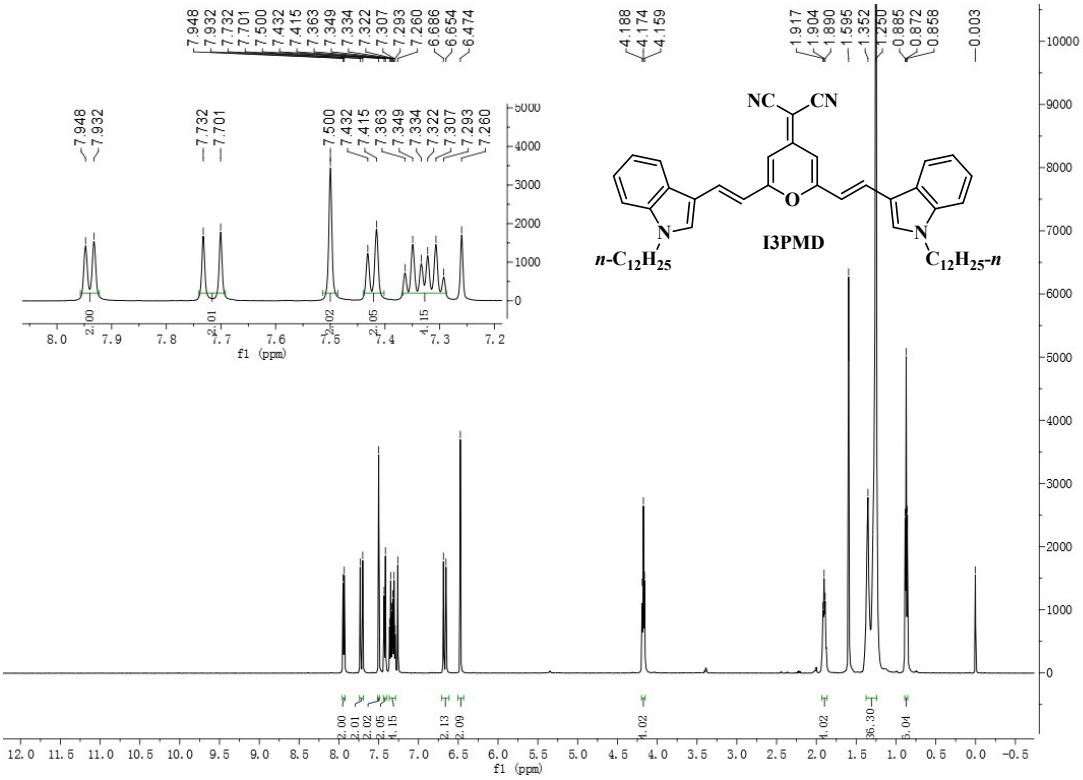

Fig. S30 ^{1}H NMR of **I3PMD** ($CDCl_3$, 500 MHz).

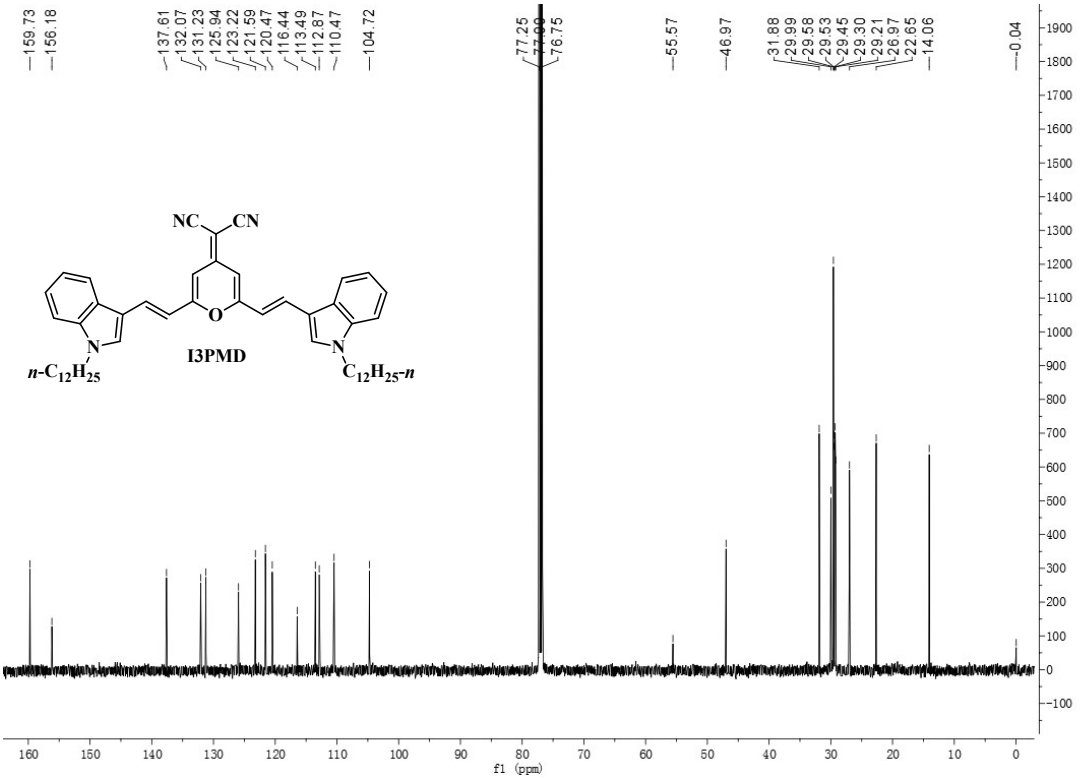

Fig. S31 ^{13}C NMR of **I3PMD** ($CDCl_3$, 125 MHz).

