SUPPORTING INFORMATION

Nanostructured films from poly(3-hexylthiophene)-graft-poly(ε-caprolactone) as light responsive generators of reactive oxygen species

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SUPPLEMENTARY FIGURES AND TABLES

Table S1 Thickness of the films before and after the thermo-oxidative process.

Film	Thickness (µm) Before thermo-oxidation	Thickness (µm) After thermo-oxidation
P3HT	6.3 ± 1.0	5.8 ± 1.8
$P3HT_{95}$-*g*-PCL_5	5.6 ± 3.6	5.0 ± 2.9
$P3HT_{82}$-*g*-PCL_{18}	5.3 ± 2.9	1.8 ± 1.5

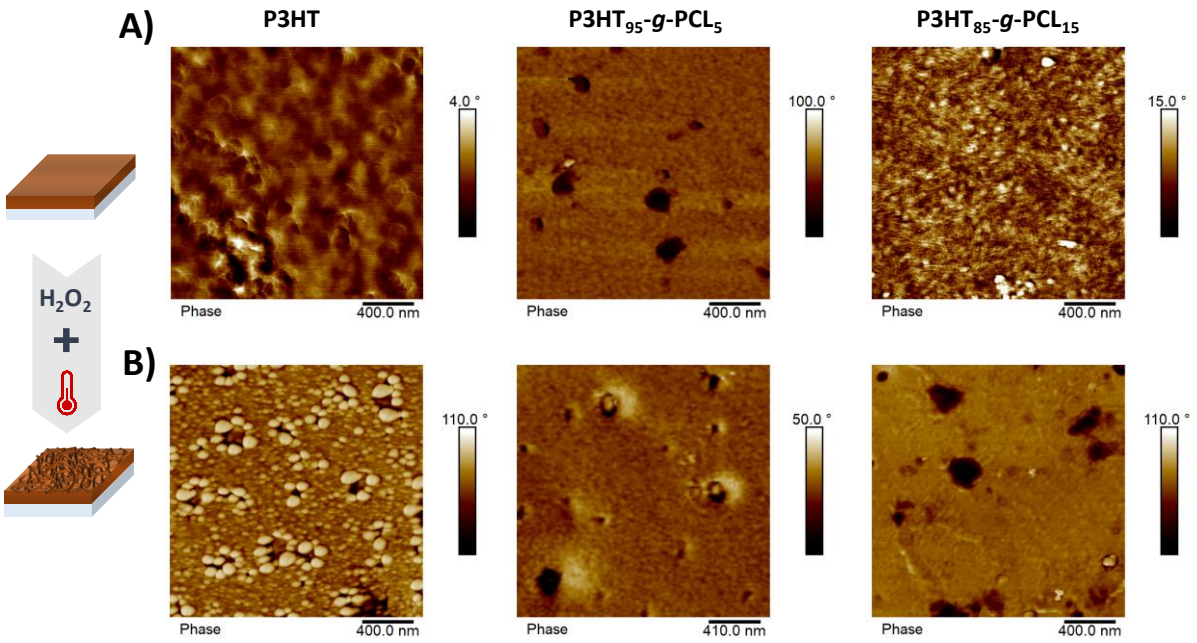

Fig. S1 Phase AFM images of the films A) before and B) after the thermo-oxidative process.

