

Supplementary Materials

Depolymerization of PET with *n*-Hexylamine, *n*-Octylamine, and 3-Amino-1-Propanol, Affording Terephthalamides

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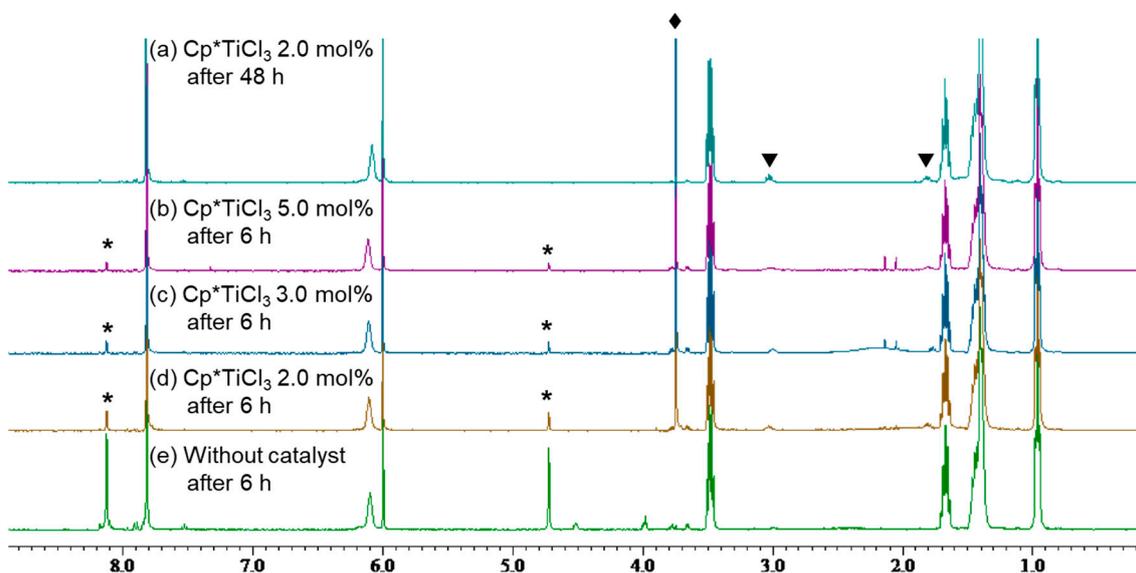


Figure S1. ^1H NMR spectra (in tetrachloroethane- d_2 at 100 $^\circ\text{C}$) of the reaction mixture (after removal of volatiles) in the reaction of PET with *n*-hexylamine (130 $^\circ\text{C}$) in the presence of Cp^*TiCl_3 . Conditions: (a) Cp^*TiCl_3 2.0 mol% after 48 h, (b) Cp^*TiCl_3 5.0 mol% after 6 h, (c) Cp^*TiCl_3 3.0 mol% after 6 h, (d) Cp^*TiCl_3 2.0 mol% after 6 h, (e) without catalyst after 6 h. Resonances marked with * were corresponded to byproduct (PET oligomers) and peaks marked with ◆, ▼ are impurity (◆ ethylene glycol; ▼ THF in NMR solvent).

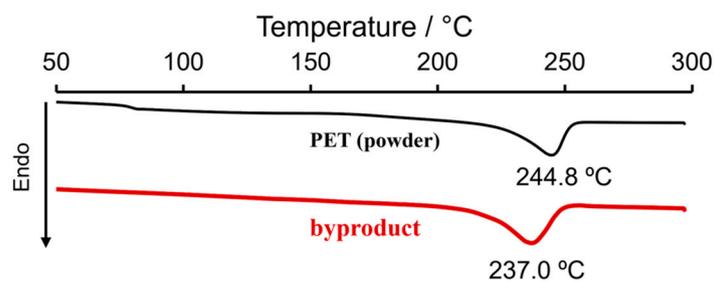


Figure S2. DSC thermograms for PET and byproduct (PET oligomer) isolated from the reaction mixture (runs 8,9).