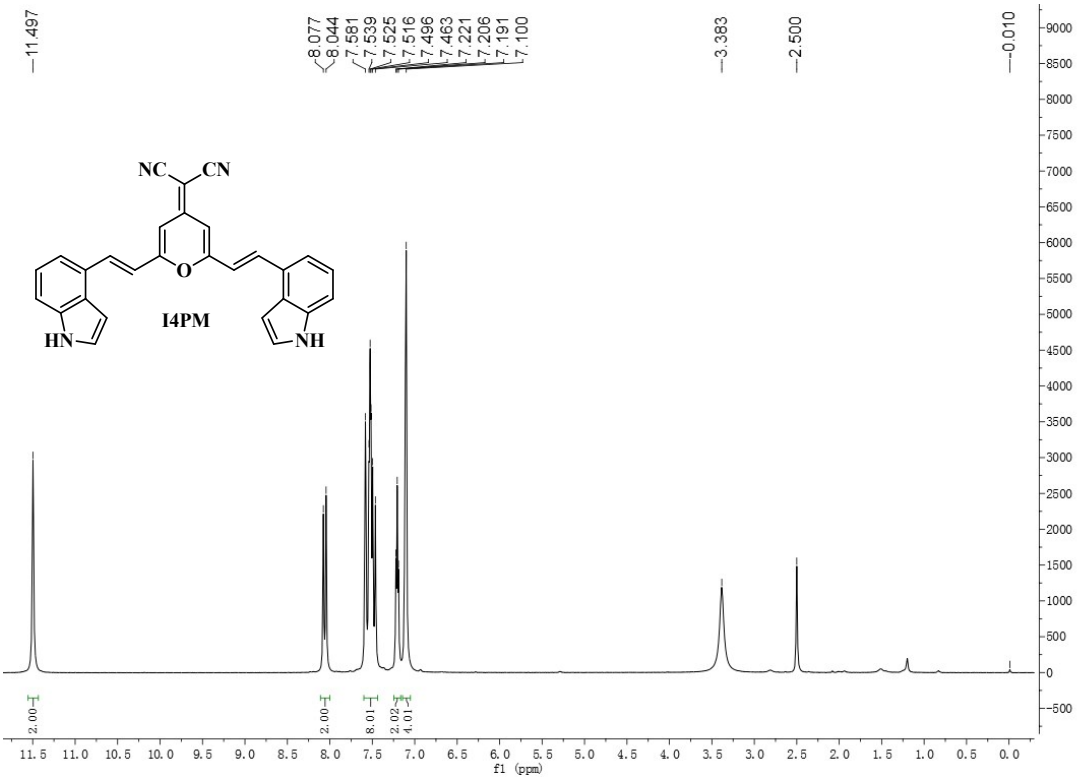

Fig. S32 ^{1}H NMR of **I4PM** (DMSO-d_6, 500 MHz).

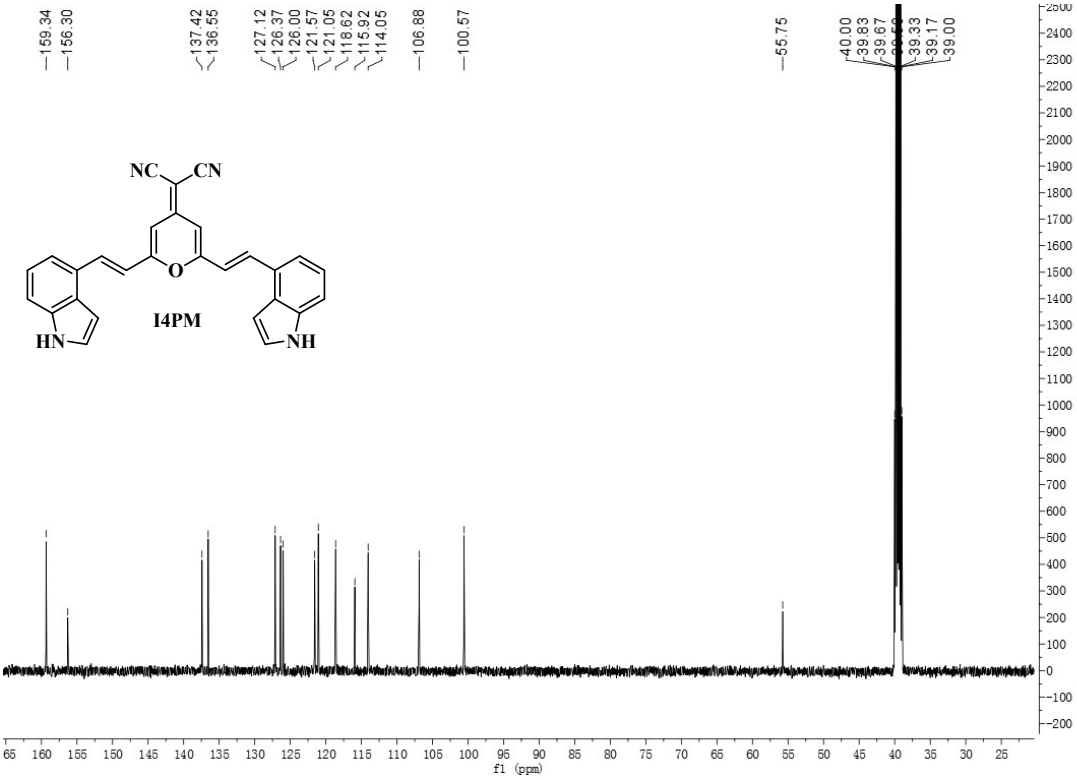

Fig. S33 ^{13}C NMR of **I4PM** (DMSO-d_6, 125 MHz).