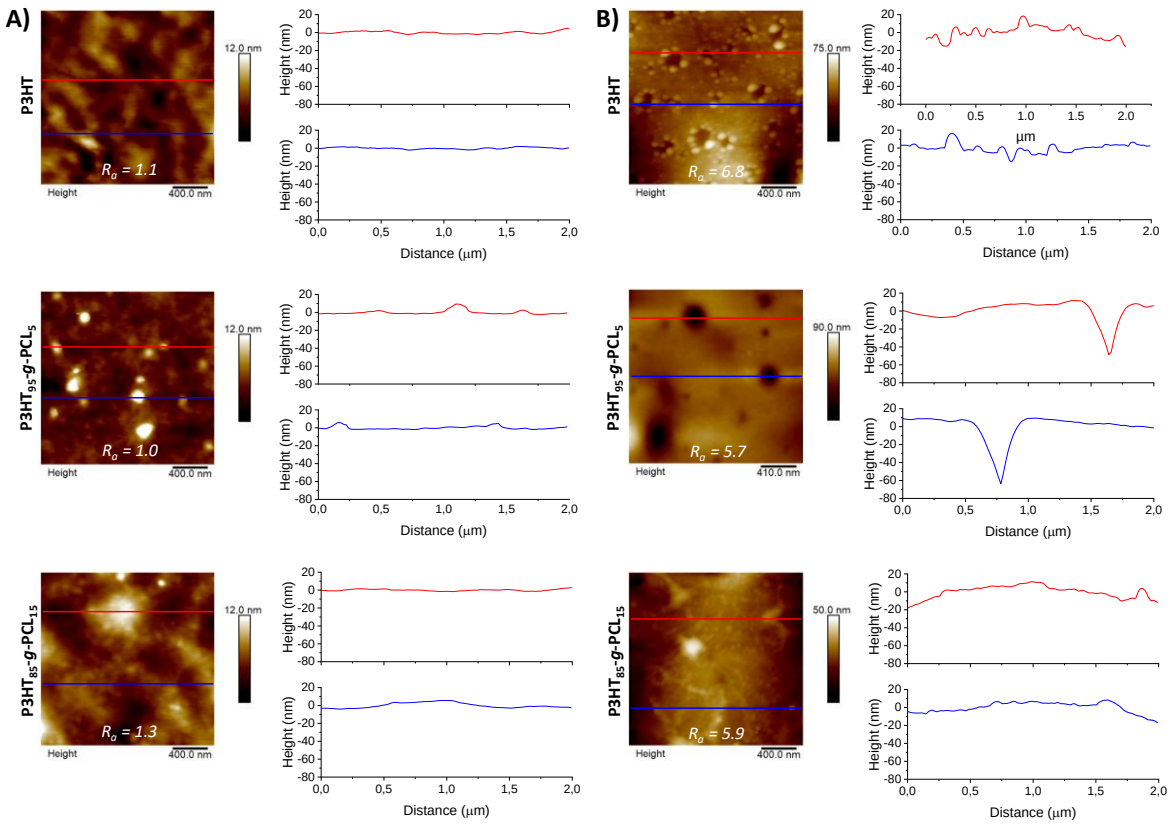

Fig. S2 Topographical AFM images of the films A) before and B) after the thermo-oxidative process. The red and blue lines show the cut positions to determine the pore dimensions in the graphs shown to the right of the AFM images.

