Electronic Supplementary Material (ESI) for Polymer Chemistry.

Cobalt catalysed controlled copolymerization: an efficient approach to bifunctional polyisoprene with enhanced properties

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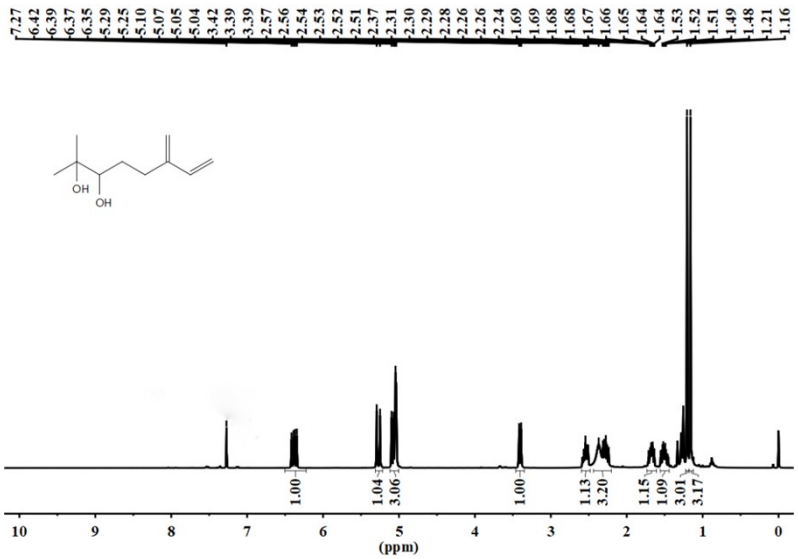


