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Supporting Information

Catalyst-Free Multicomponent Polymerization of Aldehyde, Amine and Trimethylsilyl Cyanide toward Poly(α-aminonitrile)s

Tianyu Cheng,[*,1] Huadong Wang,[1] Jianqing Ding,[1] Junguo Fang,[1] Jia Wang,[*2]

Mingzhao Li,[3] Jie Chen,[3] Anjun Qin[*3], Ben Zhong Tang[4]

[1]School of Chemical and Environmental Engineering, Anhui Polytechnic University, Wuhu 241000, China. E-mail: chengty@ahpu.edu.cn

[2]Songshan Lake Materials Laboratory, Dongguan 523808, China. E-mail: wangjia@sslab.org.cn

[3]State Key Laboratory of Luminescent Materials and Devices, Guangdong Provincial Key Laboratory of Luminescence from Molecular Aggregates, AIE Institute, Center for Aggregation-Induced Emission, South China University of Technology, Guangzhou 510640, China. Email: msqinaj@scut.edu.cn

[4]School of Science and Engineering, Shenzhen Institute of Aggregate Science and Technology, The Chinese University of Hong Kong, Shenzhen (CUHK-Shenzhen), Guangdong, 518172, P.R. China

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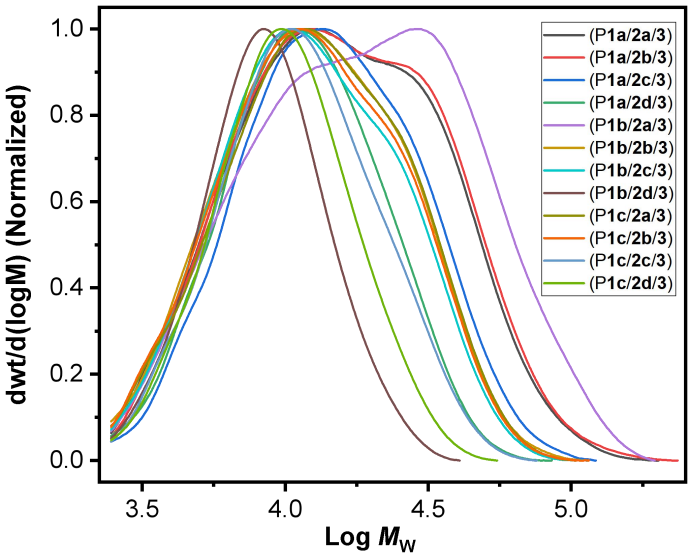


Figure S1. The GPC traces of P**1a/2a/3**-P**1c/2d/3**, estimated by gel-permeation chromatography (GPC) on the basis of a PMMA calibration and DMF containing 0.05 M LiBr as the eluent.

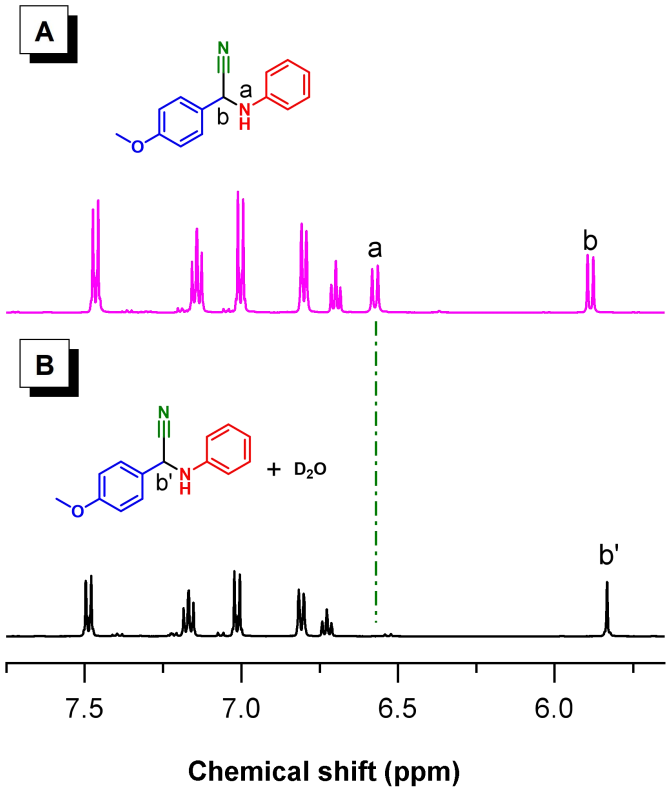


Figure S2. ^{1}H NMR spectra of (A) model compound and (B) model compound treated with D_2O

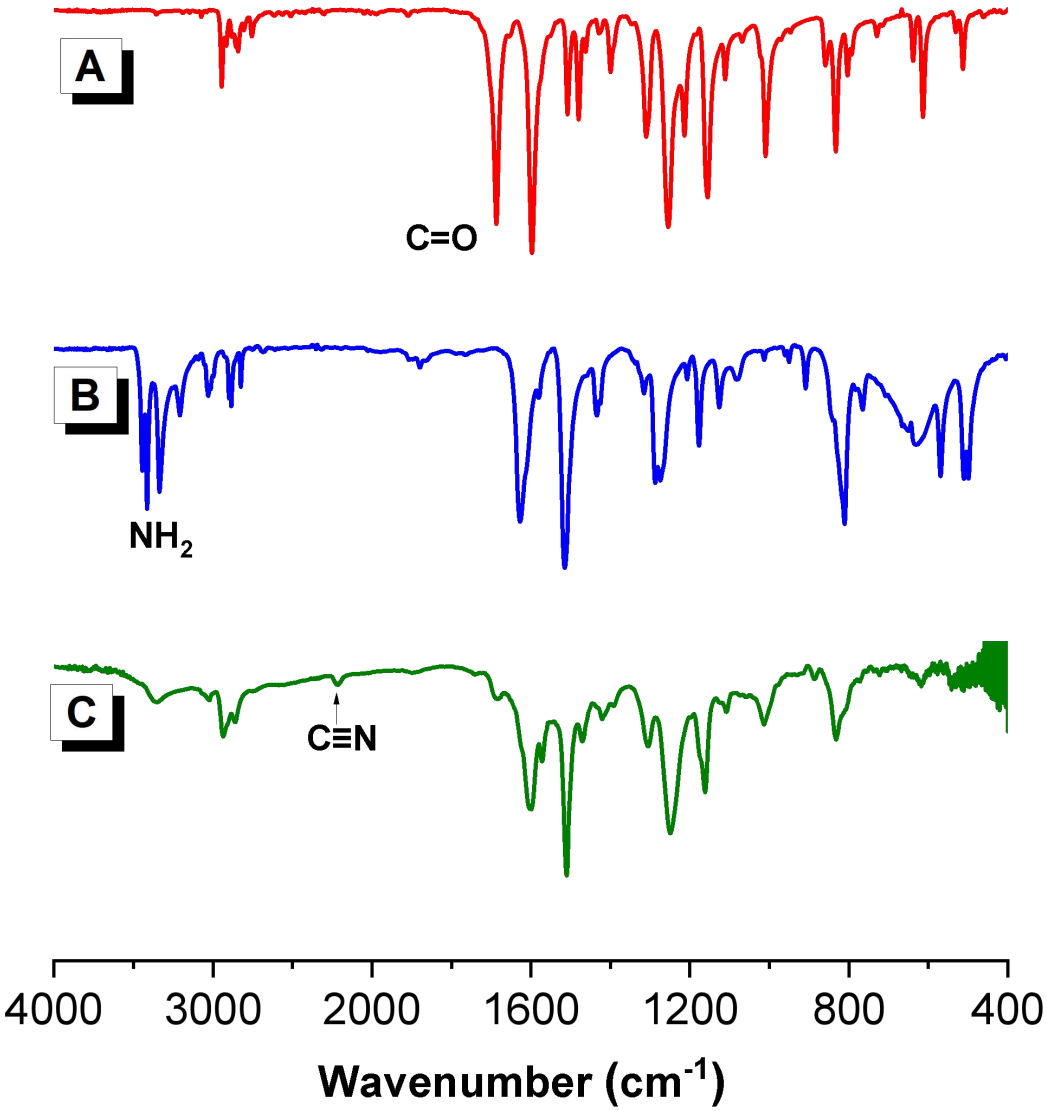


Figure S3. FT-IR spectra of (A) **1a**, (B) **2b** and (C) P**1a/2b/3.**

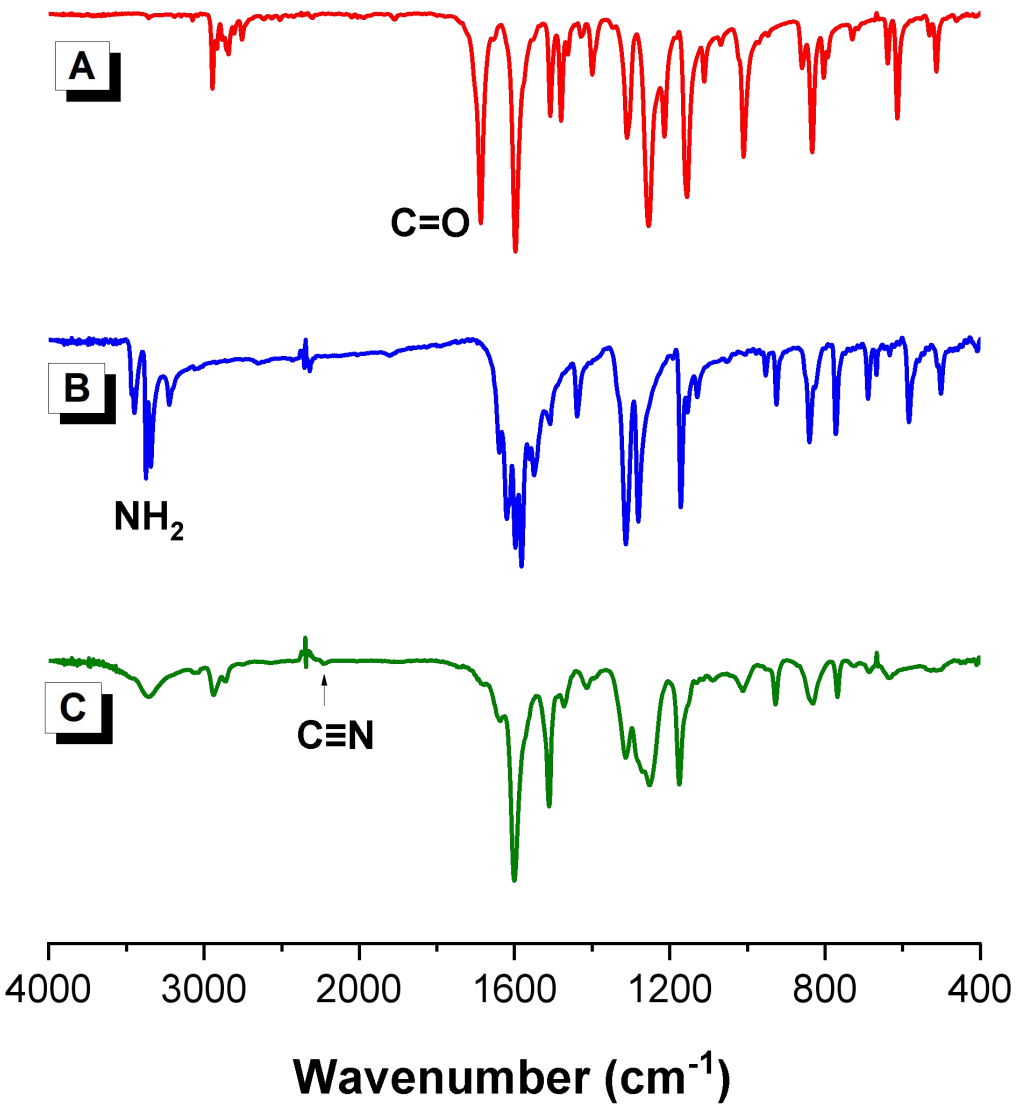


Figure S4. FT-IR spectra of (A) **1a**, (B) **2c** and (C) P**1a/2c/3**.

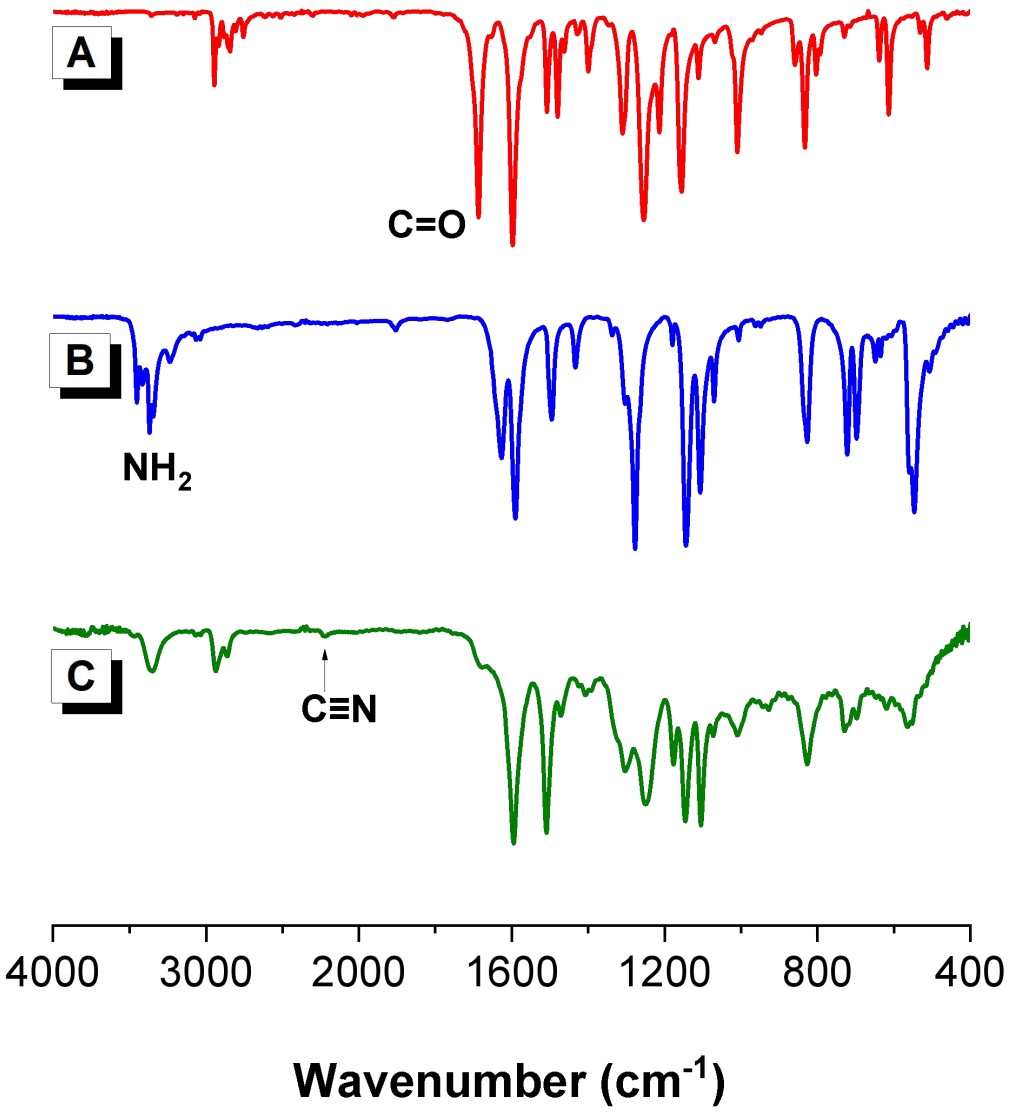


Figure S5. FT-IR spectra of (A) **1a**, (B) **2d** and (C) P**1a/2d/3**.

