Supporting Information

Synthesis of nanoporous poly(2-chloro-2-propen-1-ol) and its modification via ethylenediamine: vanadyl-catalyzed process, structural characterization, and CO_2 sorption

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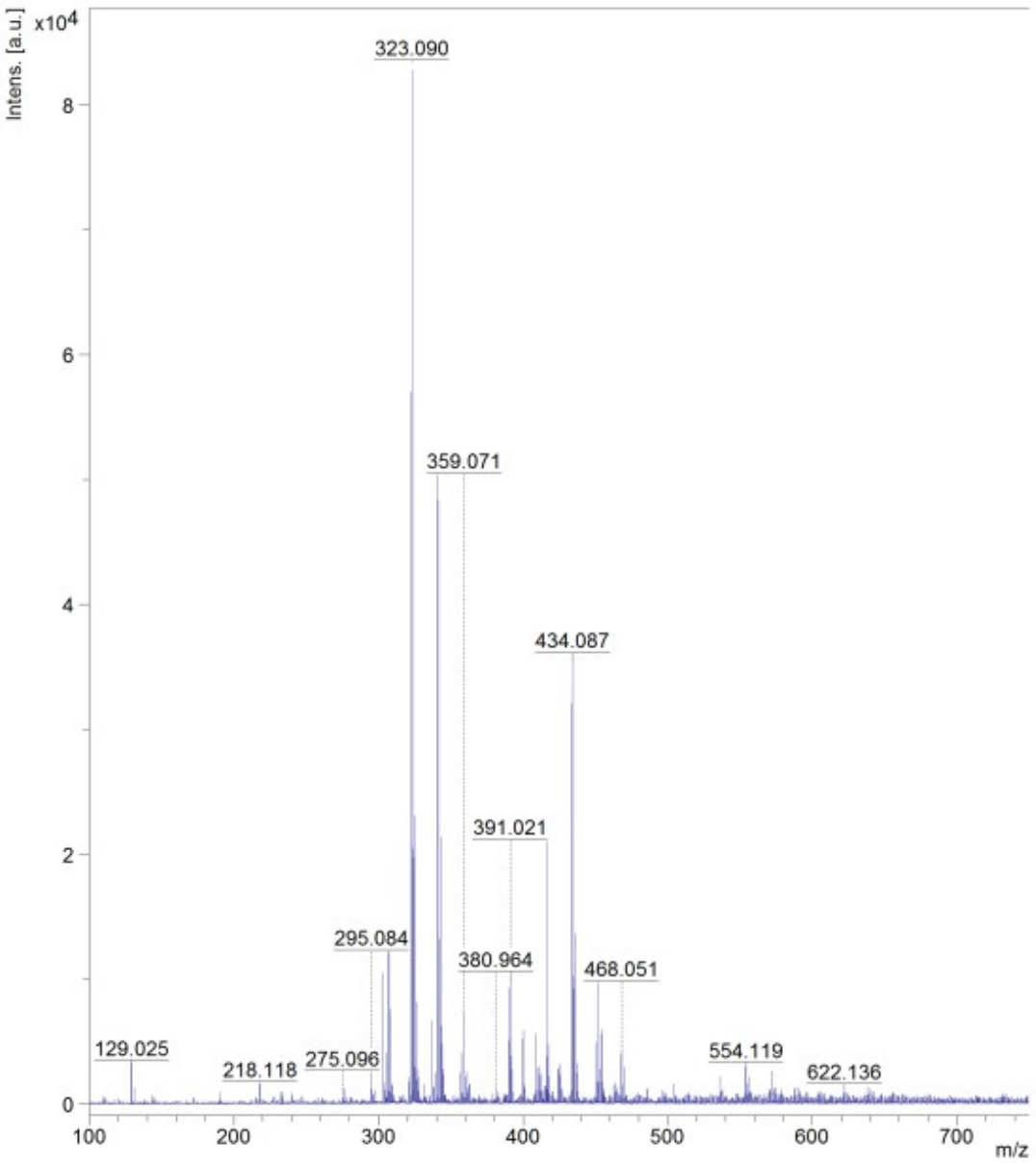


Figure S1. MALDI-TOF-MS spectrum of vanadyl acetylacetonate hydrogen bonded with 3-amino-2-chloropyridine (CCA matrix)

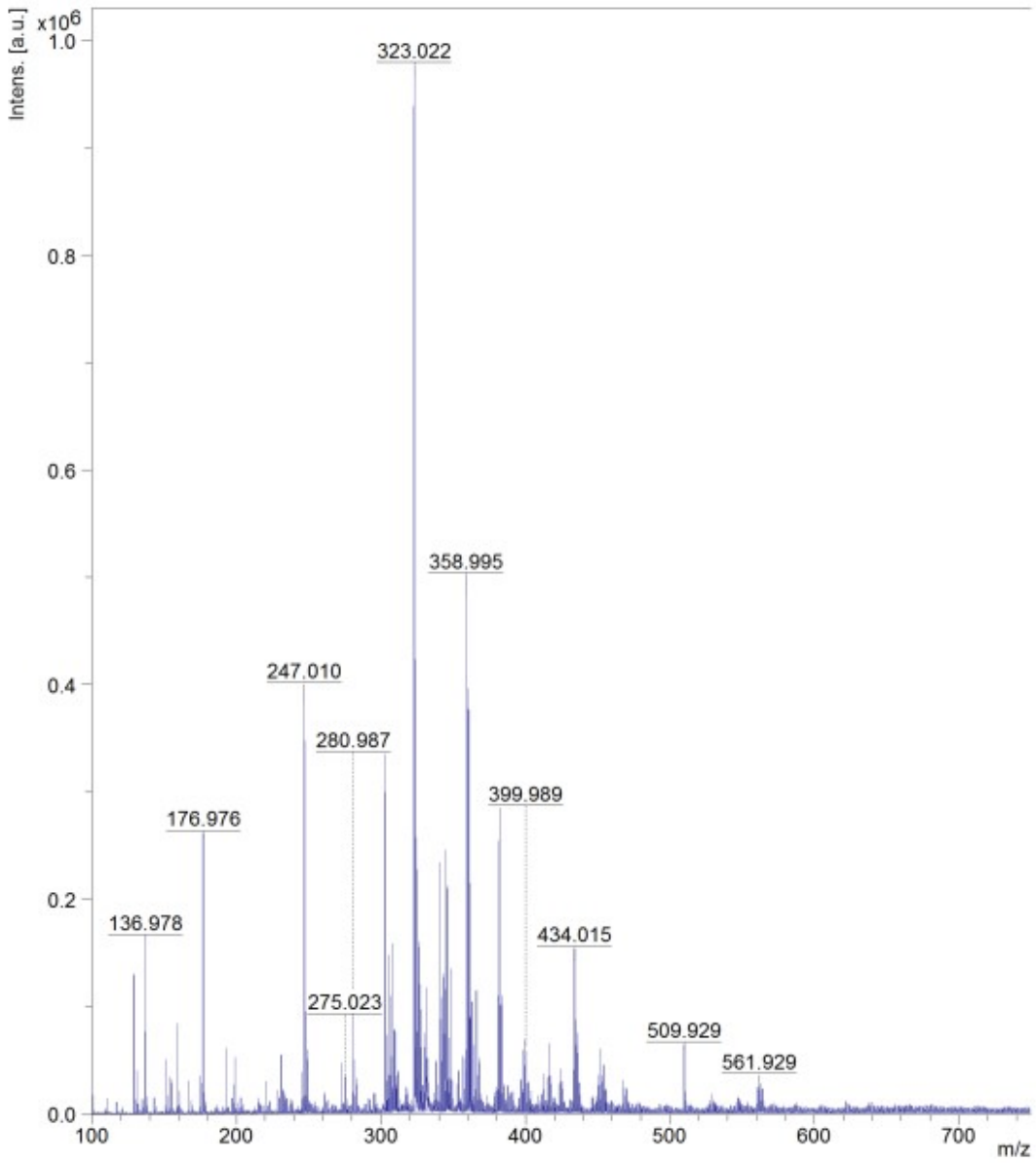


Figure S2. MALDI-TOF-MS spectrum of vanadyl acetylacetonate hydrogen bonded with 3-amino-2-chloropyridine (DHB matrix)