Fig. 1S The ^{1}H NMR of $My(OH)_2$

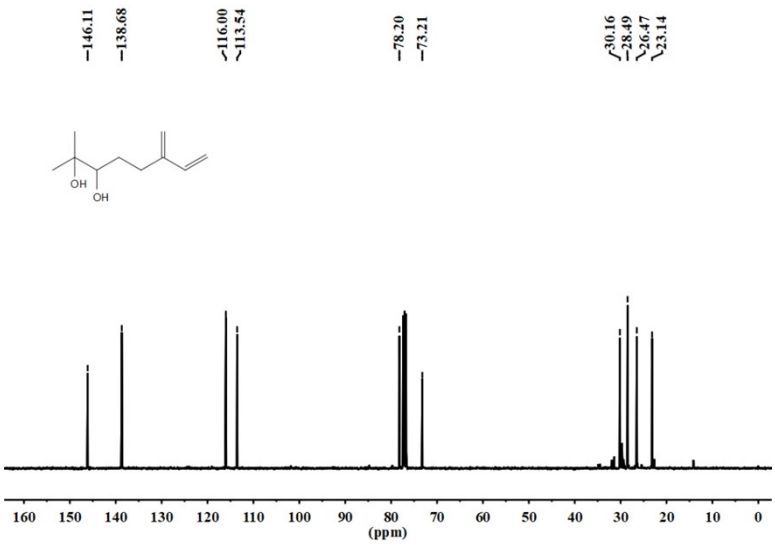


Fig. 2S The ^{13}C NMR of $My(OH)_2$

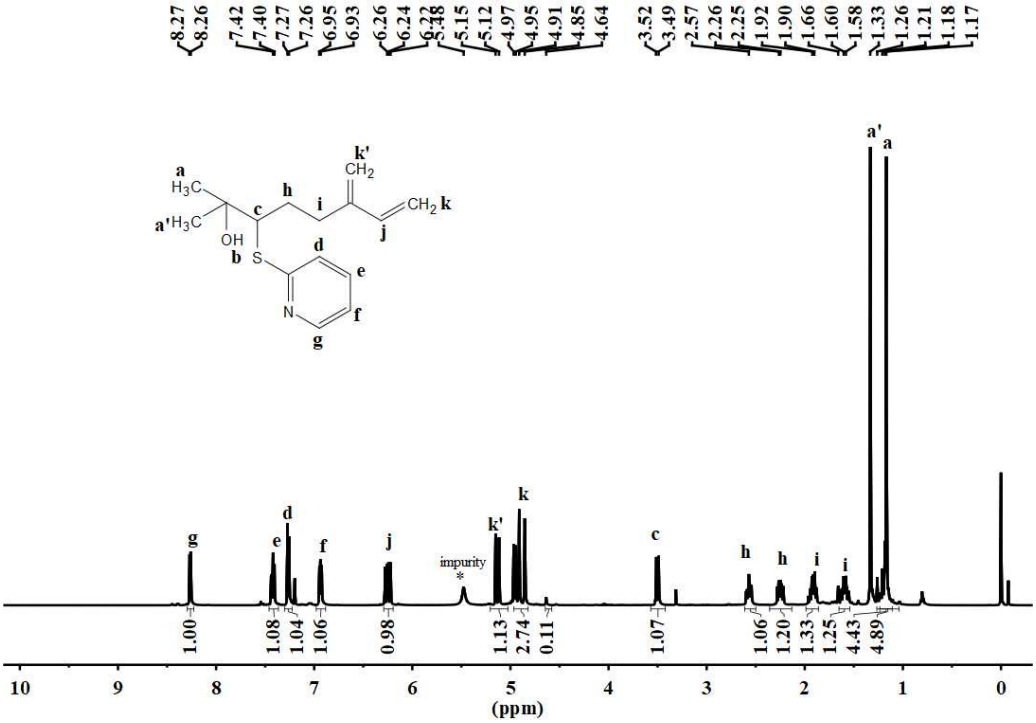


Fig. 3S The ^{1}H NMR of My-OH-Py

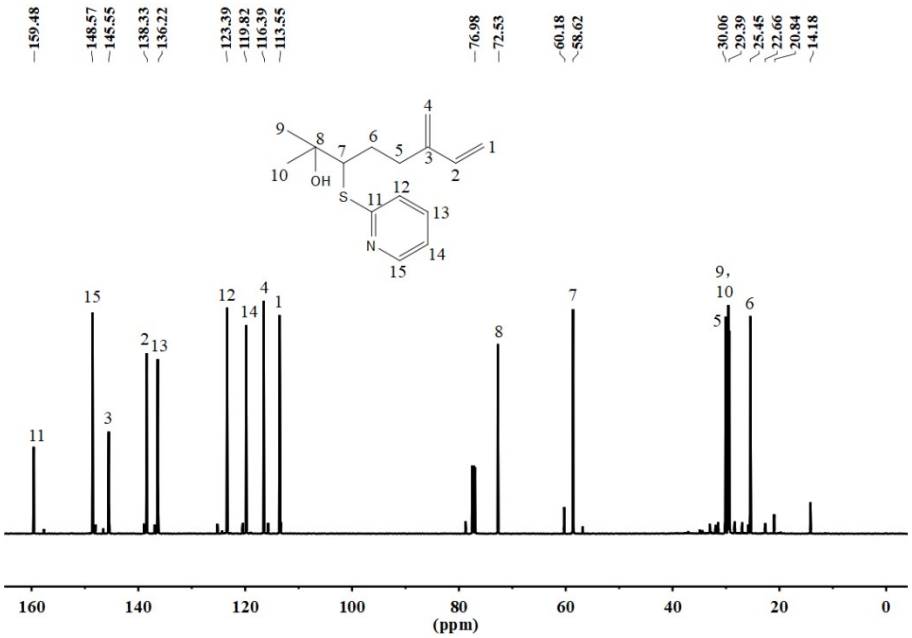


Fig. 4S The ^{13}C NMR of My-OH-Py

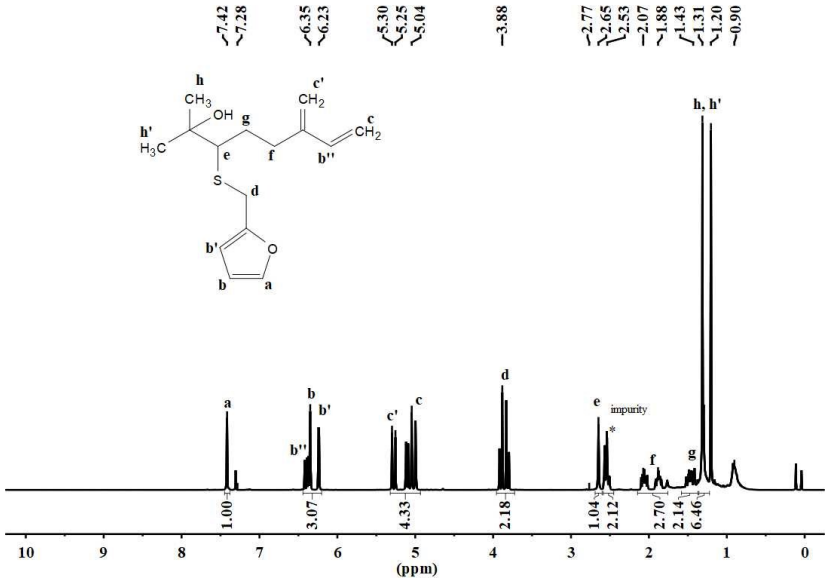


Fig. 5S The ^{1}H NMR of My-OH-Fu

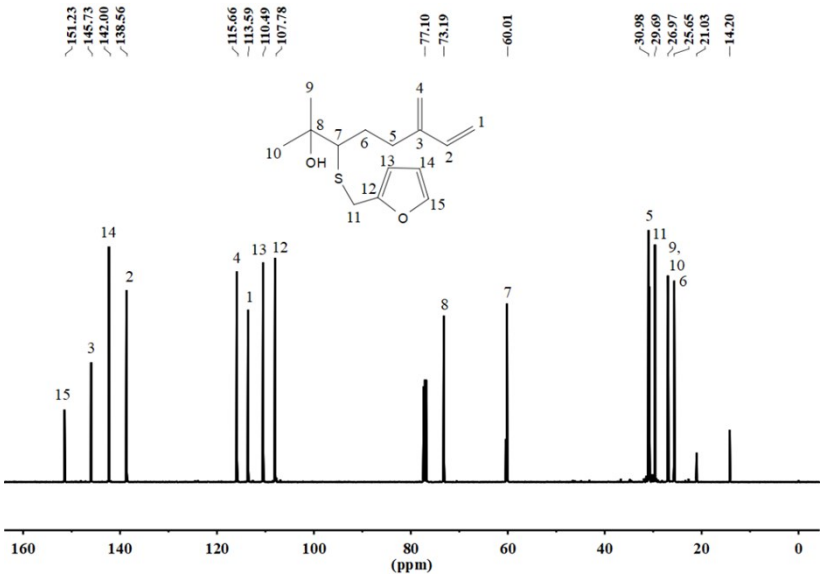


