

## SUPPLEMENTARY INFO

### Enzyme-Catalyzed Polyurethane Adhesives Degradation

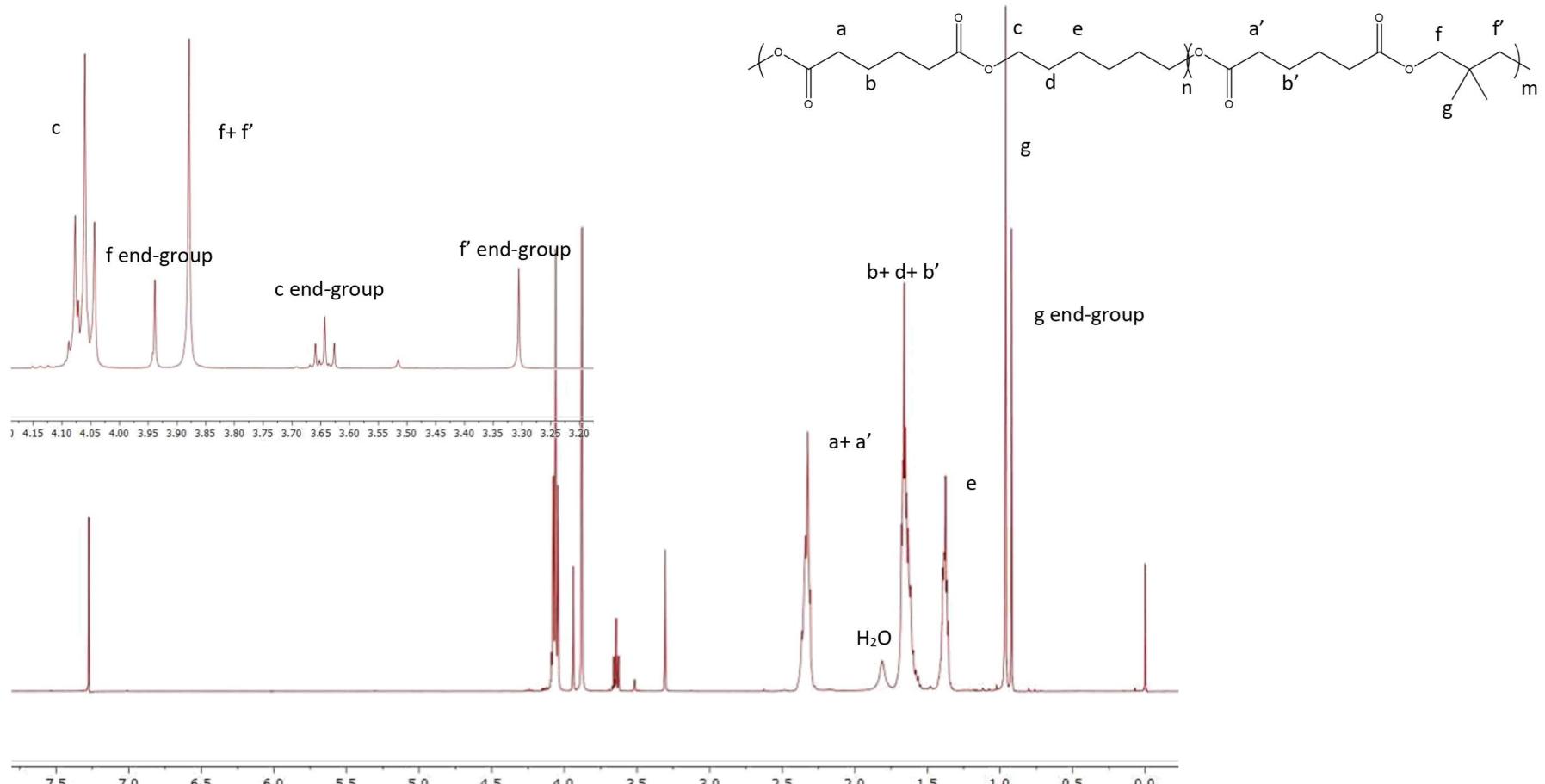
Angela Romano<sup>a</sup>, Antonella Rosato<sup>a</sup>, Laura Sisti<sup>a\*</sup>, Giulio Zanaroli<sup>a</sup>, Svajus Joseph Asadauskas<sup>b†</sup>, Paulina Nemaniutė<sup>b</sup>, Dalia Bražinskienė<sup>b</sup>, Asta Grigucevičienė<sup>b</sup>, Grazia Totaro<sup>a</sup>