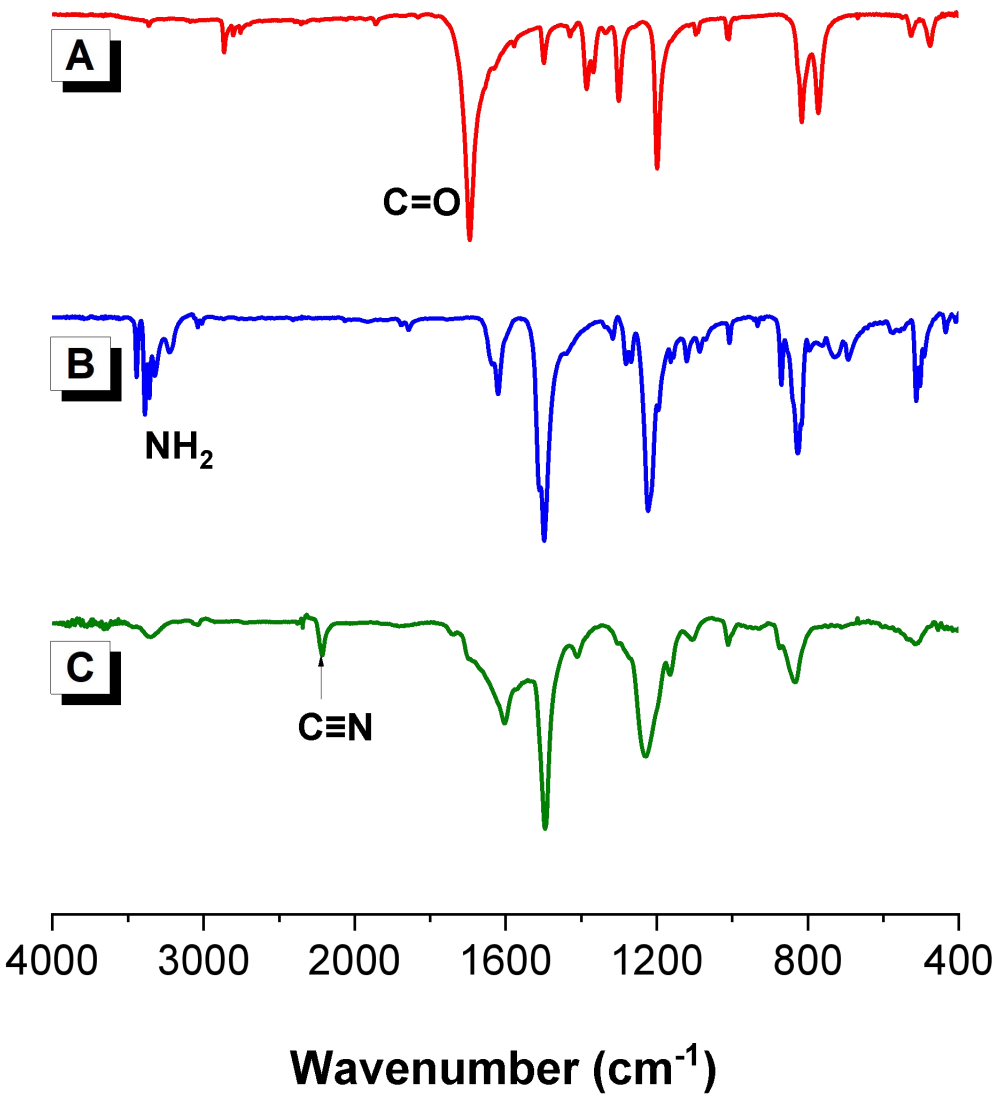


Figure S6. FT-IR spectra of (A) **1b**, (B) **2a** and (C) P**1b**/**2a**/**3**.

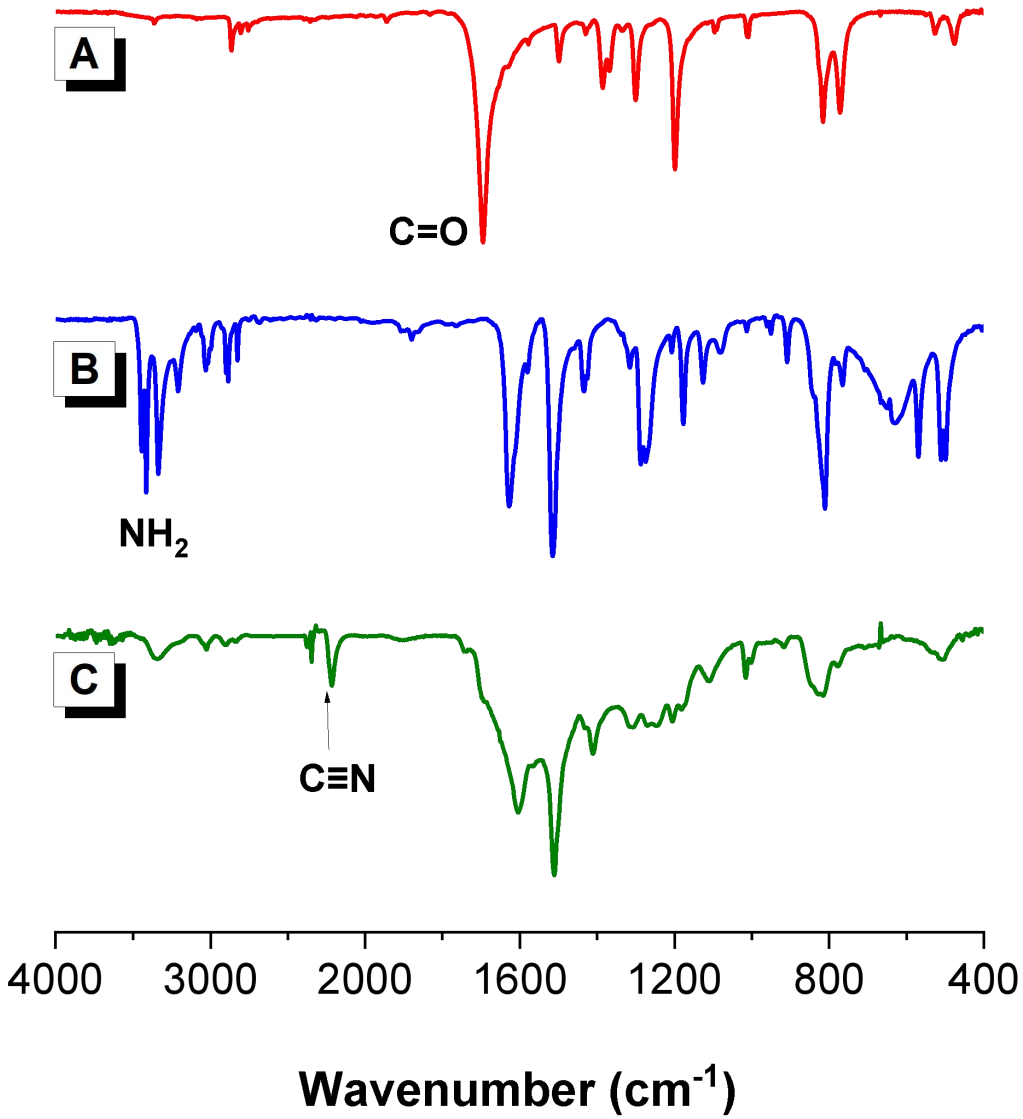
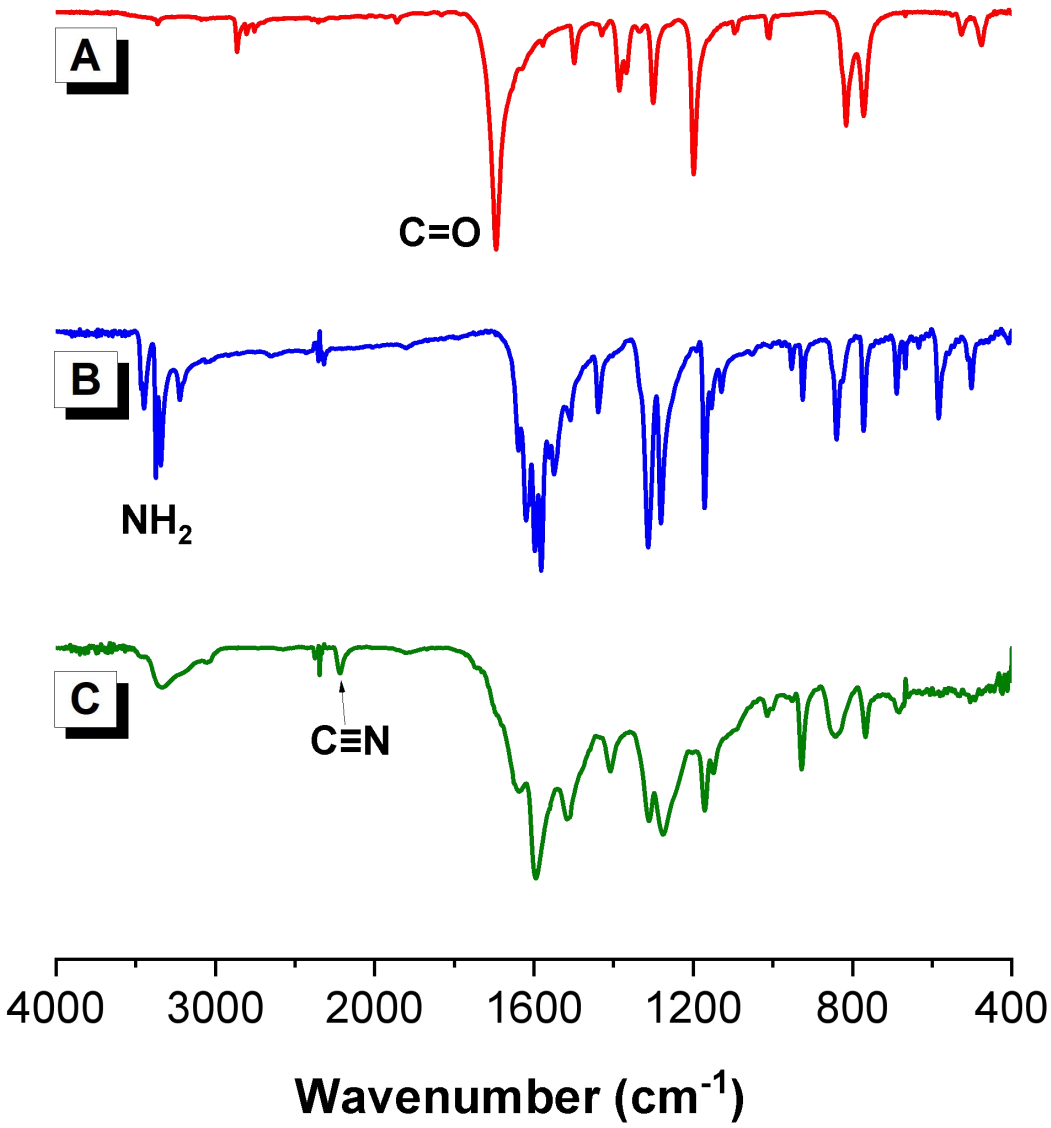


Figure S7. FT-IR spectra of (A) **1b**, (B) **2b** and (C) P**1b/2b/3**.



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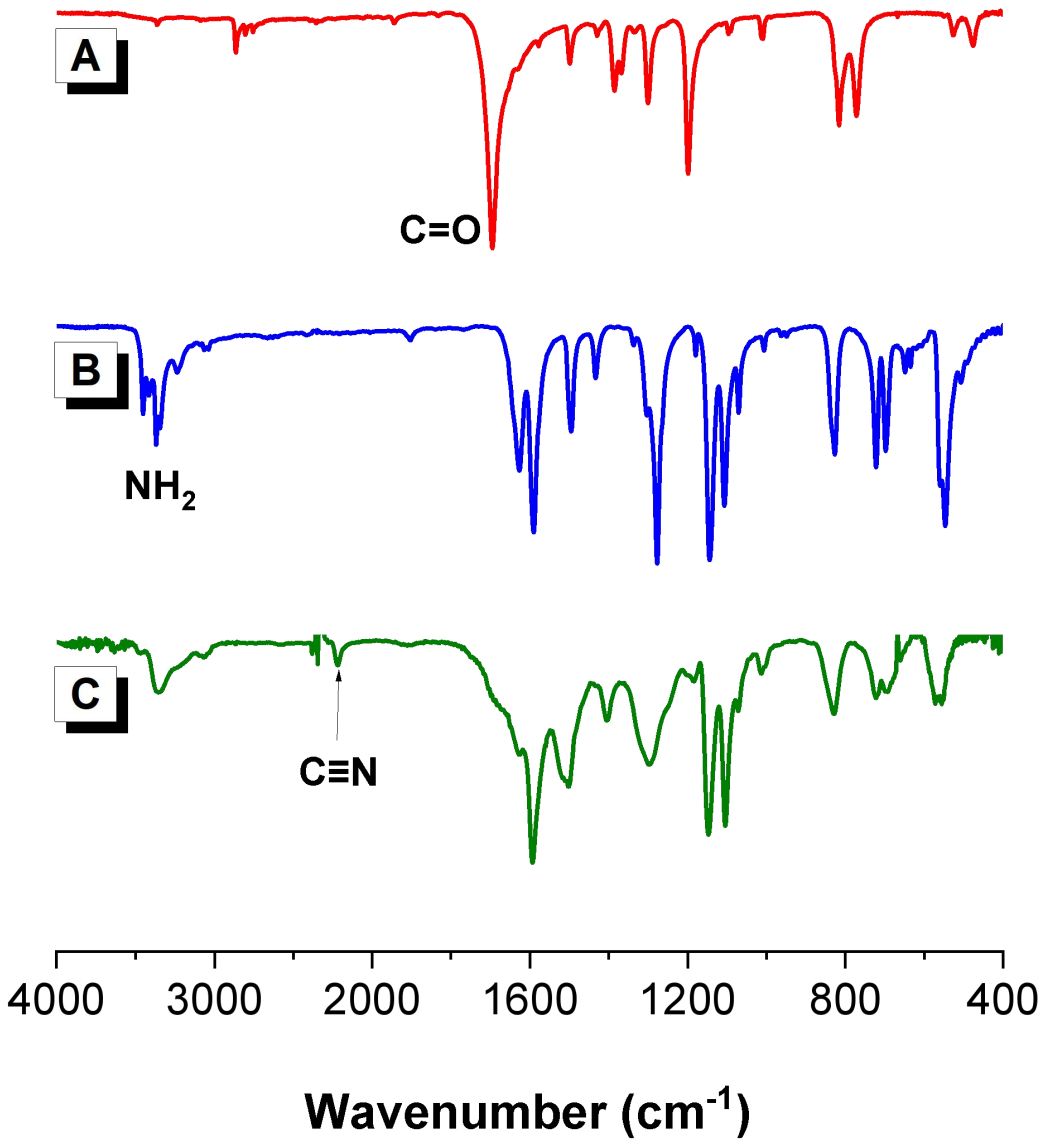

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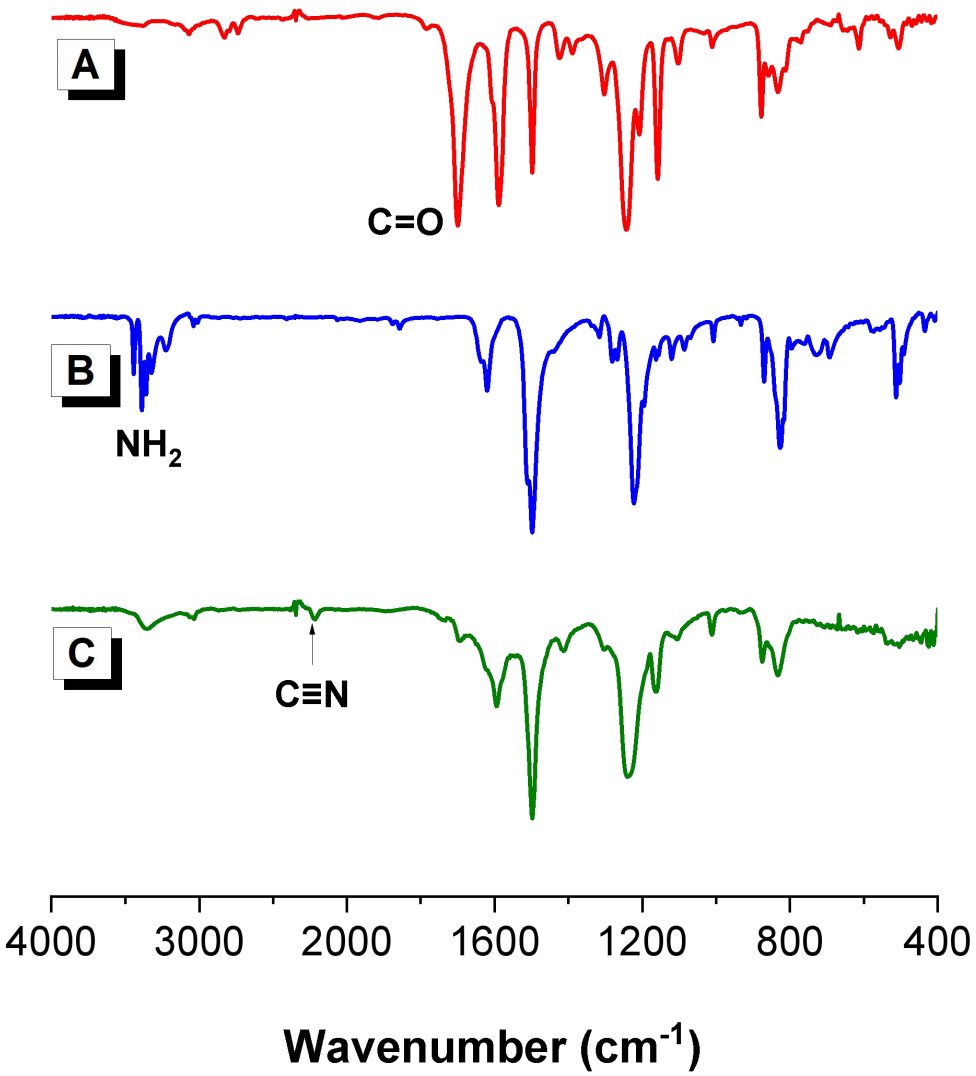