Fig. 6S The ^{13}C NMR of My-OH-Fu

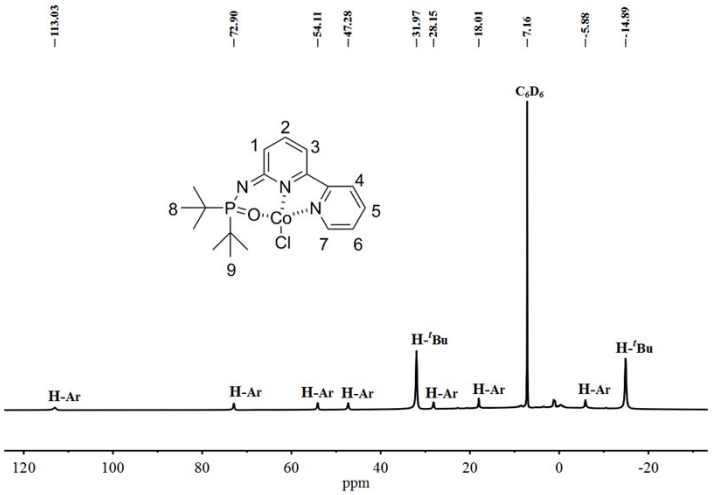


Fig. 7S The ^{1}H NMR of **CoPN^{3}$_{-By}**

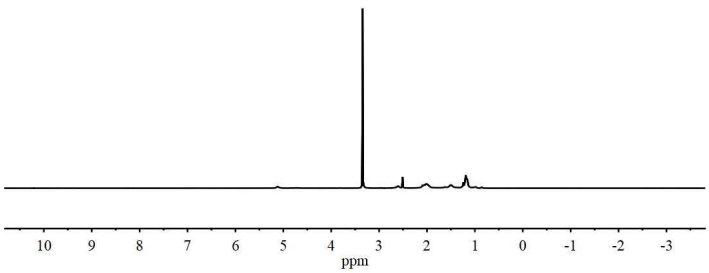


Fig. 8S The ^{31}P NMR of **CoPN^{3}$_{-By}**

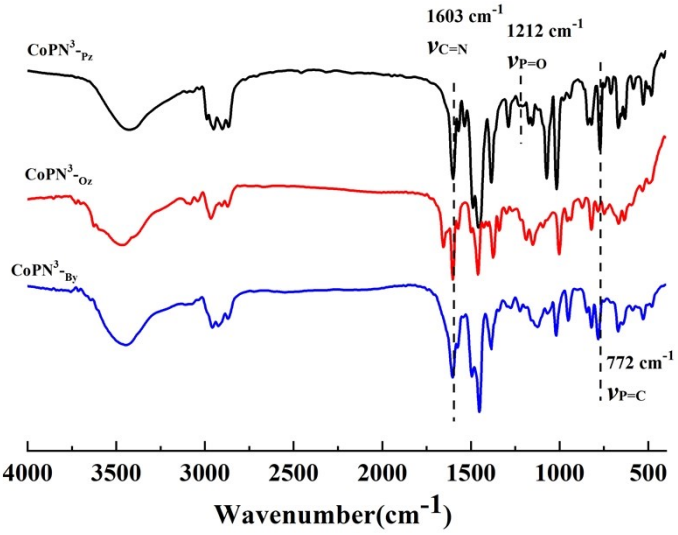


Fig. 9S The FT-IR of complexes

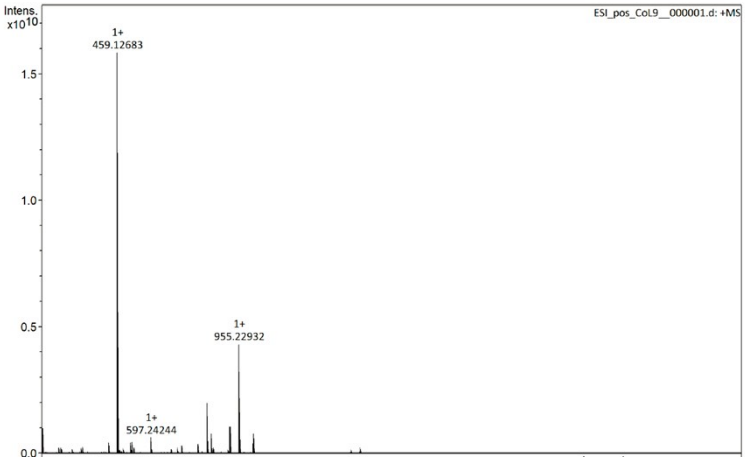


Fig. 10S The mass spectrometry of complex **CoPN³-By**

