Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Converse Transitions between Micelles and Vesicles of Pyrrolidone Based AIE Amphiphilic Copolymers in Polar and Apolar Solvents

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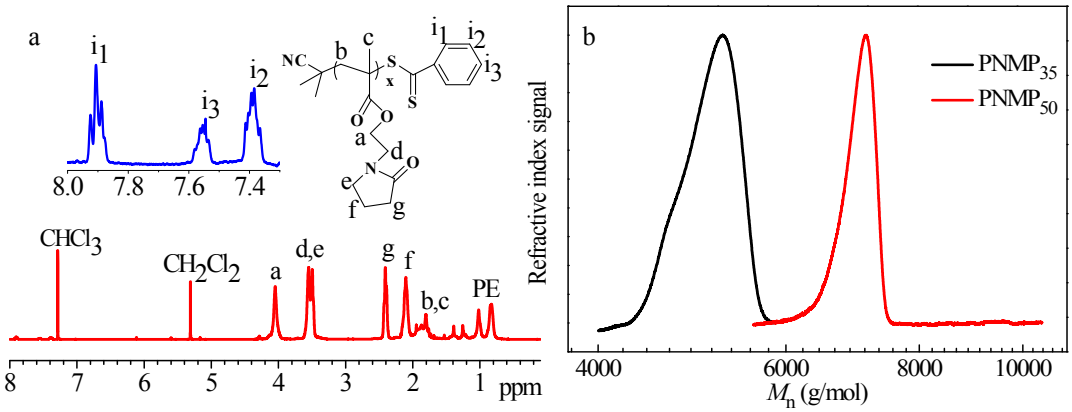
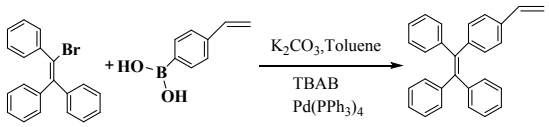


Figure S1. (a) Representative ^{1}H NMR and (b) DMF GPC of PNMP macro-CTAs.

Table S1. Summary of monomer conversions, mean degrees of polymerization and GPC molecular weights for two PNMP macro-CTAs.

Target DP	^{1}H NMR	Actual DP by	GPC	
	Conversion %	^{1}H NMR	M_n (g/mol)	M_w/M_n
$PNMP_{37}$	99	35	5000	1.03
$PNMP_{55}$	98	50	7100	1.03



Scheme S1 Synthesis of TPE.

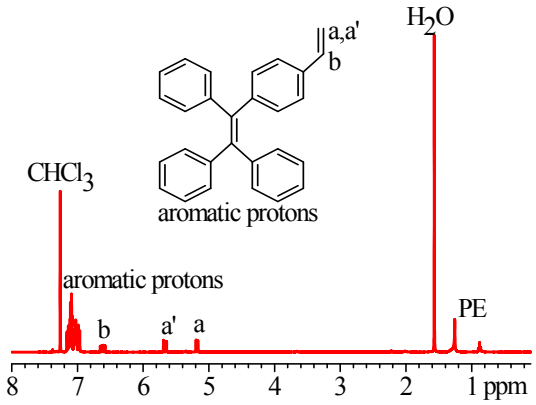


Figure S2. ^{1}H NMR of TPE (δ, $CDCl_3$): 5.20 and 5.68 (2H, C*H*$_2$=CH-), 6.63 (1H, CH_2=C*H*-), 6.96-7.20 (19H, benzene ring skeleton).

