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Electronic Supplementary Information

Development of ruthenium polypyridine metallo-monomers and characterization of their metallopolymers obtained by ROMP

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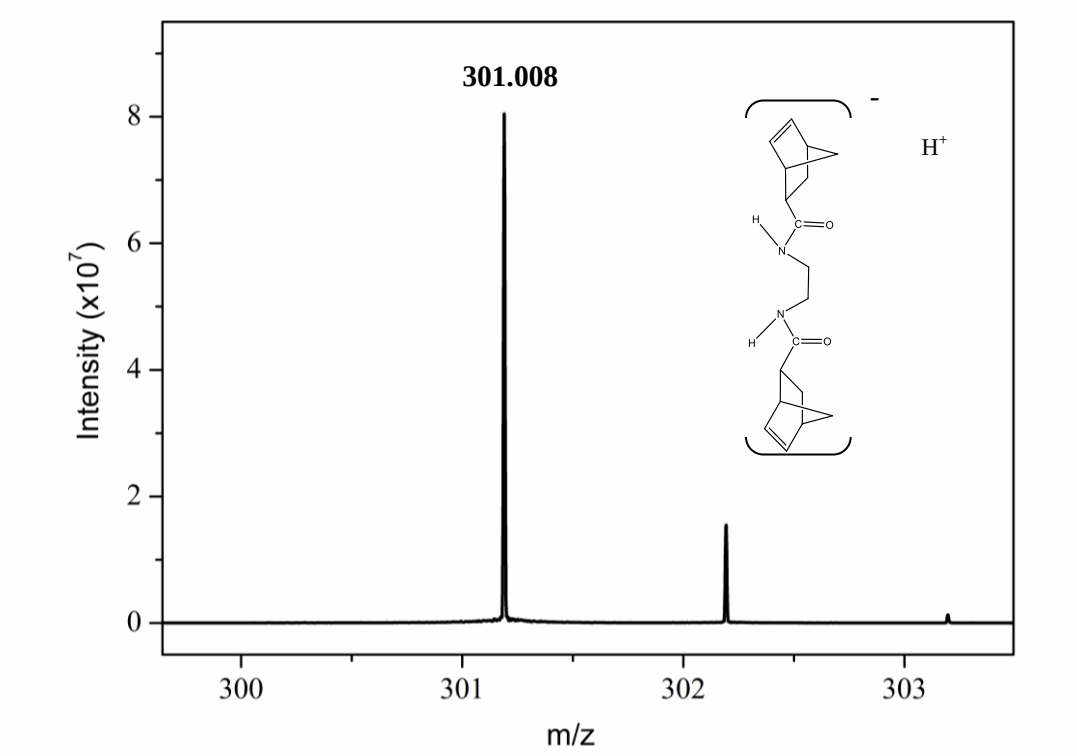

Figure S1. Mass spectrum of NEN ligand **(1)**. ESI-MS(*m/z*): Calc. 300.1877, Found 301.1957 (M^-).

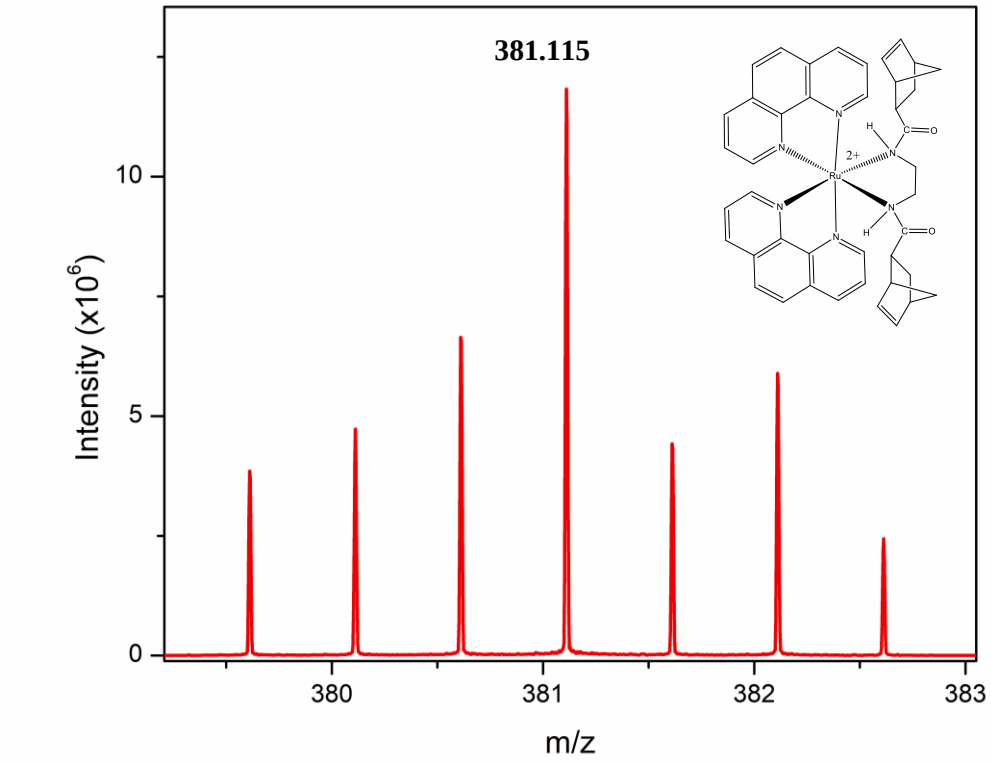

Figure S2. Mass spectrum of the complex ion **(3)** ([Ru]phen-NEN) in positive mode. ESI-MS (*m/z*): Calc. 381.1128, Found 381.115 (M^+).