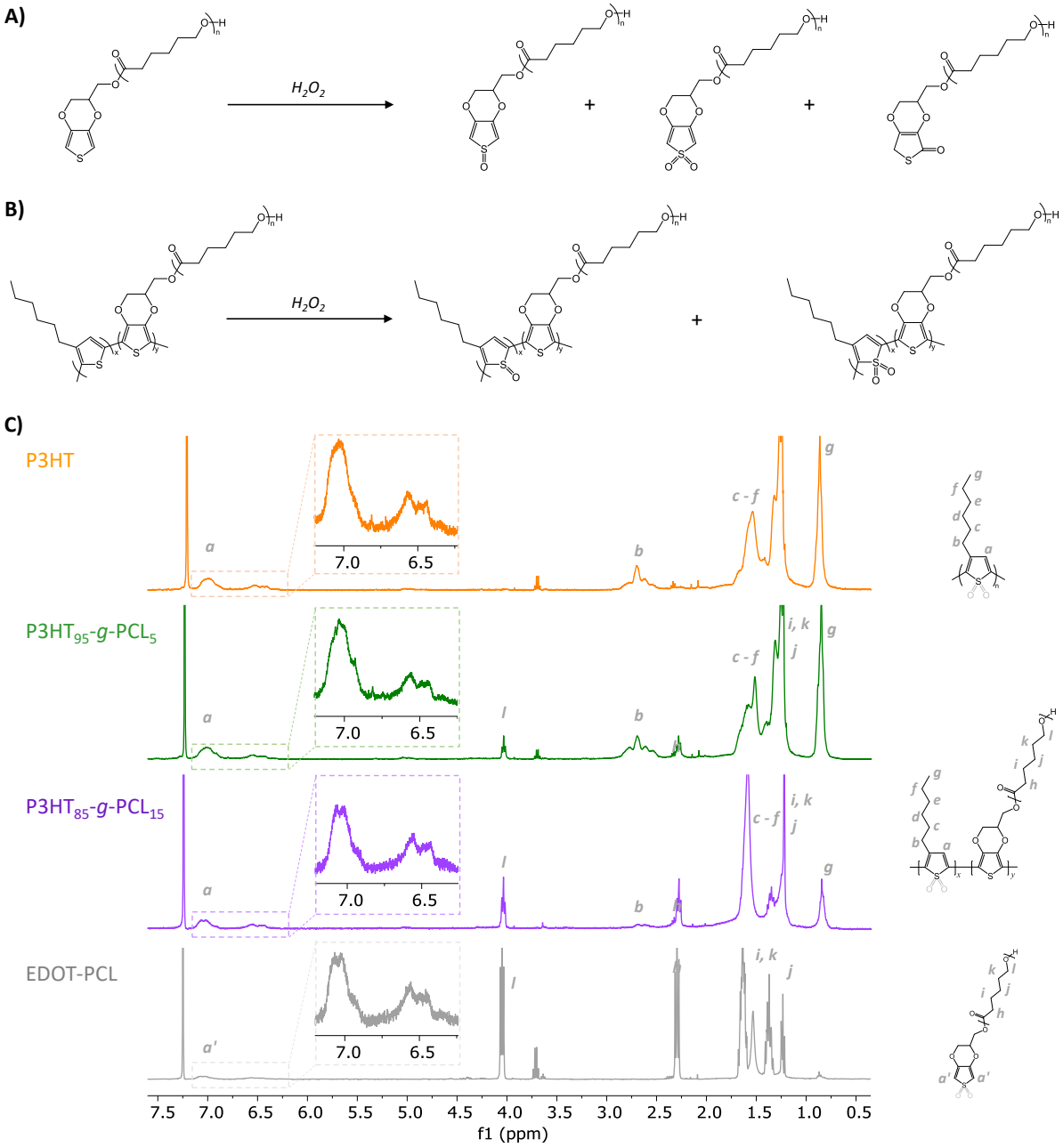

Fig. S3 Chemical route employed to oxidize the A) macromonomer α-EDOT-PCL, and B) P3HT-based copolymers in the presence of H_2O_2. C) ^{1}H NMR spectra of the films, homopolymer P3HT (orange curve), graft copolymers $P3HT_{95}$-*g*-PCL_5 (green curve), $P3HT_{85}$-*g*-PCL_{15} (purple curve), and macromonomer α-EDOT-PCL (grey curve), after the thermo-oxidative treatment.

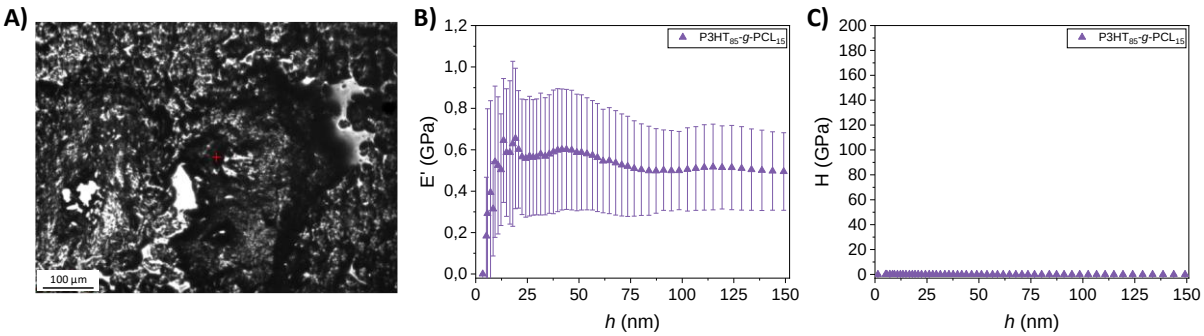

Fig. S4 A) Optical microscope image of P3HT$_{85}$-*g*-PCL$_{15}$ films. B) Storage modulus (E') and C) Hardness (H) of P3HT$_{85}$-*g*-PCL$_{15}$ films.

