Supporting Information

Synthesis and Optoelectronic Properties of Block and Random Copolymers Having Pendant Carbazole and (Di)phenylanthracene

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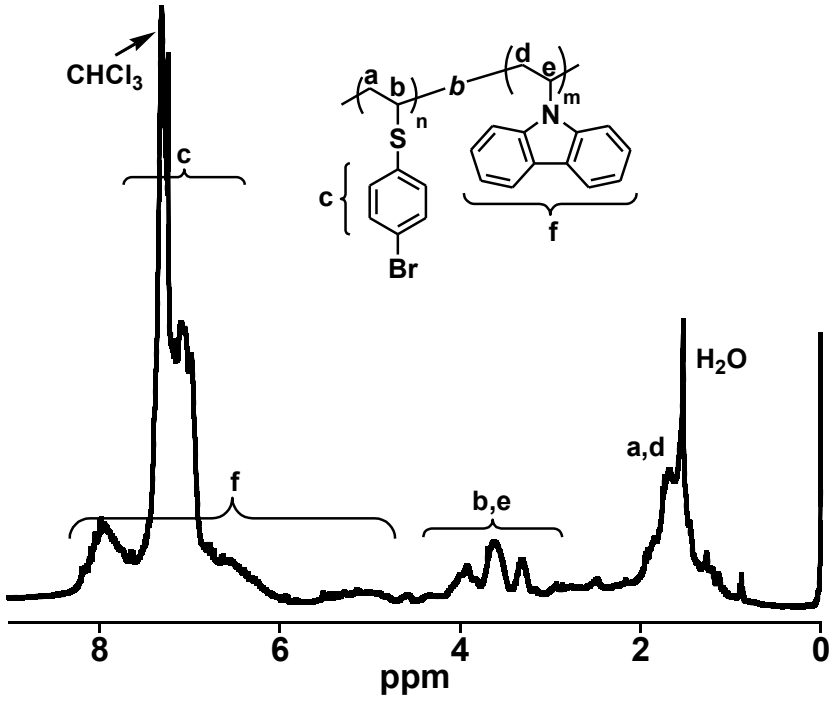

Figure S1. ^{1}H NMR spectrum of poly(BPVS)-*b*-poly(NVC) in $CDCl_3$.

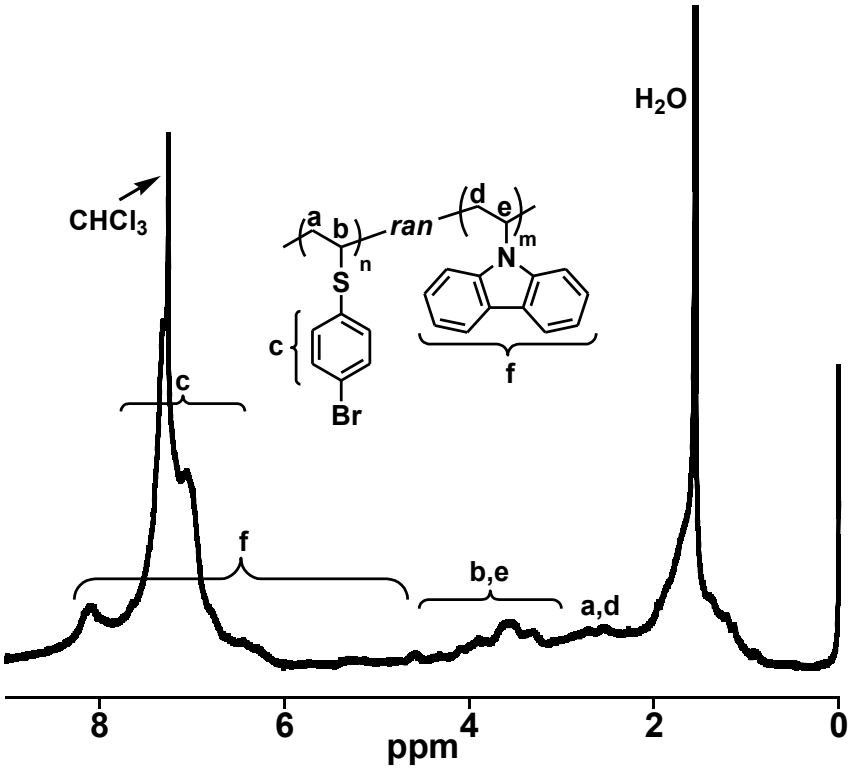

Figure S2. ^{1}H NMR spectrum of poly(BPVS-*ran*-NVC) in $CDCl_3$.