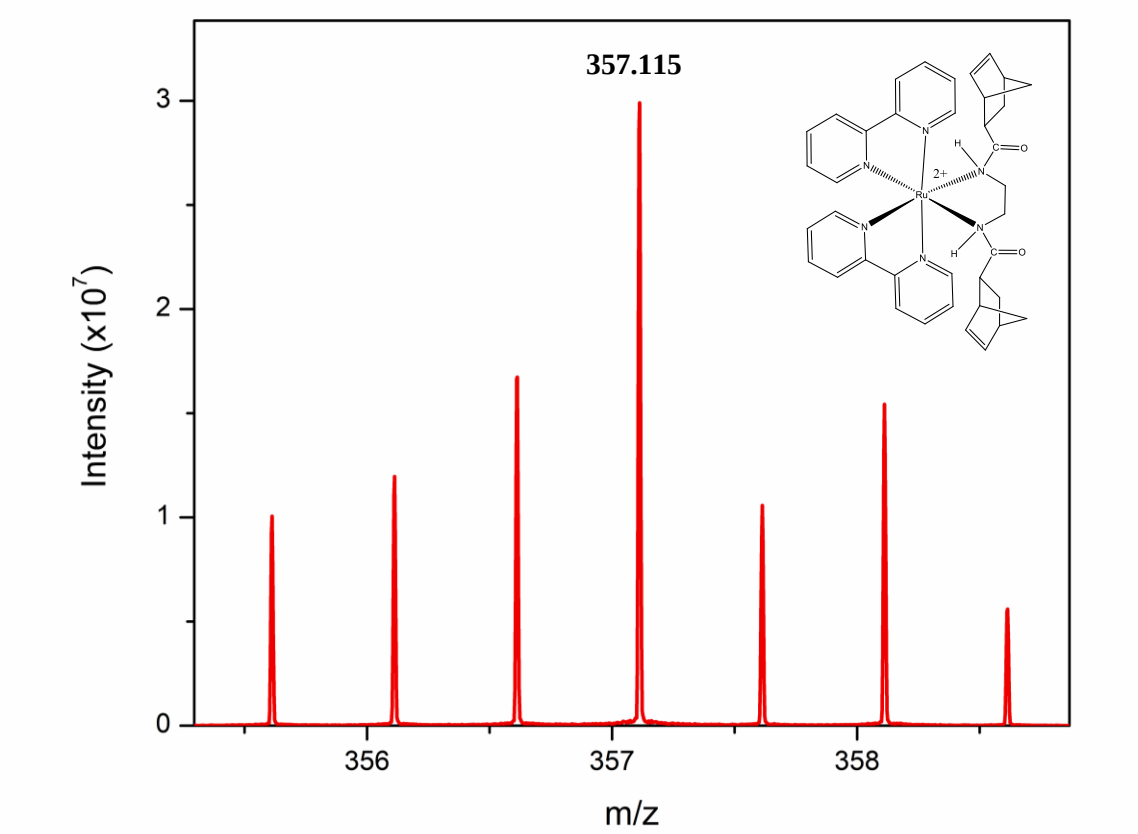

Figure S3. Mass spectrum of the complex ion **(5)** ([Ru]bpy-NEN), in positive mode. ESI-MS(m/z): Calc. 357.1128, Found 357.115 (M^+).

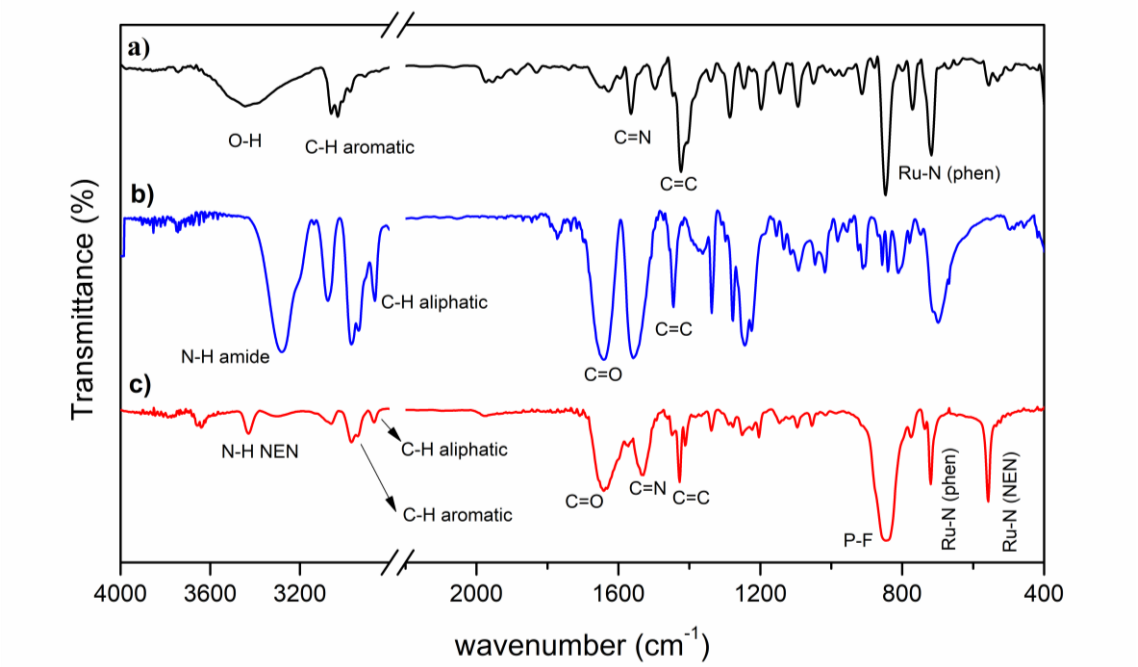

Figure S4. Infrared spectra of complexes a) [Ru]phen-Cl **(2)**, b) NEN **(1)** and c) [Ru]phen-NEN **(3)** in KBr.