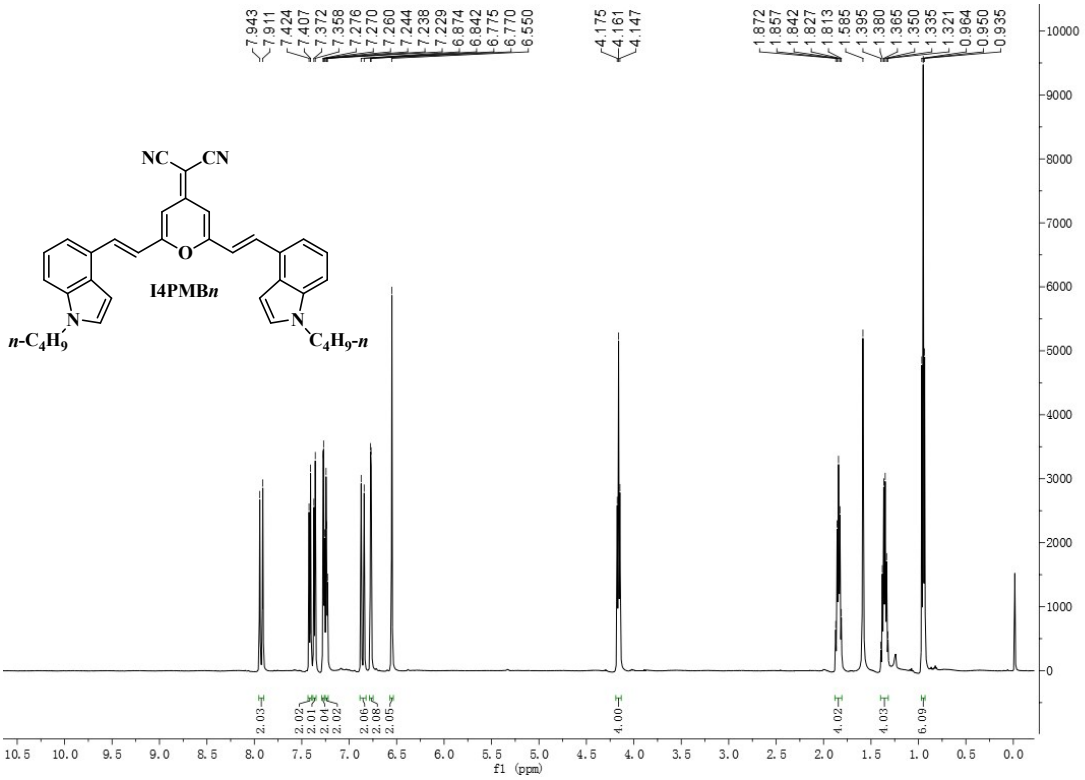

Fig. S34 ^{1}H NMR of **I4PMB*n*** ($CDCl_3$, 500 MHz).

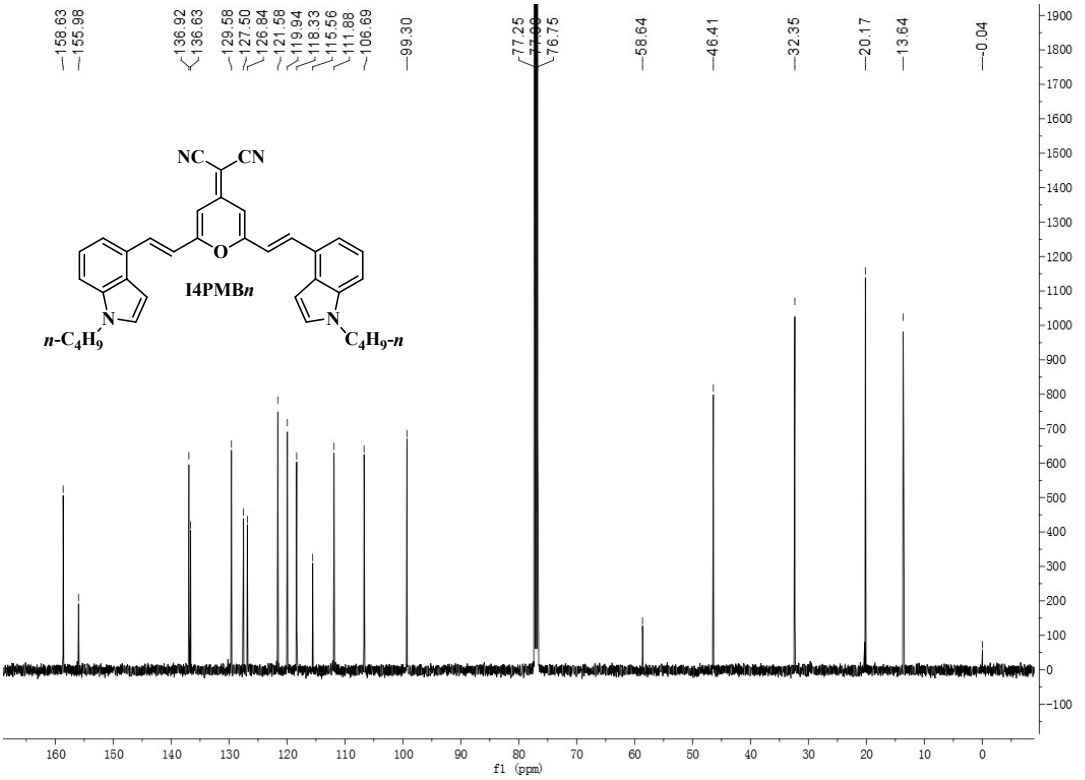

Fig. S35 ^{13}C NMR of **I4PMB*n*** ($CDCl_3$, 125 MHz).

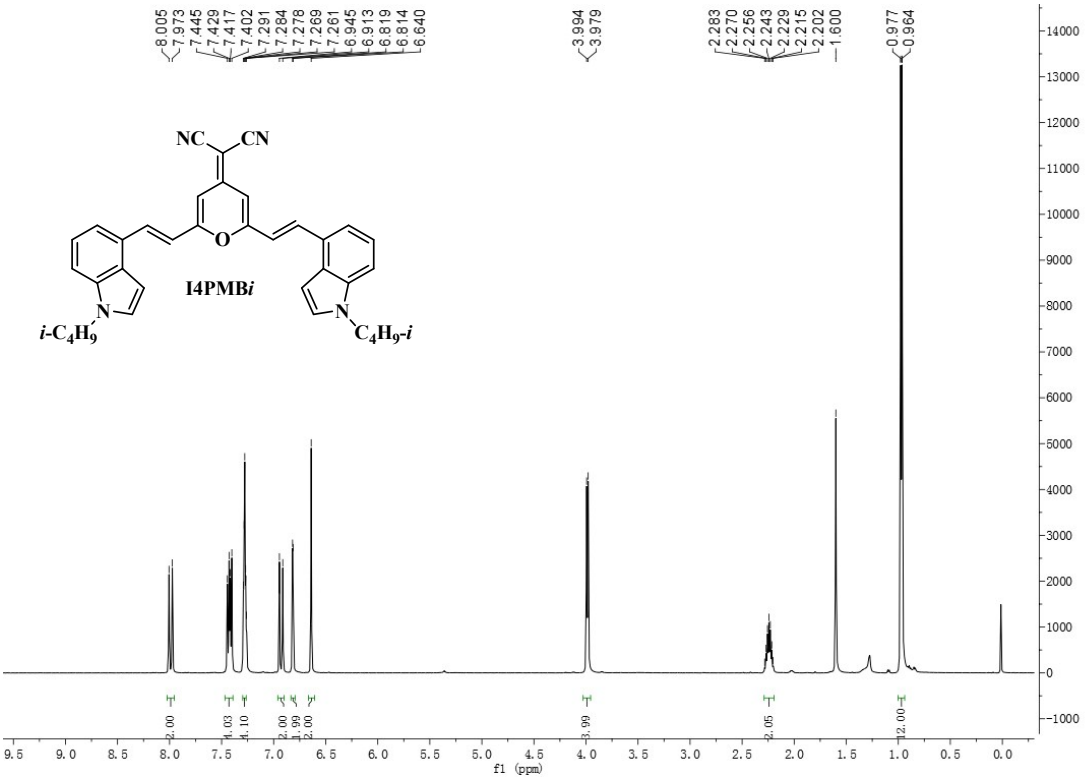

Fig. S36 ^{1}H NMR of **I4PMB*i*** ($CDCl_3$, 500 MHz).