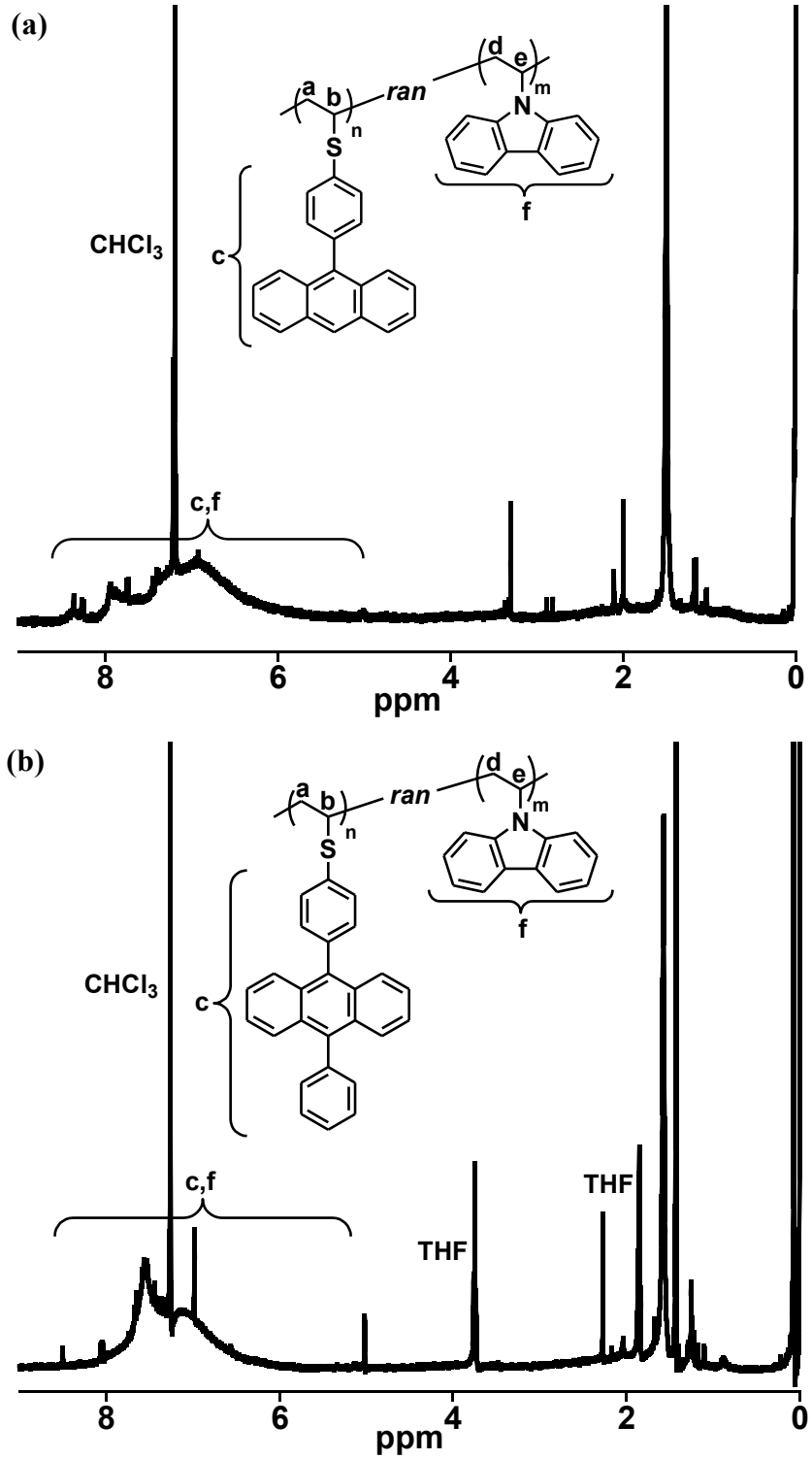

Figure S3. ^{1}H NMR spectra of (a) poly(BPVS-An-*ran*-NVC) and (b) poly(BPVS-Pan-*ran*-NVC) in $CDCl_3$.