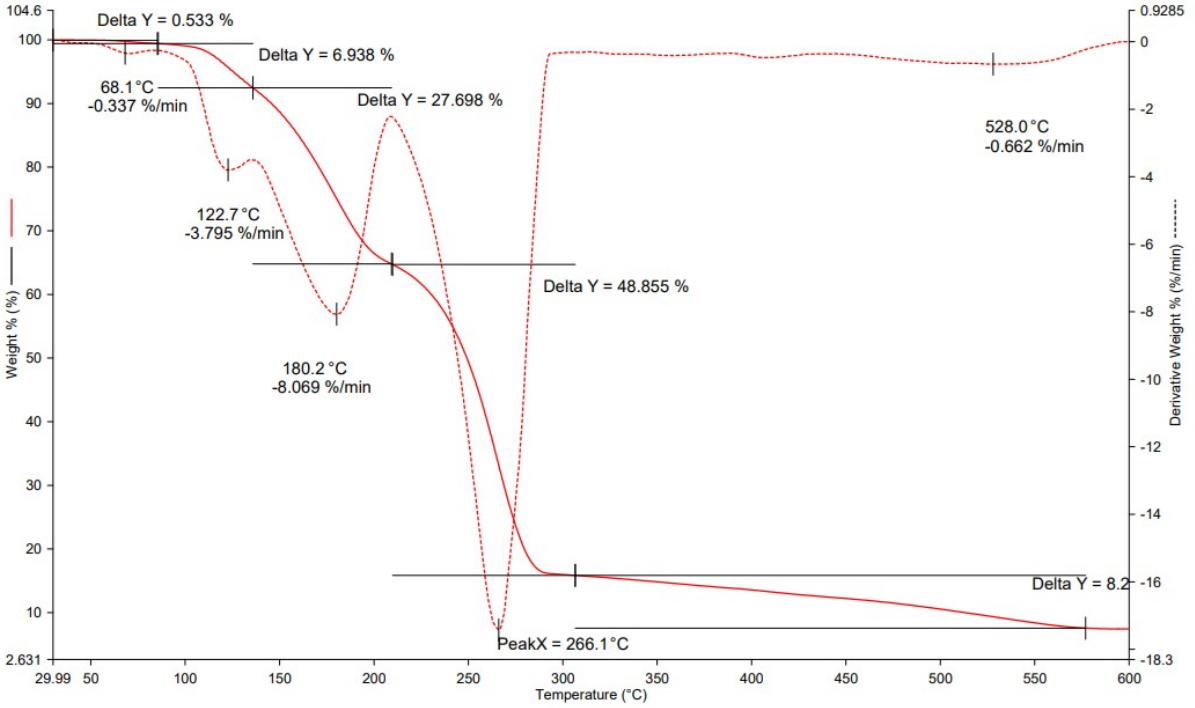


Figure S3. TG of vanadyl acetylacetonate hydrogen bonded with 3-amino-2-chloropyridine.

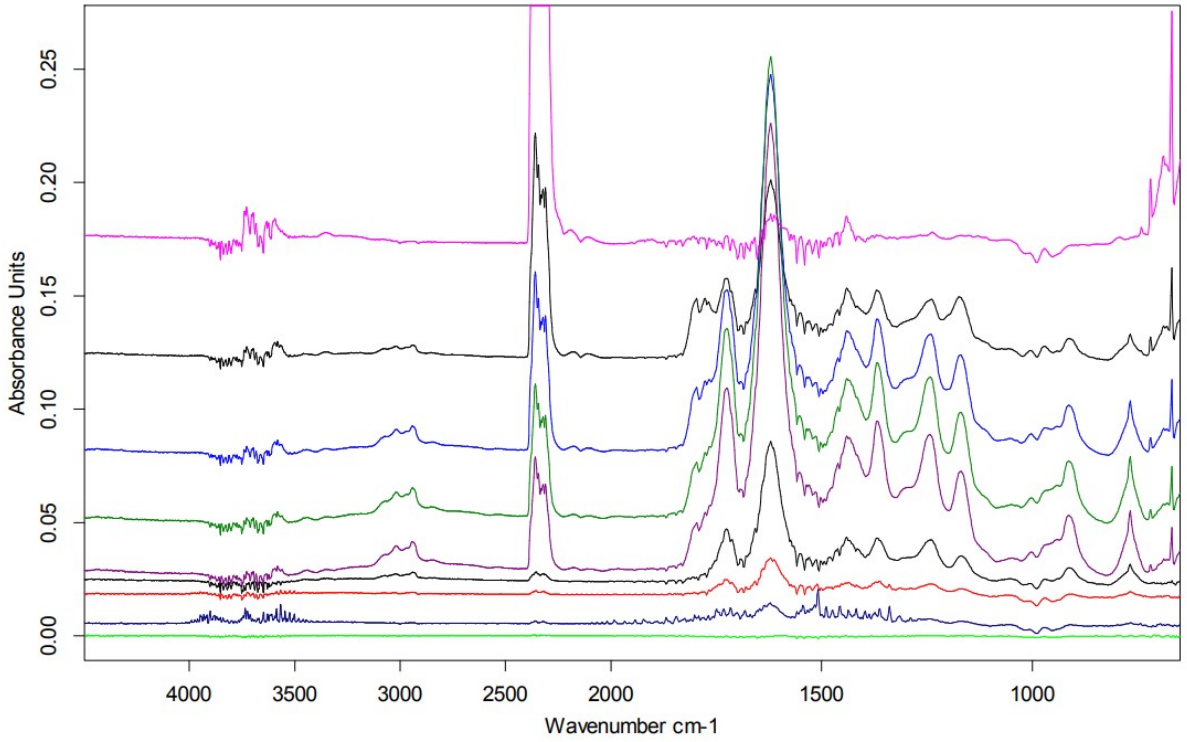


Figure S4. FTIR spectra of vanadyl acetylacetonate hydrogen bonded with 3-amino-2-chloropyridine (TG-FTIR) - changes in the duration of the measurement - the lowest are the spectra at the beginning of the measurement and the higher the closer to the end of the measurement.

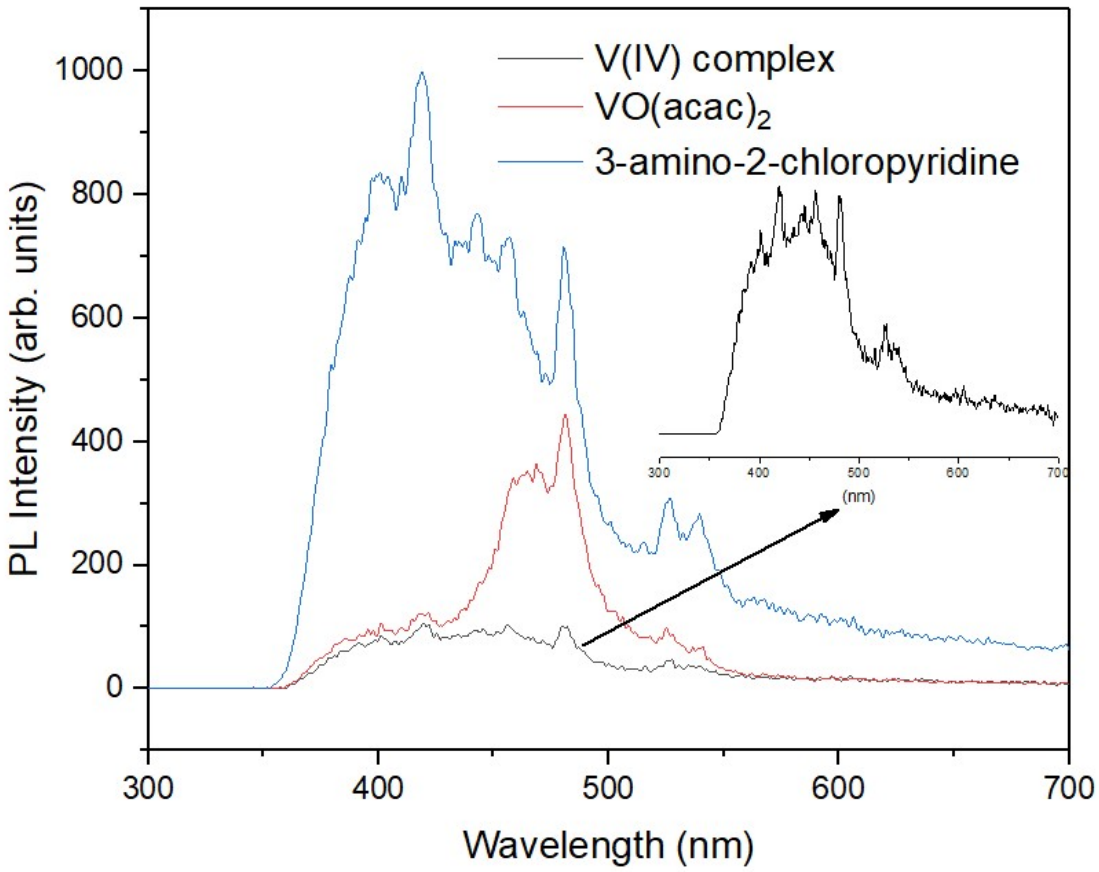


Figure S5. The PL spectra of vanadyl acetylacetonate hydrogen-bonded with 3-amino-2-chloropyridine and substrates used for its synthesis.