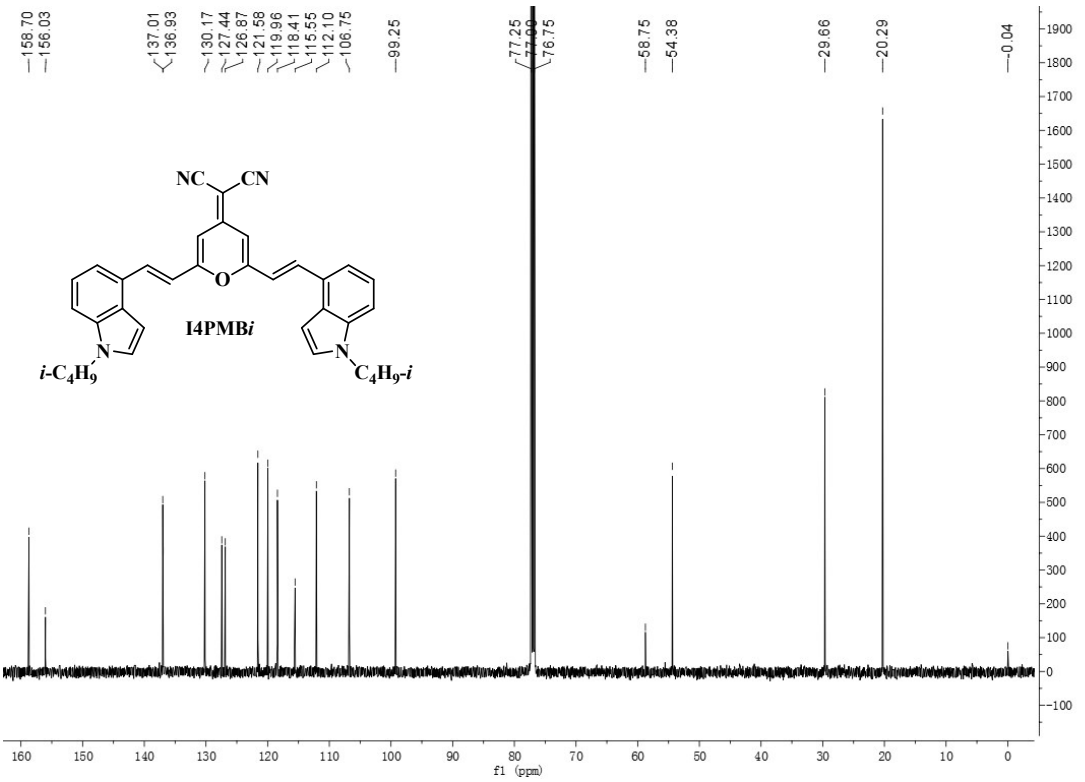

Fig. S37 ^{13}C NMR of **I4PMB*i*** ($CDCl_3$, 125 MHz).

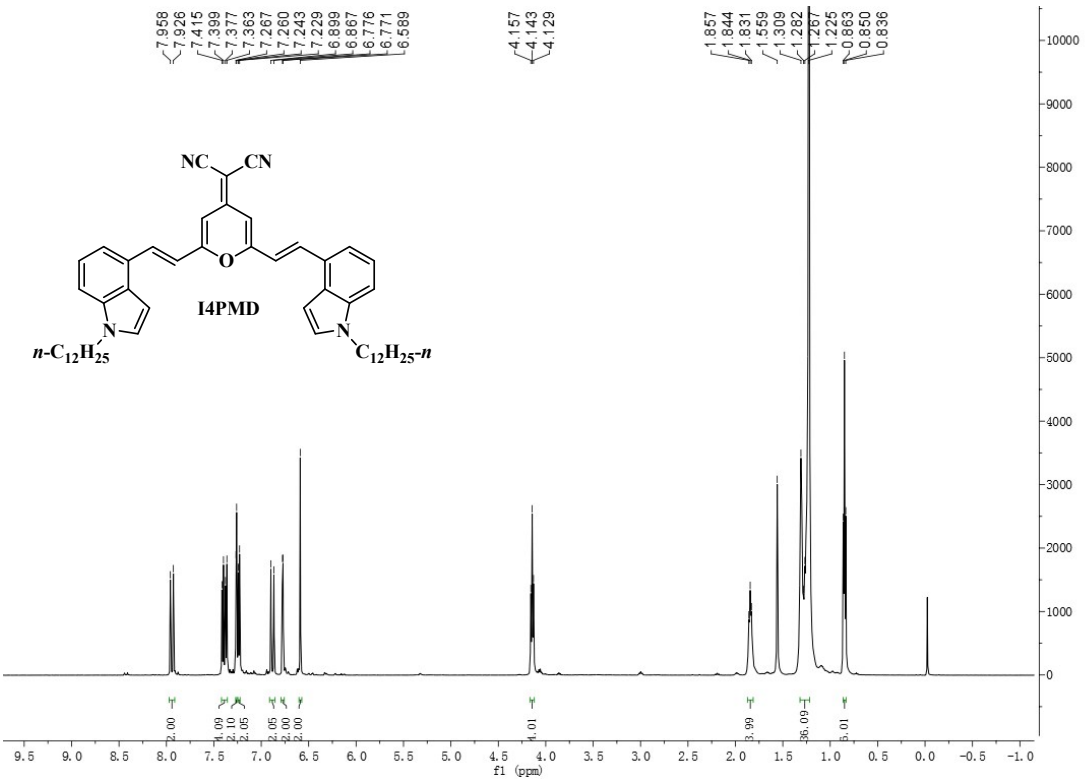

Fig. S38 ^{1}H NMR of **I4PMD** ($CDCl_3$, 500 MHz).