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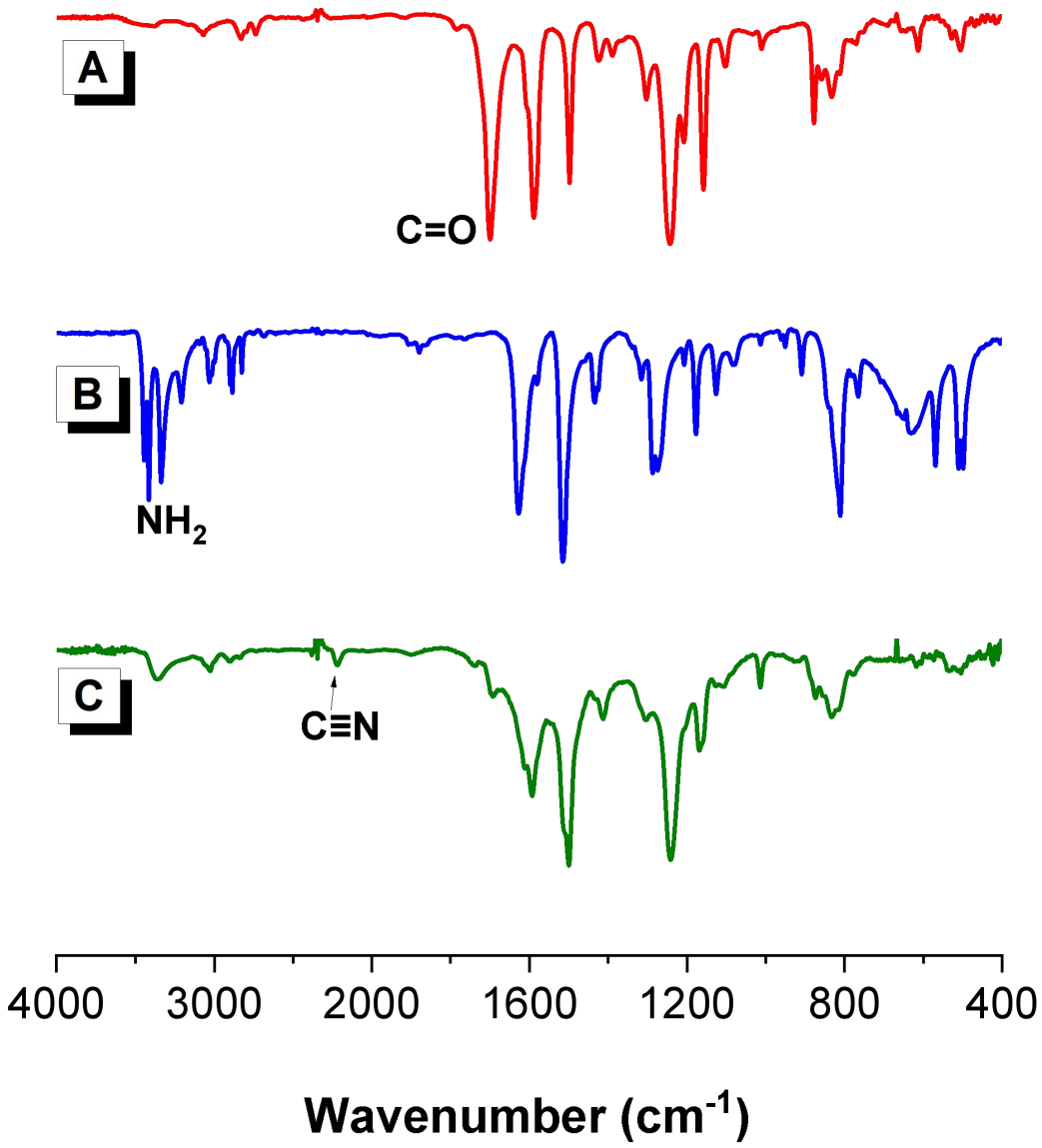


Figure S11. FT-IR spectra of (A) **1c**, (B) **2b** and (C) P**1c/2b/3**.

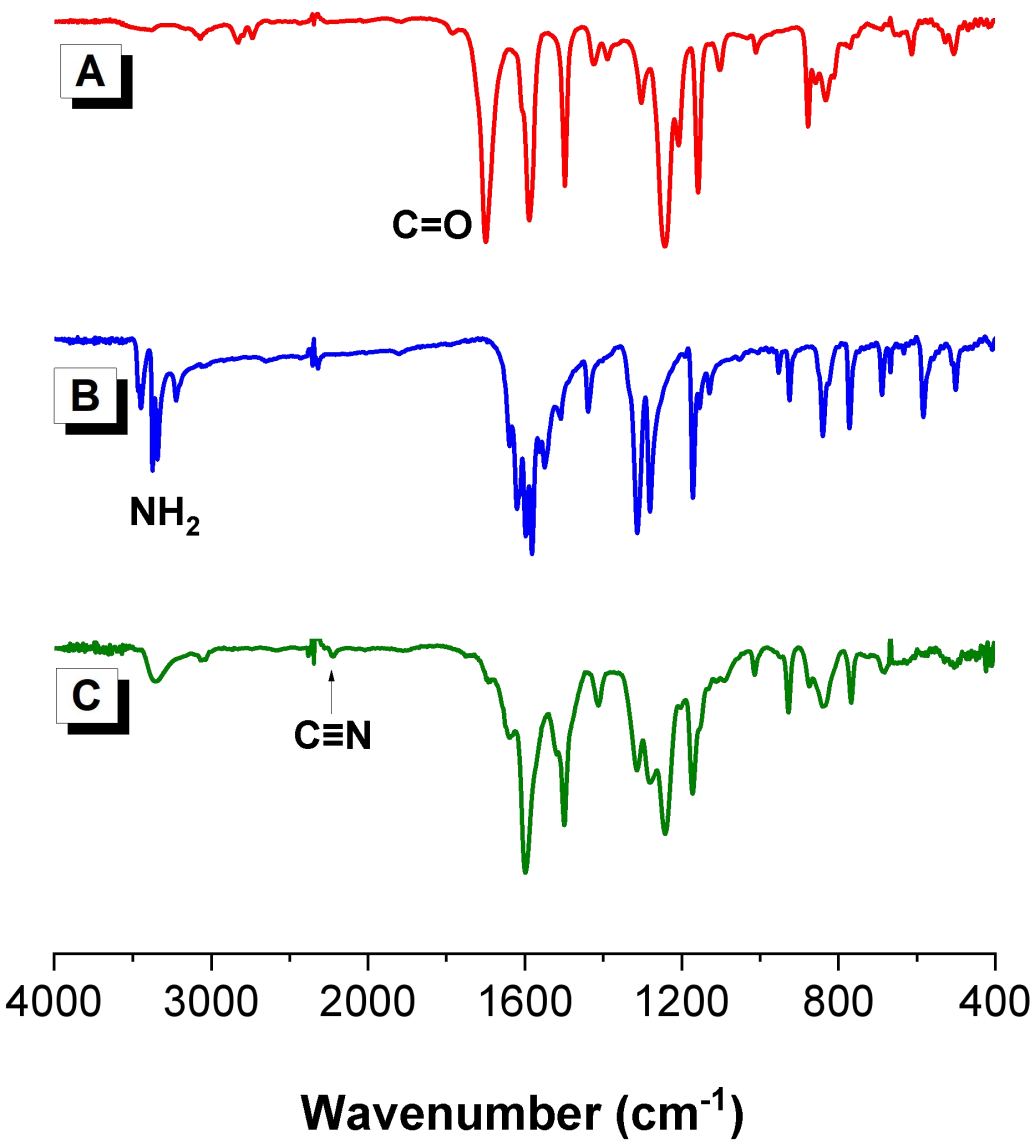


Figure S12. FT-IR spectra of (A) **1c**, (B) **2c** and (C) P**1c/2c/3**.

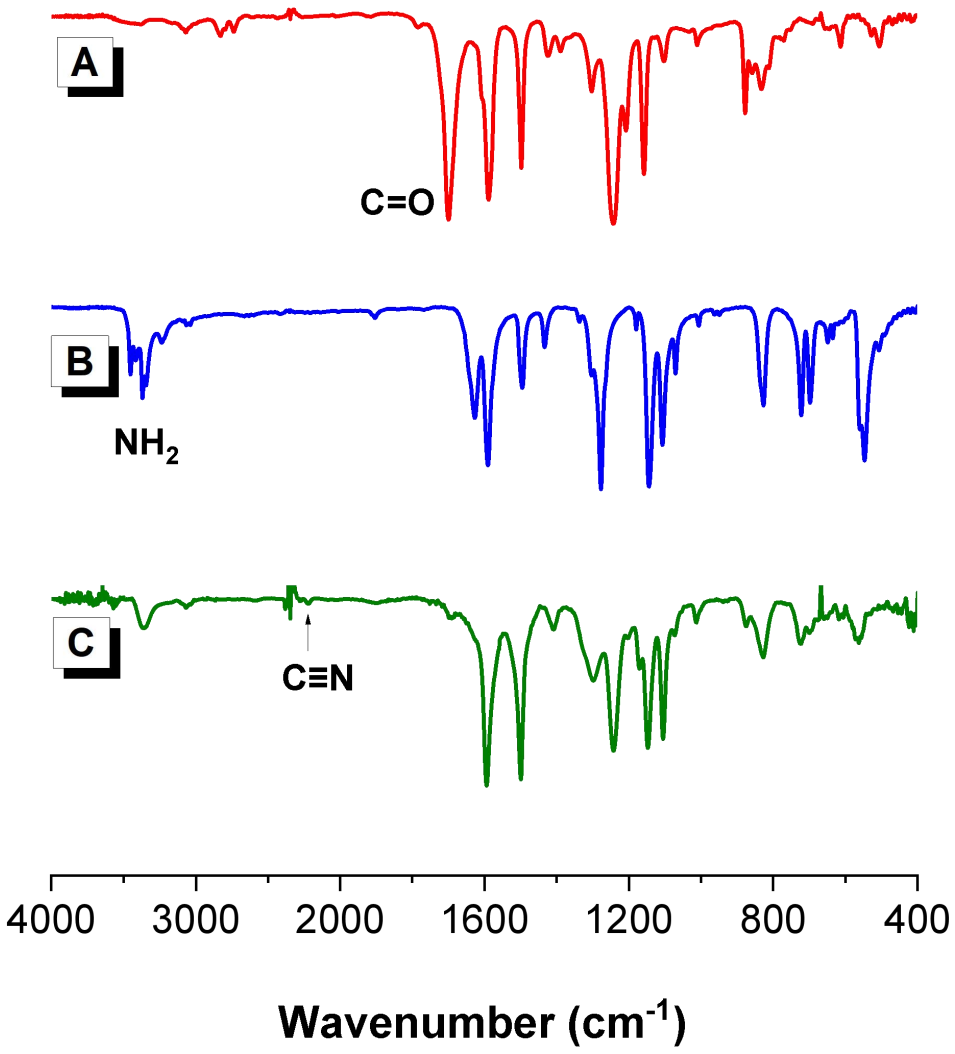


Figure S13. FT-IR spectra of (A) **1c**, (B) **2d** and (C) P**1c/2d/3**.