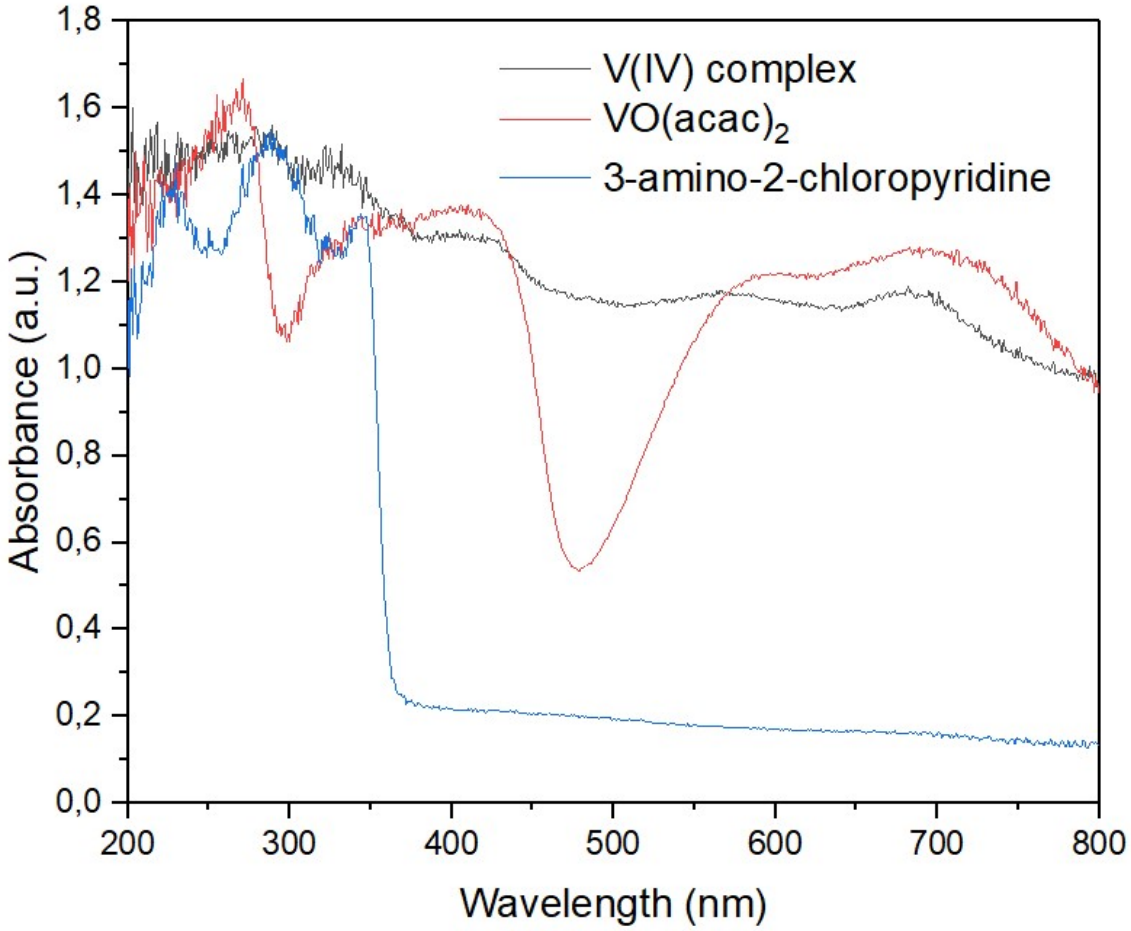


Figure S6. The UV-Vis DRS spectra of vanadyl acetylacetonate hydrogen-bonded with 3-amino-2-chloropyridine and substrates used for its synthesis.

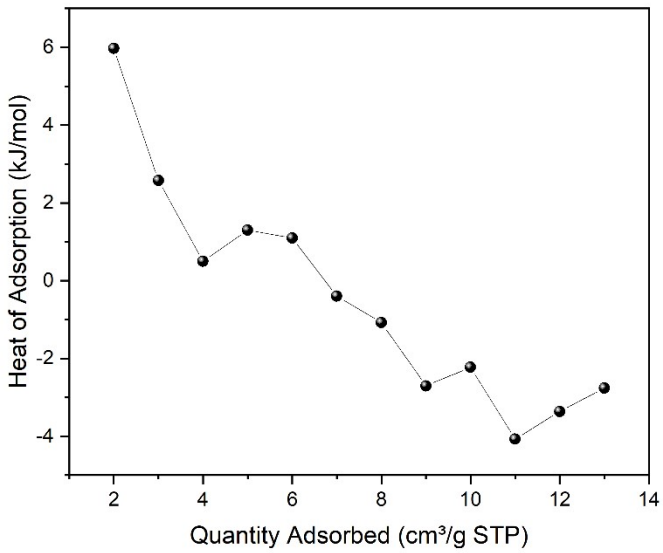


Figure S7. Heat of adsorption (complex compound sample) of CO_2 in range quantity adsorbed from 2 to 13 cm^3/g of CO_2.

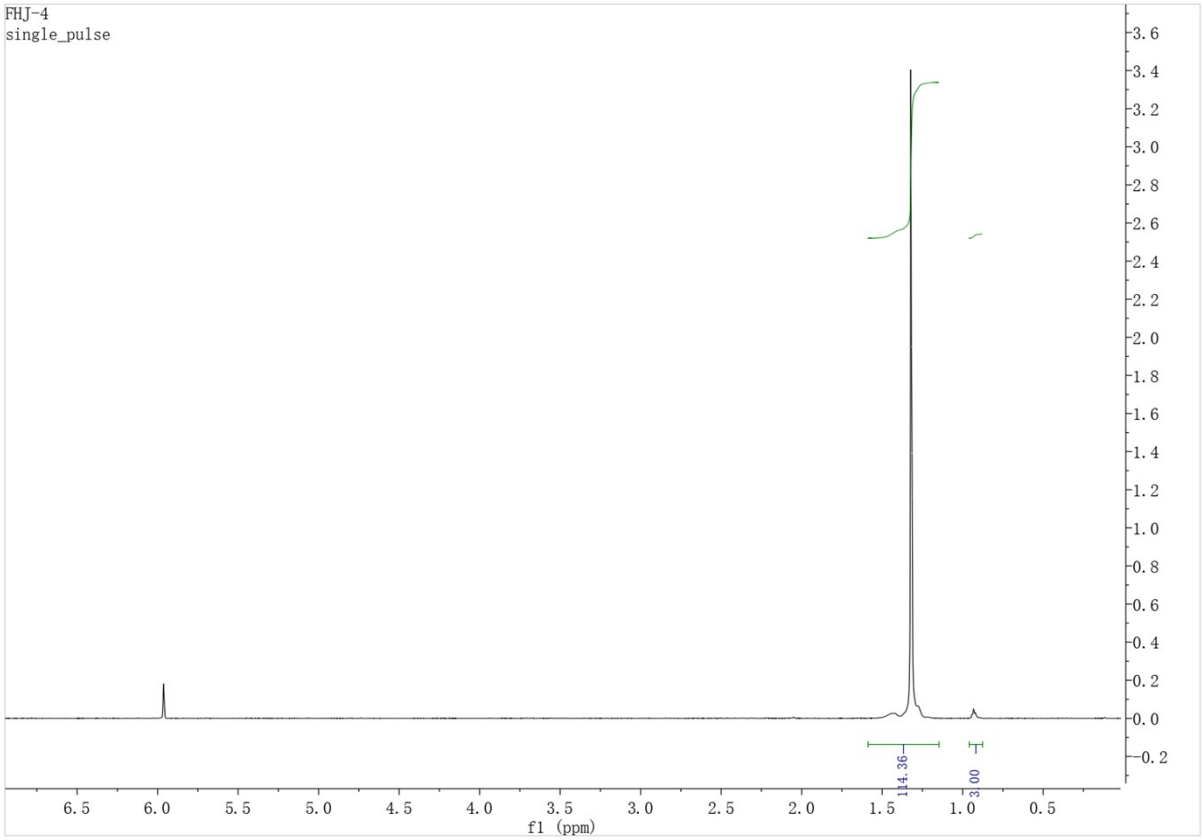


Figure S8. ^{1}H NMR spectrum of the copolymer from table 2, entry 1 ($CDCl_2CDCl_2$, 100 °C).