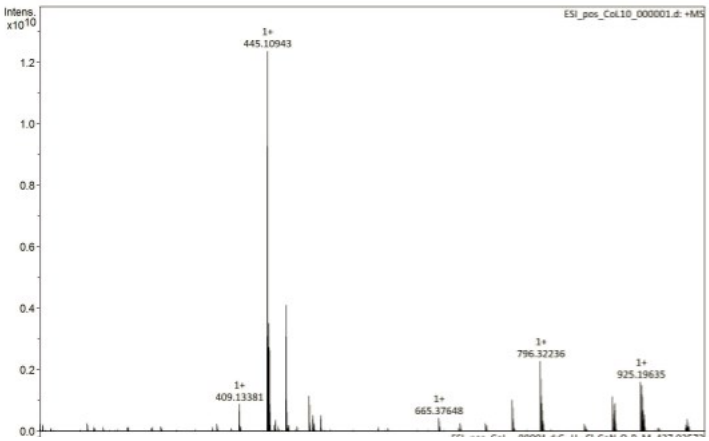


Fig. 11S The mass spectrometry of complex **CoPN³-Pz**

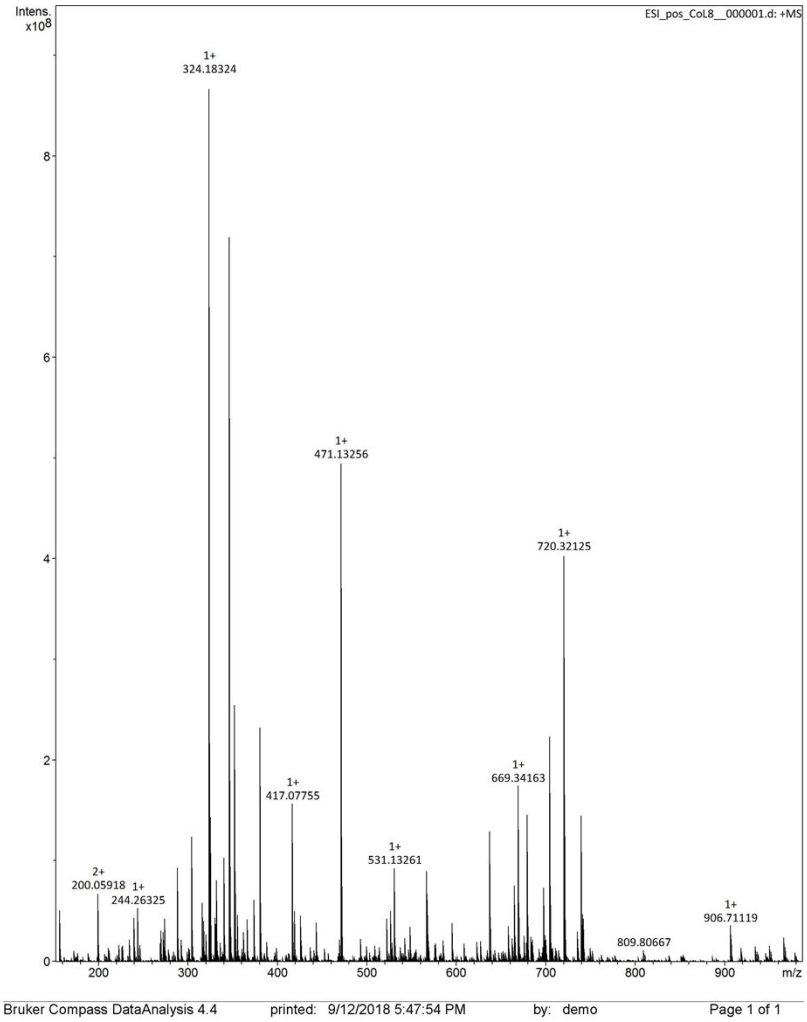


Fig. 12S The mass spectrometry of complex **CoPN³-oz**

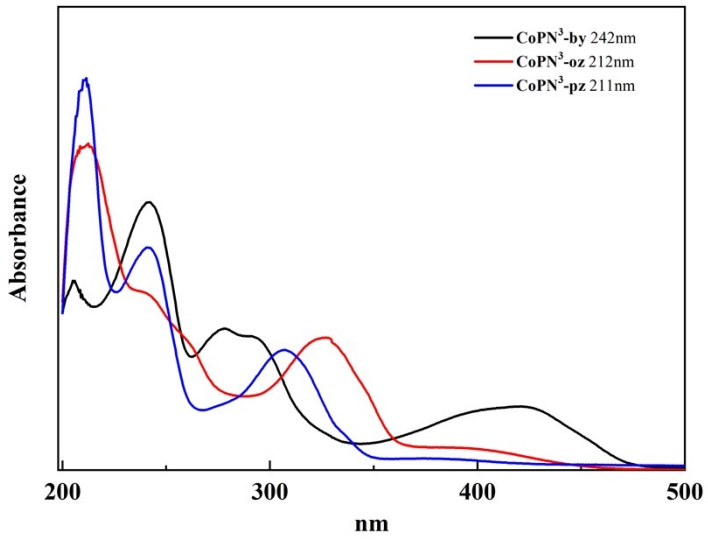
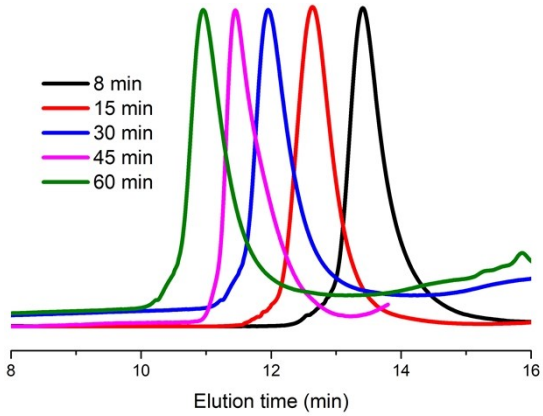
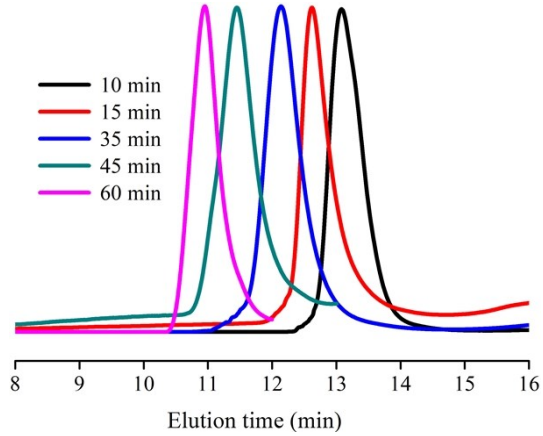


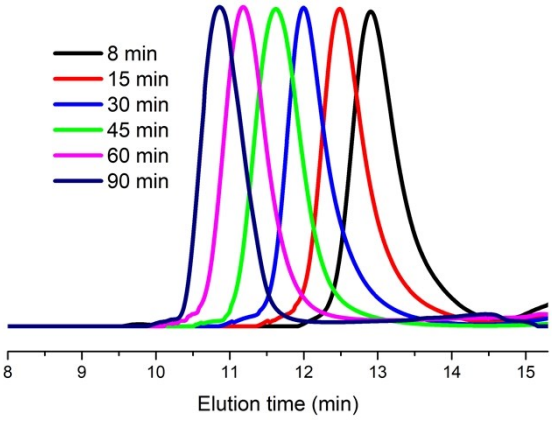
