Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

A Dynamic Covalent Selenide Bond Containing a Degradable Cross-Linked Polymer

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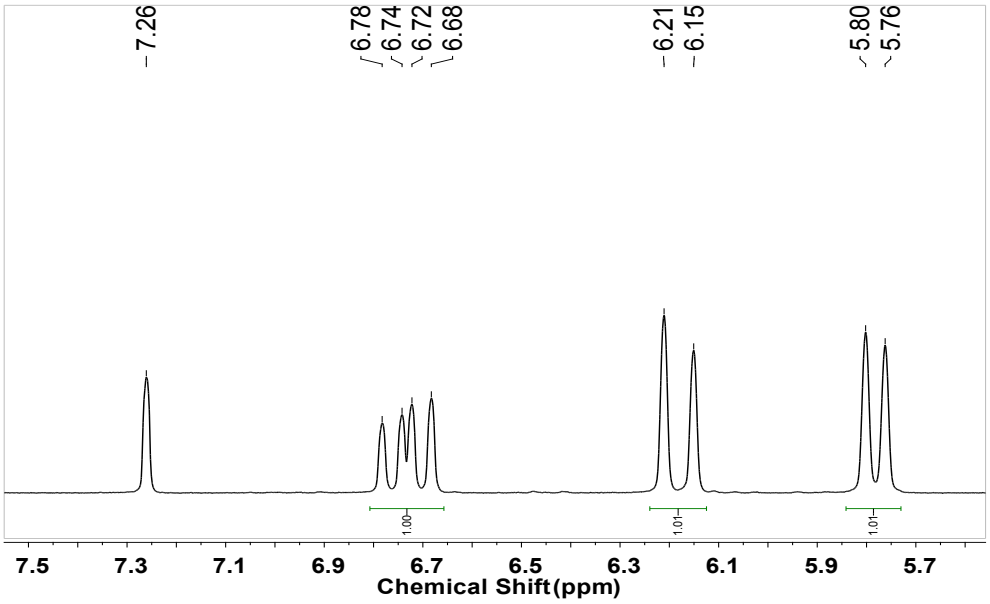


Figure S1. ^{1}H NMR spectrum of FVPDSe in $CDCl_3$.

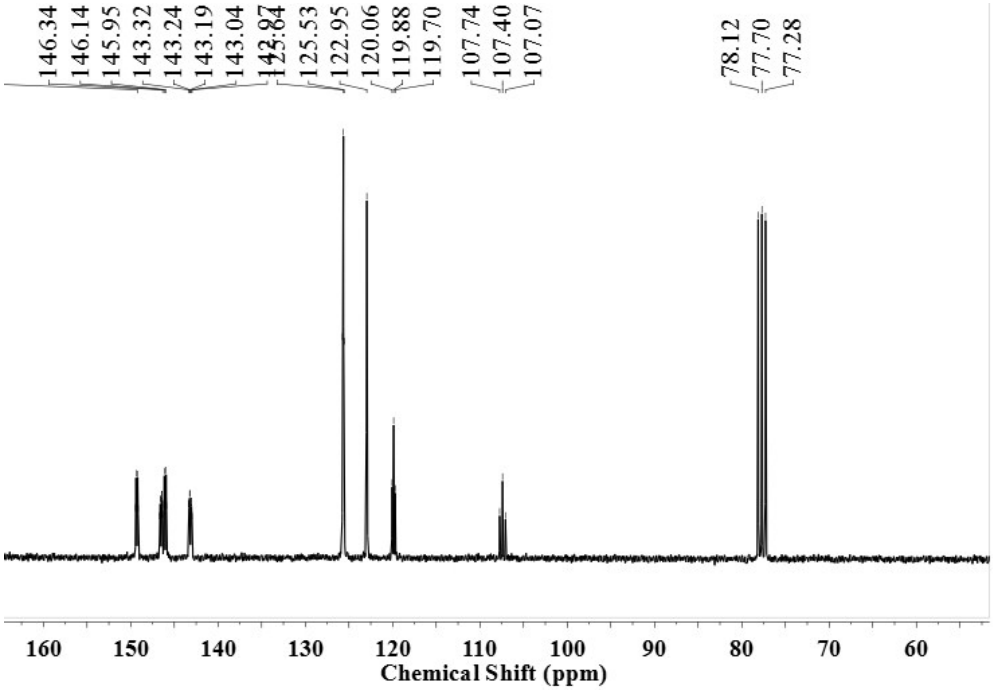


Figure S2. ^{13}C NMR spectrum of FVPDSe in $CDCl_3$.