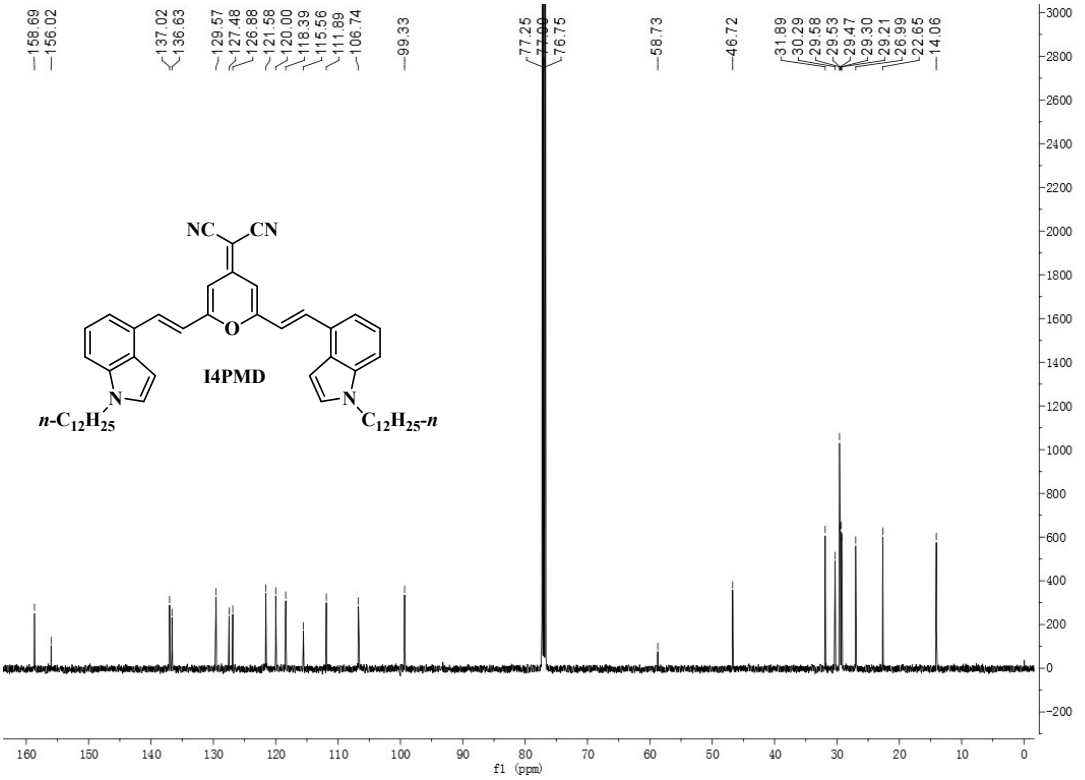

Fig. S39 ^{13}C NMR of **I4PMD** ($CDCl_3$, 125 MHz).

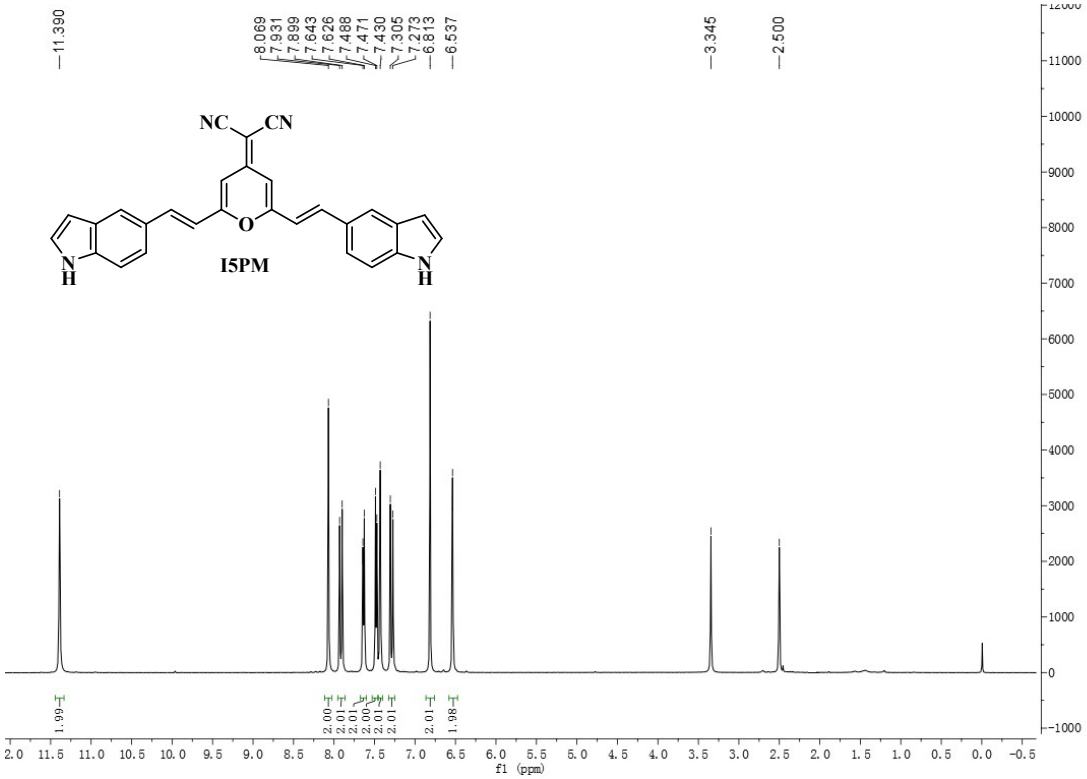

Fig. S40 ^{1}H NMR of **I5PM** (DMSO-d_6, 500 MHz).