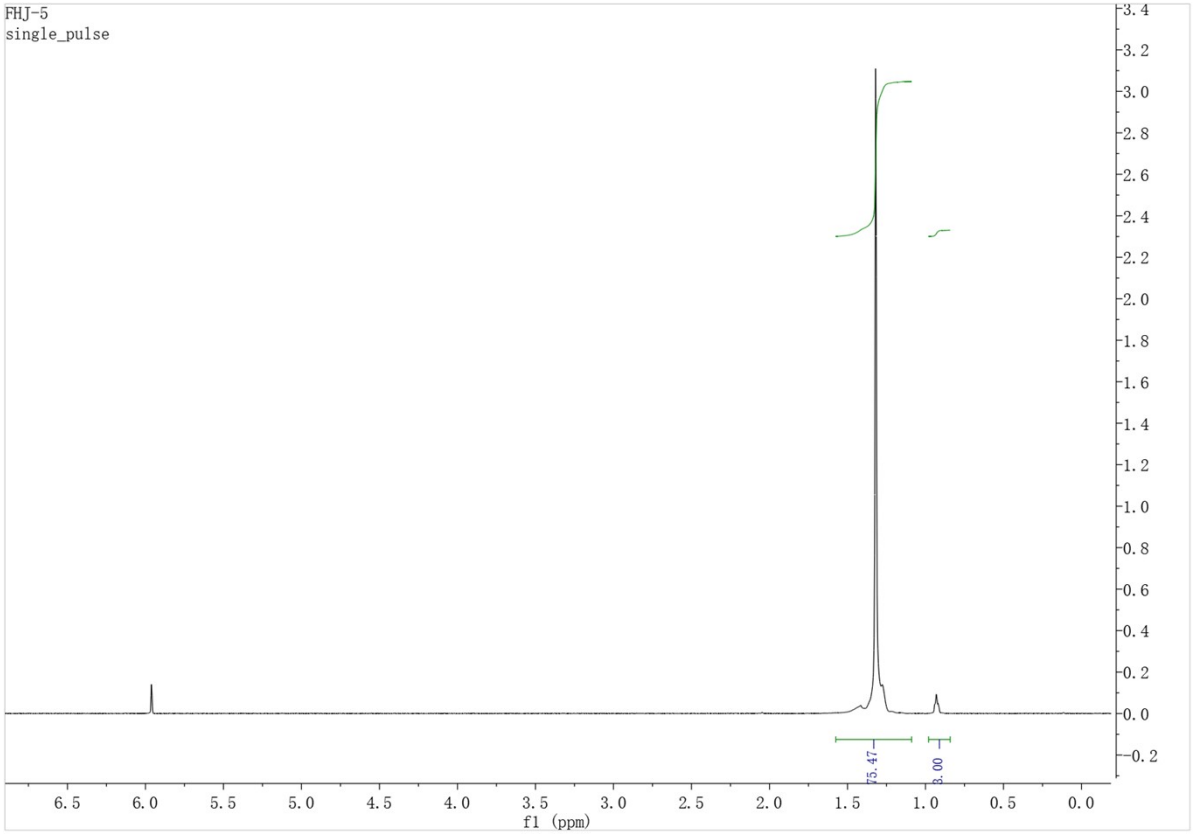


Figure S9. ^{1}H NMR spectrum of the copolymer from table 2, entry 2 ($CDCl_2CDCl_2$, 100 °C).

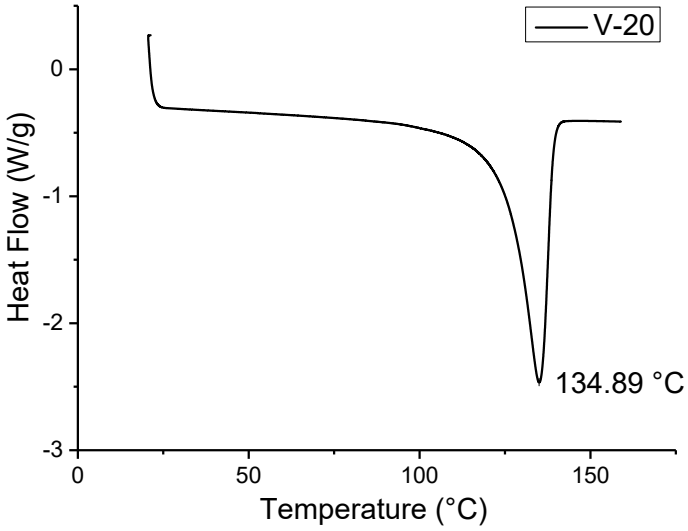


Figure S10. DSC of the polymer from table 1, entry 1.

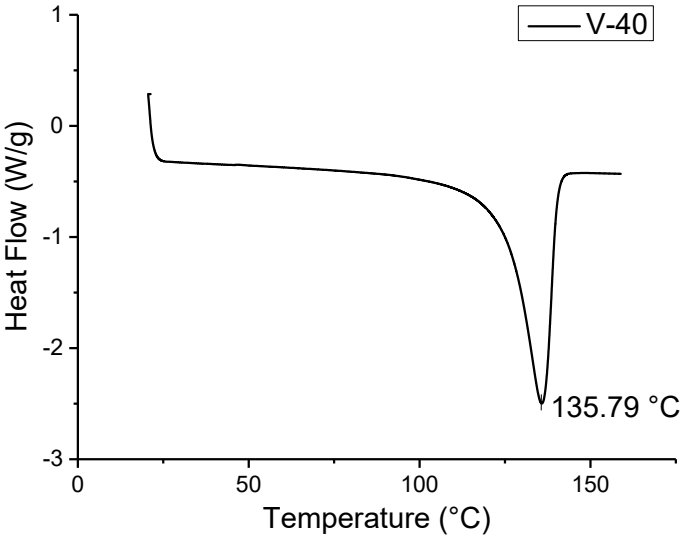


Figure S11. DSC of the polymer from table 1, entry 2.

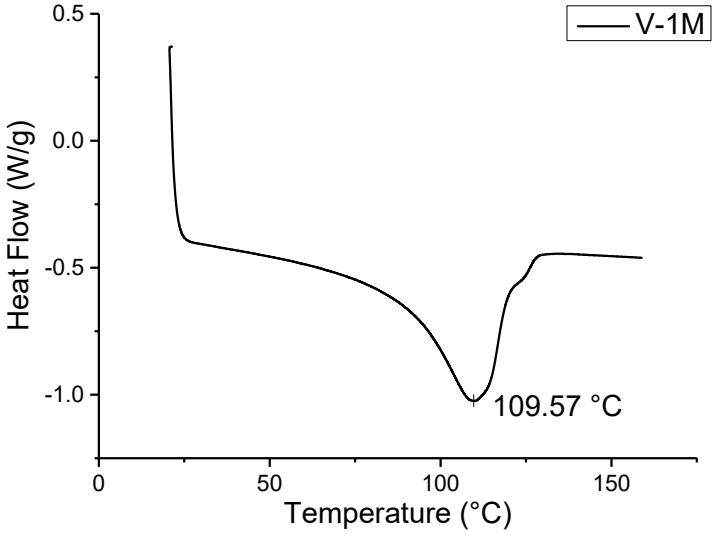
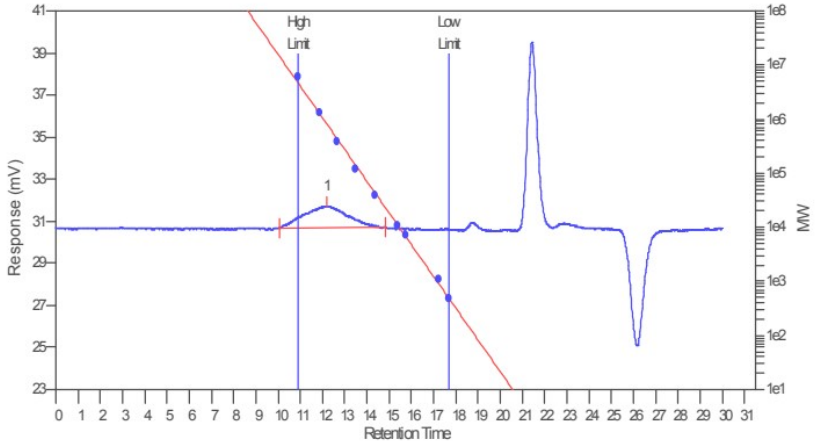
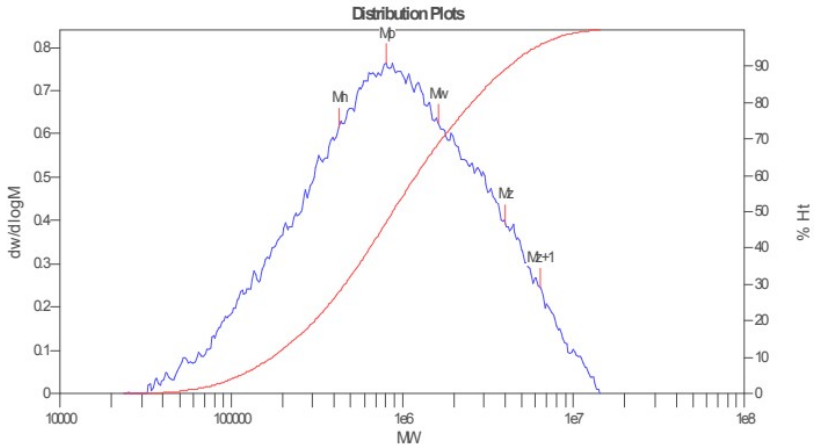