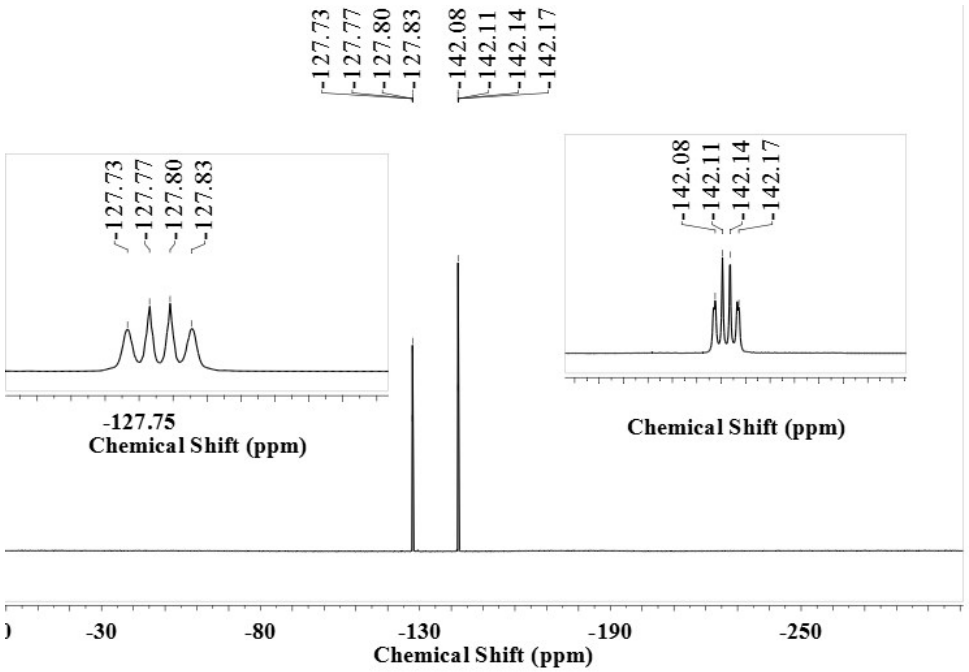


Figure S3. ^{19}F NMR spectrum of FVPDSe in $CDCl_3$.