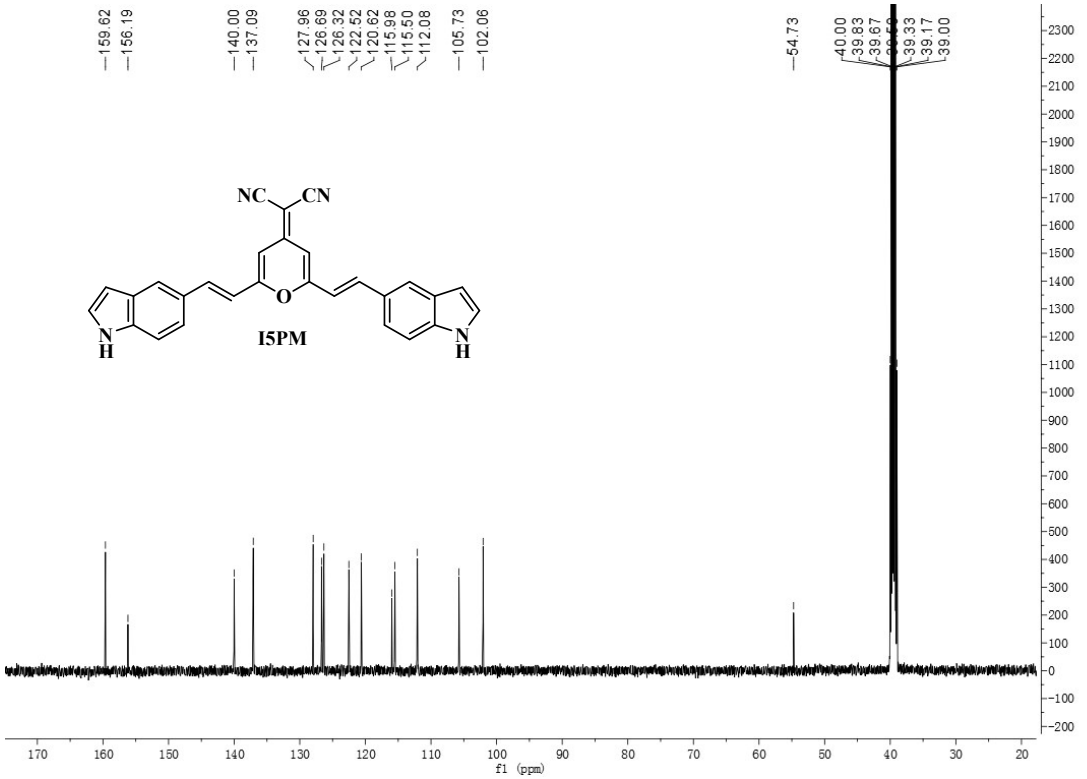

Fig. S41 ^{13}C NMR of **I5PM** (DMSO-d_6, 125 MHz).

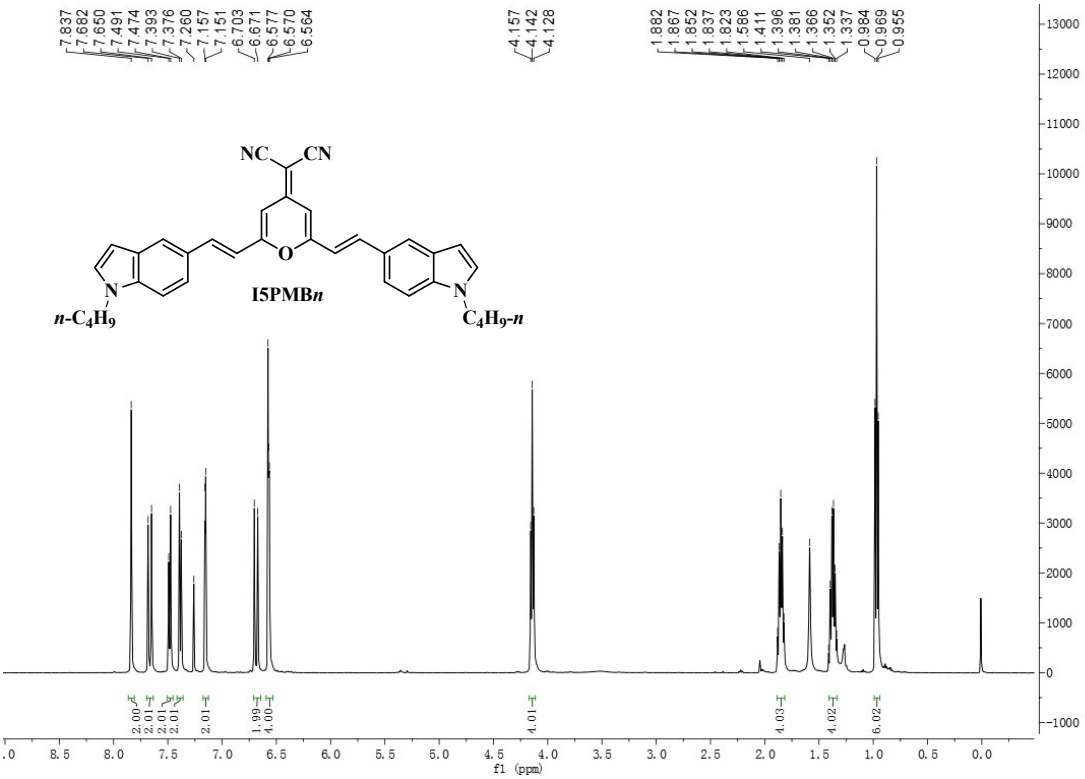

Fig. S42 ^{1}H NMR of **I5PMB*n*** ($CDCl_3$, 500 MHz).