Figure S11. DSC of the polymer from table 2, entry 1.





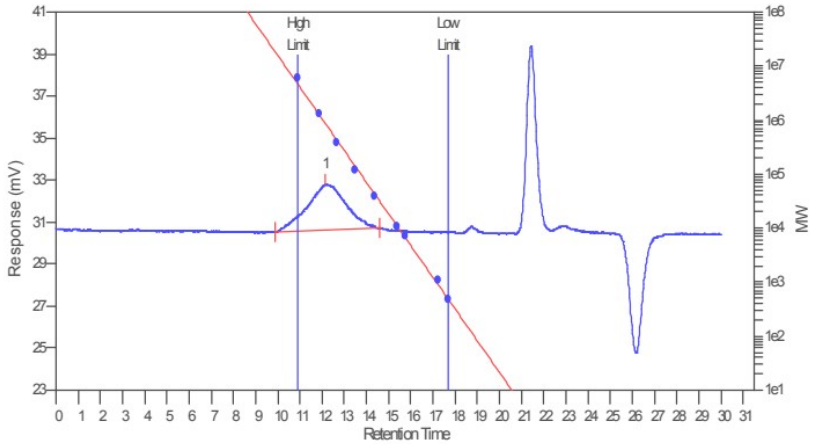
MW Averages

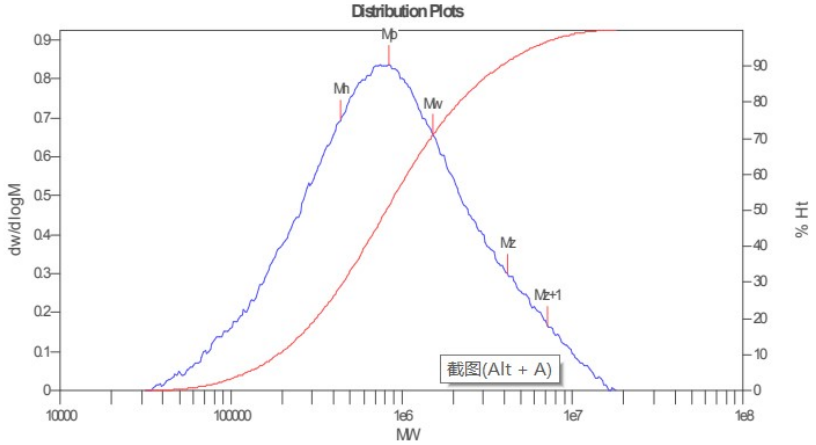
Peak No	Mp	Mn	Mw	Mz	Mz+1	Mv	PD
1	803751	426841	1621791	4026622	6370631	1363267	3.79952

Processed Peaks

Peak No	Name	Start RT (mins)	Max RT (mins)	End RT (mins)	Pk Height (mV)	% Height	Area (mV.secs)	% Area
1		10.07	12.20	14.82	1.02356	0	137.214	100

Figure S12. GPC of the polymer from table 1, entry 1.





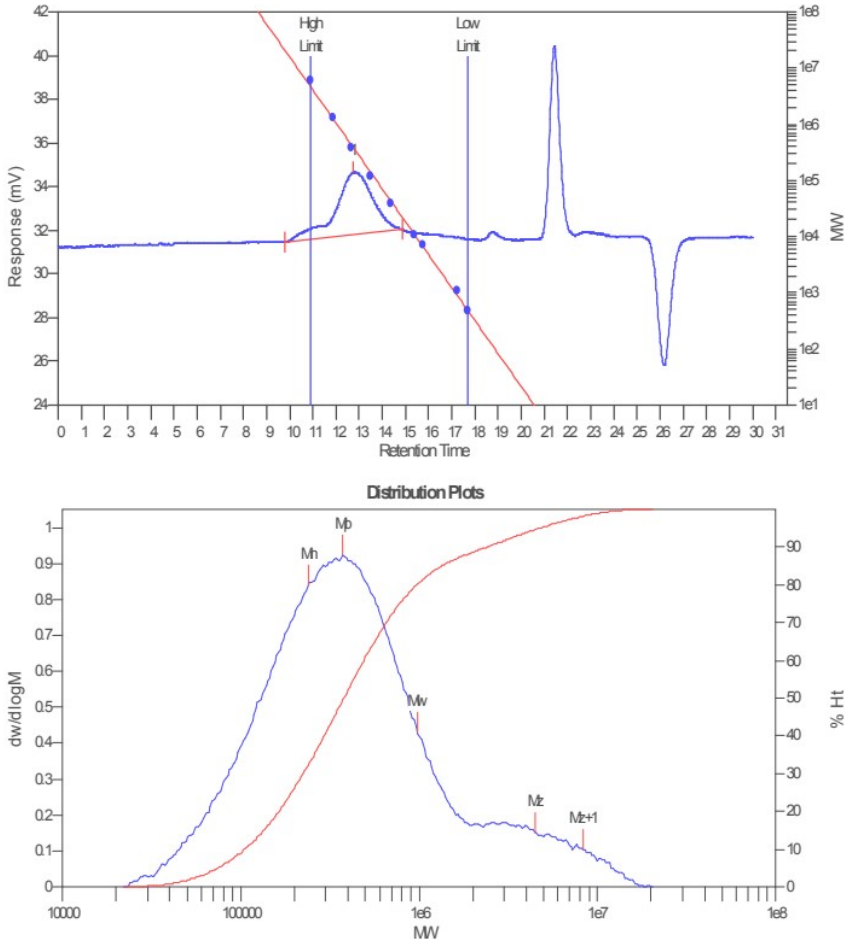
MW Averages

Peak No	Mp	Mn	Mw	Mz	Mz+1	Mv	PD
1	840757	440948	1522517	4153579	7153467	1272613	3.45283

Processed Peaks

Peak No	Name	Start RT (mins)	Max RT (mins)	End RT (mins)	Pk Height (mV)	% Height	Area (mV.secs)	% Area
1		9.90	12.17	14.60	2.17426	0	265.427	100

Figure S13. GPC of the polymer from table 1, entry 2.



MW Averages

Peak No	Mp	Mn	Mw	Mz	Mz+1	Mv	PD
1	373927	238932	980160	4500341	8343329	746888	4.10226

Processed Peaks

Peak No	Name	Start RT (mins)	Max RT (mins)	End RT (mins)	Pk Height (mV)	% Height	Area (mV.secs)	% Area
1		9.80	12.77	14.87	2.87647	0	319.128	100

Figure S14. GPC of the polymer from table 2, entry 1.