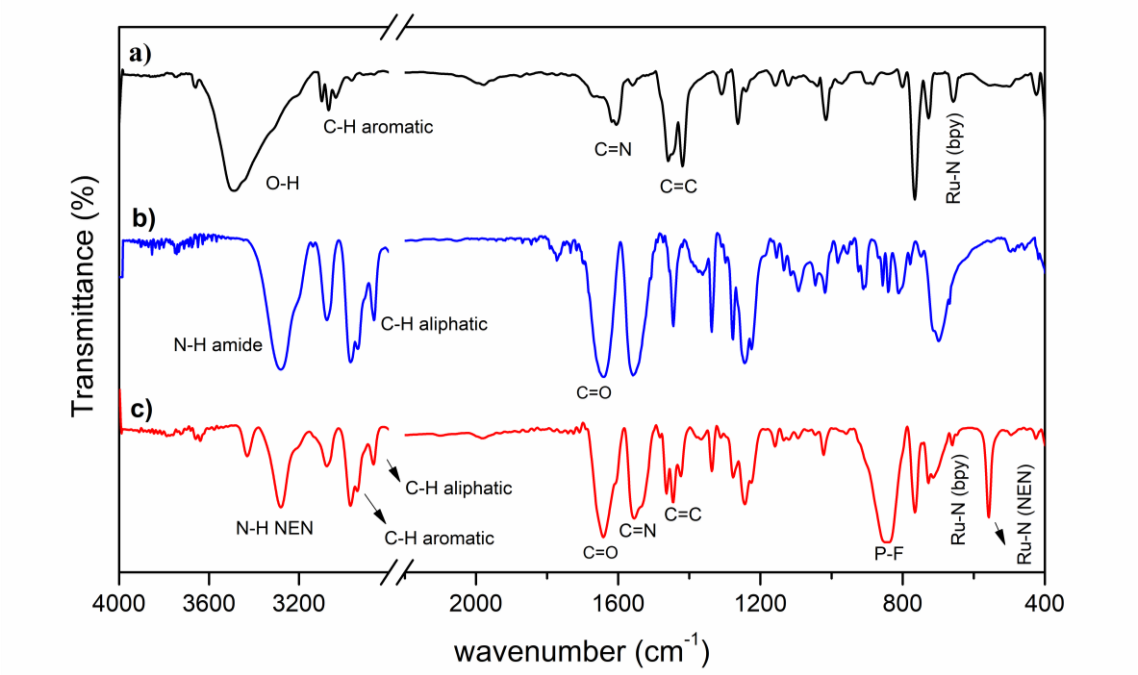

Figure S5. Infrared spectra of complexes a) [Ru]bpy-Cl **(4)**, b) NEN **(1)** and c) [Ru]bpy-NEN **(5)** in KBr.

