

Electronic supplementary information

Yan Zhang,^a Lingqian Kong,^b Xiuping Ju,^b Hongmei Du^a, Jinsheng Zhao^{*a}, Yu Xie^{*c}

^aShandong Key Laboratory of Chemical Energy Storage and Novel Cell Technology, Liaocheng University, Liaocheng, 252059, P. R. China.

^bDongchang College, Liaocheng University, Liaocheng, 252059, P. R. China.

^cCollege of Environment and Chemical Engineering, Nanchang Hangkong University, Nanchang 330063, PR China.

*Correspondence: j.s.zhao@163.com (Jinsheng Zhao); xieyu_121@163.com (Yu Xie)

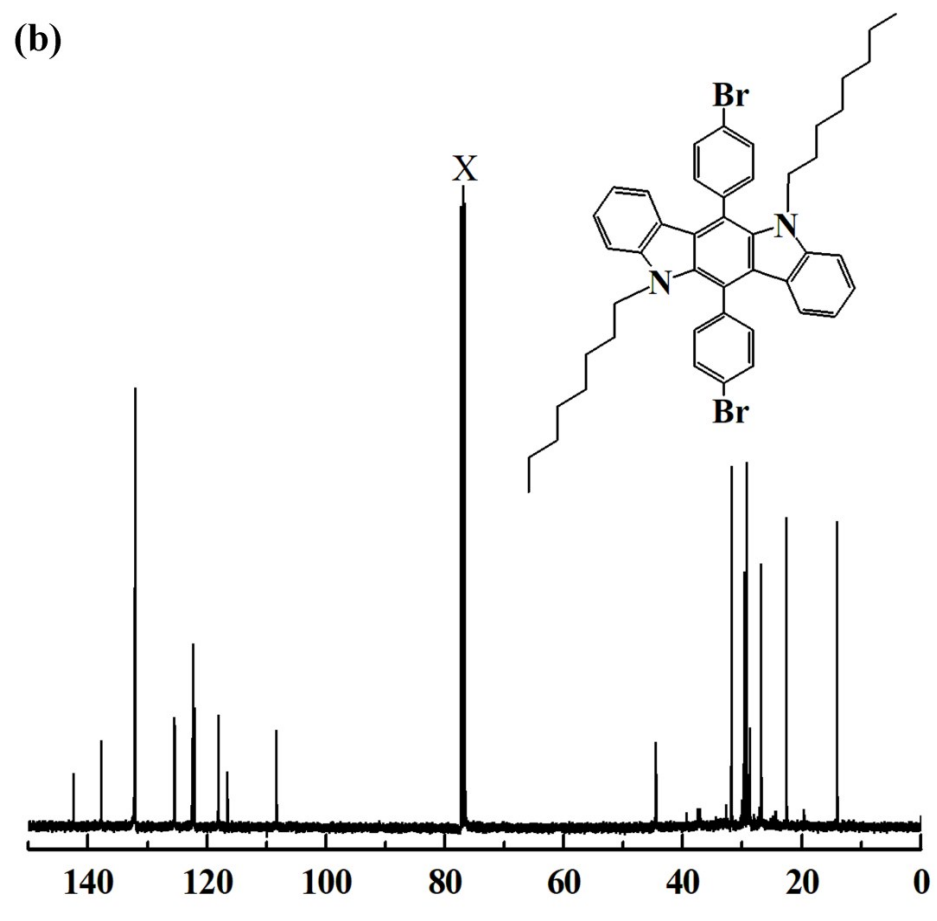
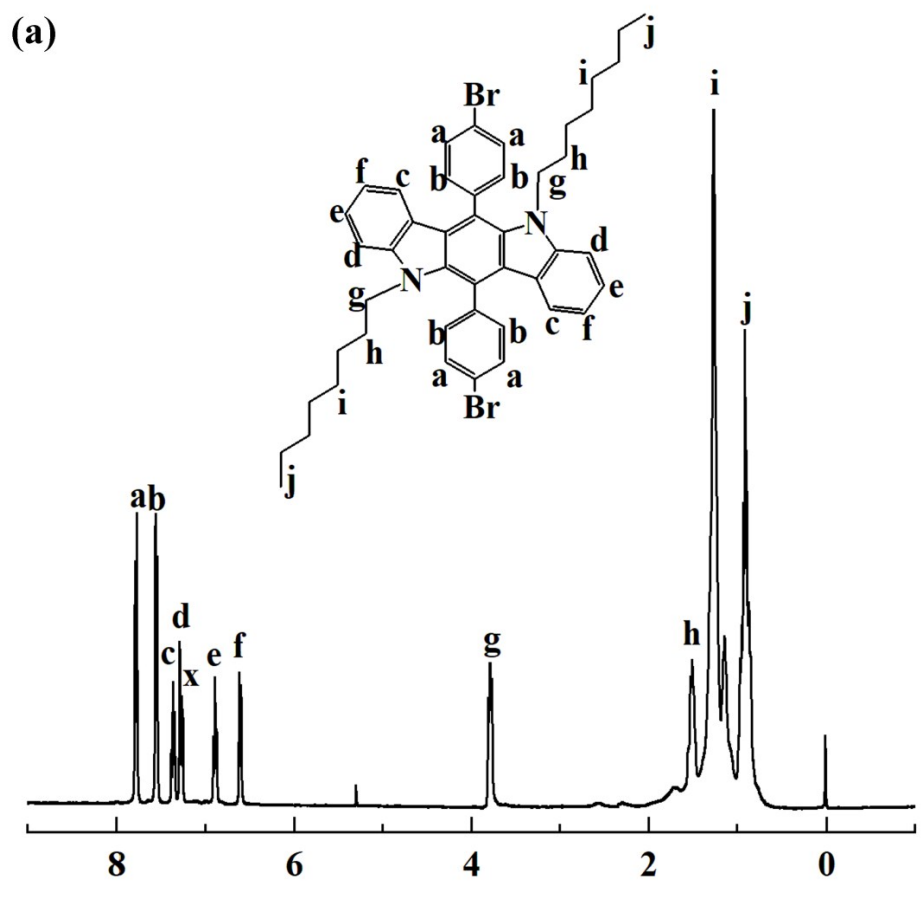
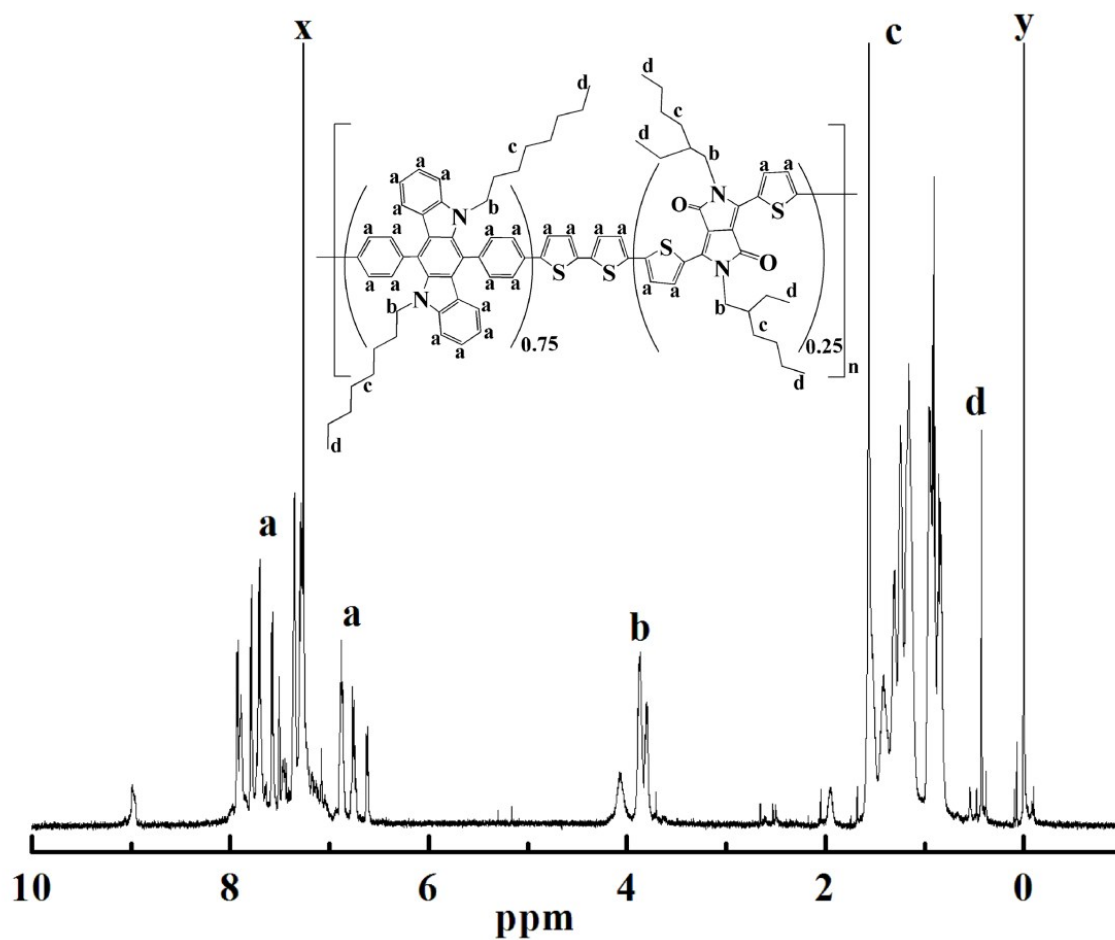