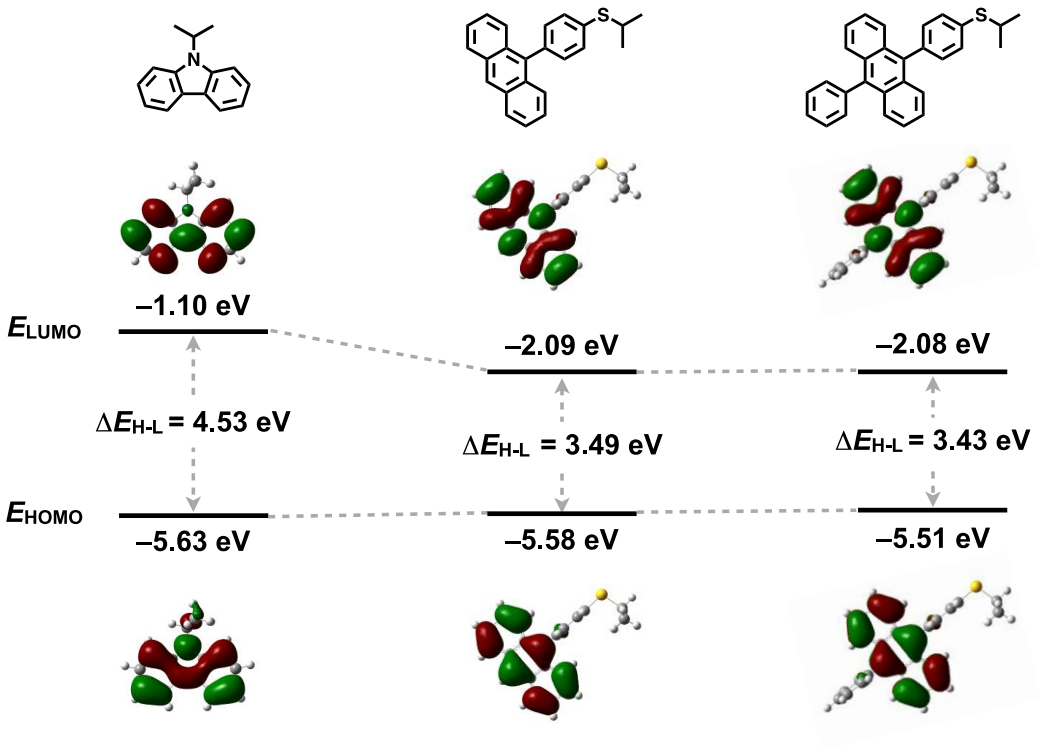

Figure S4. Spatial distributions of the HOMOs and LUMOs of carbazole and (di)phenylanthracene moieties.

Table S1. Synthesis of poly(BPVS)-*b*-poly(NVC) at 60 °C for 24 h in bulk [a].

Entry	Macro-CTA	$[M]_0$ [a] /[Macro-CTA]$_0$	Yield [b] (%)	M_n [c] (theory)	M_n [d] (EA)	M_n [e] (SEC)	M_w/M_n [e] (SEC)	Composition [e] BPVS : NVC
1	poly(BPVS)	100	81	27,900	28,100	19,400	1.28	41 : 59

[a] [Macro-CTA]$_0$/[AIBN]$_0$ = 2/1. [b] Hexane-insoluble part. [c] The theoretical molecular weight ($M_{n,\,theory}$) = (M_w of NVC) × [NVC]$_0$/[Macro-CTA]$_0$ × yield + (M_w of Macro-CTA).[d] Calculated by elemental analysis (EA). [e] Measured by size-exclusion SEC using polystyrene standards in DMF (10 mM LiBr). [f] P(BPVS) macro-CTA : $M_{n,\,NMR}$ = 12,200, $M_{n,\,SEC}$ = 7,700, M_w/M_n = 1.36.

Table S2. RAFT copolymerization of BPVS with NVC using xanthate-type CTA[a].

Entry	$[BPVS]_0$/ $[NVC]_0$	Yield[b] (%)	M_n[c] (SEC)	M_w/M_n[c] (SEC)	Composition[d] M1 : M2
1	50/150	52	8,200	1.40	40 : 60

[a] $[CTA]_0/[AIBN]_0 = 2/1$, $[M1+M2]_0 = 10M$. [b] Hexane-insoluble part. [c] Number-average molecular weight (M_n) and molecular weight distribution (M_w/M_n) were measured by size-exclusion chromatography (SEC) using polystyrene standards in DMF (10 mM LiBr). [d] Calculated by elemental analysis.

Table S3. Solubility of poly(BPVS-An), poly(BPVS-PAn), and poly(NVC).

Sample	H_2O	Acetone	THF	MeOH	EtOH
poly(BPVS-An)	-	-	+	-	-
poly(BPVS-PAn)	-	-	+	-	-
poly(NVC)	-	-	+	-	-

Sample	Ether	Chloroform	EtOAc	DMF	Hexane
poly(BPVS-An)	-	+	-	+	-
poly(BPVS-PAn)	-	+	-	+	-
poly(NVC)	-	+	-	+	-

+ : Soluble at room temperature, - : Insoluble at room temperature.