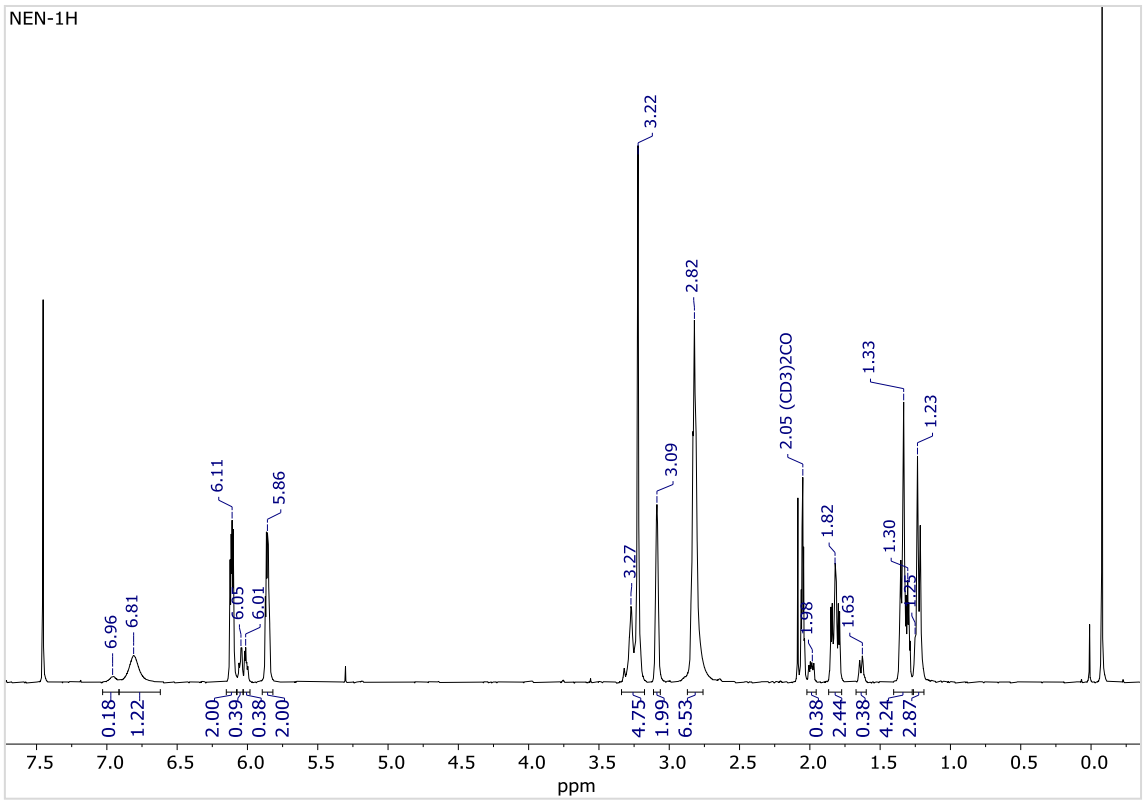

Figure S6. ^{1}H-NMR (500 MHz) of NEN **(1)** in $(CD_3)_2CO/CDCl_3$. The signals corresponding to the *endo*-NEN and *exo*-NEN portions are present at a 4:1 ratio from olefins associated with the mixture of the *endo* and *exo* isomers of 5-norbornene-2-carboxylic acid.

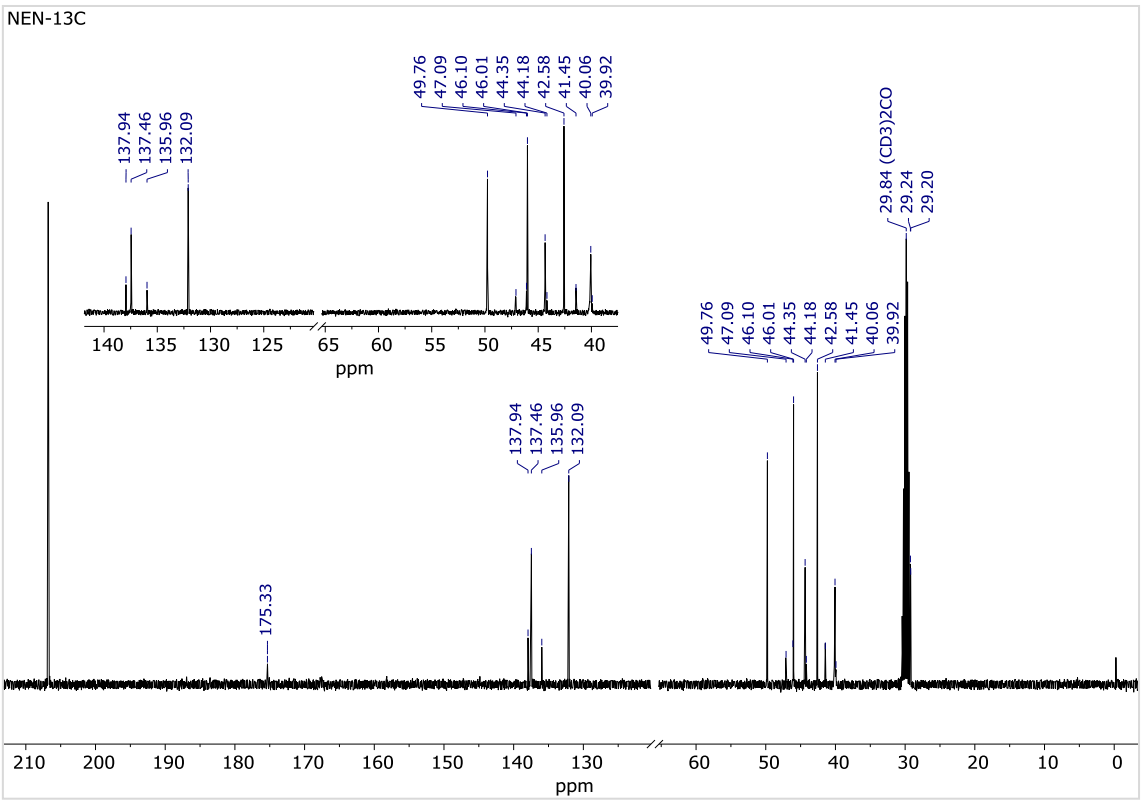

Figure S7. ^{13}C-NMR (500 MHz) of NEN **(1)** in $(CD_3)_2CO/CDCl_3$.