<sup>a)</sup> Dipartimento di Ingegneria Civile, Chimica, Ambientale e dei Materiali, Università di Bologna, Via Terracini 28, 40131, Bologna, Italy

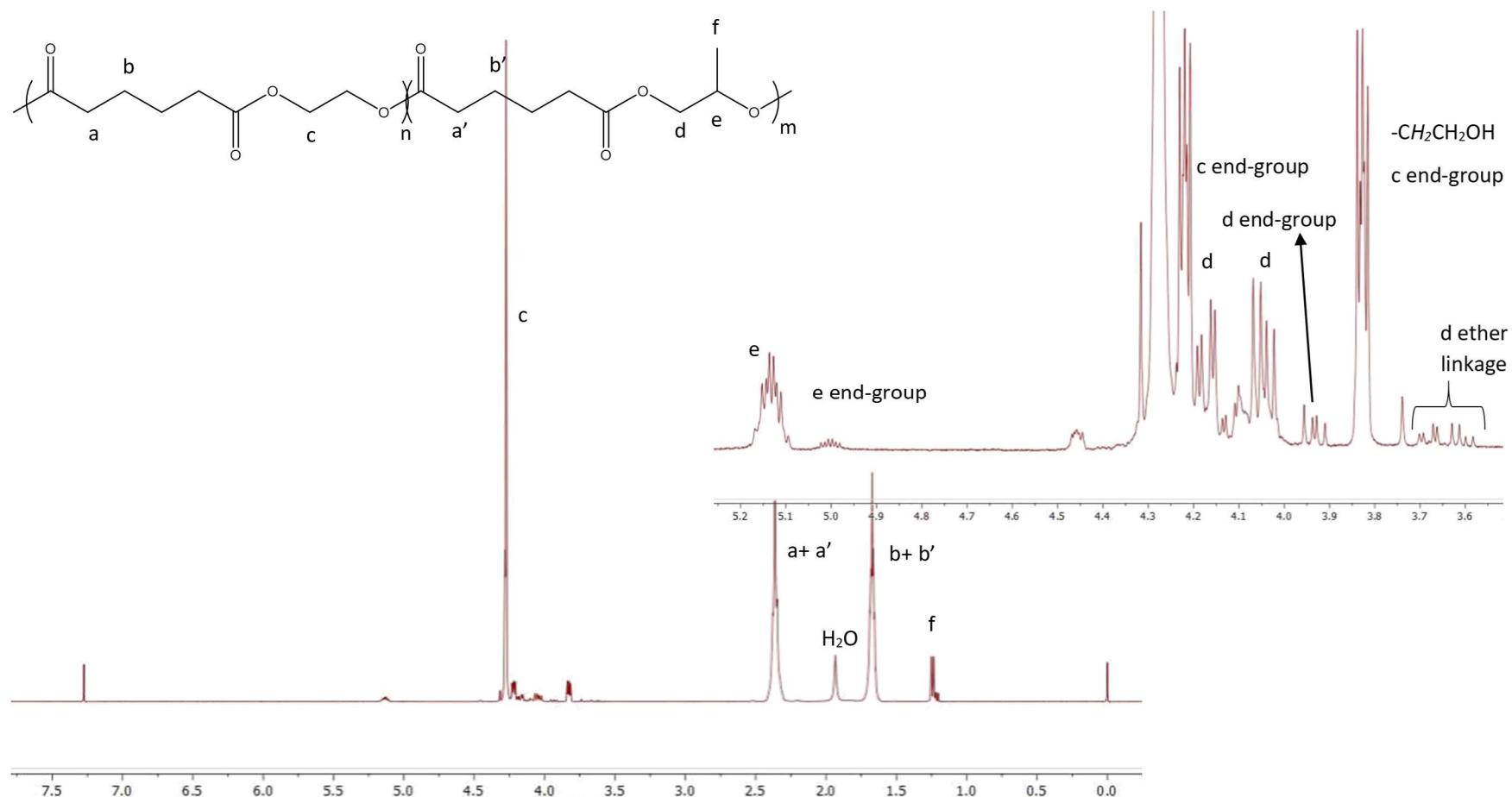
<sup>b)</sup> Center for Physical Sciences and Technology, Department of Chemical Engineering and Technologies, Saulėtekio av. 3, Vilnius, LT-10257

