Supporting Information

Highly cis-1, 4-selective coordination polymerization of polar 2-(4-methoxyphenyl)-1, 3-butadiene and copolymerization with isoprene using β-diketiminato yttrium bis(alkyl) complex

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Figure S1\textsuperscript{1} $^1$H NMR spectrum of 2-MOPB.

Figure S2\textsuperscript{1} $^1$H-$^1$H COSY spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S3 DEPT 45 spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S4 HSQC spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S5 HMBC spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S6 Thermograms of P(2-MOPB) and P(MOSt-alt-E).

Figure S7 $^{13}$C NMR spectrum of P(MOSt-alt-E).

Figure S8 $^{13}$C NMR spectra of P(2-MOPB-co-IP)s.

Figure S9 GPC traces of copolymers of P(2-MOPB-co-IP)s.

Figure S10 Fineman–Ross plot for copolymerization of 2-MOPB and IP with the ternary catalytic system.

Figure S11 $^1$H NMR spectrum of oligomer P(2-MOPB)-1.

Figure S12 $^1$H NMR spectrum of oligomer P(2-MOPB)-2.
Figure S1 $^1$H NMR (400 MHz, CDCl$_3$, 25 °C) of 2-MOPB.

Figure S2 $^1$H-$^1$H COSY (500 MHz, CDCl$_3$, 25 °C) spectrum of P(2-MOPB) (Table 1, entry 1)
Figure S3 DEPT 45 (125 MHz, CDCl₃, 25 °C) spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S4 HSQC spectrum of P(2-MOPB) (Table 1, entry 1)
Figure S5 HMBC spectrum of P(2-MOPB) (Table 1, entry 1)

Figure S6 Thermograms of P(2-MOPB) (curve A) and P(MOS-t-alt-E) (curve B).
Figure S7 $^{13}$C NMR (125 MHz, CDCl$_3$, 25 °C) spectrum of P(MOSt-alt-E).

Figure S8 $^{13}$C NMR spectra of P(2-MOPB-co-IP)s.(Table 1, entries 5-11)
Figure S9  GPC traces of copolymers of P(2-MOPB-co-IP)s (Table 1, entries 4-11)

Figure S10  Fineman–Ross plot for copolymerization of 2-MOPB and IP with the ternary catalytic system
Figure S11 $^1$H NMR spectrum of oligomer P(2-MOPB)-1.

Figure S12 $^1$H NMR spectrum of oligomer P(2-MOPB)-2.