Fig. 13S The UV-vis of complexes



(a)



(b)



(c)

Fig. 14S The GPC profiles of copolymers (a: run 1, b: 6 and c: 10 in table 1) collected at different time

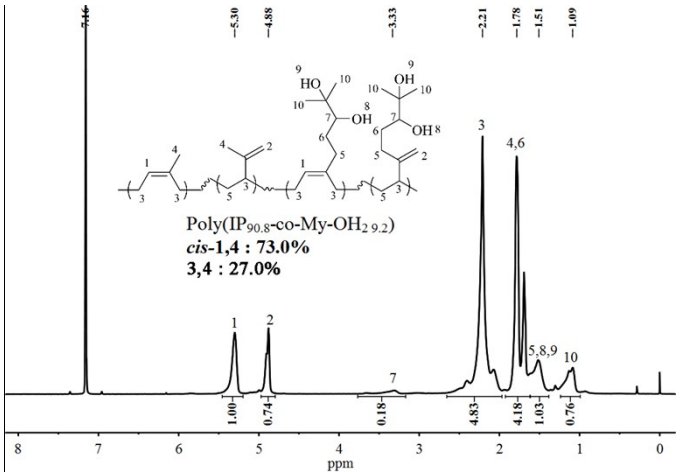


Fig. 15S The ^{1}H NMR of poly(isoprene-co-My(OH)$_2$) (run 3, table 1)

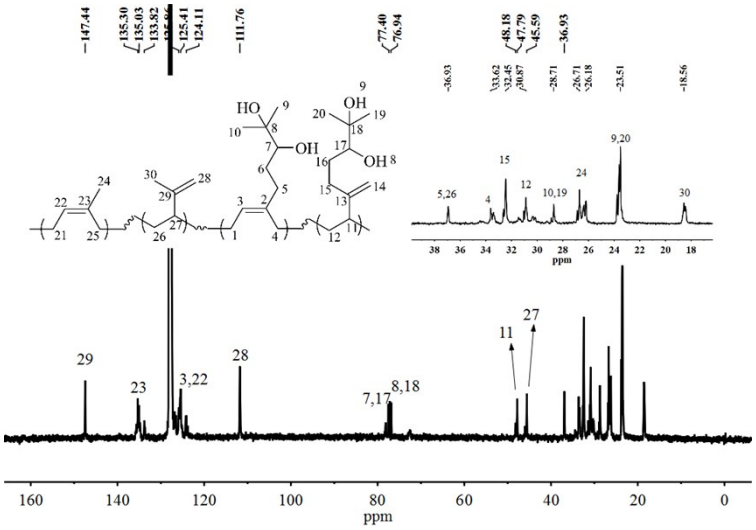


Fig. 16S The ^{13}C NMR of of poly(isoprene-co-My(OH)$_2$) (run 3, table 1)