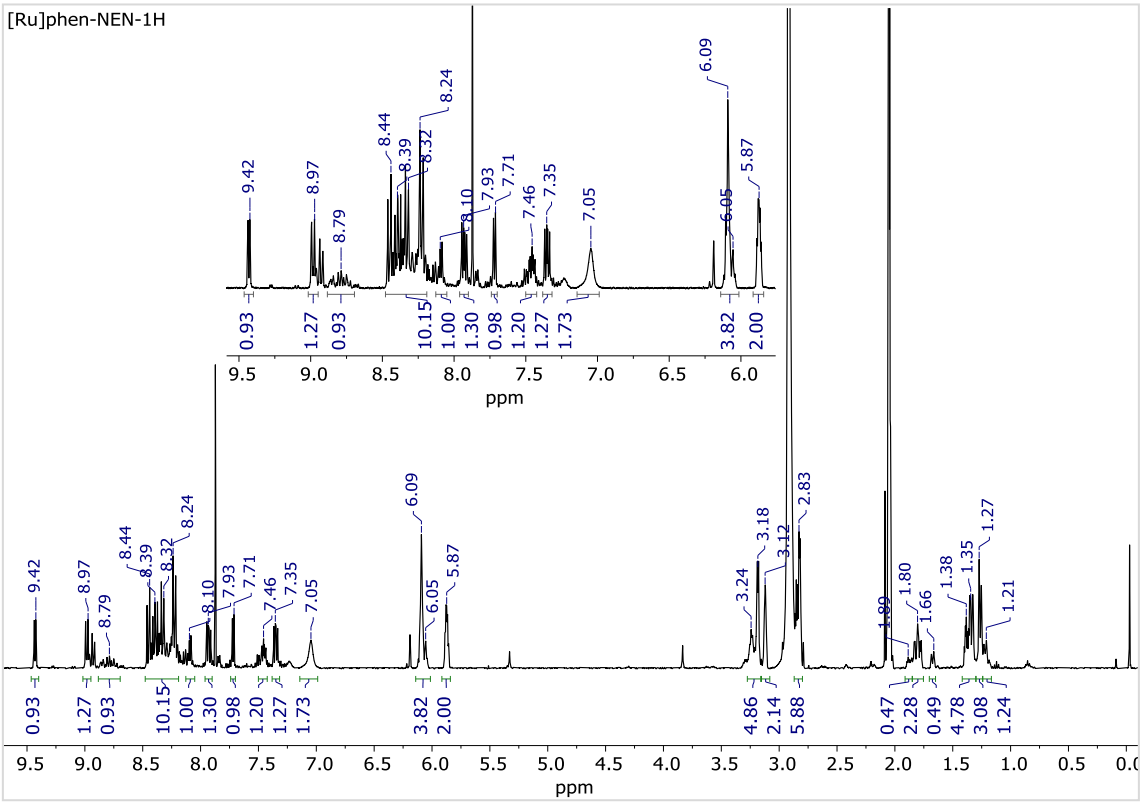

Figure S8. ^{1}H-NMR (500 MHz) of complex **3** ([Ru]phen-NEN) in $(CD_3)_2CO/CDCl_3$.

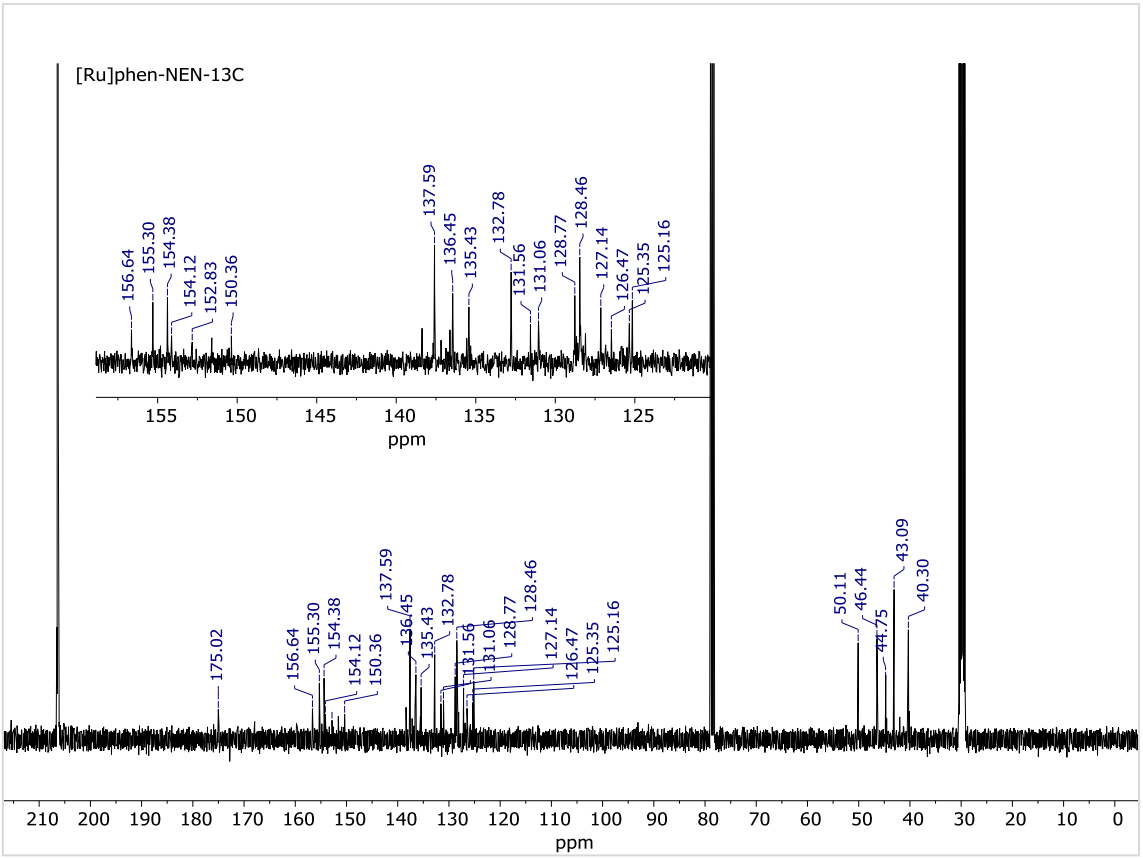

Figure S9. ^{13}C-NMR (500 MHz) of complex **3** ([Ru]phen-NEN) in $(CD_3)_2CO/CDCl_3$.