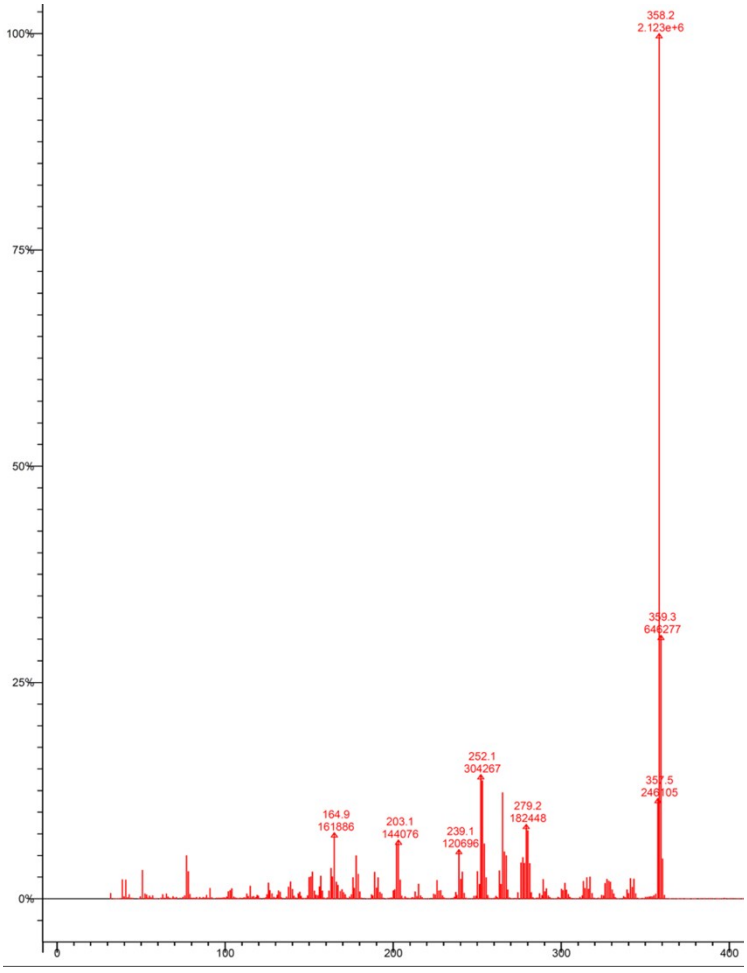


Figure S3. Mass spectrum of TPE. MS (EI), *m/z*: 358 (calcd. for $C_{28}H_{22}$ 358).

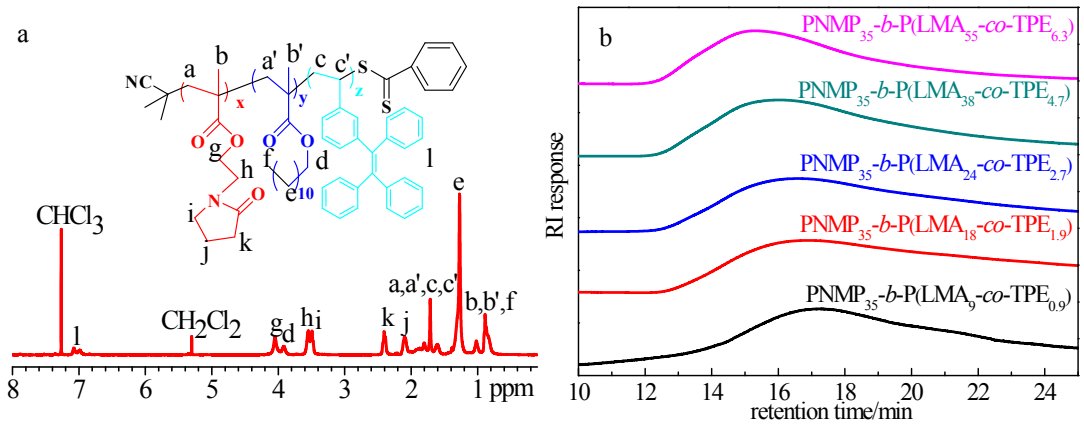


Figure S4. (a) Representative ^{1}H NMR and (b) GPC of PNMP$_{35}$-*b*-P(LMA$_y$-*co*-TPE$_z$).

