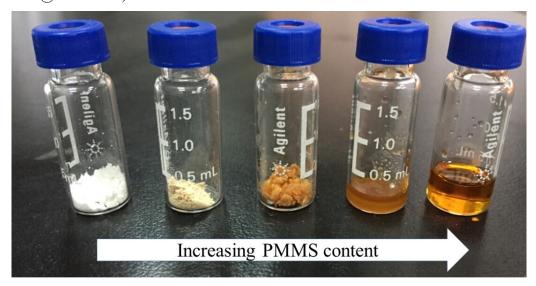
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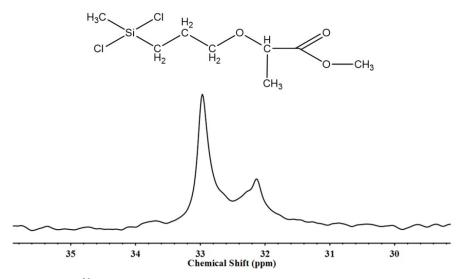
## **Electronic Supplementary Information**

## Novel design, facile synthesis and low infrared emissivity properties of single-handed helical polysilanes

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**Fig. S1.** Random poly[di-*n*-hexylsilane-co-(methoxycarbonyl ethyl propyl ether)methylsilane HPS copolymers from left to right with MMS contents of 0%,10%, 30%, 50%, and 100%, respectively, as determined by the copolymerization ratio.



 $\textbf{Fig. S2.} \ \, \text{Inverse gated $^{29}$Si NMR spectrum (CDCl}_3, 99.35 \ \text{MHz}) \ of \ DCMMS \ and \ peak \ assignment.$ 

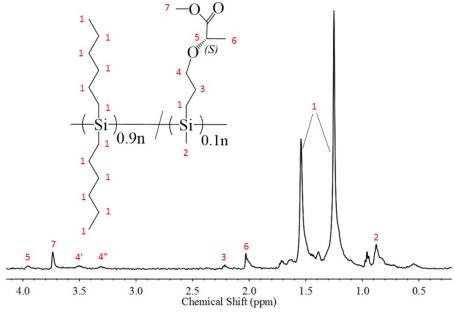


Fig. S3. <sup>1</sup>H NMR spectrum (CDCl<sub>3</sub>, 300 MHz) of HPS-1 and peak assignment.

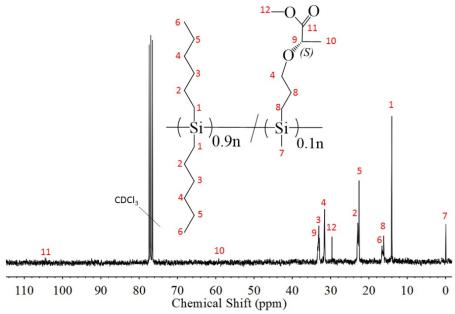
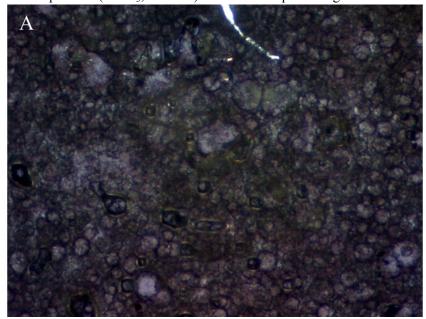


Fig. S4. <sup>13</sup>C NMR spectrum (CDCl<sub>3</sub>, 75 MHz) of HPS-1 and peak assignment.



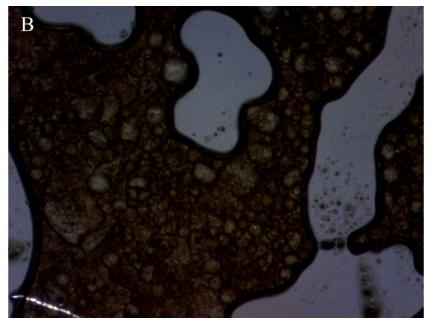


Fig. S5. Microscopy images of HPS-3: (A) at room temperature; (B) after melting.