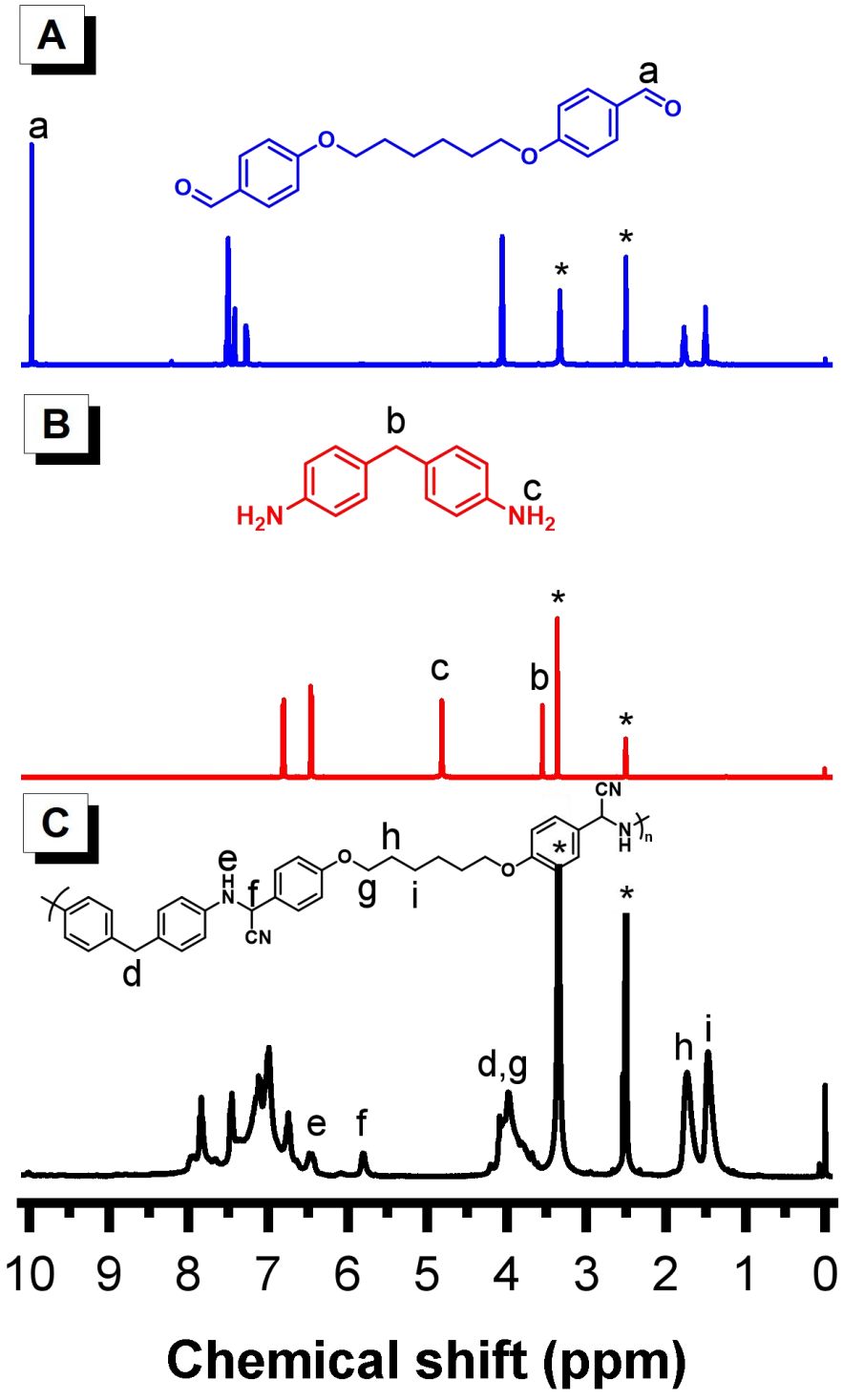
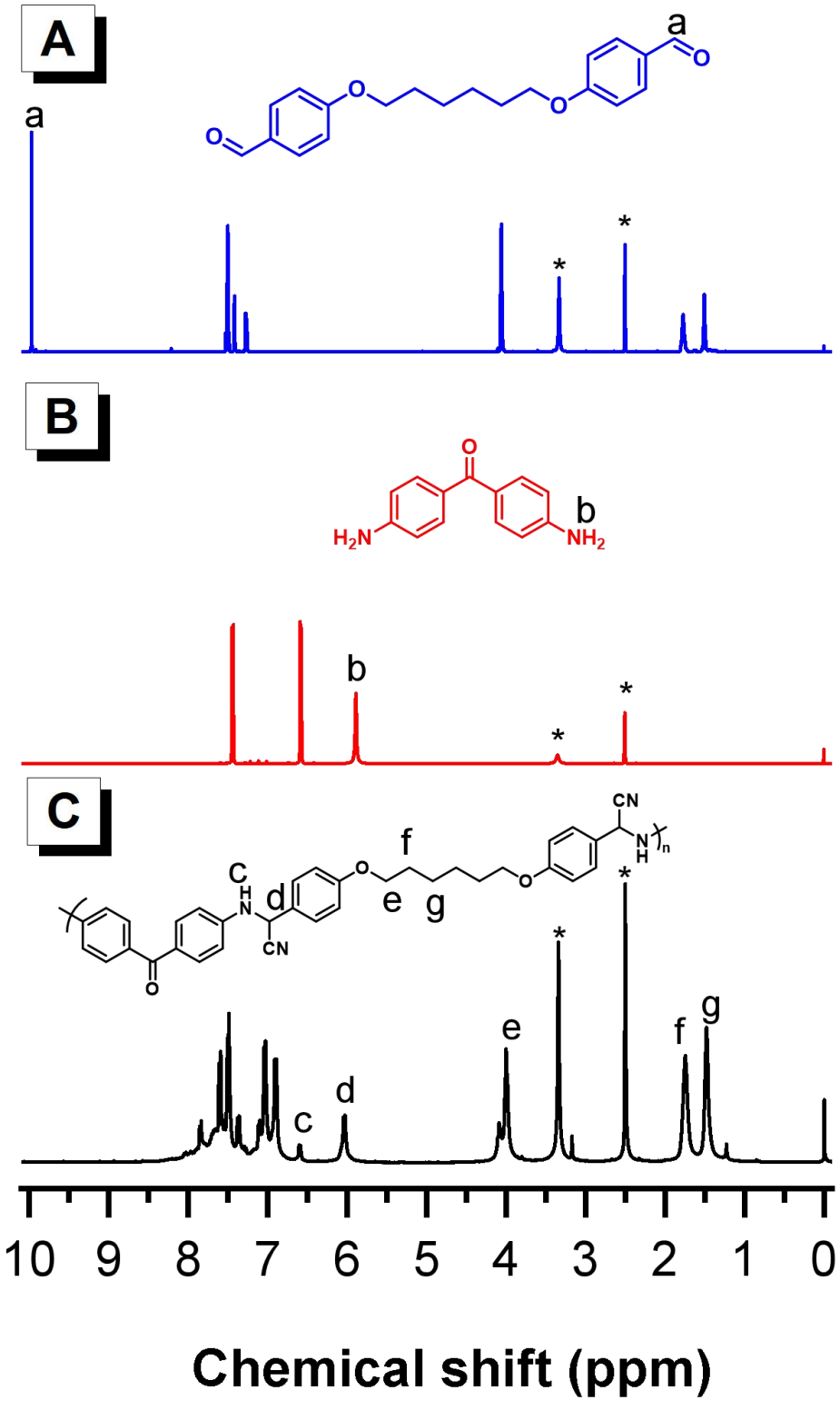


Figure S14. ^{1}H NMR spectra of (A) **1a**, (B) **2b**, and (C) P**1a**/**2b**/**3** in DMSO-d_6. The solvent peaks are marked with asterisks.



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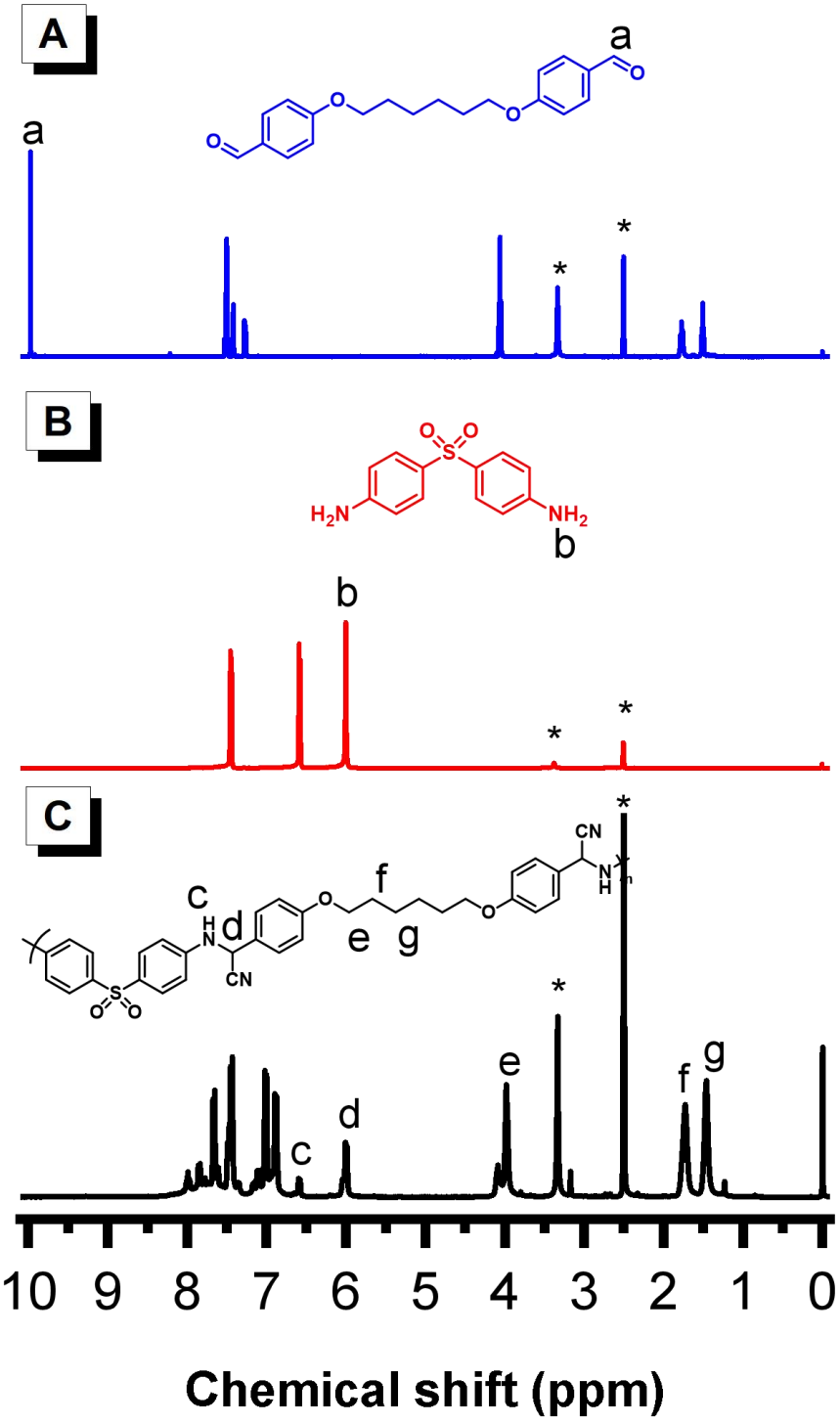

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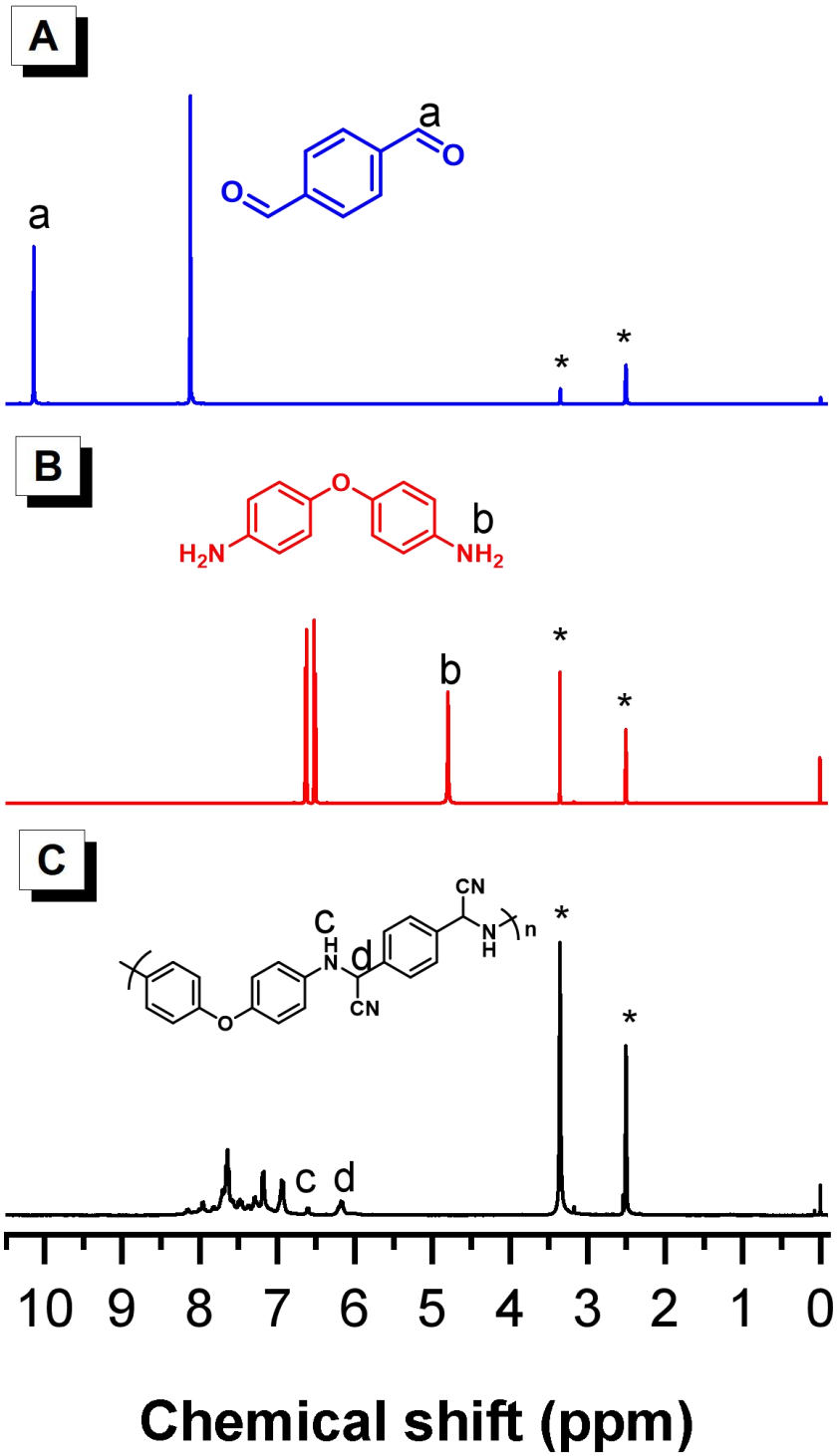

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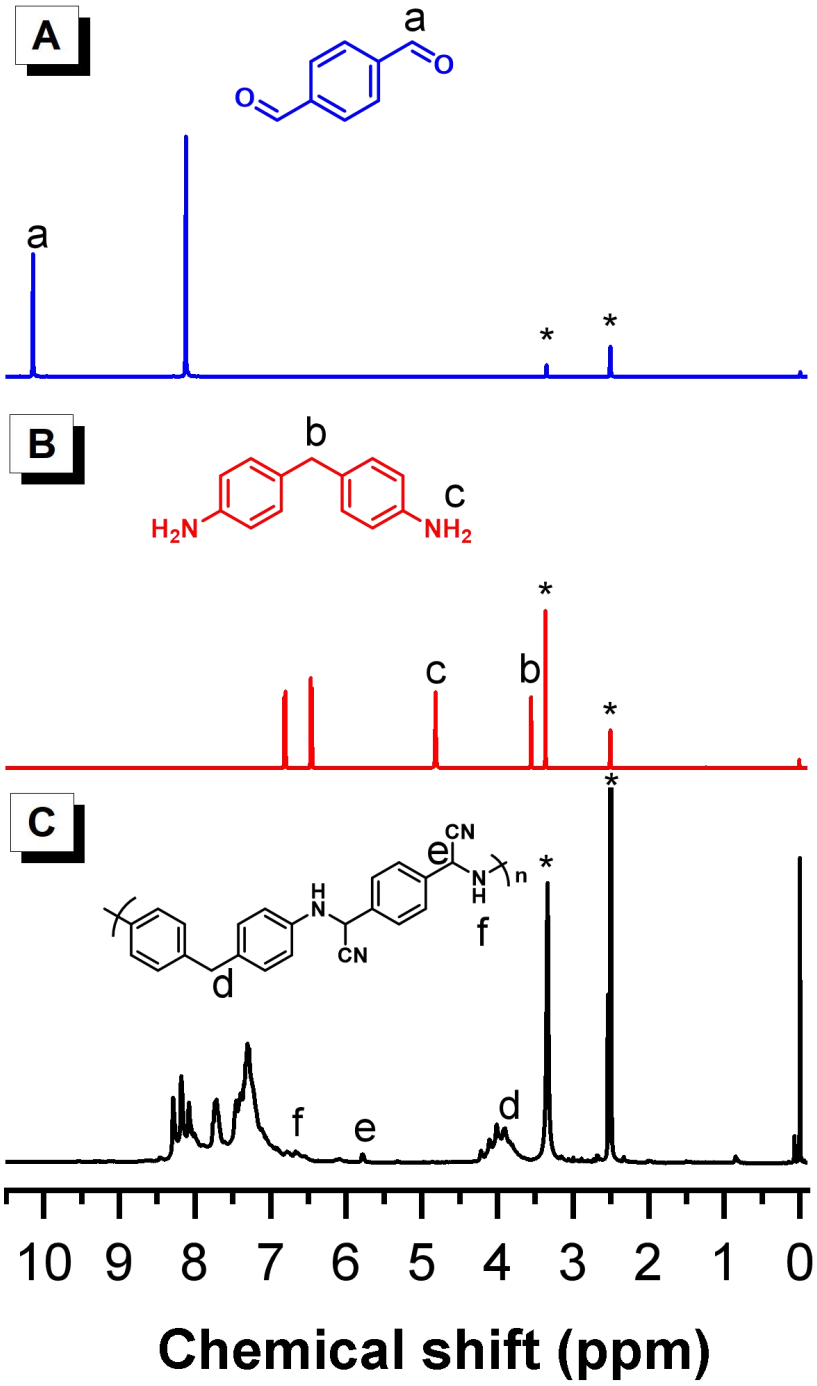
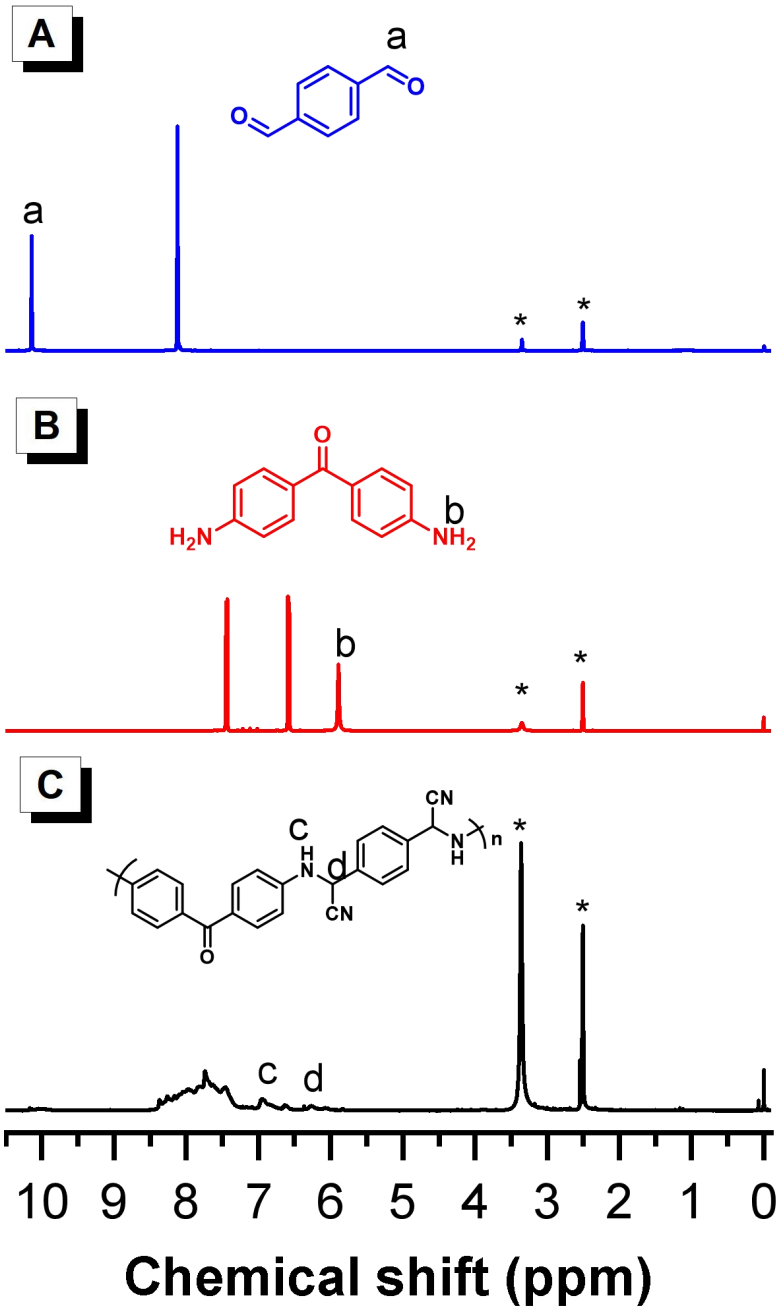


Figure S18. ^{1}H NMR spectra of (A) **1b**, (B) **2b**, and (C) P**1b**/**2b**/**3** in DMSO-d_6. The solvent peaks are marked with asterisks.