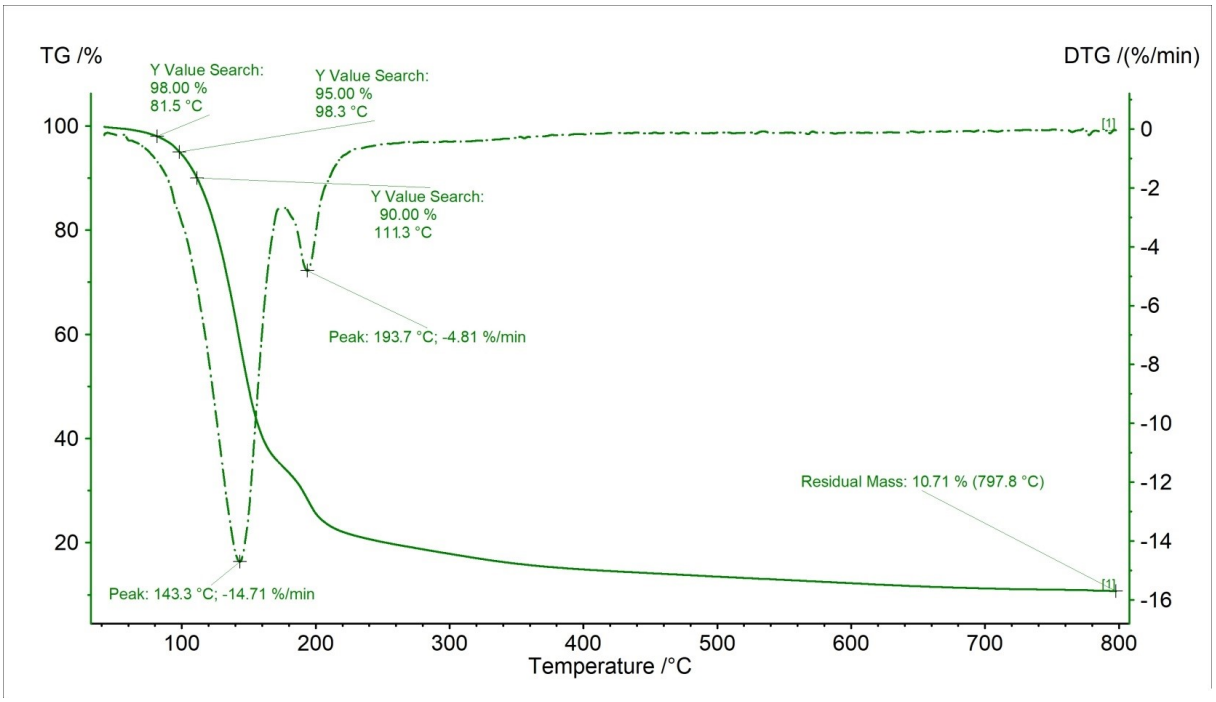


Figure S15. TG analysis of poly(2-chloro-2-propen-1-ol).

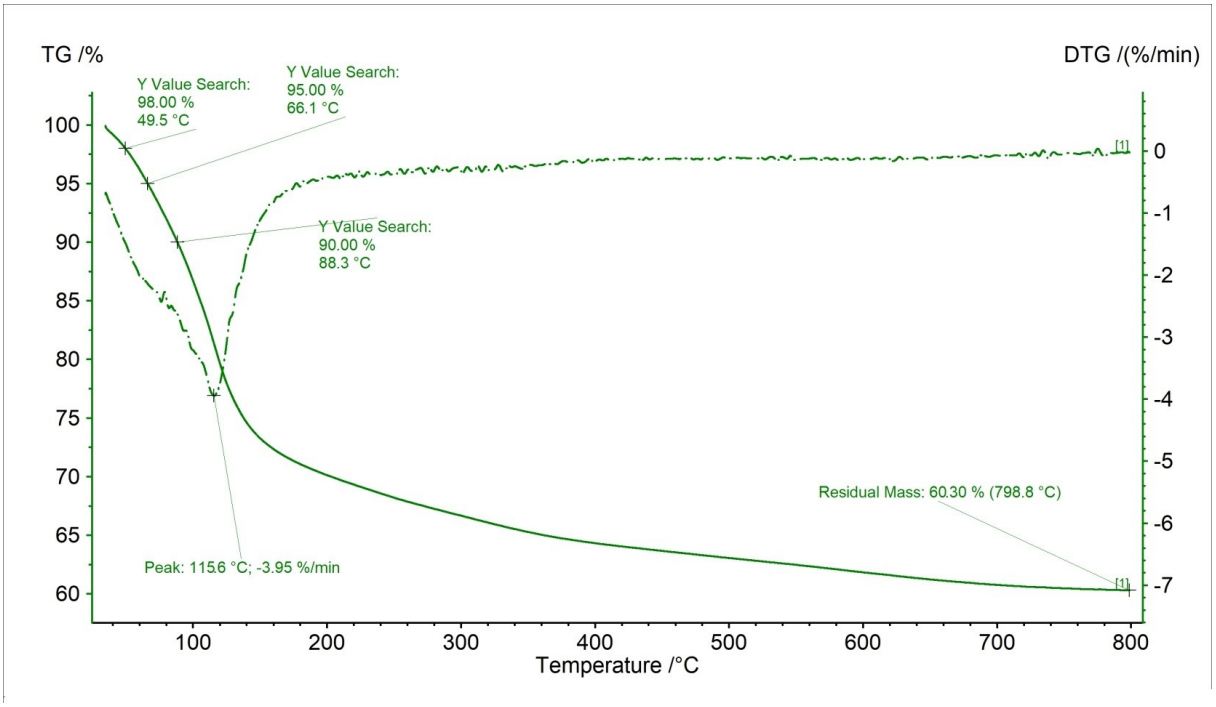


Figure S16. TG analysis of poly(2-chloro-2-propen-1-ol) modified with EDA.

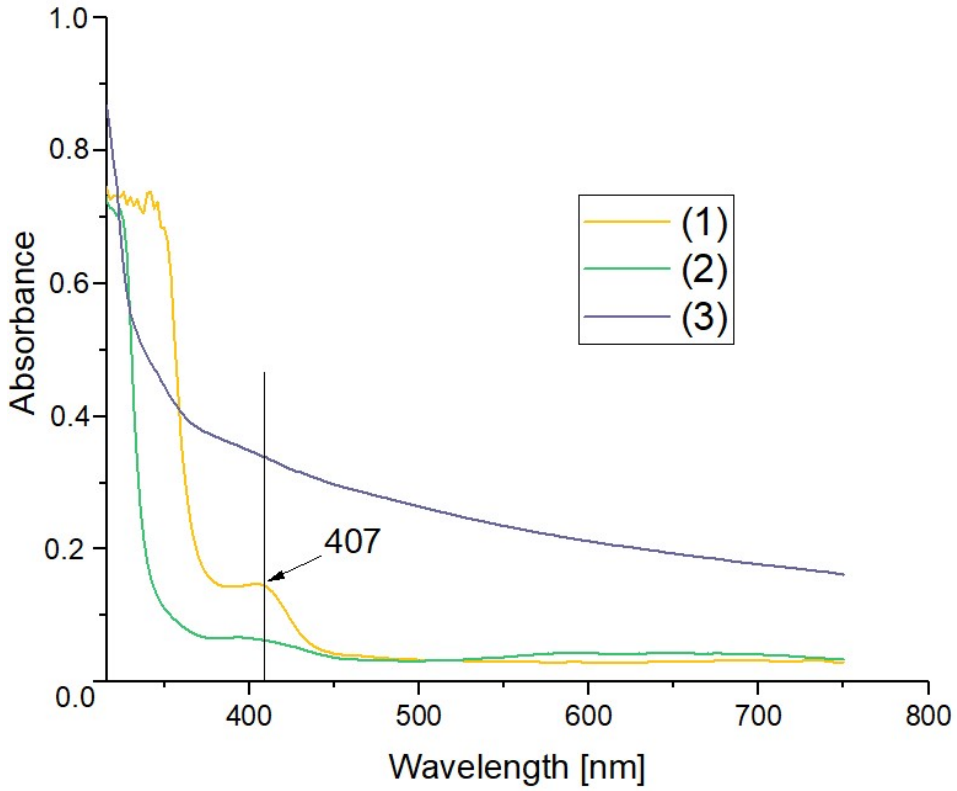


Figure S17. UV-VIS spectra of $VO(acac)_2(H_2O)$(3-amino-2-chloropyridine) (**1**), $VO(acac)_2(H_2O)$(3-amino-2-chloropyridine) with Et_2AlCl **(2)**, $VO(acac)_2(H_2O)$(3-amino-2-chloropyridine) with Et_2AlCl and ethylene **(3)**. All solutions were prepared in CH_2Cl_2.