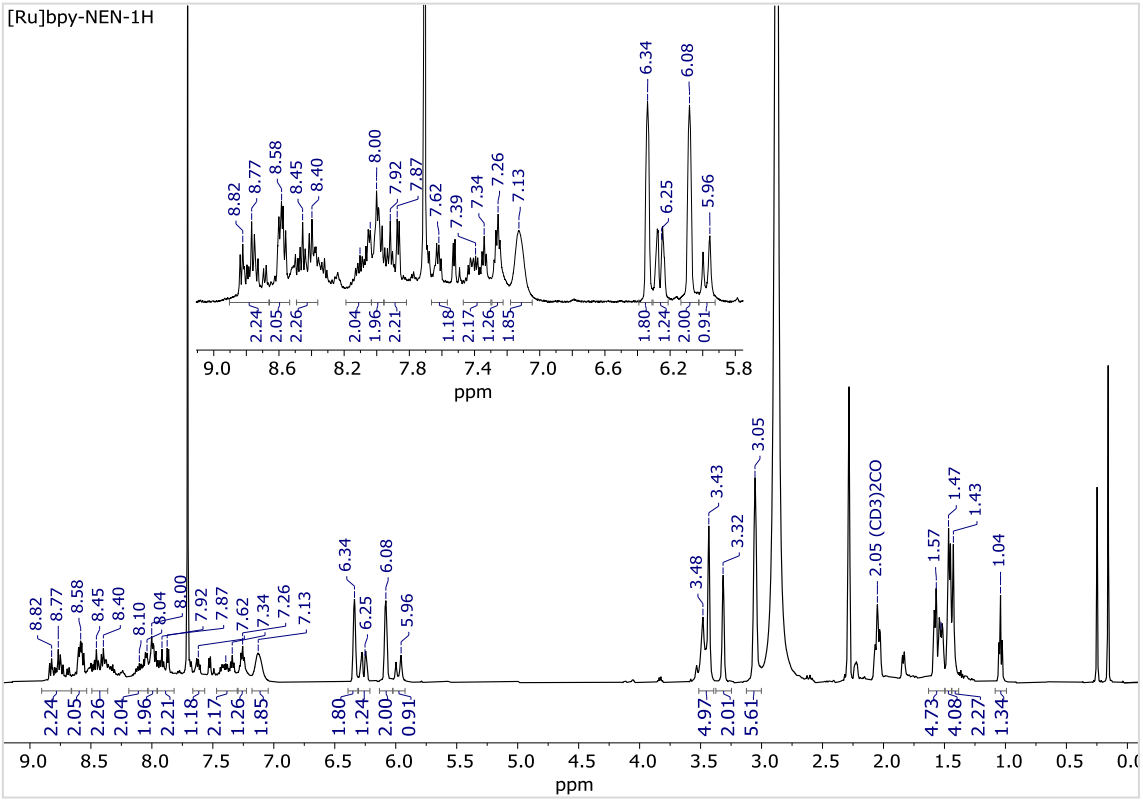

Figure S10. ^{1}H-NMR (500 MHz) of complex **5** ([Ru]bpy-NEN) in $(CD_3)_2CO/CDCl_3$.

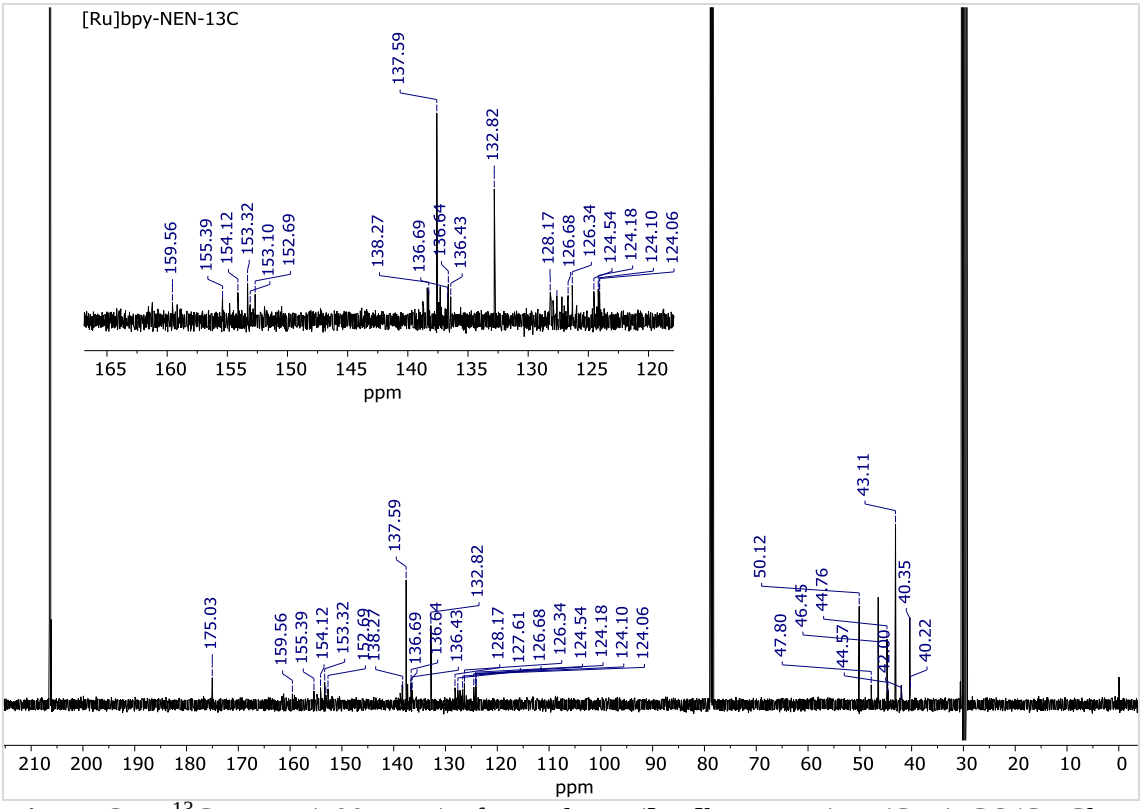

Figure S11. ^{13}C-NMR (500 MHz) of complex **5** ([Ru]bpy-NEN) in $(CD_3)_2CO/CDCl_3$.