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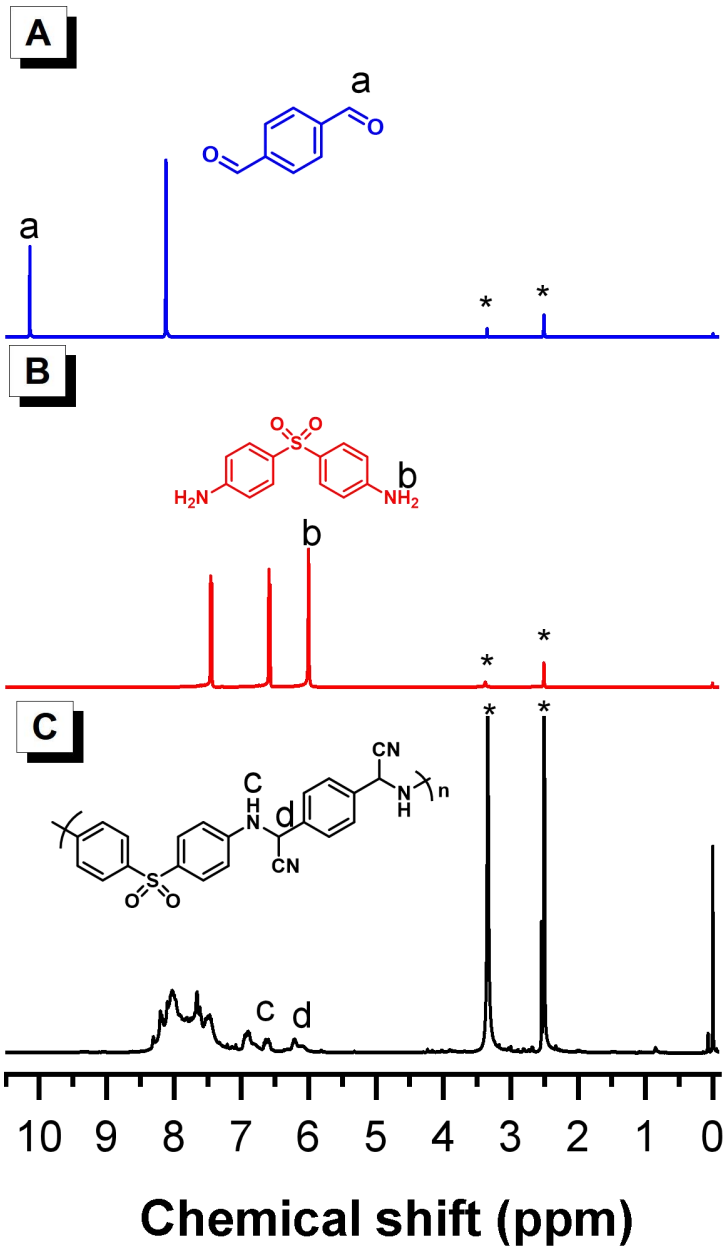
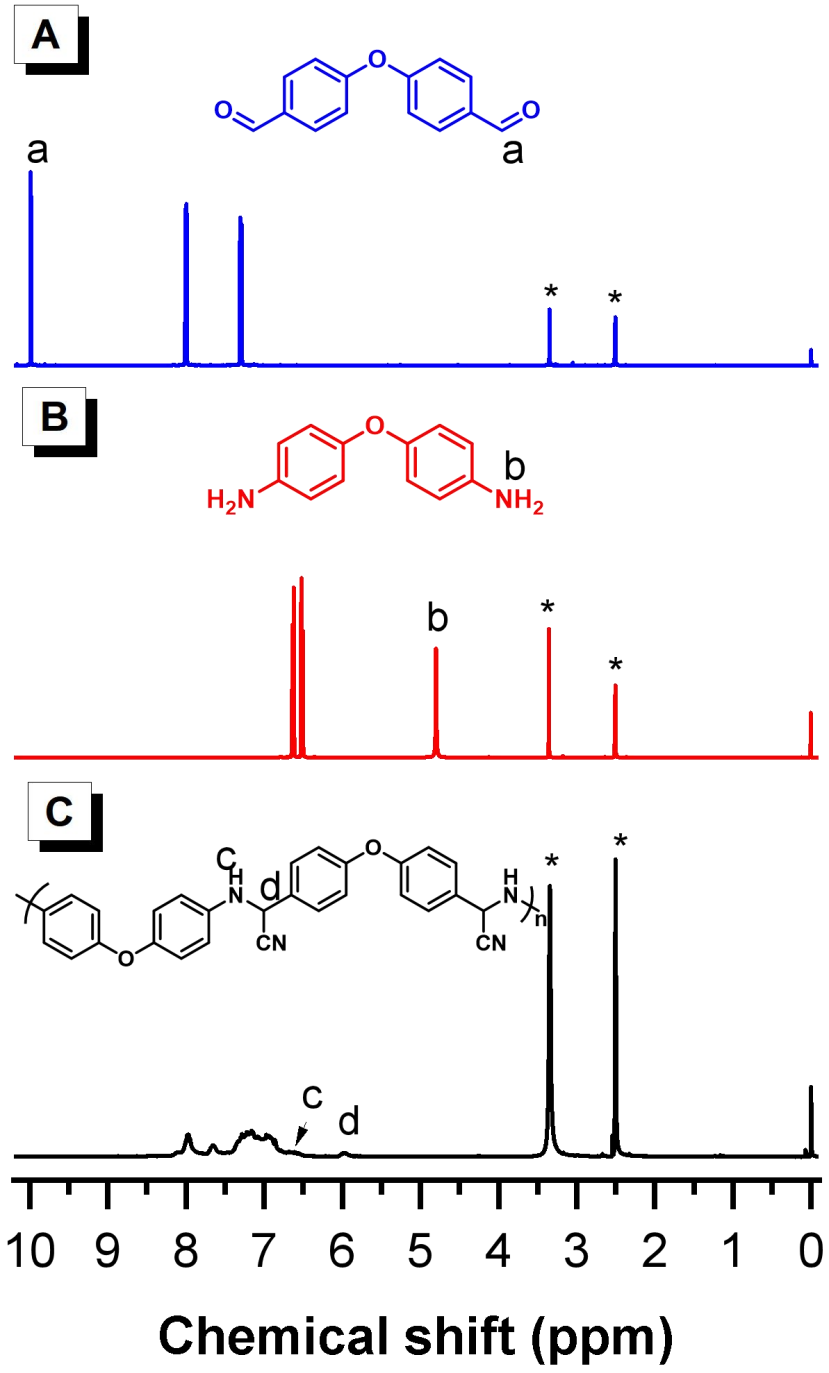


Figure S20. ^{1}H NMR spectra of (A) **1b**, (B) **2d**, and (C) P**1b/2d/3** in DMSO-d_6. The solvent peaks are marked with asterisks.



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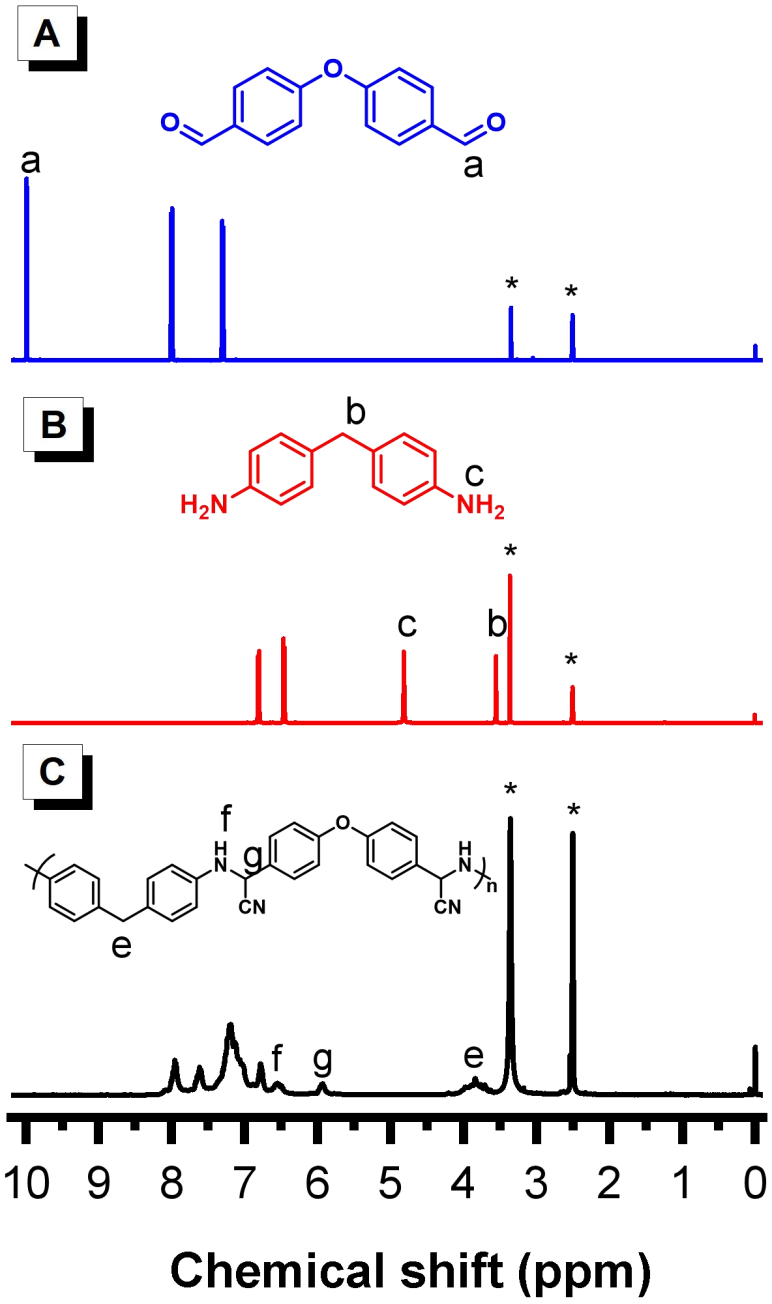

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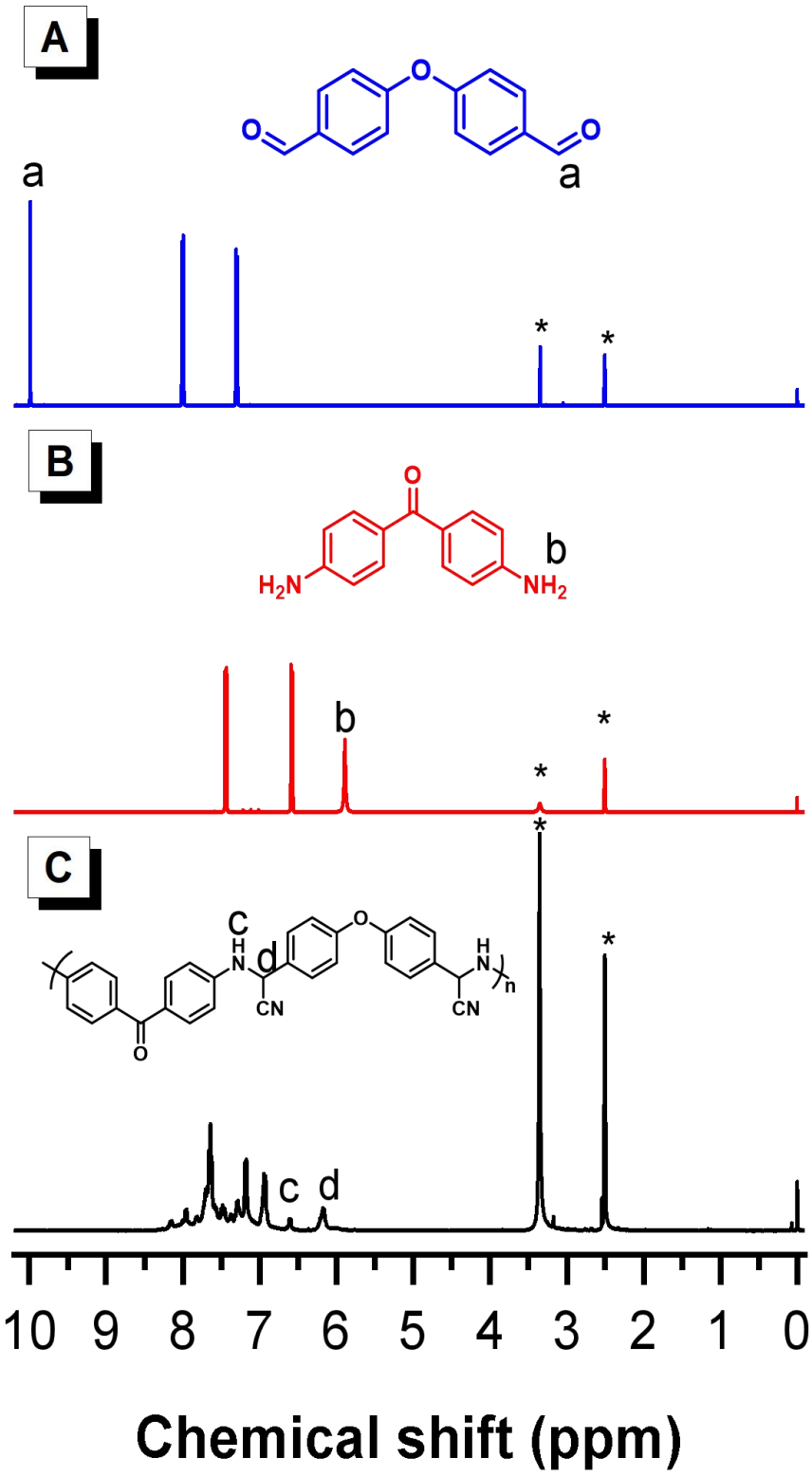

Figure S23. ^{1}H NMR spectra of (A) **1c**, (B) **2c**, and (C) P**1c**/**2c**/**3** in DMSO-d_6. The solvent peaks are marked with asterisks.