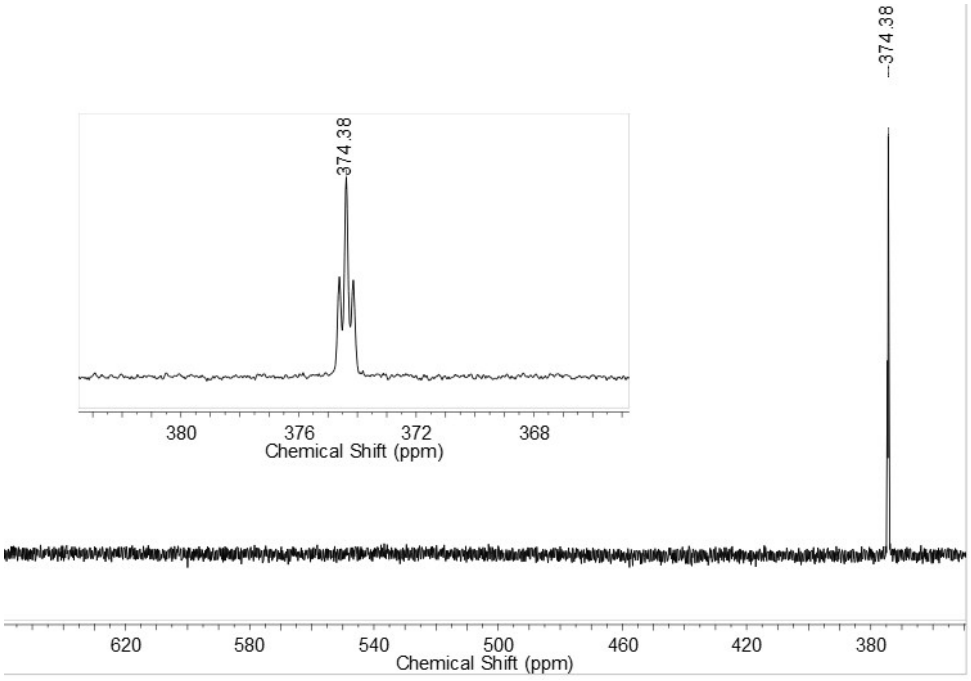


Figure S4. ^{77}Se NMR spectrum of FVPDSe in $CDCl_3$.

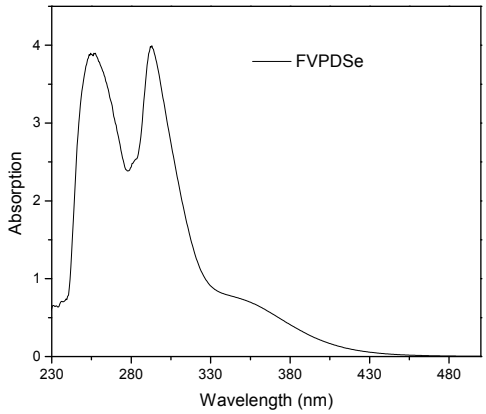
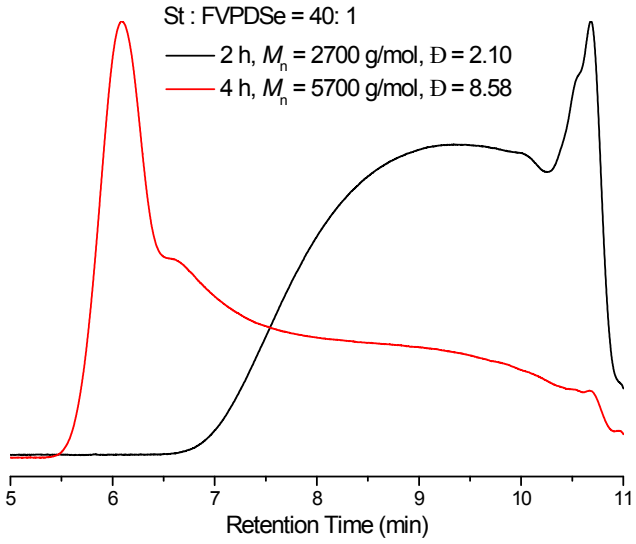
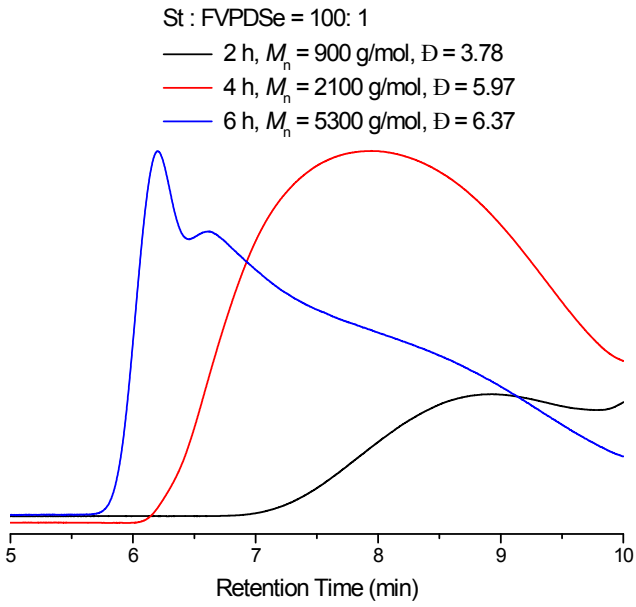


Figure S5. UV-Vis curve of FVPDSe.