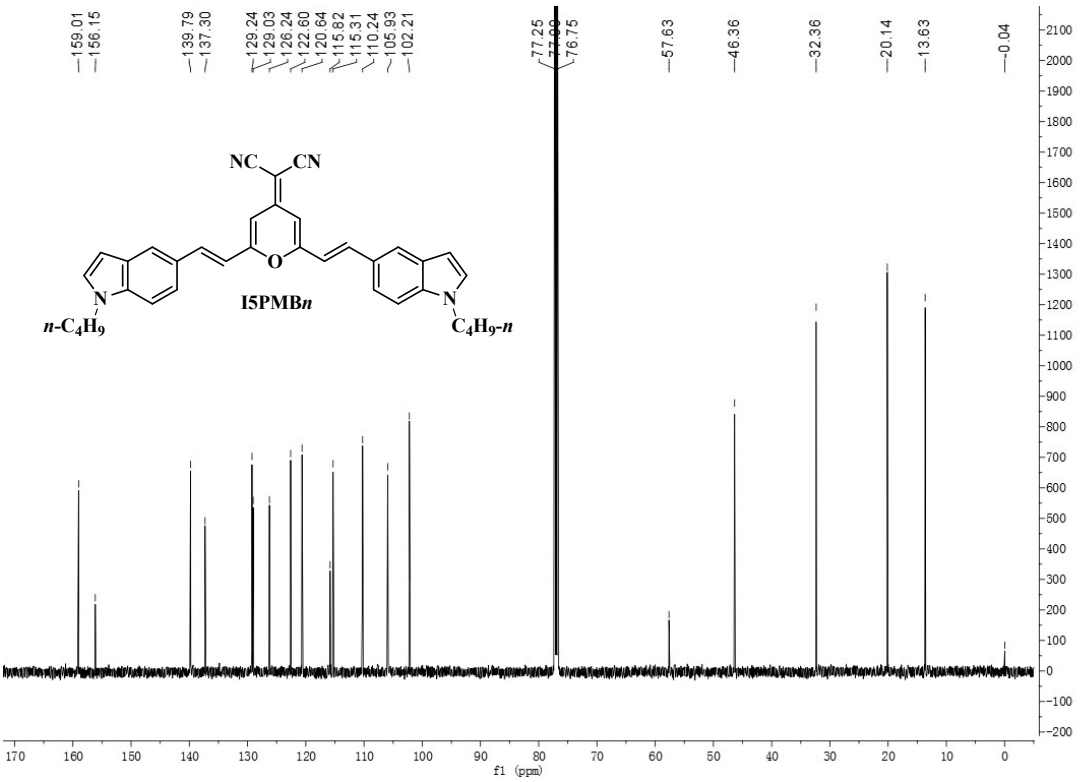

Fig. S43 ^{13}C NMR of **I5PMB*n*** ($CDCl_3$, 125 MHz).

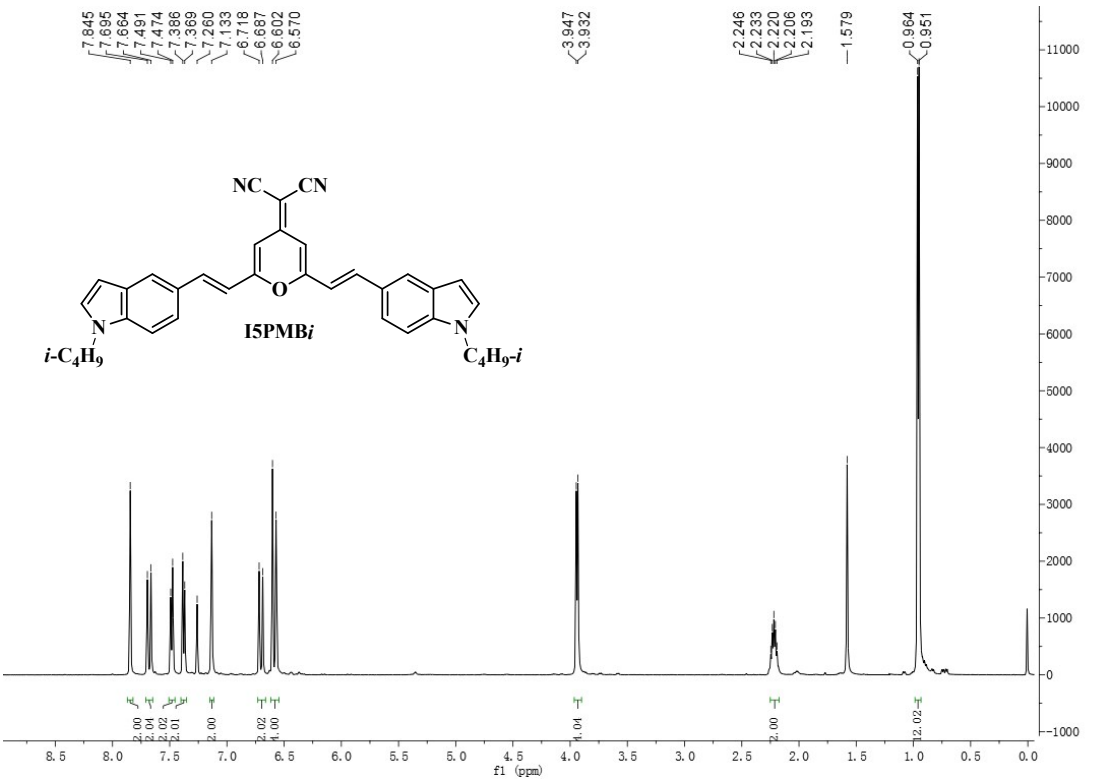

Fig. S44 ^{1}H NMR of **I5PMB*i*** ($CDCl_3$, 500 MHz).

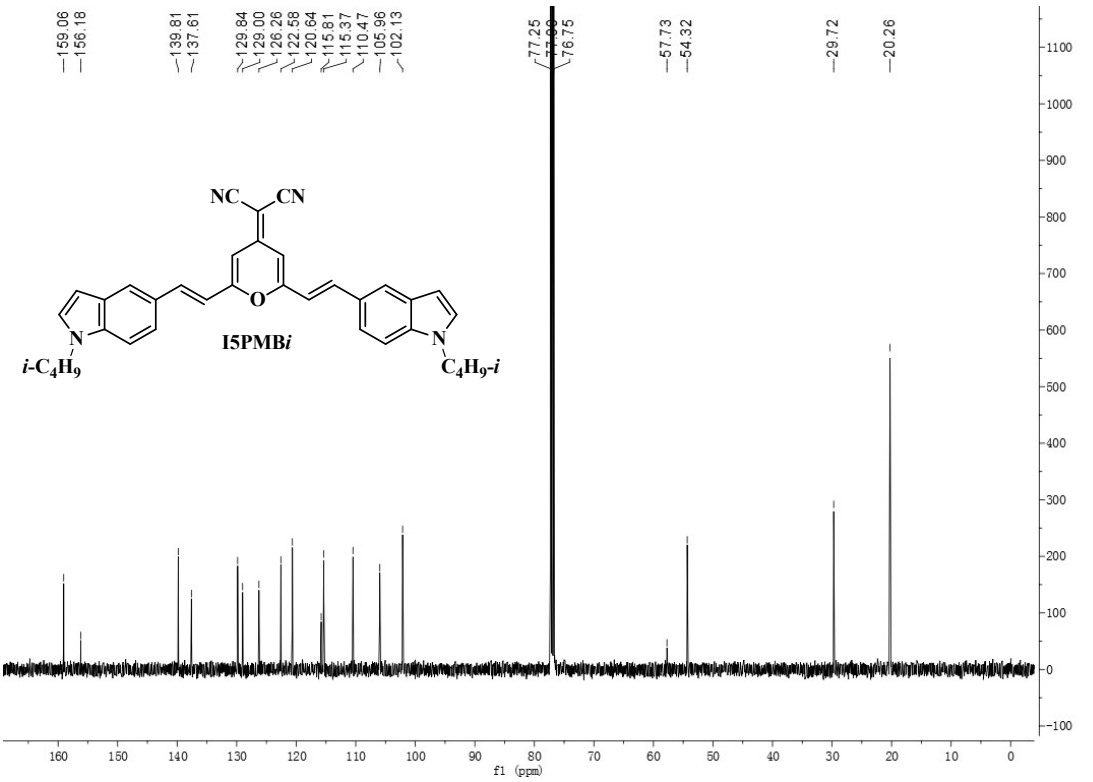

Fig. S45 ^{13}C NMR of **I5PMB*i*** ($CDCl_3$, 125 MHz).

