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Polycarbonates derived from propylene oxide, CO₂, and 4-vinyl cyclohexene oxides terpolymerization catalyzed by bifunctional salcyCo^{III}NO₃ complex and its post-polymerization modification

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PII: S0032-3861(17)30906-0

DOI: 10.1016/j.polymer.2017.09.033

Reference: JPOL 20002

To appear in: Polymer

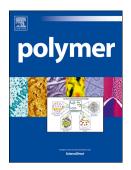
Received Date: 4 May 2017

Revised Date: 9 August 2017

Accepted Date: 15 September 2017

Please cite this article as: Zhang H, Liu B, Ding H, Chen J, Duan Z, Polycarbonates derived from propylene oxide, CO₂, and 4-vinyl cyclohexene oxides terpolymerization catalyzed by bifunctional salcyCo^{III}NO₃ complex and its post-polymerization modification, *Polymer* (2017), doi: 10.1016/j.polymer.2017.09.033.

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GRAPHICAL ABSTRACT

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Terpolymerizations of CO_2 , propylene oxide, and 4-vinyl cyclohexene oxide were successfully achieved under a single quaternary ammonium salt functionalized salen $Co^{III}Cl$ complex. The terpolymer shows an advantage to conveniently incorporate a variety of functional groups by post-polymerization modifications. The T_g of fully cyclic carbonate-functionalized poly(cyclohexne carbonate) is up to 196 $^{\circ}C$, which is the highest T_g of CO_2 -based polycarbonate reported

TOC Figure

$$+ co_{2} + \underbrace{ \bigcap_{rac\text{-salcyCo}^{\parallel}NO_{3}}^{rac\text{-salcyCo}^{\parallel}NO_{3}}_{m} + \underbrace{ \bigcap_{rac\text{-salcyCo}^{\parallel}NO_{3}}^{rac\text{-salcyCo}^{\parallel}NO_{3}}_{m} + \underbrace{ \bigcap_{rac\text{-salcyCo}^{\parallel}NO_{3}}^{rac\text{-salcyCo}^{\parallel}NO_{3}}_{NMP, 90^{\circ}C} + \underbrace{ \bigcap_{rac\text{-salcyCo}^{\parallel}NO_{3}}^{rac\text{-salcyCo}^{\parallel}NO_{3}}_{n} + \underbrace{ \bigcap_{r$$

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