## **Supporting Information**



**Fig. S1** <sup>1</sup>H NMR spectrum of  $H_2C=CH(CH_2)_9$ -OSiMe<sub>3</sub>.



**Fig. S2** GPC elution curves of poly(ethylene-co-10-undecen-1-ol)s obtained at different times (EU1, EU4, EU5 and EU6 in Table 1).



Fig. S3. <sup>13</sup>C NMR and DEPT spectra of the poly(ethylene-co-10-undecen-1-ol)s (EU1,

EU5 in Table 1).

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Chemical shift (ppm)	Assignment
11.10	1B <sub>2</sub>
14.12	$1B_n$
14.65	$1B_3$
20.04	$1B_1$
22.92	$2B_n$
23.37	$2B_4$
32.23	$3B_n$
37.29	$\alpha B_1$
38.11	$T_{\delta\delta}$

Table S1 Main Chemical shifts and assignments of <sup>13</sup>C NMR.<sup>1,2</sup>

## Scheme S1 Microstructure unit of incorporation of 10-undecen-1-ol in PE chain<sup>4-6</sup>



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