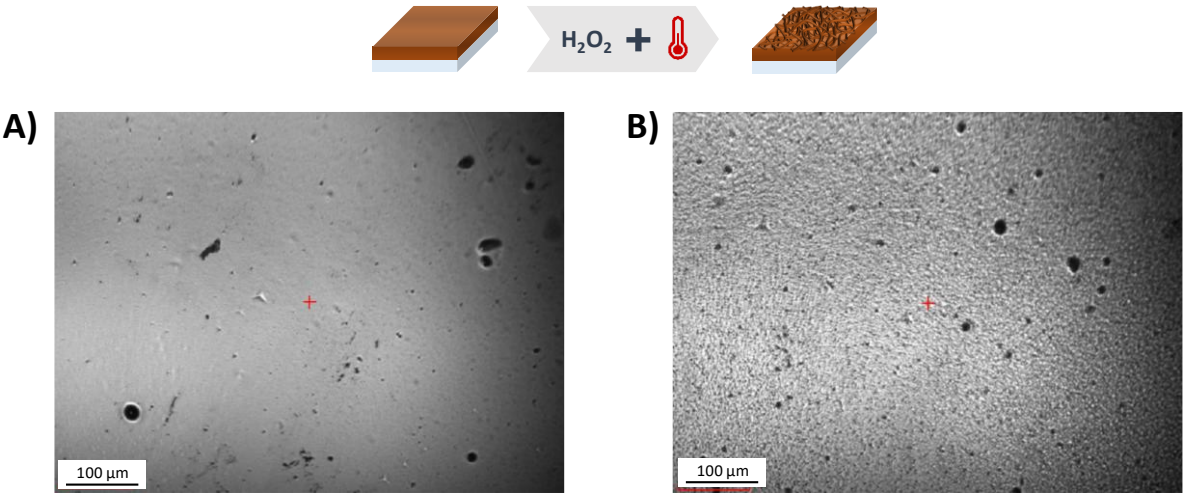

Fig. S5 Optical microscope images of P3HT$_{95}$-*g*-PCL$_{5}$ films A) before and B) after the thermo-oxidative treatment.

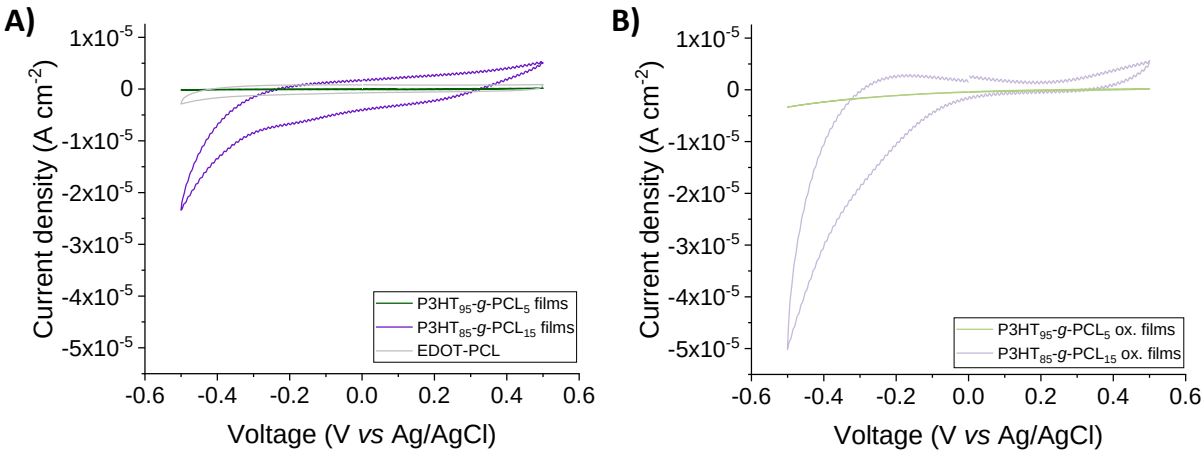

Fig. S6 Cyclic voltammetries of the copolymers coating ITO electrodes before (A) and after (B) the thermo-oxidative treatment.