\* Corresponding Author: Laura Sisti laura.sisti@unibo.it

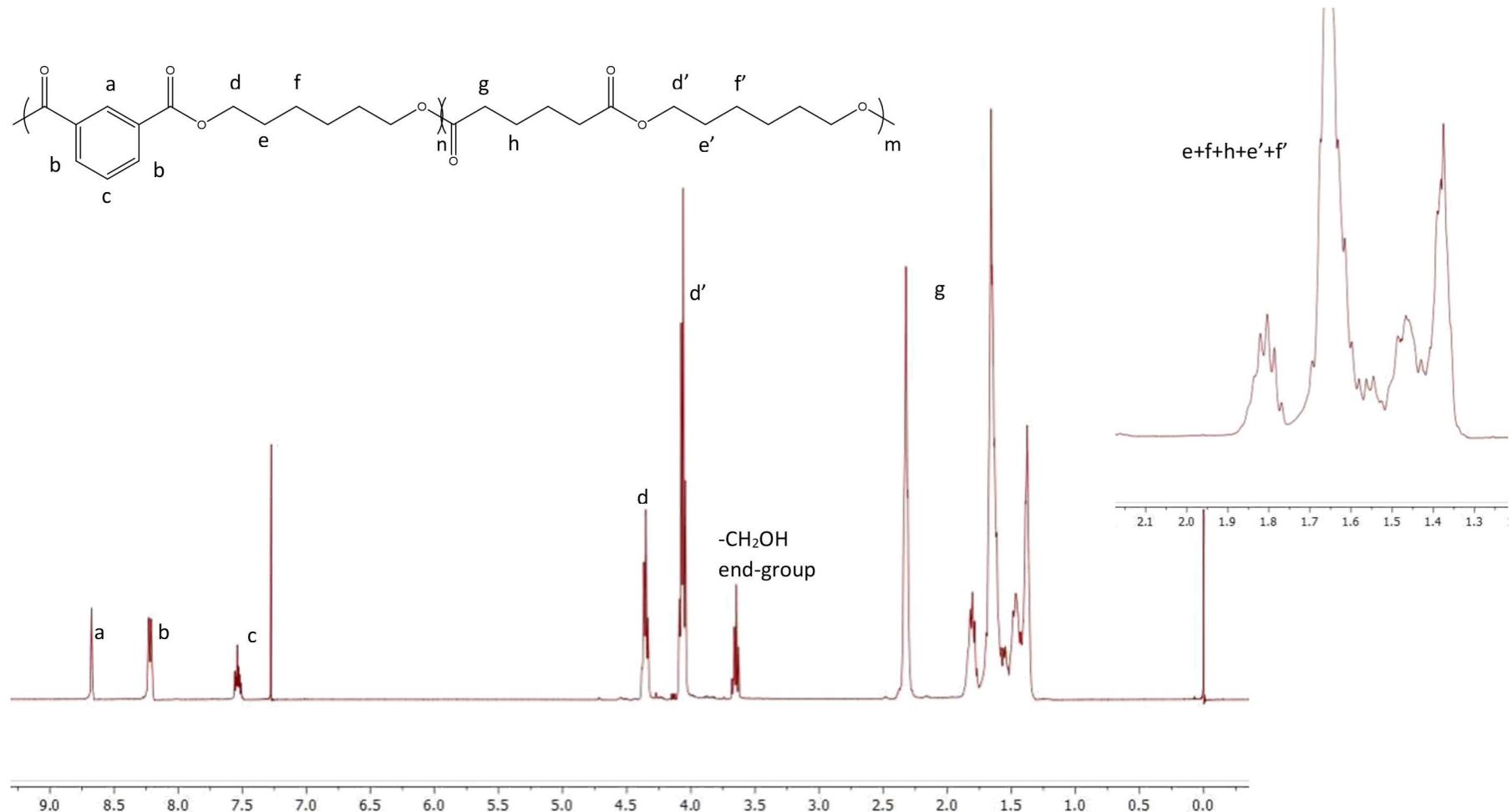
<sup>†</sup>This research article is dedicated to the memory of Dr. Svajus Joseph Asadauskas, friend and colleague, who prematurely left us in July 2023. His enthusiasm for science is a stimulus and an inspiration for his collaborators.