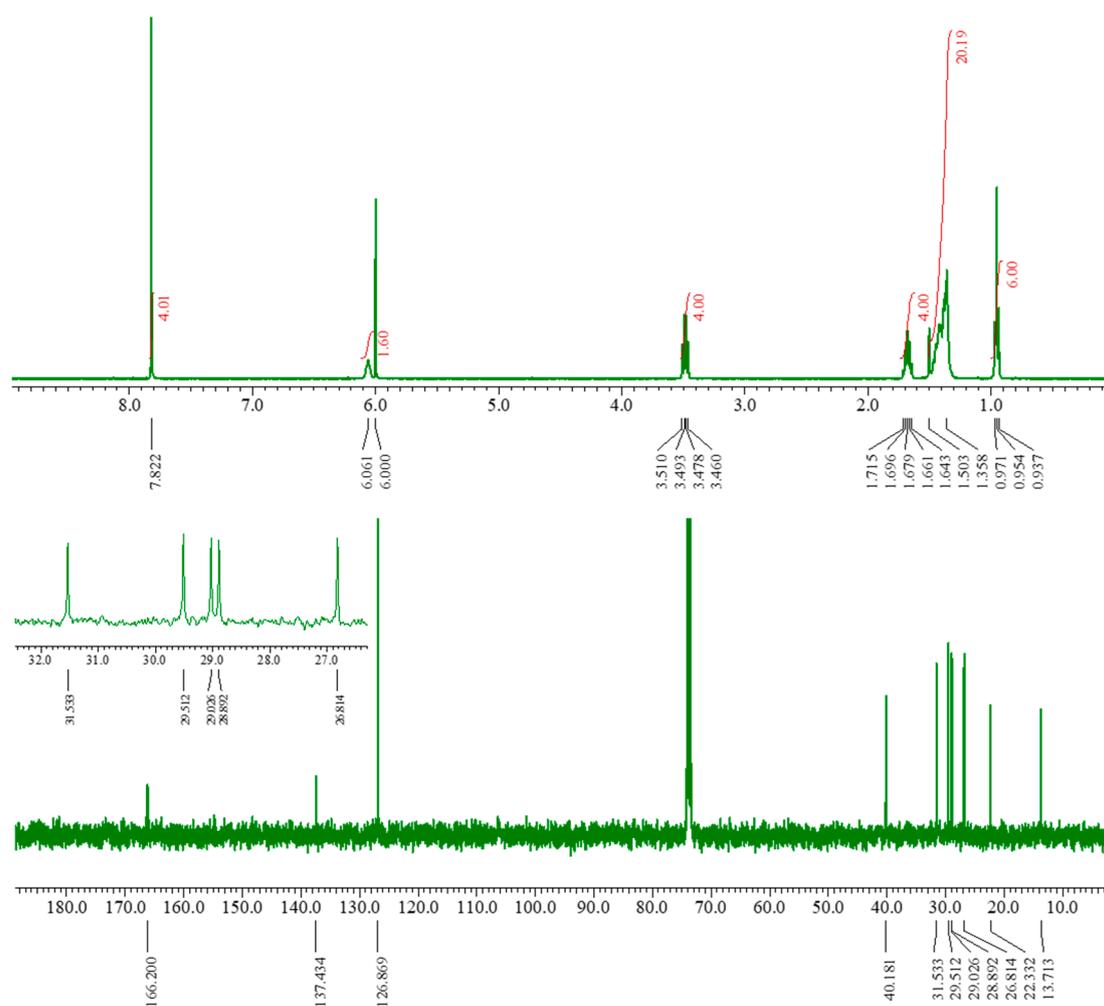


Figure S3. (top) $^1\text{H-NMR}$ spectrum and (bottom) $^{13}\text{C-NMR}$ spectrum for di(*n*-octyl) terephthalimide (in tetrachloroethane- d_2 at 100 $^\circ\text{C}$).