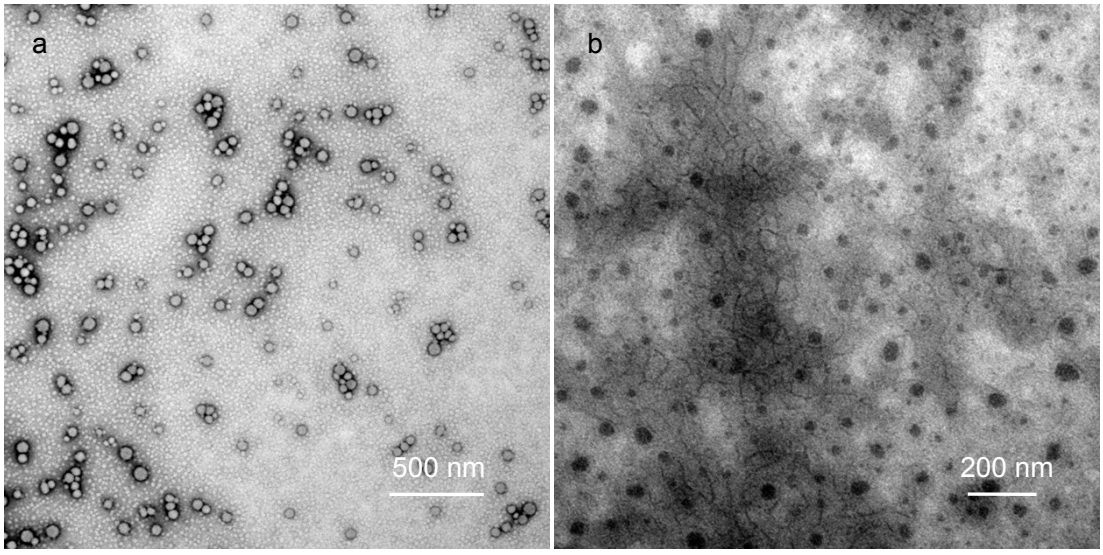


Figure S5. TEM images of 1 wt% PNMP$_{35}$-*b*-P(LMA$_{18}$-*co*-TPE$_{1.9}$) (a) and PNMP$_{35}$-*b*-P(LMA$_{38}$-*co*-TPE$_{4.7}$) (b) aqueous solutions, respectively.

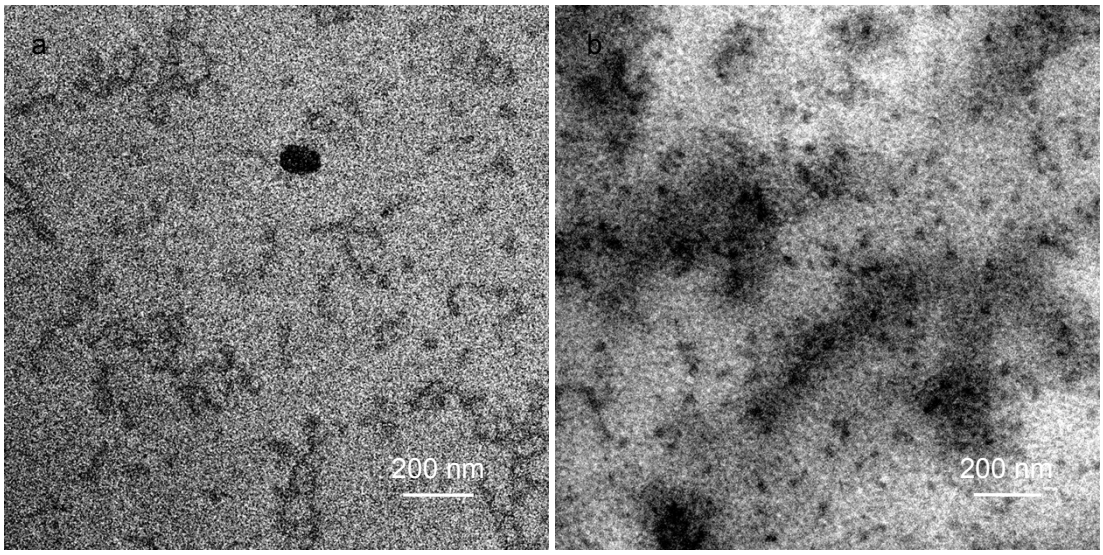


Figure S6. TEM images of 1 wt% $PNMP_{35}$-*b*-P(LMA_{24}-*co*-$TPE_{2.7}$) (a) and $PNMP_{35}$-*b*-P(LMA_{38}-*co*-$TPE_{4.7}$) (b) in n-dodecane, respectively.