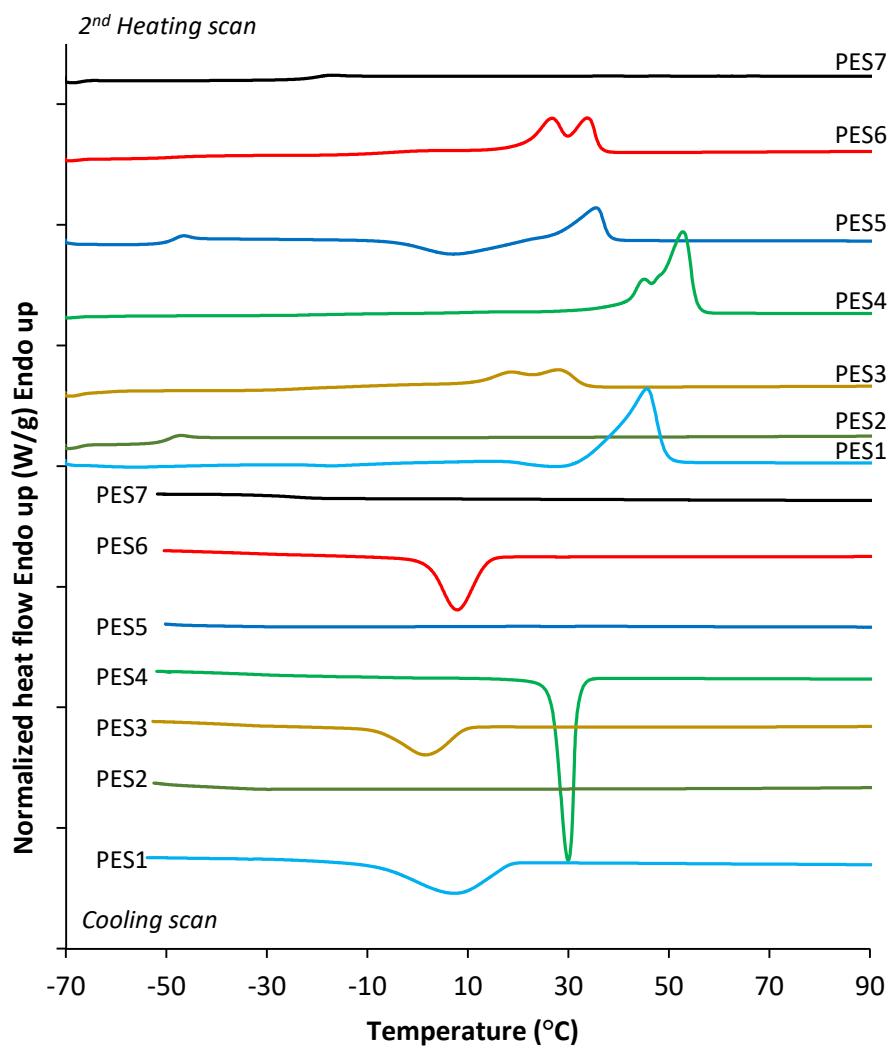
**Figure S1.**  $^1\text{H}$ -NMR of PES3. ( $\text{CDCl}_3$ ,  $\delta$  ppm), 400 MHz: 0.92 (6H, s,  $\text{CH}_3$ ), 0.96 (6H, s,  $\text{CH}_3$ ), 1.36-1.39 (4H, m,  $\text{CH}_2$ ), 1.56-1.59 (12H, m,  $\text{CH}_2$ ), 2.30-2.39 (8H, m,  $\text{CH}_2$ ), 3.31 (2H, s,  $\text{CH}_2$ ), 3.63-3.66 (2H, t,  $\text{CH}_2$ ), 3.88 (4H, s,  $\text{CH}_2$ ), 3.94 (2H, s,  $\text{CH}_2$ ), 4.04-4.08 (4H, t,  $\text{CH}_2$ )