Table S1. ^{1}H NMR assignments for Figs. S3-S8 obtained in $(CD_3)_2CO/CDCl_3$ at 25 °C.

	NEN		**[Ru]phen-NEN**		**[Ru]bpy-NEN**	
	^{1}**H**	^{13}C{^{1}**H**}	^{1}**H**	^{13}C{^{1}**H**}	^{1}**H**	^{13}C{^{1}**H**}
1	6.11	132.09	6.09	132.78	6.34	132.82
2	3.09	44.35	3.12	44.75	3.32	44.76
3	2.82	49.76	2.83	50.10	3.05	50.12
4	1.82; 1.30	29.24	1.80; 1.38		1.43; 1.53	
5	5.86	137.46	5.87	137.59	6.08	137.59
6	2.82	42.58	2.83	43.10	3.05	43.11
7	1.33; 1.23	46.01	1.35; 1.27	46.44	1.57; 1.47	46.45
8		175.33		175.02		175.03
9	6.81		7.05		7.13	
10	6.81		7.05		7.13	
11		175.33		175.02		175.03
12	1.82; 1.30	29.24	1.80; 1.38		1.43 ; 1.53	
13	2.82	42.58	2.83	43.10	3.05	43.11
14	5.86	137.46	5.87	137.59	6.08	137.59
15	6.11	132.09	6.09	132.78	6.34	132.82
16	2.82	49.76	2.83	50.10	3.05	50.12
17	3.09	44.35	3.12	44.75	3.32	44.76
18	1.33; 1.23	46.01	1.35; 1.27	46.44	1.57; 1.47	46.45
19	3.22	40.06	3.18	40.30	3.43	40.35

20	3.22	40.06		3.18	40.30	3.43	40.35
21				9.42	155.30	8.82	155.39
22				7.46	135.43	7.39	126.34
23				8.49 - 8.16	128.77	8.58	138.27
24					125.35	8.45	124.06
25				8.49 - 8.16	128.46		159.56
26				8.49 - 8.16	128.46		153.10
27					131.06	7.92	124.18
28				8.49 - 8.16	125.16	8.00	132.69
29				7.93	127.14	7.62	127.61
30				7.71	154.38	8.04	153.32
31					152.63	8.77	154.12
32					156.64	8.10	126.68
33				8.97	155.30	8.58	136.43
34				8.79	135.43	8.40	124.10
35				8.49 - 8.16	128.77		161.23
36					126.47		154.81
37				8.49 - 8.16	128.46	7.34	124.55
38				8.49 - 8.16	128.46	8.00	136.64
39					131.56	7.26	128.17
40				8.49 - 8.16	136.45	7.87	152.69
41				7.35	127.14		
42				8.10	154.38		
43					150.36		
44					154.12		

a) Syntheses **b) Precipitation** **c) Copolymer**

Figure S12. Images of **a)** reaction solution during copolymer; **b)** methanol precipitated copolymer; **c)** isolated copolymer.

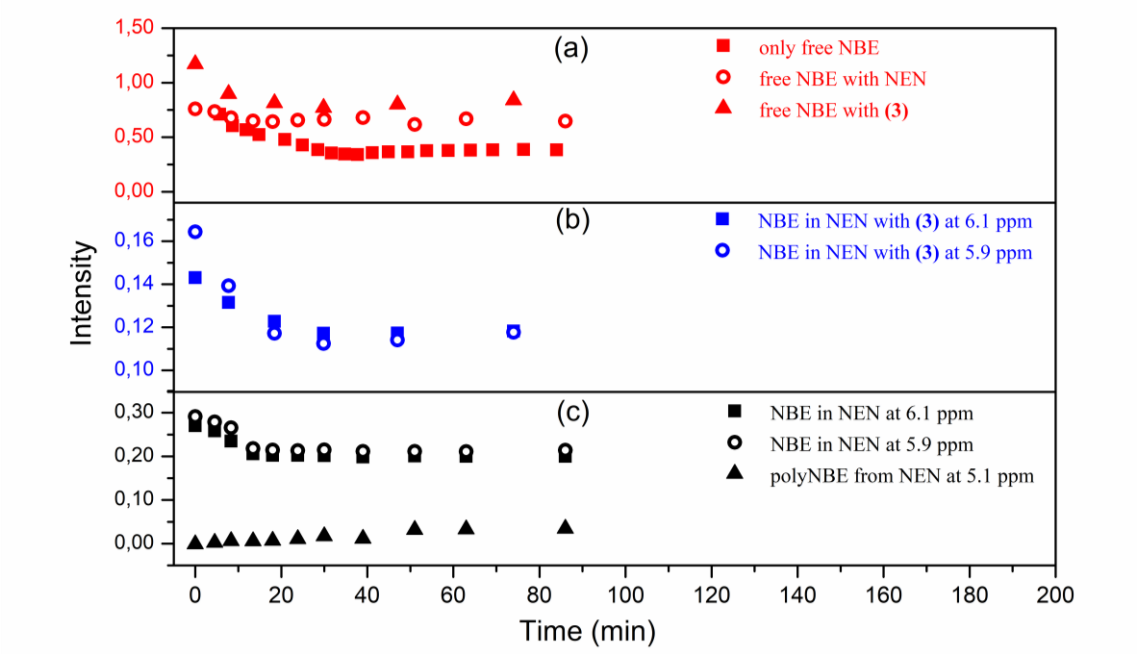

Figure S13. Intensities of signals in the ^{1}H NMR spectra from Figure 3, from **(a)** ROMP of NBE, **(b)** ROMP of NBE with NEN and **(c)** ROMP of NBE with **3**.