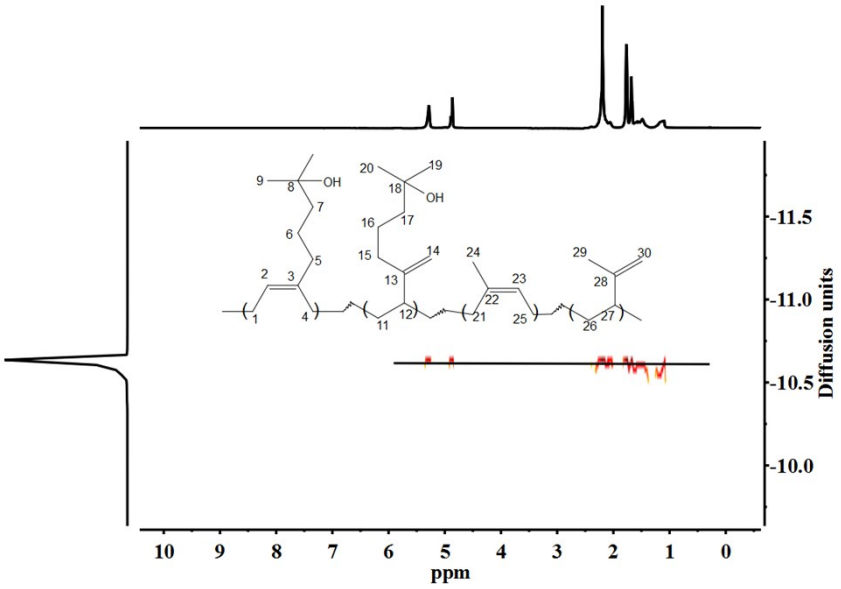


Fig. 17S The DOSY NMR of poly(isoprene-co-My(OH)$_2$) (run 3, table 1)

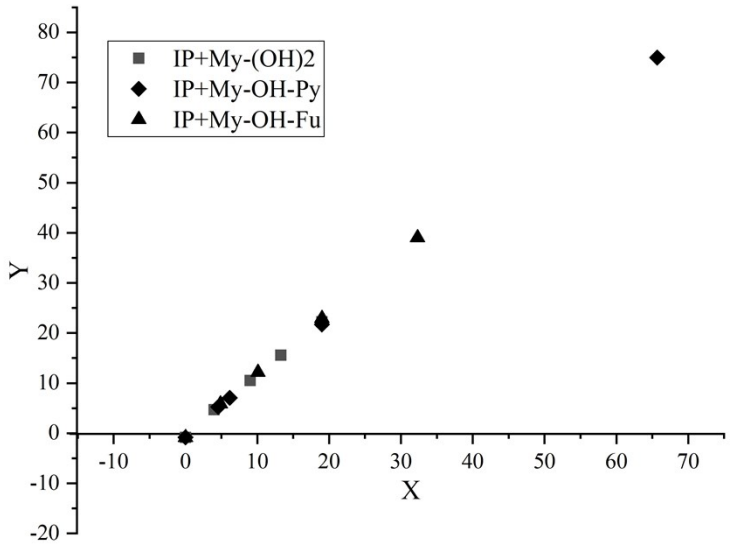


Fig. 18S Reactivity ratio X= $(1-F_1)(f_1/1-f_1)^2/F_1$, Y=$(f_1/1-f_1)(2-1/F_1)$; IP+My-$(OH)_2$: r_1= 1.17, r_2= 0.87; IP+My-OH-Py: r_1= 1.14, r_2= 0.82;, IP+My-OH-Fu, r_1= 1.21, r_2= 0.86.)

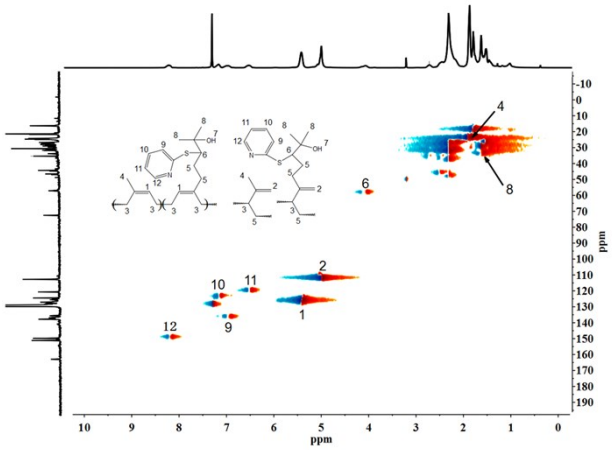


Fig. 19S The HSQC NMR of poly(isoprene-co-My-OH-Py) (run 7, table 1)