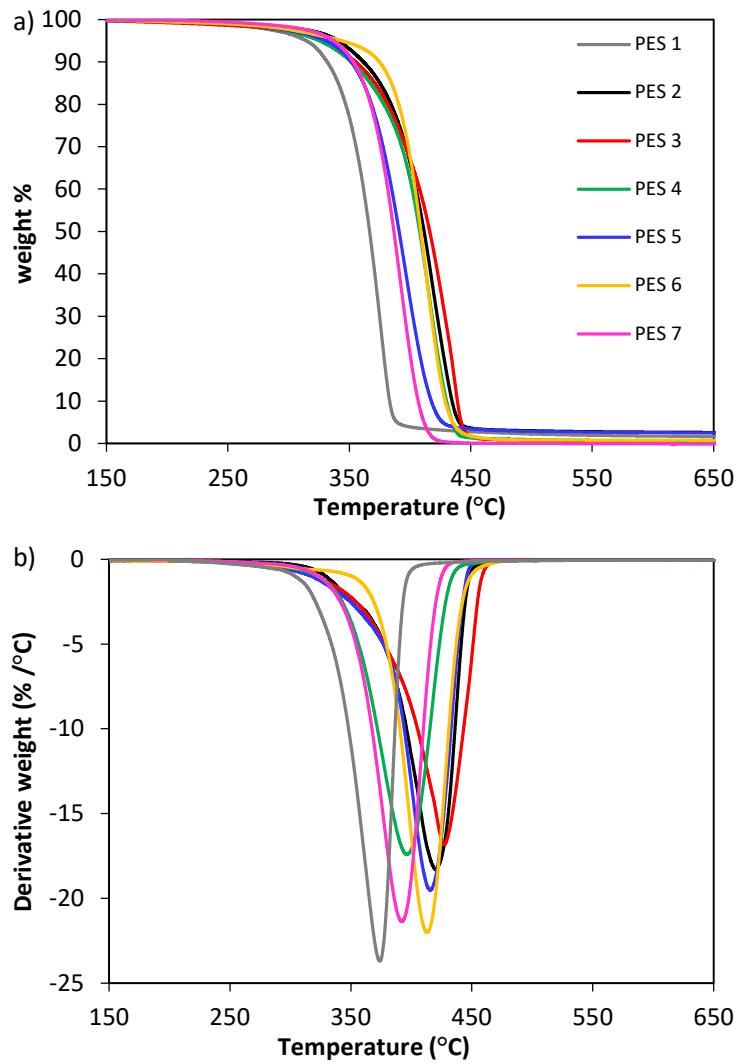
**Figure S2.**  $^1\text{H}$ -NMR of PES5. ( $\text{CDCl}_3$ ,  $\delta$  ppm), 400 MHz: 1.20-1.22 (3H, d,  $\text{CH}_3$ ), 1.23-125 (3H, d,  $\text{CH}_3$ ), 1.65-1.69 (8H, m,  $\text{CH}_2$ ), 2.35-2.39 (8H, m,  $\text{CH}_2$ ), 3.58-3.63 (1H, dd,  $\text{CH}_2$ ), 3.66-3.70 (1H, dd,  $\text{CH}_2$ ), 3.74 (3H, s,  $\text{CH}_3$ ), 3.82-3.84 (2H, t,  $\text{CH}_2$ ), 3.91-3.95 (1H, dd,  $\text{CH}_2$ ), 4.02-4.07 (1H, dd,  $\text{CH}_2$ ), 4.15-4.19 (1H, dd,  $\text{CH}_2$ ), 4.21-4.23 (2H, t,  $\text{CH}_2$ ), 4.27 (4H, s,  $\text{CH}_2$ ), 4.98-5.02 (1H, m,  $\text{CH}$ ), 5.09-5.17 (1H, m,  $\text{CH}$ )