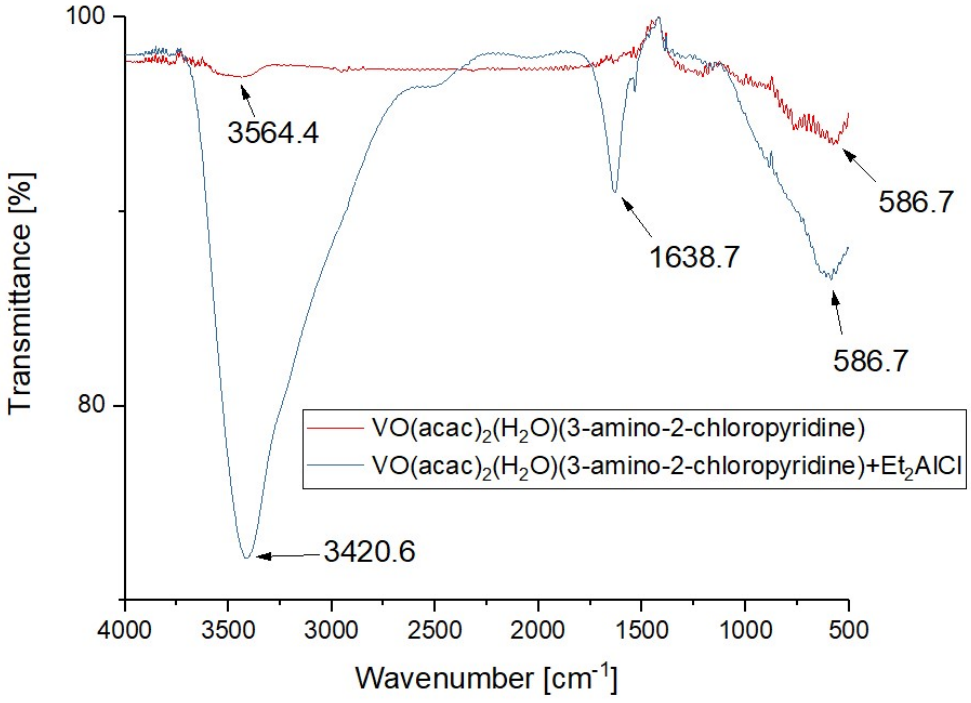


Figure S18. FTIR spectra of $VO(acac)_2(H_2O)$(3-amino-2-chloropyridine) and $VO(acac)_2(H_2O)$(3-amino-2-chloropyridine) with Et_2AlCl.

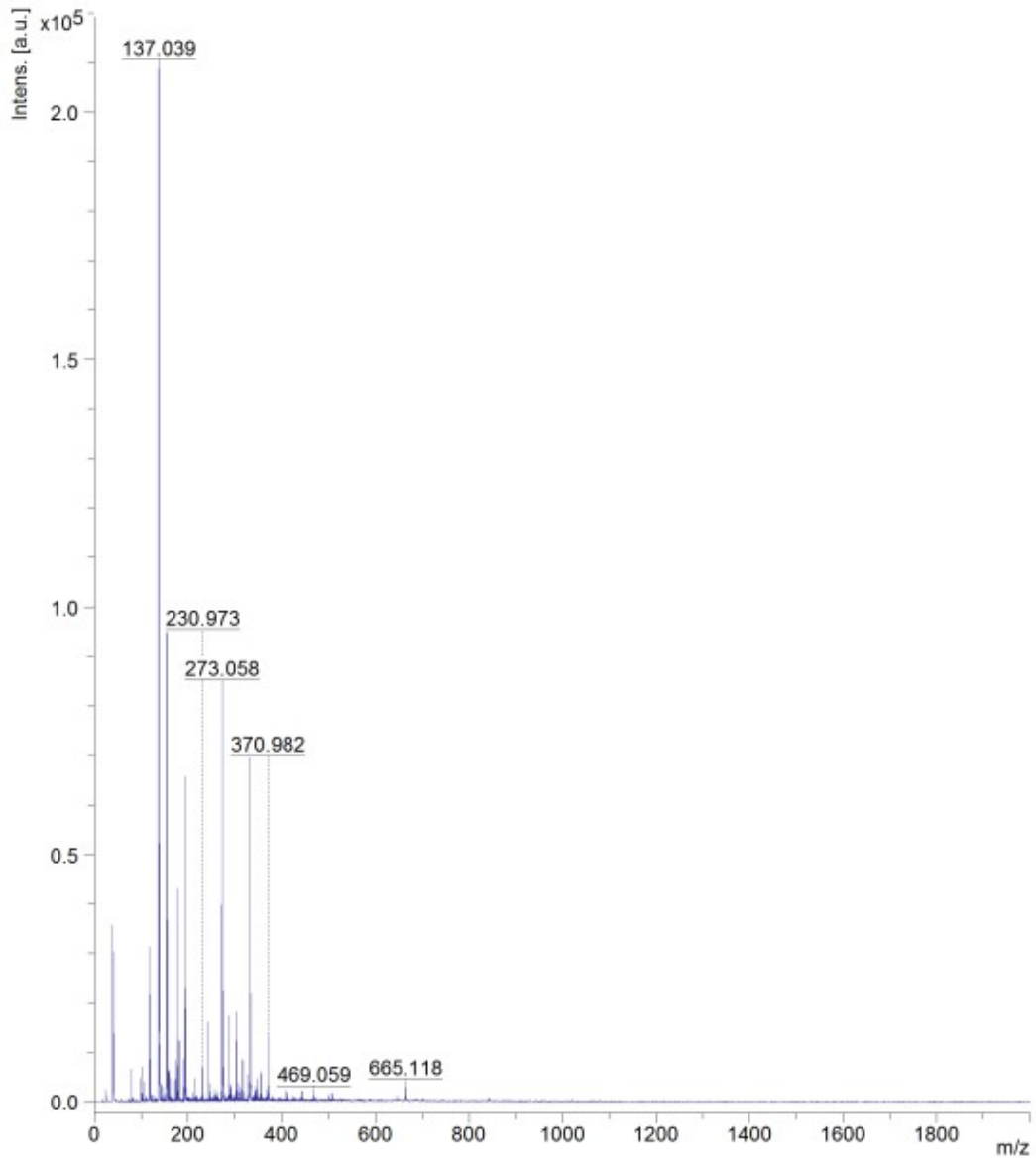


Figure S19. MALDI-TOF-MS of poly(2-chloro-2-propen-1-ol).

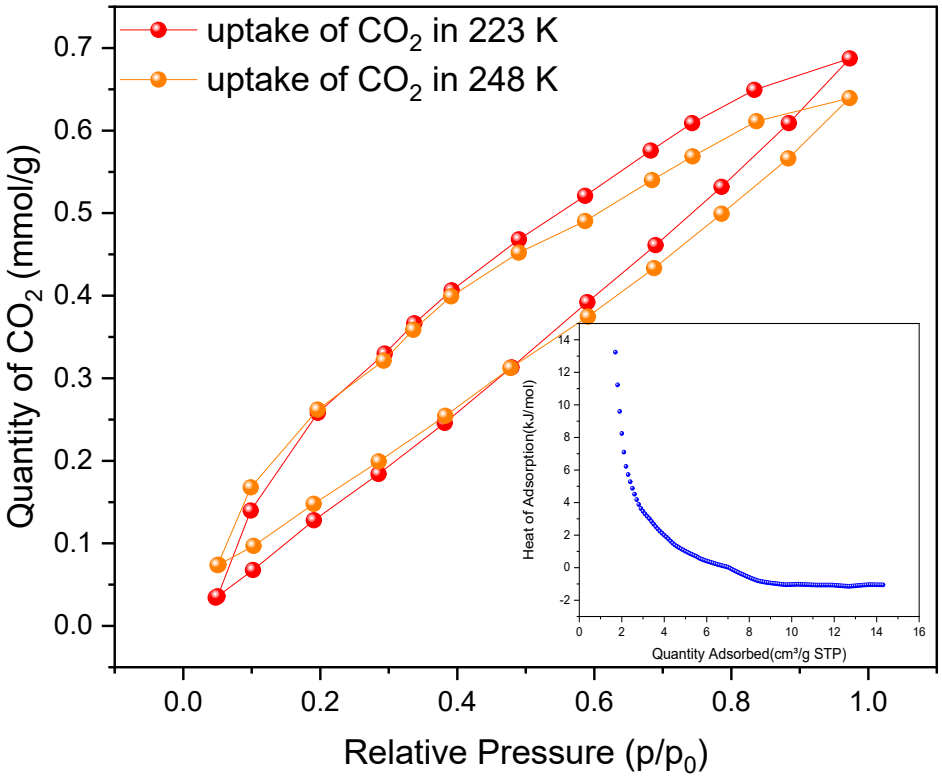


Figure S20. Plot of nitrogen adsorption-desorption isotherms at 223 and 248 K for poly(2-chloro-2-propen-1-ol) modified with EDA, and a plot of the heat of adsorption of CO_2 based on these isotherms as an insert.