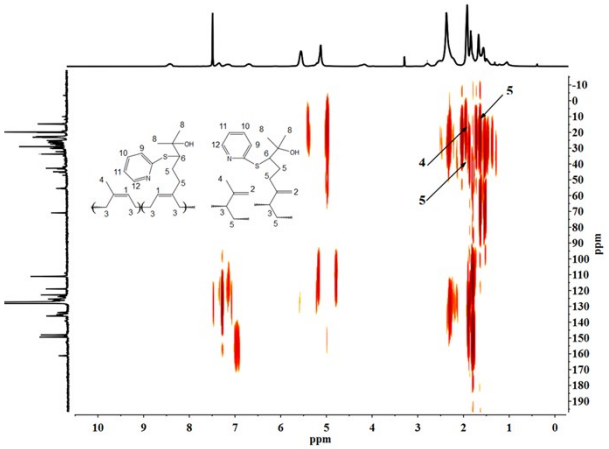


Fig. 20S The HMBC NMR of poly(isoprene-co-My-OH-Py) (run 3, table 1)

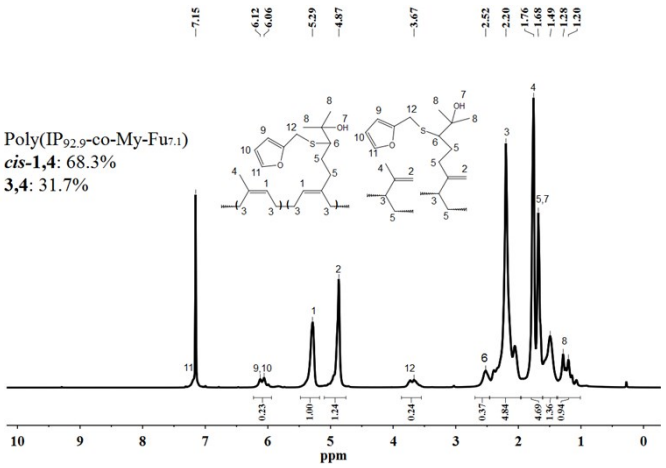


Fig. 21S The ^{1}H NMR of poly(isoprene-co-My-OH-Fu) (run 11, table 1)

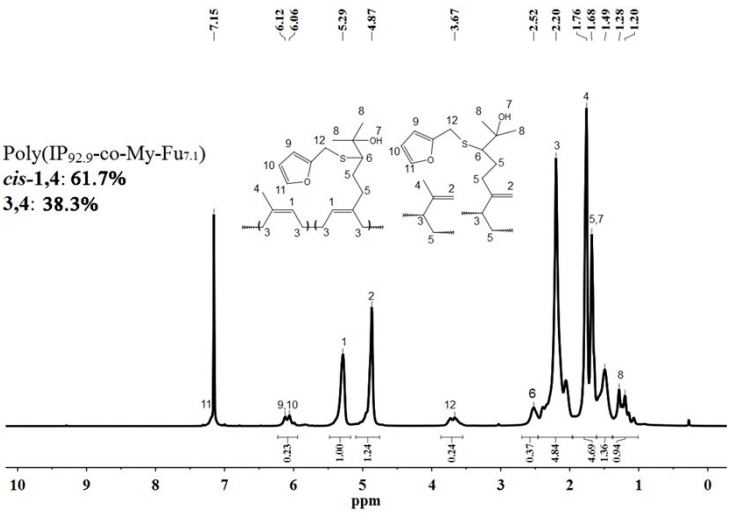


Fig. 22S The ^{1}H NMR of of poly(isoprene-co-My-OH-Fu) (run 12, table 1)

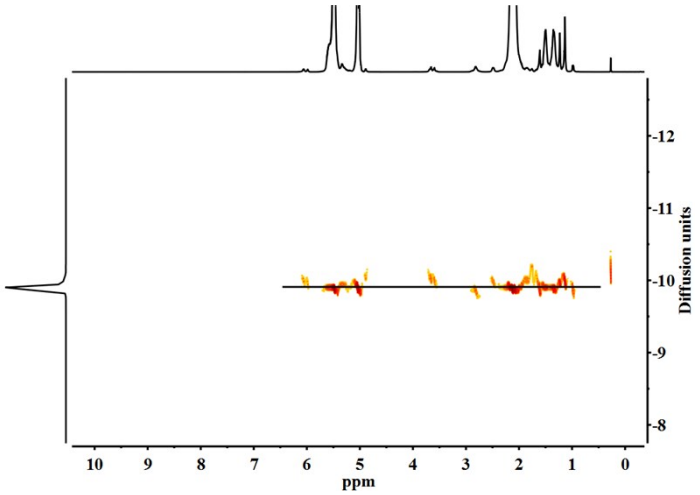


Fig. 23S The DOSY NMR of poly(isoprene-co-My-OH-Fu) (run 11, table 1)

