Supporting information

Selective isomerization-carbonylation of a terpene trisubstituted double bond

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Figure S1: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of dimethyl 3,7-dimethylnonane-1,9-dioate (2).

Figure S2: $^{13}$C ($^1$H) NMR spectrum (100 MHz, CDCl$_3$, 25 °C) of dimethyl 3,7-dimethylnonane-1,9-dioate (2).
Figure S3: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of enriched dimethyl 3-(4-methylpentyl)pentanedioate (3) with dimethyl 3,7-dimethylnonane-1,9-dioate (2) (ratio 1:10).

Figure S4: $^{13}$C {$^1$H} NMR spectrum (100 MHz, CDCl$_3$, 25 °C) of enriched dimethyl 3-(4-methylpentyl)pentanedioate (3) with dimethyl 3,7-dimethylnonane-1,9-dioate (2) (ratio 1:10).
Figure S5: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of enriched methyl 7-methoxy-3,7-dimethyloctanoate (4) with dimethyl 3,7-dimethylnonane-1,9-dioate (2) (ratio 3:1).

Figure S6: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of methyl 3,7-dimethyloct-2-enoate (5).
Figure S7: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of double bond isomers of the (esterified) starting material (depleted in 5 to facilitate observation of all isomers).

Figure S8: $^1$H NMR spectrum (400 MHz, CDCl$_3$, 25 °C) of 3,7-dimethylnonane-1,9-diol (6).
Figure S9: $^1$H NMR spectrum (400 MHz, C$_2$D$_2$Cl$_4$, 25 °C) of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (7). Insert shows enlargement of the end group region.

Figure S10: DSC trace of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (7).
Figure S11: GPC trace of poly[1,9-(3,7-dimethyl)nonadiyl-1,9-(3,7-dimethyl)nonanedioate] (7) (TCB: 160 °C, vs. PE standards).