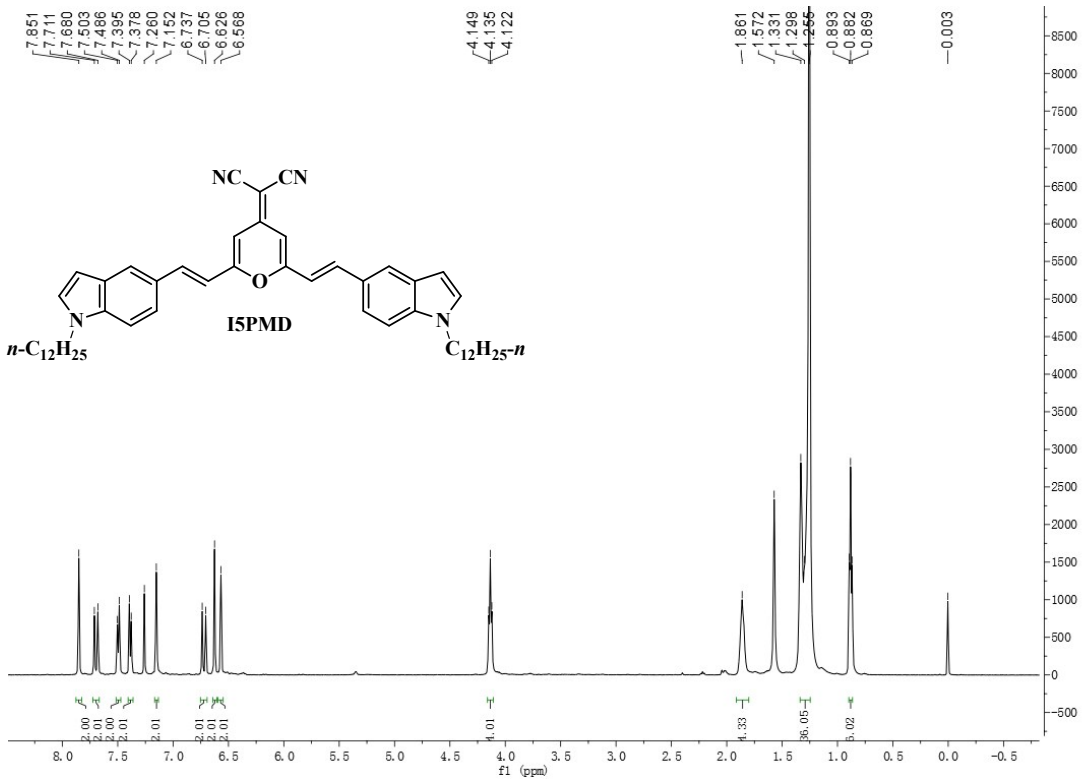

Fig. S46 ^{1}H NMR of **I5PMD** ($CDCl_3$, 500 MHz).

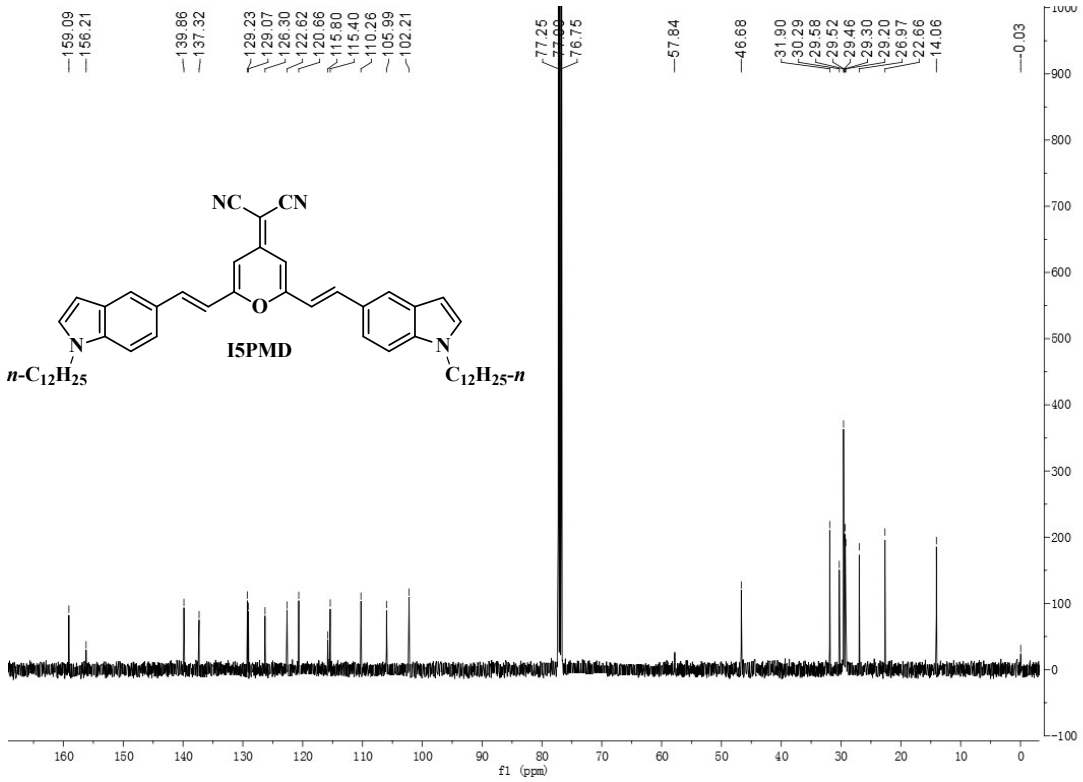

Fig. S47 ^{13}C NMR of **I5PMD** ($CDCl_3$, 125 MHz).