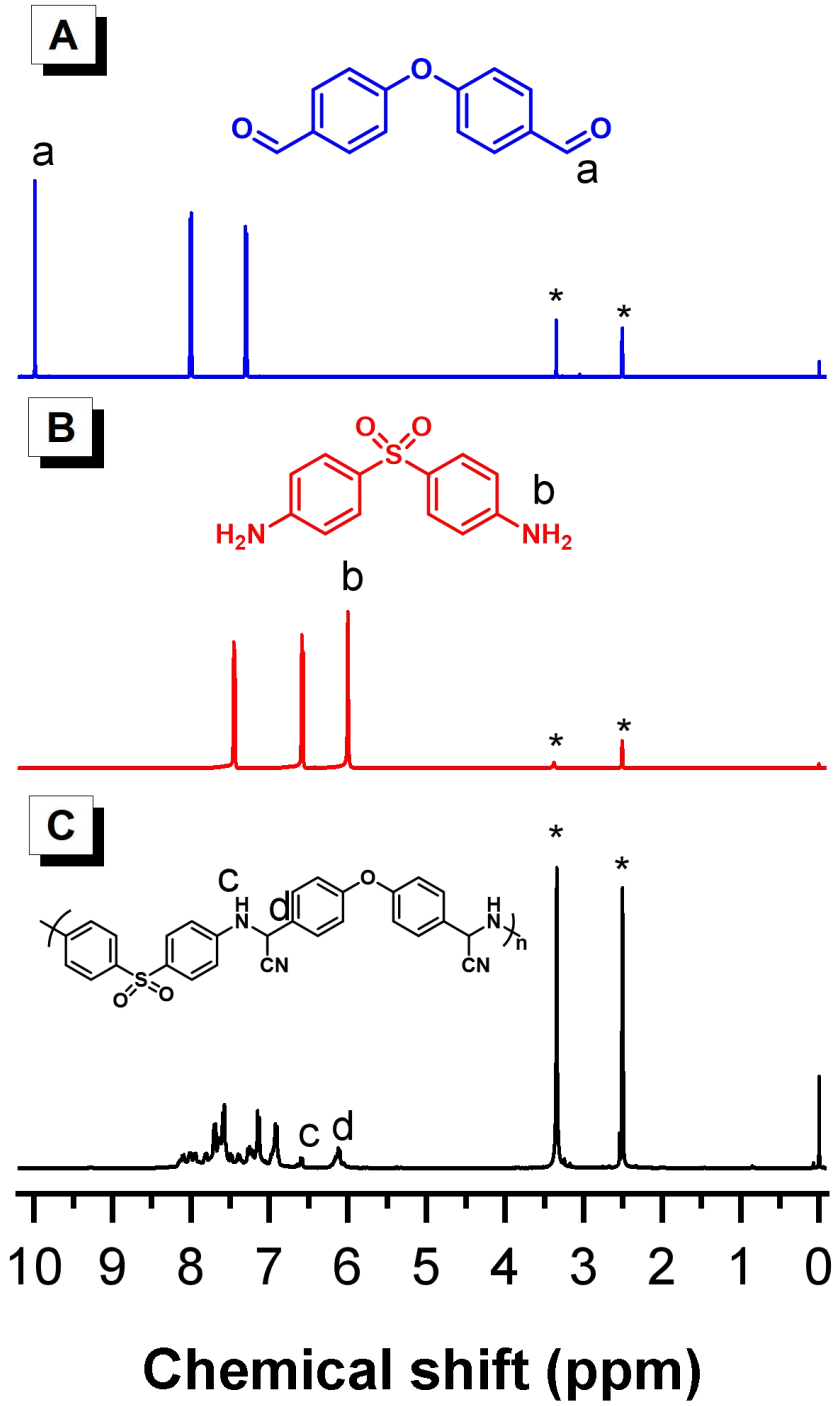

Figure S24. ^{1}H NMR spectra of (A) **1c**, (B) **2d**, and (C) P**1c**/**2d**/**3** in DMSO-d_6. The solvent peaks are marked with asterisks.

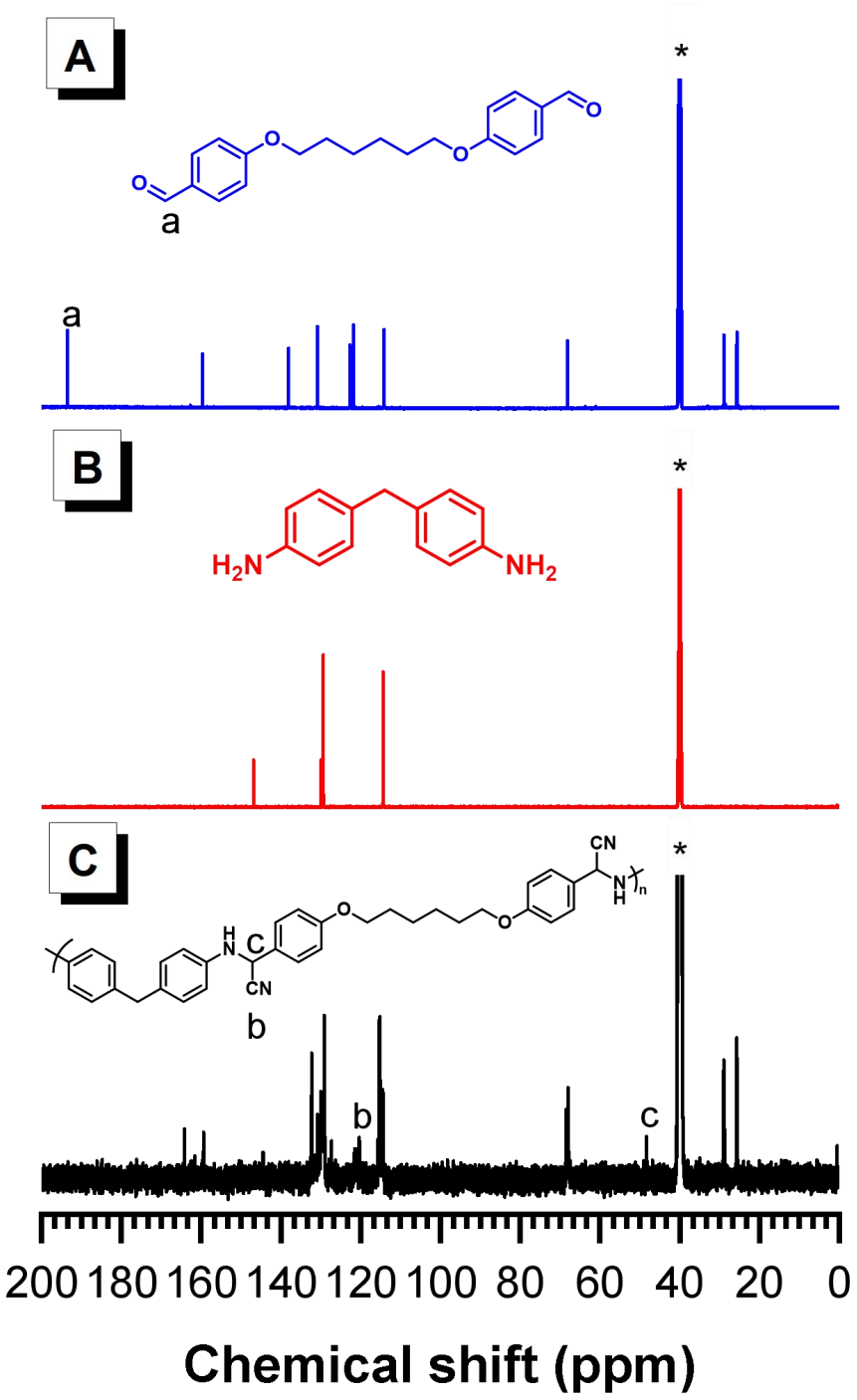

Figure S25. ^{13}C NMR spectra of (A) **1a**, (B) **2b**, and (C) P**1a/2b/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

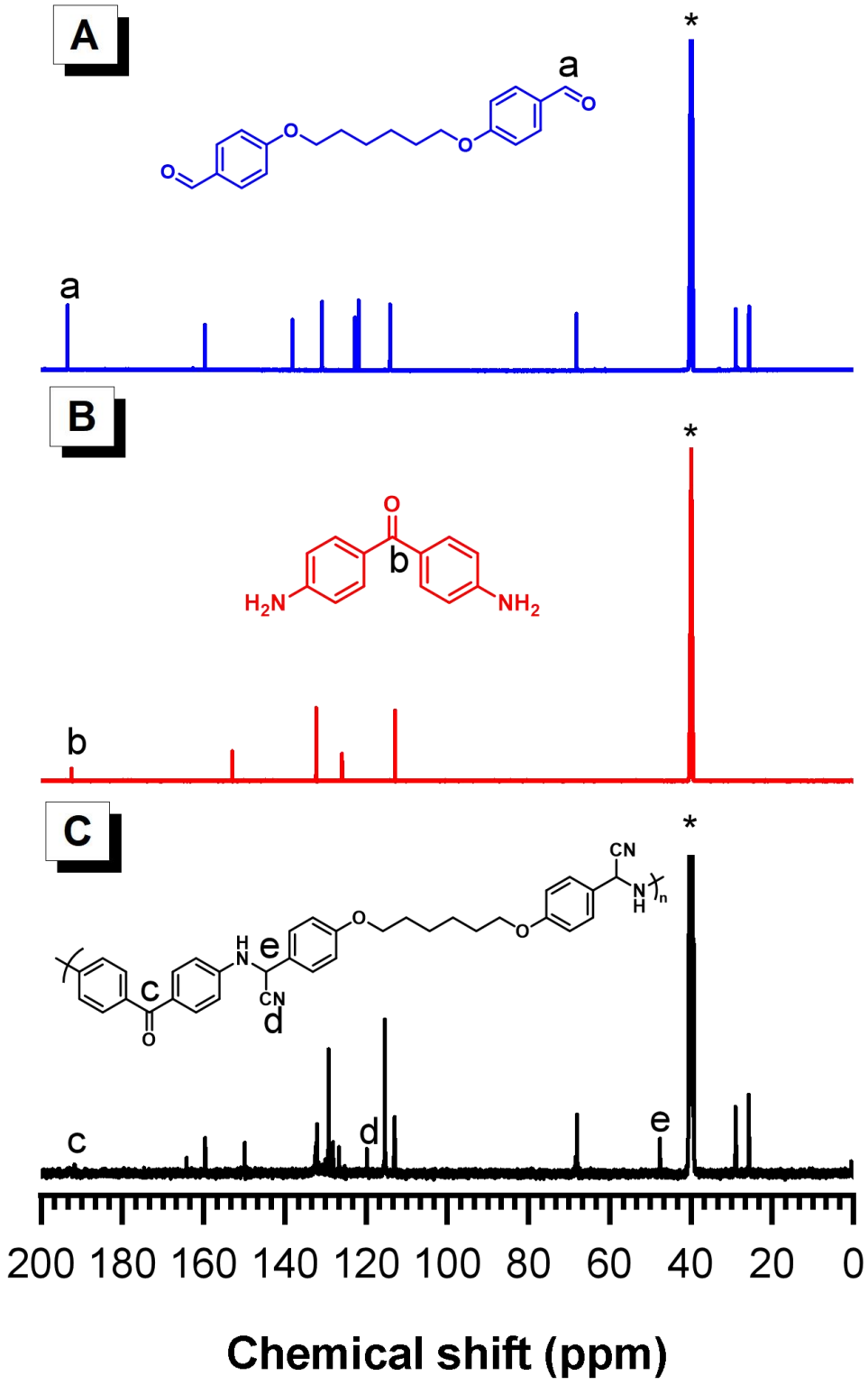

Figure S26. ^{13}C NMR spectra of (A) **1a**, (B) **2c**, and (C) P**1a/2c/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

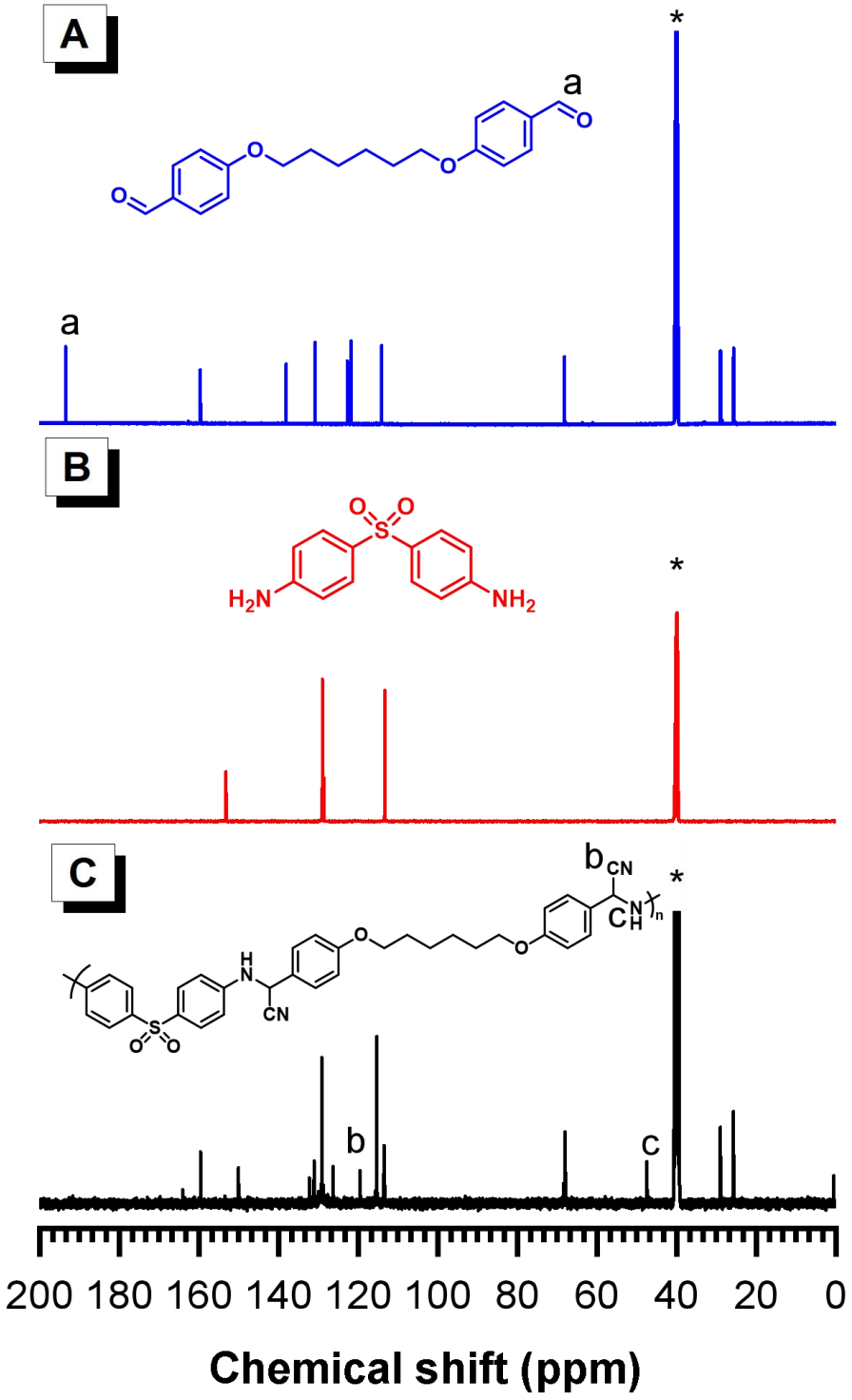

Figure S27. ^{13}C NMR spectra of (A) **1a**, (B) **2d**, and (C) P**1a/2d/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