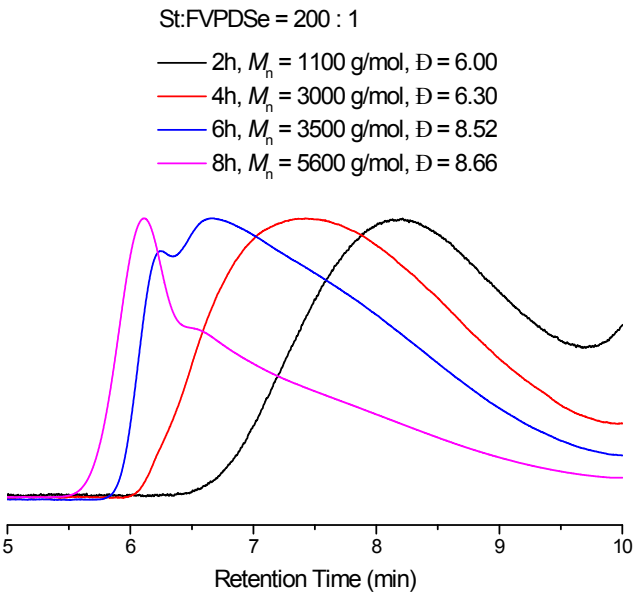


Figure S6 SEC curves of copolymers formed at low monomer conversion before gelation. Experimental condition: $[St]_0/[FVPDSe]_0$ =40, 100, and 200. $[St]_0$ = 8.0 M, in toluene-*d*8 at 50 °C, linear polystyrene standards were used for THF SEC calibration.

Figure S7 poly(FVPDSe-*co*-St) before and after chain extension in n-BA.

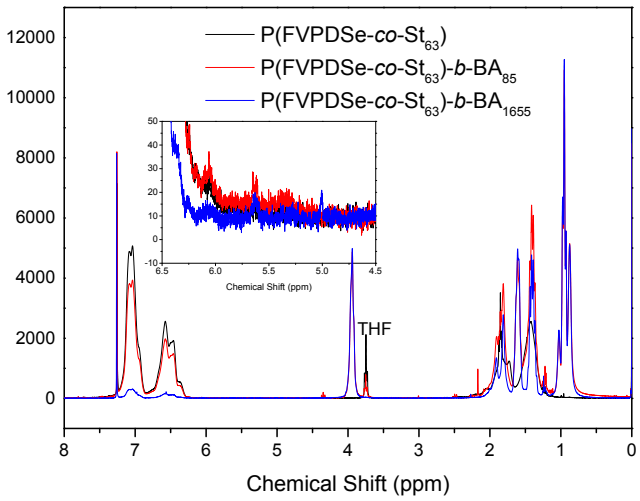


Figure S8 ^{1}H NMR spectra of poly(FVPDSe-*co*-St) and poly(FVPDSe-*co*-St)-*b*-BA after oxidation by H_2O_2. Poly(FVPDSe-*co*-St) was prepared with an initial molar ratio $[St]_0/[FVPDSe]_0$ of 100. Poly(FVPDSe-*co*-St)-b-BA was prepared with an initial molar ratio $[BA]_0/[$Poly(FVPDSe-*co*-St) $]_0$ of 500 and 2000.

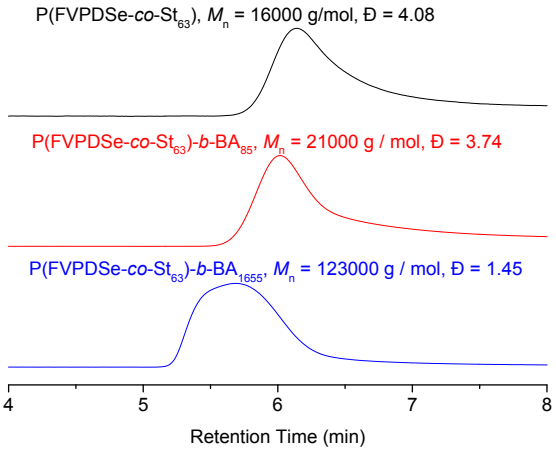


Figure S9 SEC curves of poly(FVPDSe-*co*-St) and poly(FVPDSe-*co*-St)-*b*-BA after oxidation by H_2O_2. Poly(FVPDSe-*co*-St) was prepared with an initial molar ratio $[St]_0/[FVPDSe]_0$ of 100. Poly(FVPDSe-*co*-St)-*b*-BA was prepared with an initial molar ratio $[BA]_0/[$Poly(FVPDSe-*co*-St) $]_0$ of 500 and 2000.