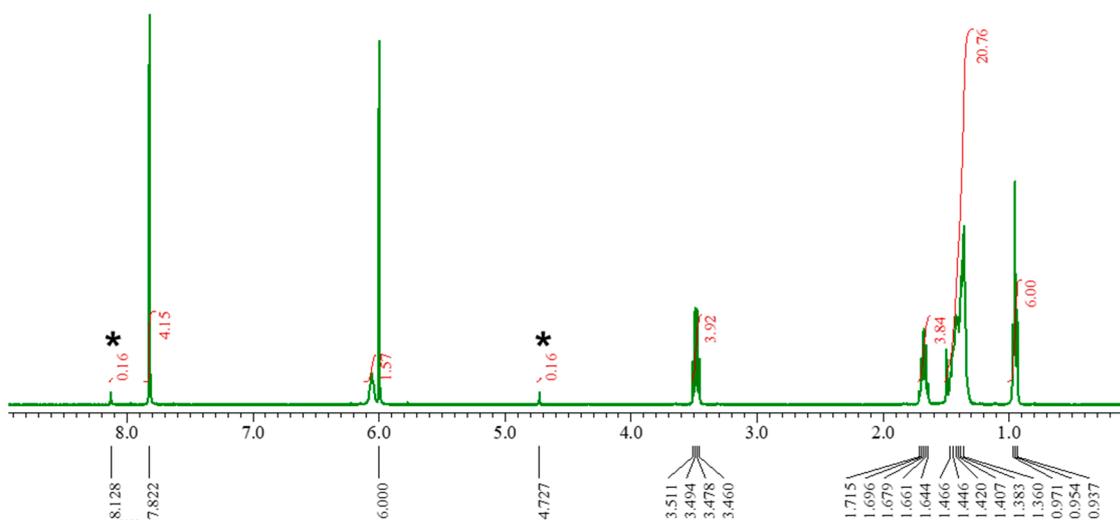


Figure S4. $^1\text{H-NMR}$ spectrum (in tetrachloroethane- d_2 at 100 $^\circ\text{C}$) for di(n -octyl) terephthalimide isolated from the mixture after 16 h (run 12). Resonances marked with * were corresponded to byproduct (PET oligomers).

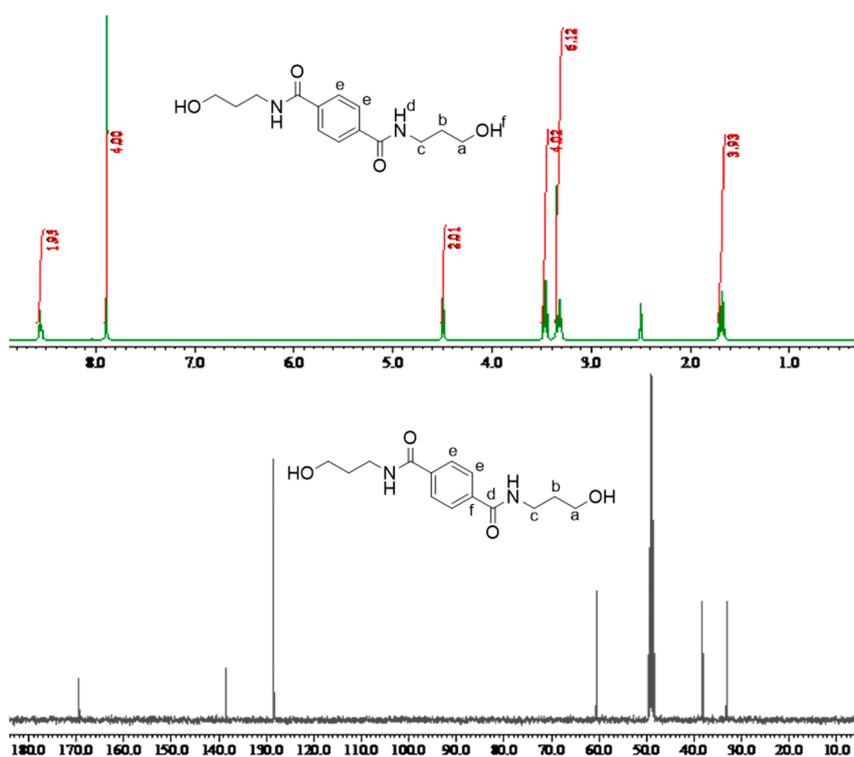


Figure S5. (top) $^1\text{H-NMR}$ spectrum (in $\text{DMSO-}d_6$ at 25 $^\circ\text{C}$) and (bottom) $^{13}\text{C-NMR}$ spectrum for bis(3-hydroxypropyl) terephthalimide (in $\text{methanol-}d_4$ at 25 $^\circ\text{C}$).