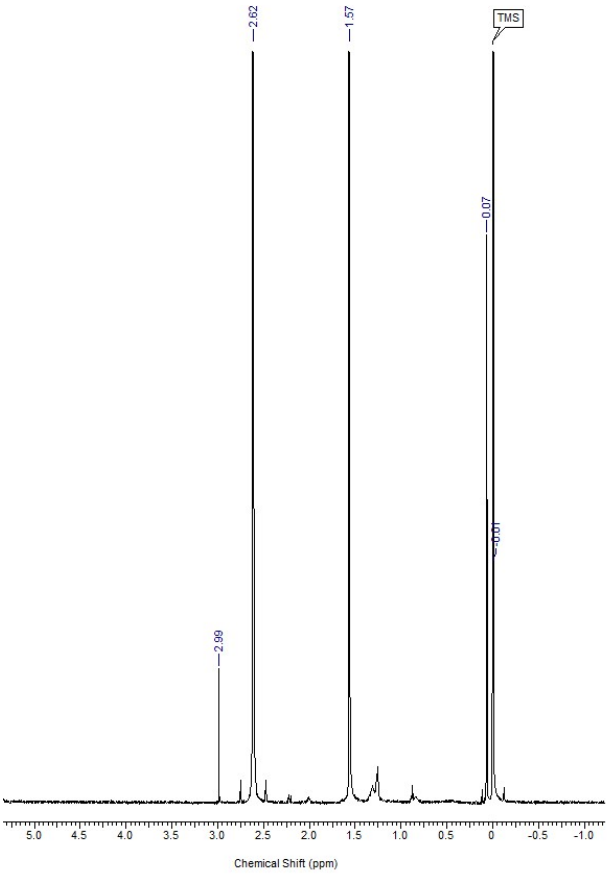


Figure S21. ^{1}H NMR of poly(2-chloro-2-propen-1-ol) ($CDCl_3$, 298 K).

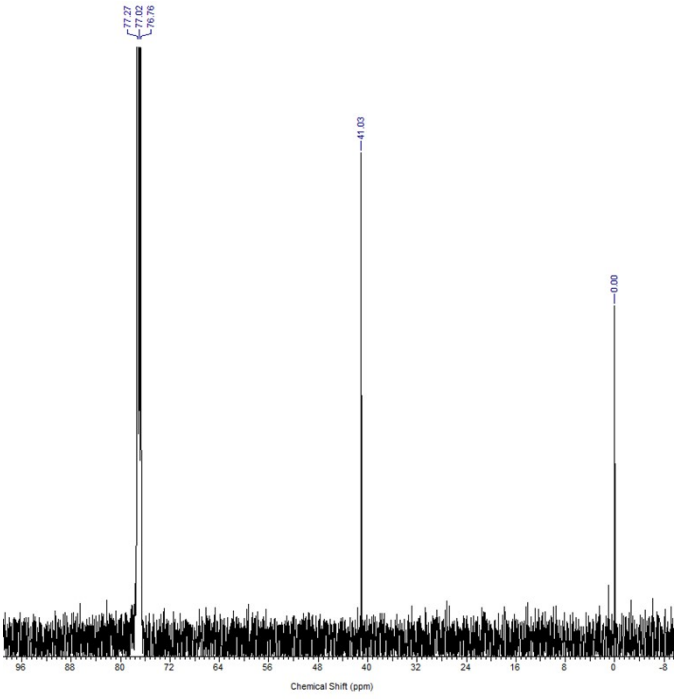


Figure S22. ^{13}C NMR of poly(2-chloro-2-propen-1-ol) ($CDCl_3$, 298 K).

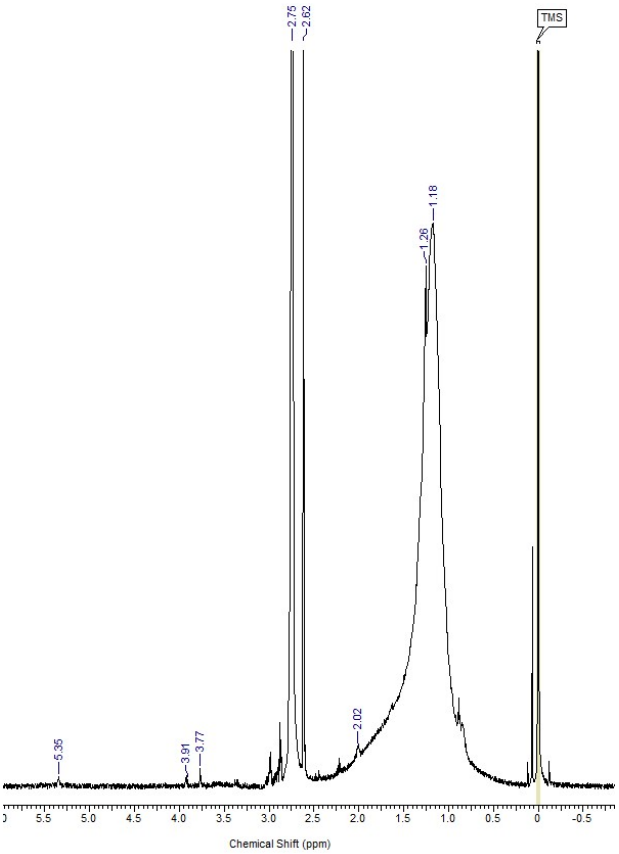


Figure S23. ^{1}H NMR of poly(2-chloro-2-propen-1-ol) modified with EDA ($CDCl_3$, 298 K).

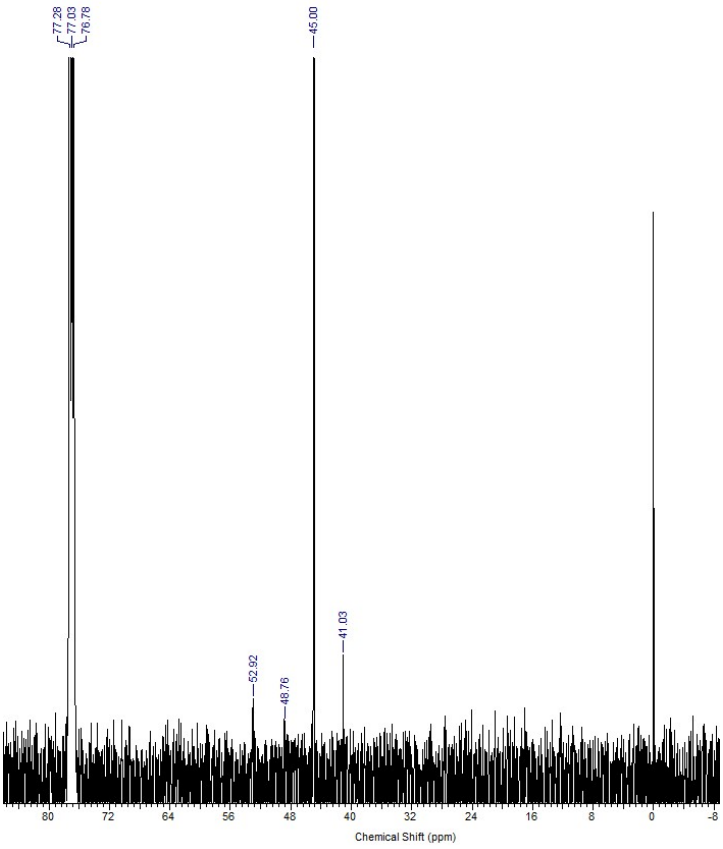


Figure S24. ^{13}C NMR of poly(2-chloro-2-propen-1-ol) modified with EDA ($CDCl_3$, 298 K).