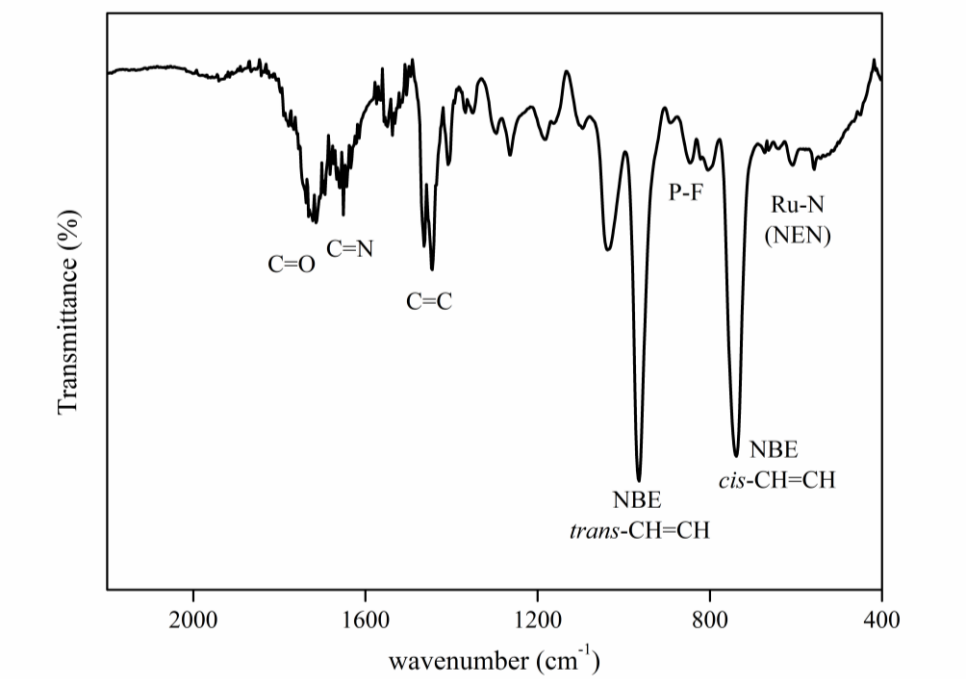

Figure S14. Infrared spectrum of copolymer from ROMP of NBE with complex **3**.

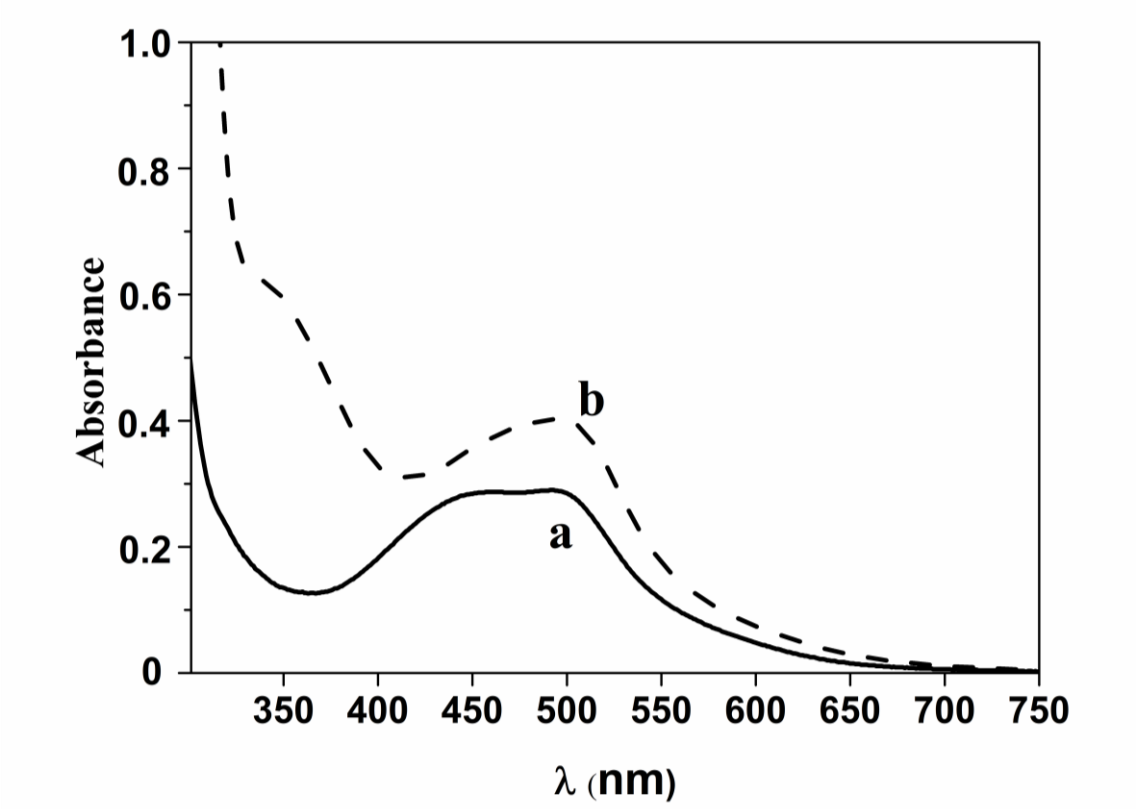

Figure S15. UV-Vis spectra of the methanol mother liquor with the chloroform washes from the synthesis of the copolymers from reaction of NBE **a**) with [Ru]phen-NEN **(3)** or **b**) with [Ru]bpy-NEN **(5)** (dashed line).