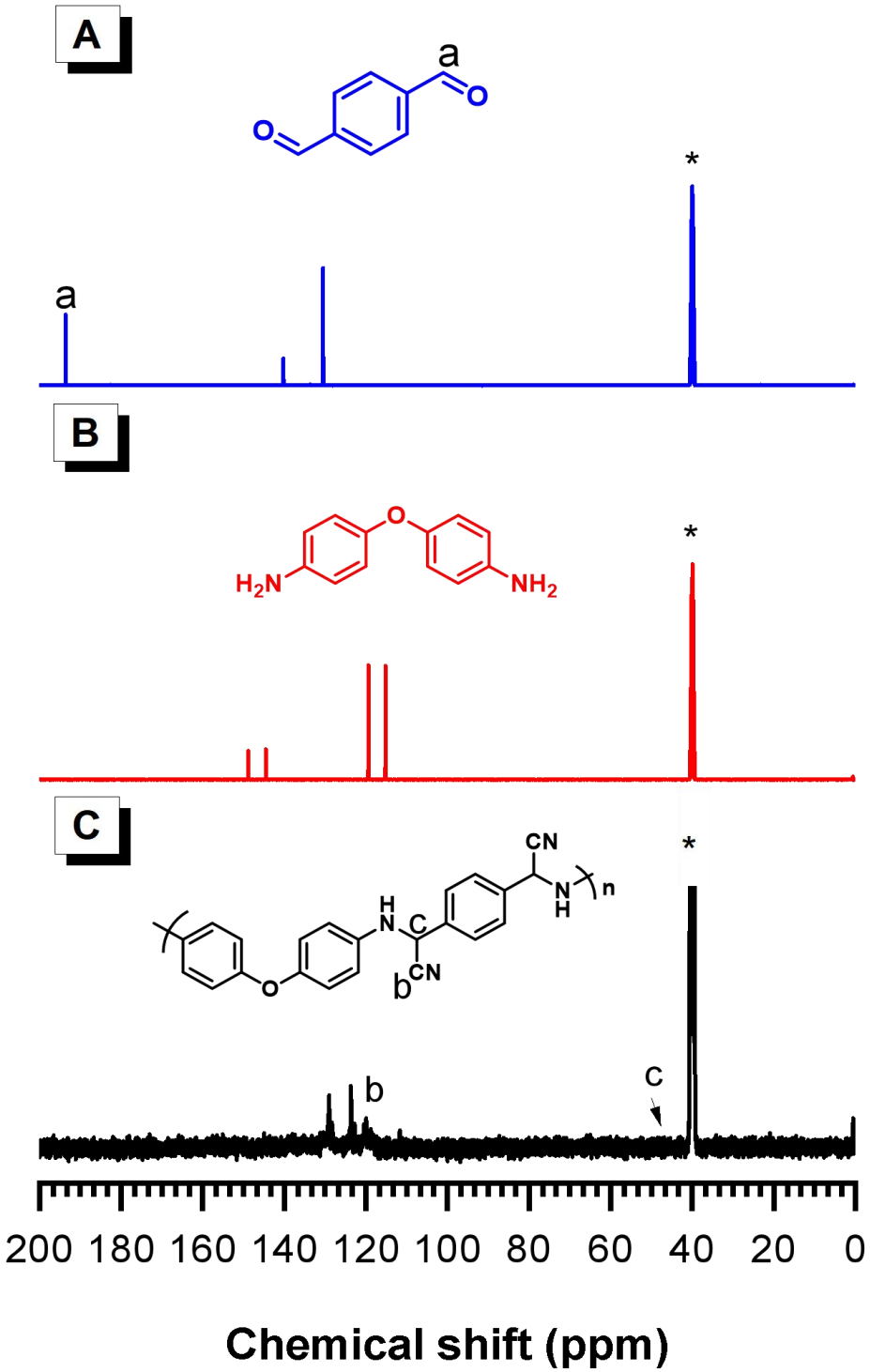

Figure S28. ^{13}C NMR spectra of (A) **1b**, (B) **2a**, and (C) P**1b/2a/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

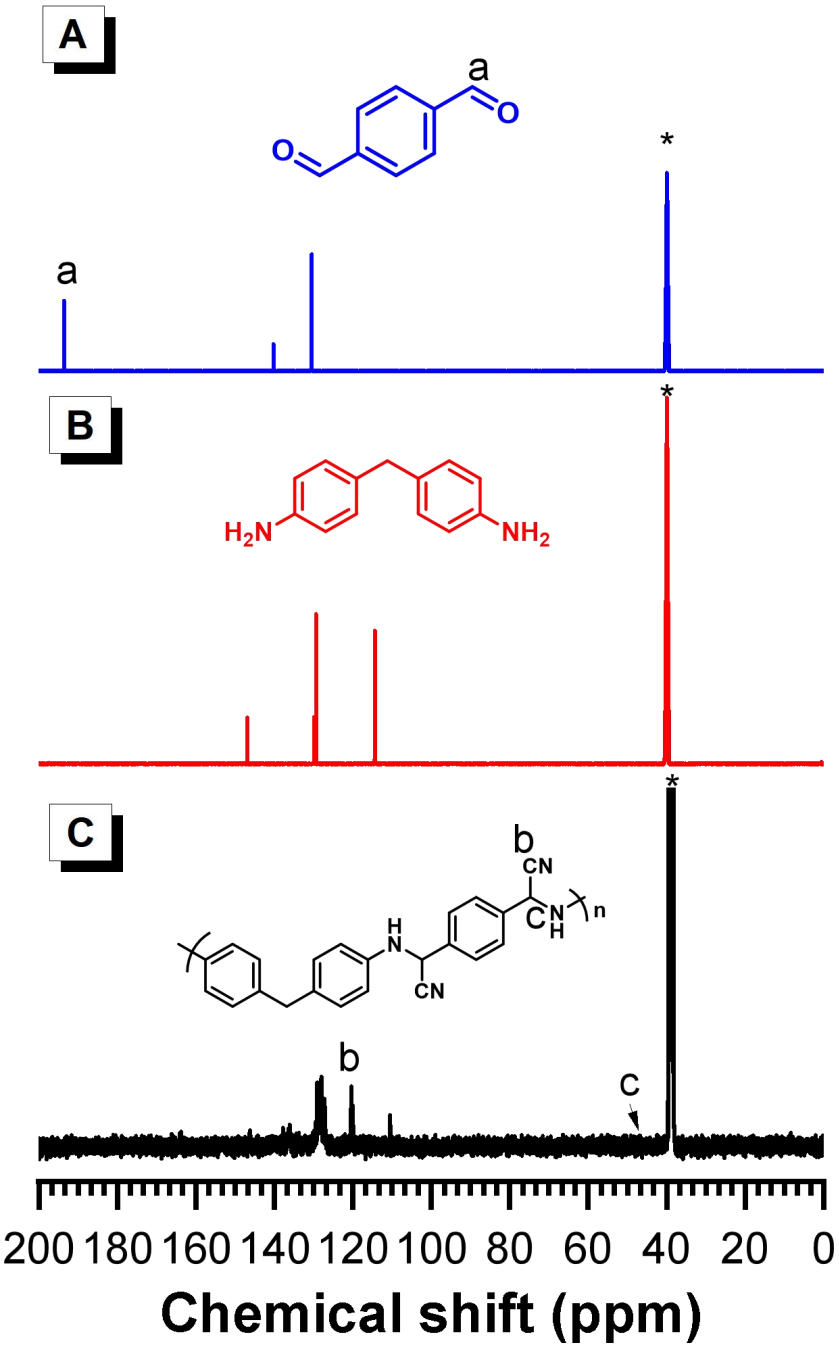

Figure S29. ^{13}C NMR spectra of (A) **1b**, (B) **2b**, and (C) P**1b**/**2b**/**3** in DMSO-d_6.The solvent peaks are marked with asterisks.

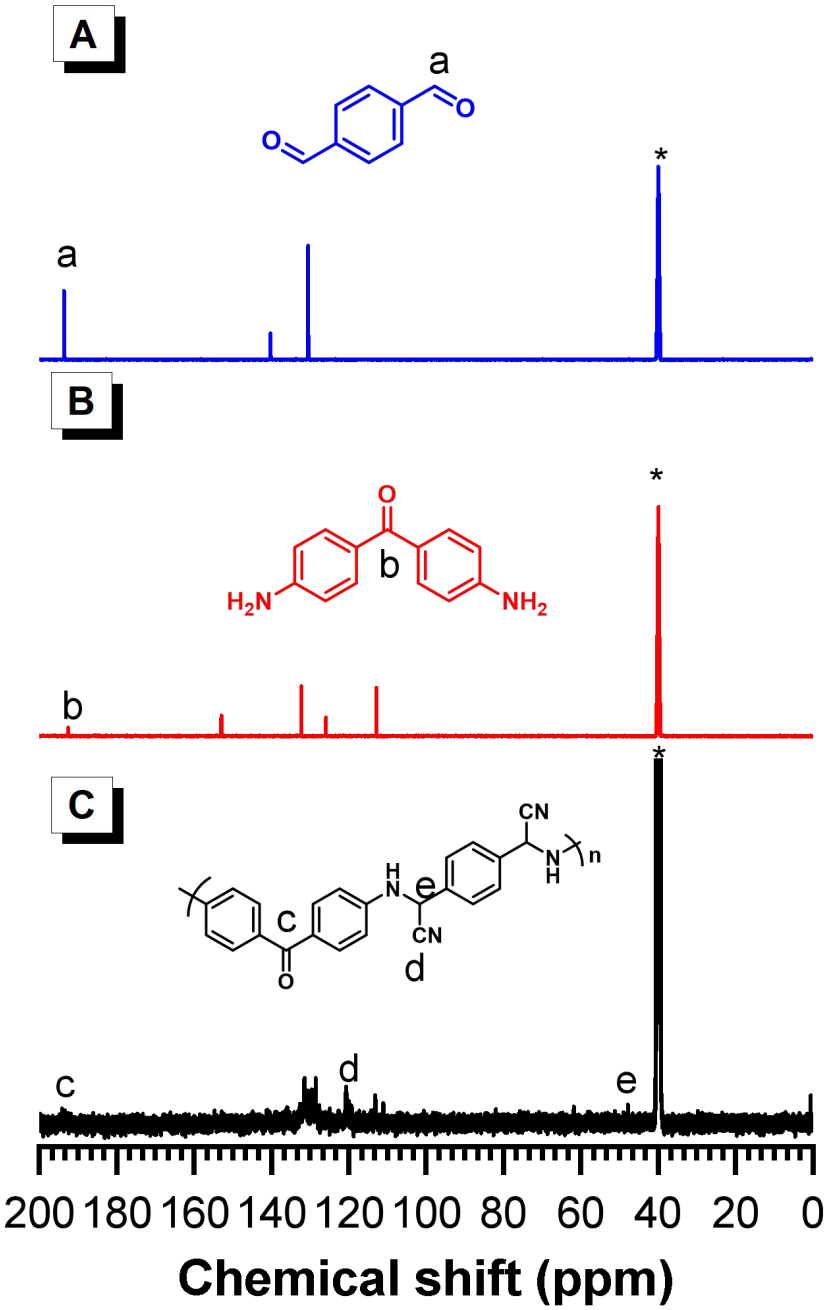

Figure S30. ^{13}C NMR spectra of (A) **1b**, (B) **2c**, and (C) P**1b/2c/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

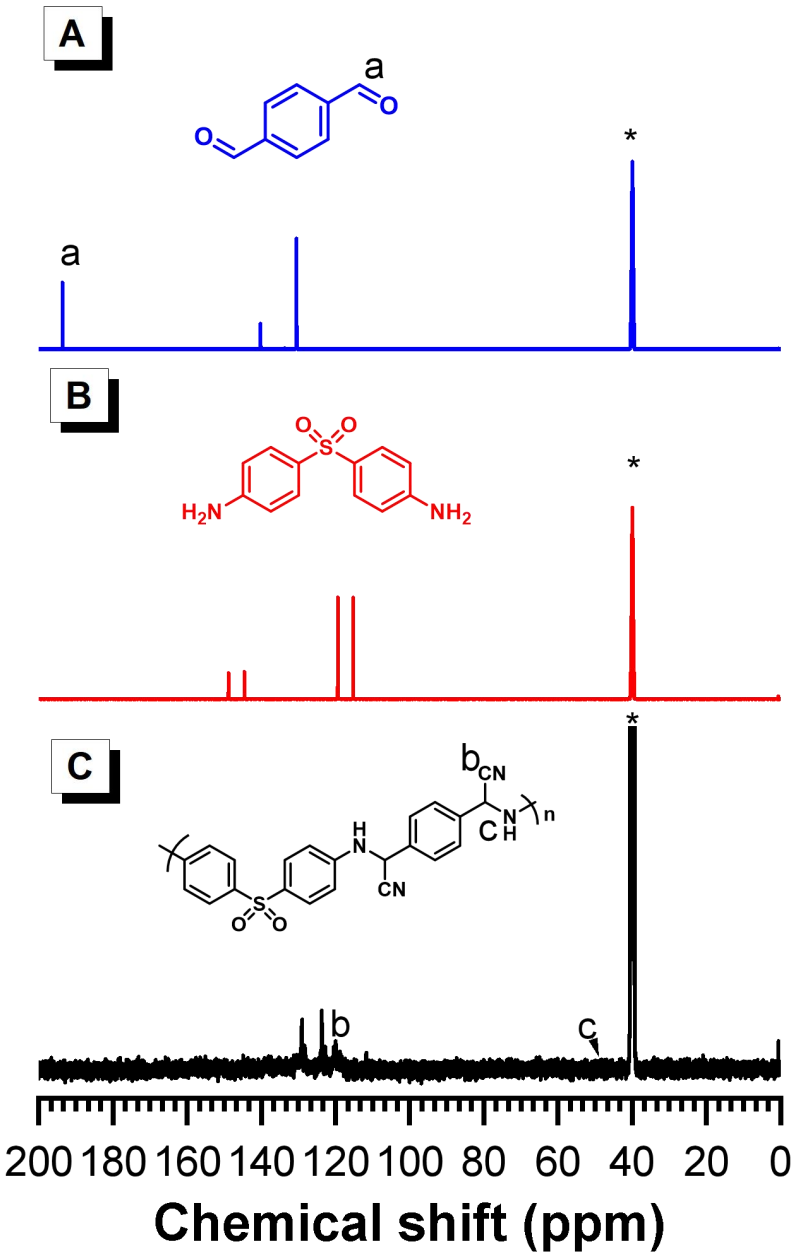

Figure S31. ^{13}C NMR spectra of (A) **1b**, (B) **2d**, and (C) P**1b/2d/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

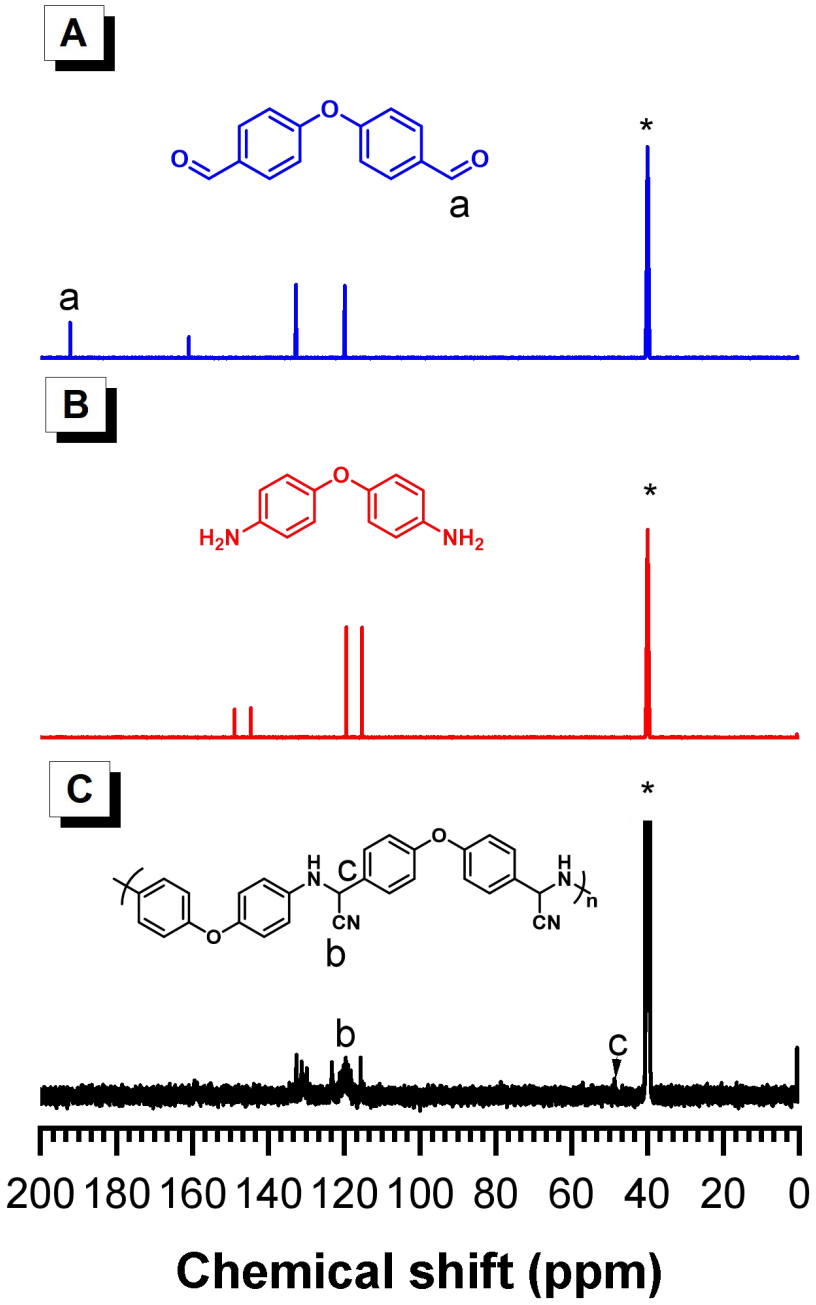

Figure S32. ^{13}C NMR spectra of (A) **1c**, (B) **2a**, and (C) P**1c/2a/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