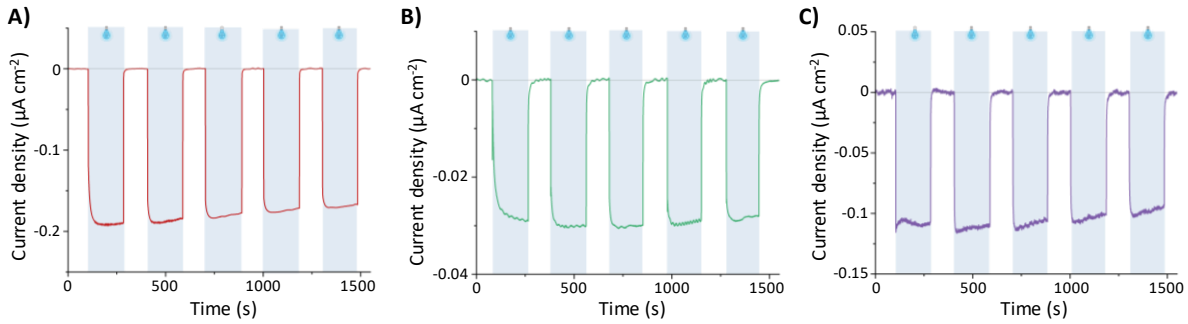

Fig. S7 Photocurrent density of oxidized A) P3HT, B) $P3HT_{95}$-*g*-PCL_5, and C) $P3HT_{85}$-*g*-PCL_{15} films during successive illumination cycles at 67 mW cm^{-2}. The photocurrent densities have been normalized with respect to the thickness of the different samples.

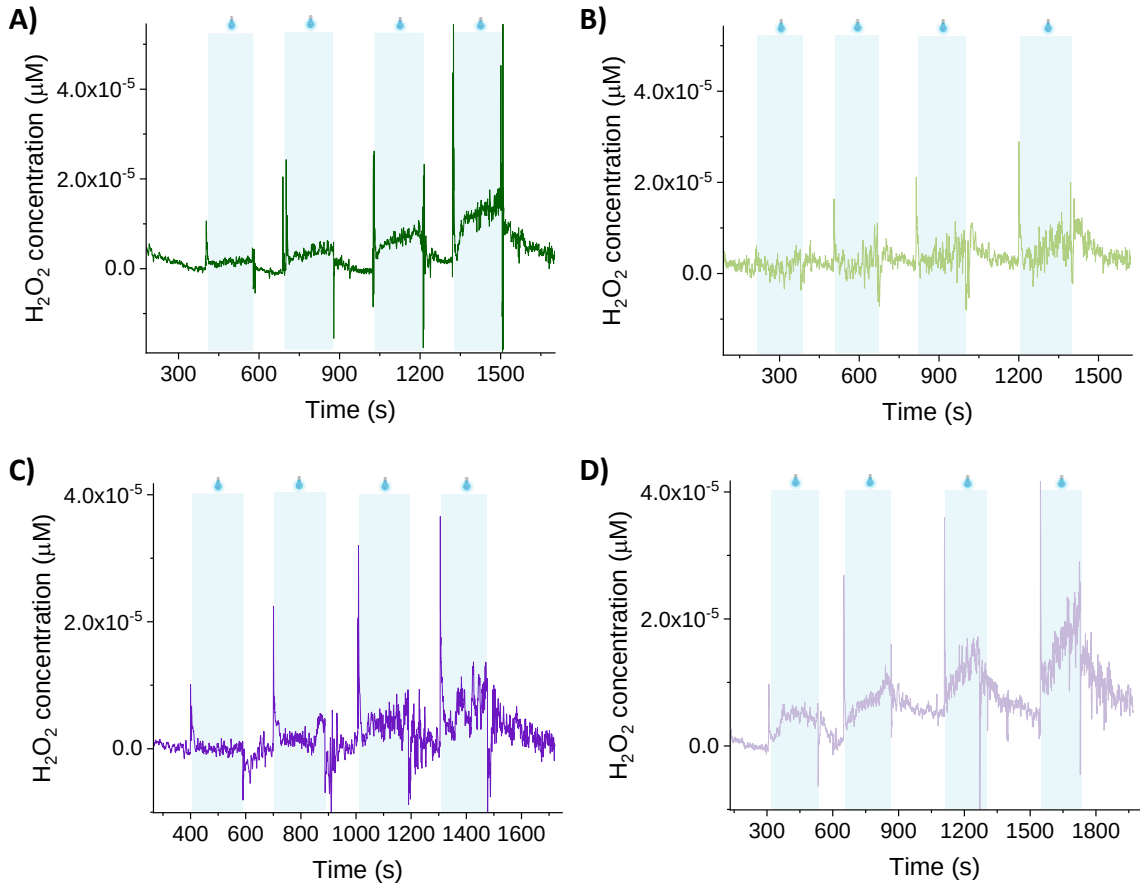

Fig. S8 Time evolution of H_2O_2 generation during photostimulation for P3HT$_{95}$-*g*-PCL$_5$ and P3HT$_{85}$-*g*-PCL$_{15}$ before (A, C) and after (B, D) the thermo-oxidative process, respectively.