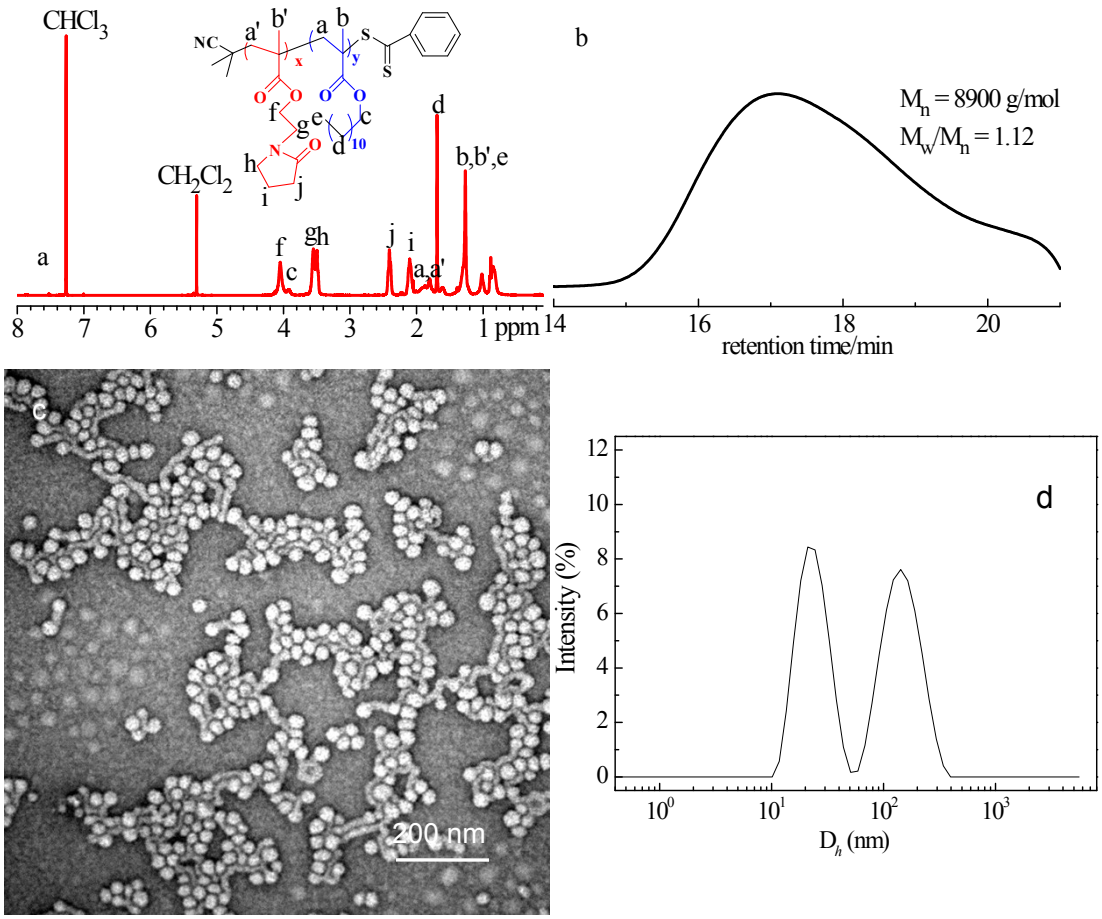


Figure S7. (a) Representative ^{1}H NMR and (b) chloroform GPC of $PNMP_{50}$-*b*-$PLMA_{10}$. TEM image of 1 wt% $PNMP_{50}$-*b*-$PLMA_{10}$ (c) and DLS result of 0.1 wt% $PNMP_{50}$-*b*-$PLMA_{10}$ (d) in water at 25 °C, respectively.

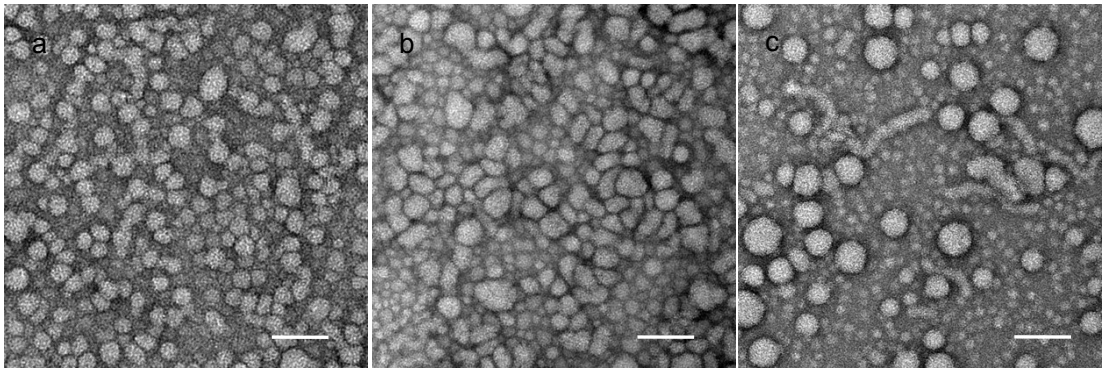


Figure S8. TEM images of 1 wt% $PNMP_{35}$-*b*-P(LMA_y-*co*-TPE_z)/$PNMP_{50}$-*b*-$PLMA_{10}$ binary system in aqueous solution with a constant $PNMP_{35}$-*b*-P(LMA_y-*co*-TPE_z) content of 40 wt%, and images (a) ~ (c) correspond to $PNMP_{35}$-*b*-P(LMA_{24}-*co*-$TPE_{2.7}$), $PNMP_{35}$-*b*-P(LMA_{38}-*co*-$TPE_{4.7}$) and $PNMP_{35}$-*b*-P(LMA_{55}-*co*-$TPE_{6.3}$), respectively. Bars represent 100 nm.