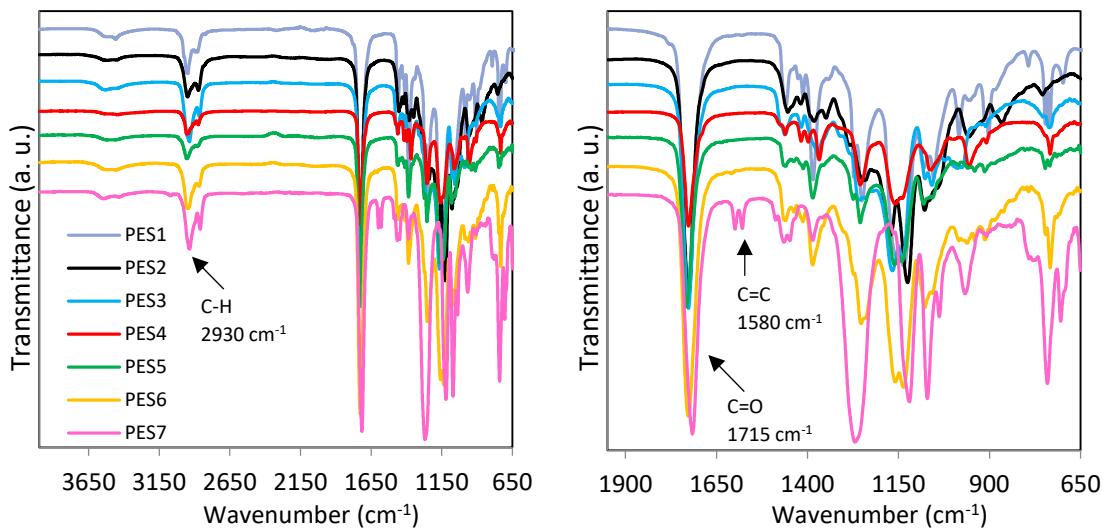
**Figure S3.**  $^1\text{H}$ -NMR of PES6. ( $\text{CDCl}_3$ ,  $\delta$  ppm), 400 MHz: 1.38-1.84 (20H, m,  $\text{CH}_2$ ), 2.31-2.32 (4H, t,  $\text{CH}_2$ ), 3.63-3.68 (2H, m,  $\text{CH}_2\text{OH}$ ), 4.04-4.09 (4H, t,  $\text{CH}_2$ ), 4.33-4.38 (4H, t,  $\text{CH}_2$ ), 7.51-7.56 (1H, m,  $\text{CH}_{\text{ar}}$ ), 8.21-8.23 (2H, d,  $\text{CH}_{\text{ar}}$ ), 8.68 (1H, s,  $\text{CH}_{\text{ar}}$ )



**Figure S4.** DSC profiles of macrodiols.



**Figure S5.** Thermogravimetric curves of macrodiols: TGA a) and dTGA b).



**Figure S6.** ATR FT-IR curves of macrodiols; zoom region (1950-650 cm<sup>-1</sup>) on the right side.