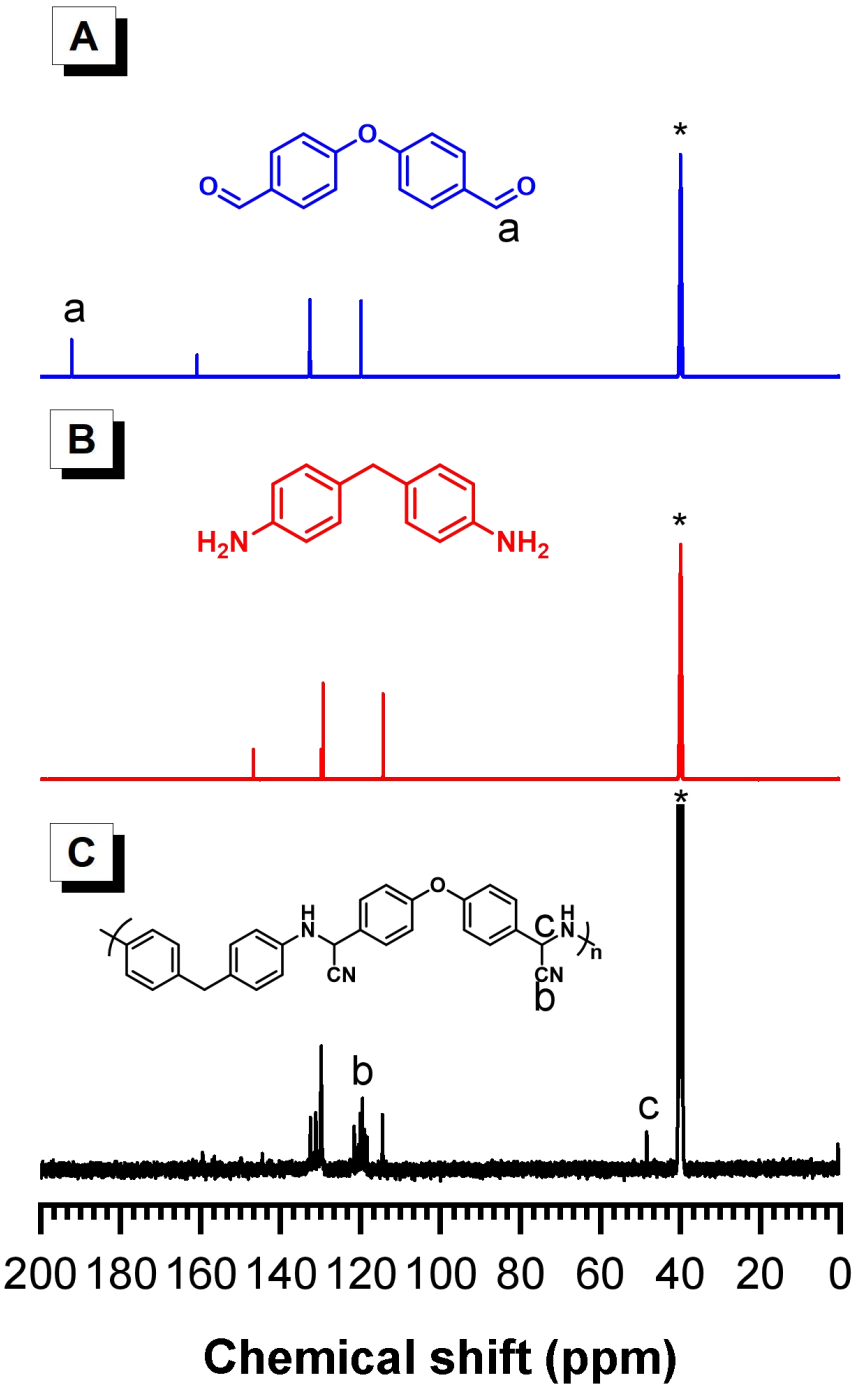

Figure S33. ^{13}C NMR spectra of (A) **1c**, (B) **2b**, and (C) P**1c/2b/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

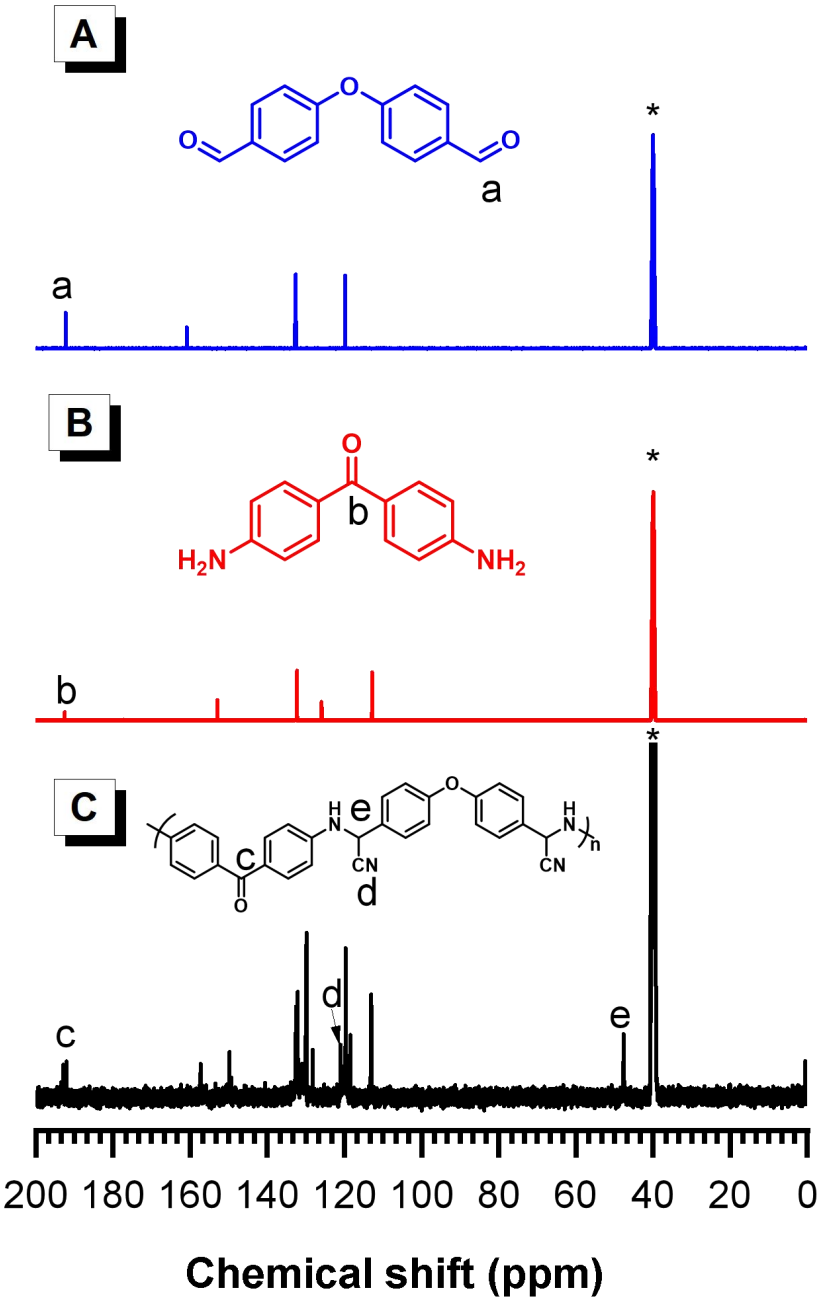

Figure S34. ^{13}C NMR spectra of (A) **1c**, (B) **2c**, and (C) P**1c/2c/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

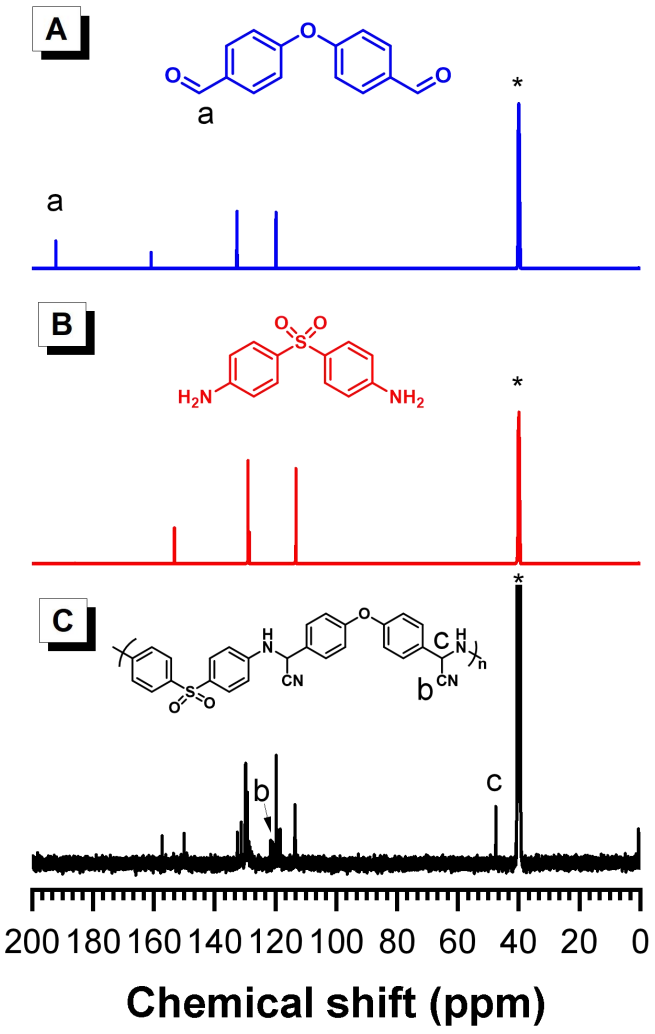

Figure S35. ^{13}C NMR spectra of (A) **1c**, (B) **2d**, and (C) P**1c/2d/3** in DMSO-d_6.The solvent peaks are marked with asterisks.

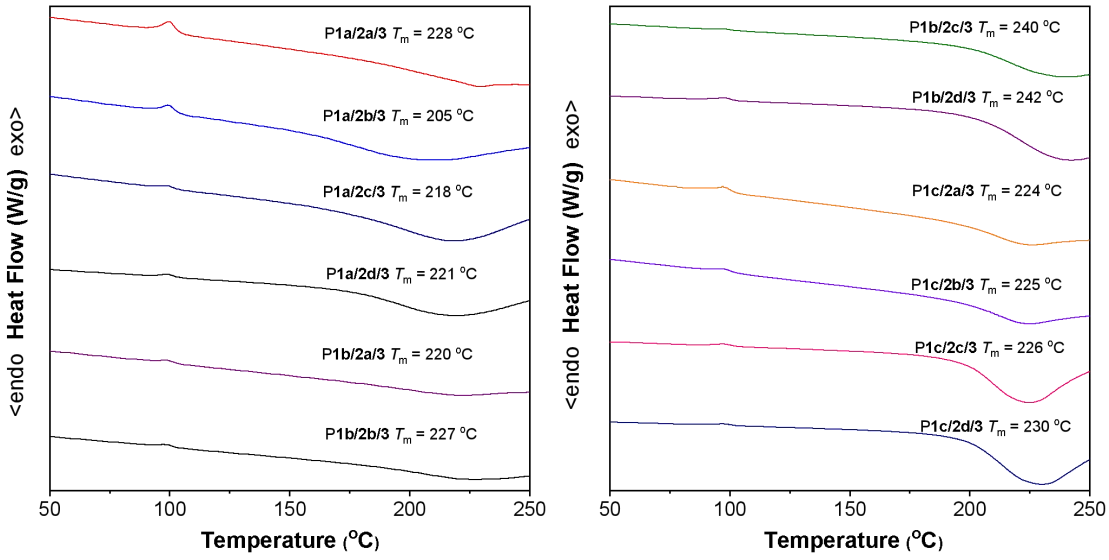

Figure S36. DSC curve of polymers.

Table S1. Refractive Indices, Abbé Numbers (v_D), Revised Abbé Numbers (v'), and Optical Dispersions (D and D') of Thin Films of P**1a/2/3**.[a]

Polymer	n_{589}[b]	$n_{632.8}$[c]	v_D[d]	D[d]	v'[e]	D'[e]
P1a/2a/3	1.7447	1.7322	11.2	0.0890	39.5	0.0253
P1a/2b/3	1.7006	1.6941	20.4	0.0491	75.7	0.0132
P1a/2c/3	1.7166	1.7049	11.5	0.0867	40.8	0.0245
P1a/2d/3	1.6793	1.6701	14.0	0.0714	50.4	0.0199

[a]Data taken from Figure 6B. [b]n = RI value at 589 nm; [c]n = RI value at 632.8 nm; [d]v_D = $(n_D - 1)/(n_F - n_C)$, where n_D, n_F and n_C are the RI values at wavelengths of Fraunhofer D, F and C spectral lines of 589.2, 486.1 and 656.3 nm, respectively; $D = 1/v_D$.[e]v' = Abbé numbers = $(n_{1319} - 1)/(n_{1064} - n_{1550})$, where n_{1319}, n_{1064} and n_{1550} are the RI values at wavelengths of 1319, 1064 and 1553 nm, respectively; $D' = 1/v'$.

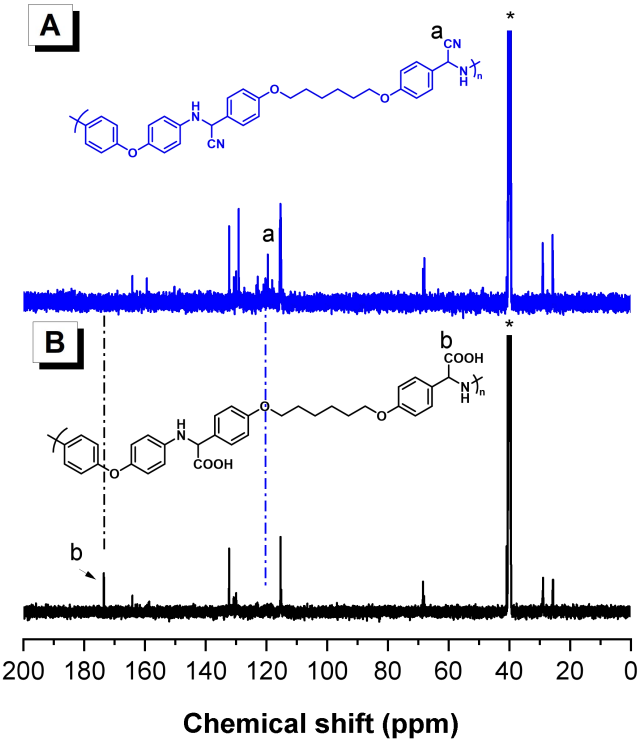

Figure S37. ^{13}C NMR spectra of (A) P**1a/2a/3** and (B) postfunctionalized P**1a/2a/3** in DMSO-d_6. The solvent and water peaks are marked with asterisks.

Scheme S1. The postmodification route of P**1a/2a/3**.