Figure S1. (a) ^1H NMR spectrum of 6,12-bis(4-bromophenyl)-5,11-dioctyl-5,11-dihydroindolo[3,2-b]carbazole in CDCl_3 , solvent peak at $\delta = 7.26$ ppm was marked by “x”, (b) ^{13}C NMR spectrum of 6,12-bis(4-bromophenyl)-5,11-dioctyl-5,11-dihydroindolo[3,2-b]carbazole in CDCl_3 , solvent peak at $\delta = 77.01$ ppm was marked by “X”.

(a) PDTCZ-1



(b) PDTCZ-2

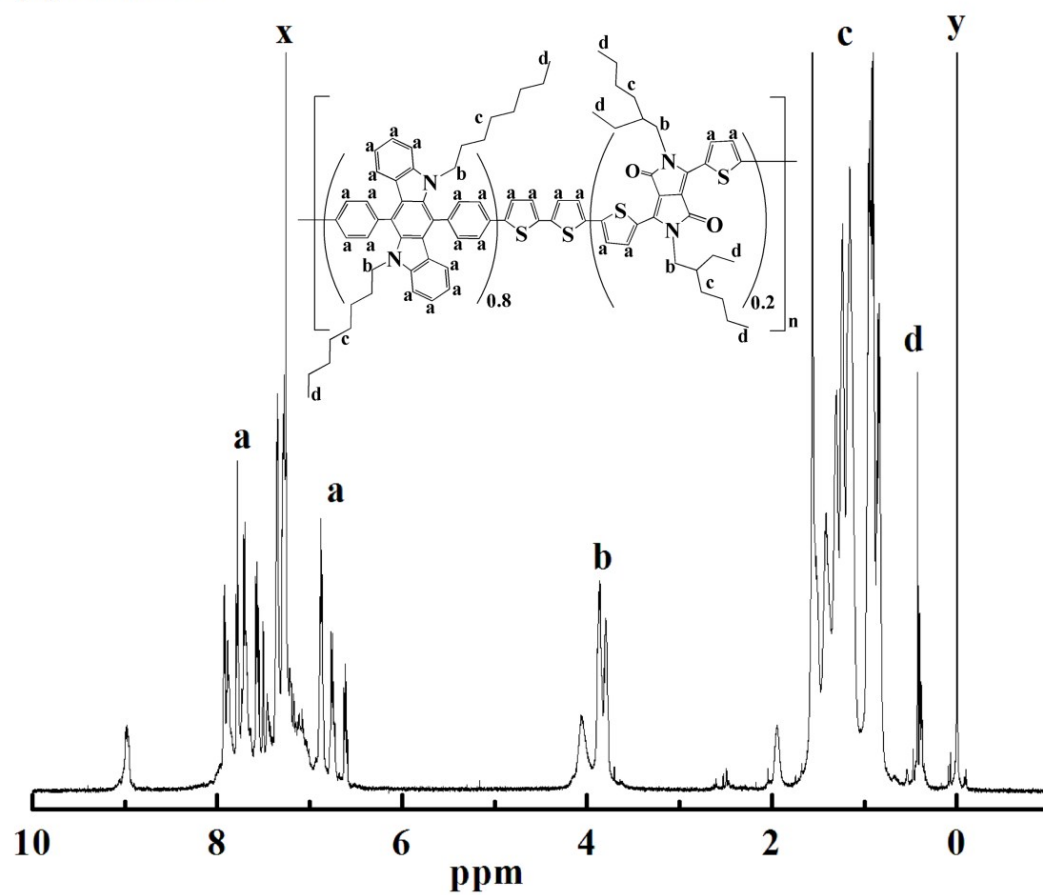


Figure S2. ^1H NMR spectra of (a) PDTCZ-1 and (b) PDTCZ-2 in CDCl_3 . Solvent and tetramethylsilane peaks were marked by “x”, “y” respectively.