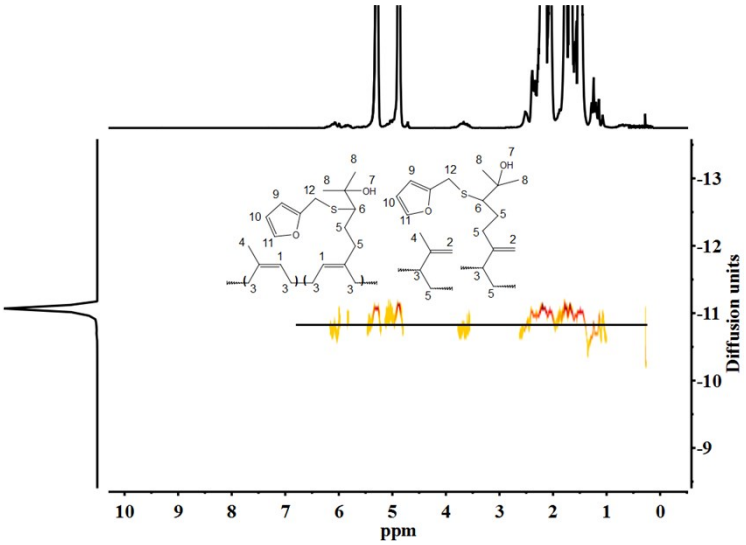


Fig. 24S The DOSY NMR of poly(isoprene-co-My-OH-Fu) (run 12, table 1)

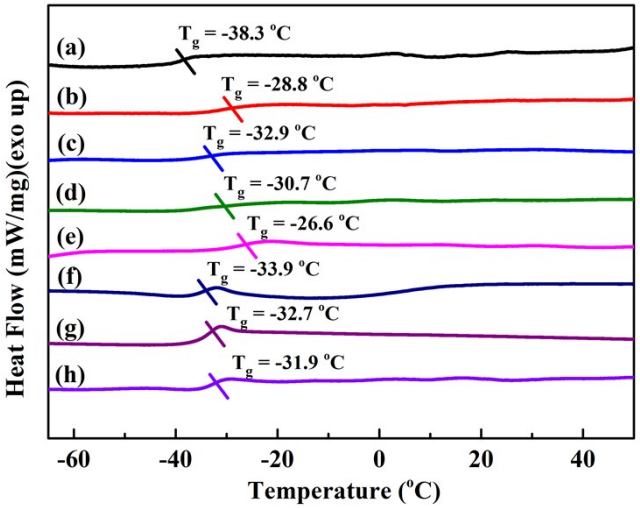


Fig. 25S The T_g of copolymers (a: run1, table 1, b: run 3 table 1, c: run 6, table 1, d: run 7, table 1, e: run 8, table 1, f: run 9, table 1, g: run 11, table 1, h: run 12, table 1)

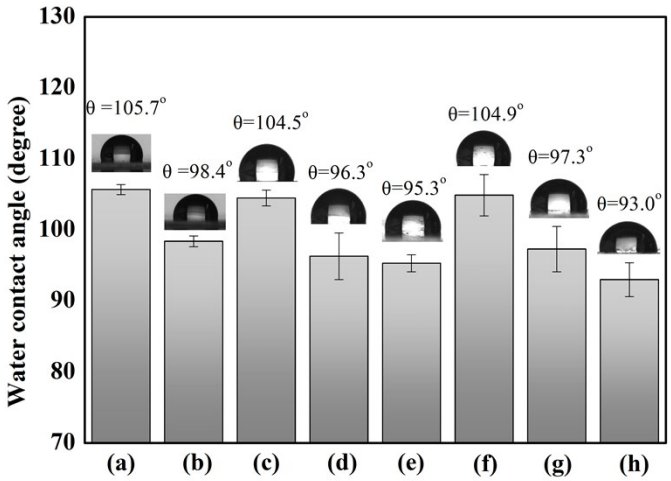


Fig. 26S The WCA of copolymers (a: run1, table 1, b: run 3 table 1, c: run 6, table 1, d:

run 7, table 1, e: run 8, table 1, f: run 9, table 1, g: run 11, table 1, h: run 12, table 1)

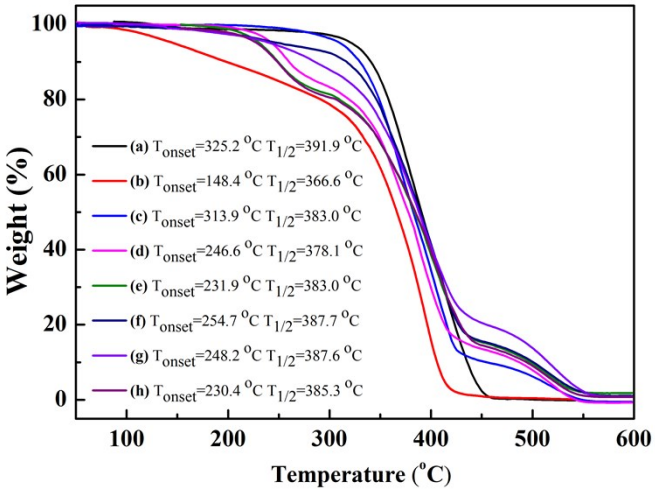


Fig. 27S The TGA of copolymers (a: run1, table 1, b: run 3 table 1, c: run 6, table 1, d: run 7, table 1, e: run 8, table 1, f: run 9, table 1, g: run 11, table 1, h: run 12, table 1)