## Dramatic differences in fluorescence of AIEgens-doped micro- and

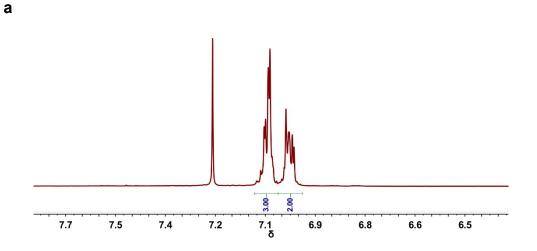
## macrophase separated systems

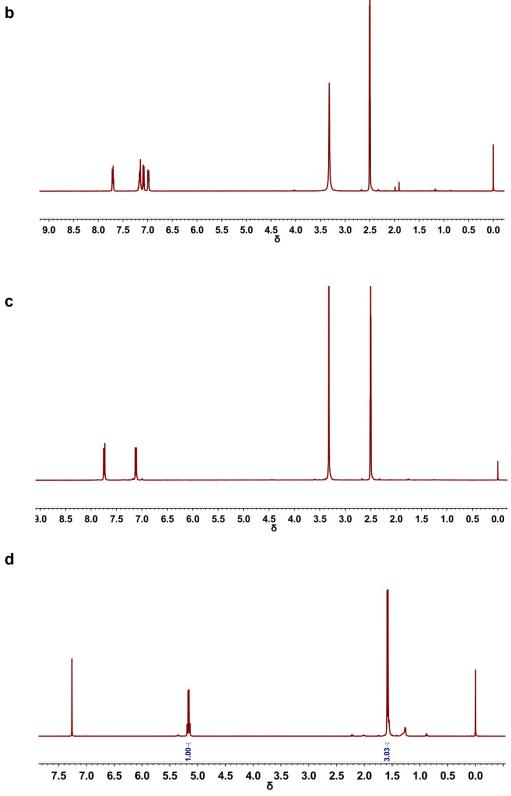
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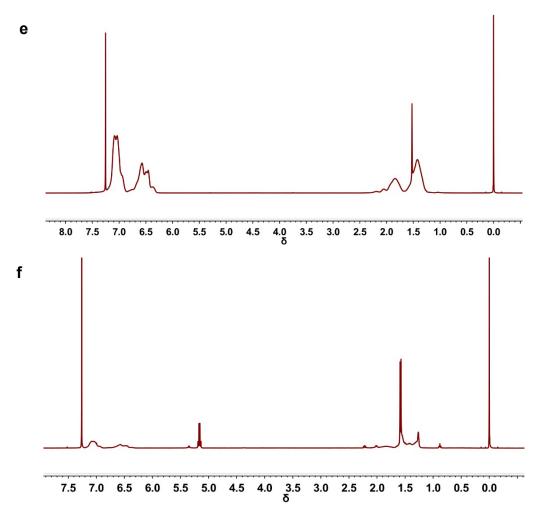
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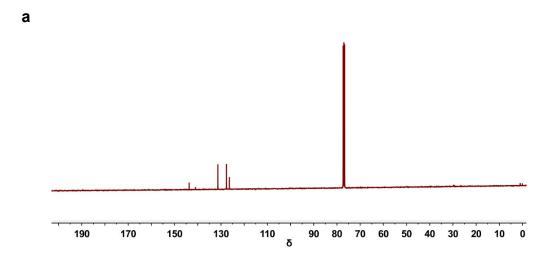
<sup>c</sup> Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing 100190, P. R. China.

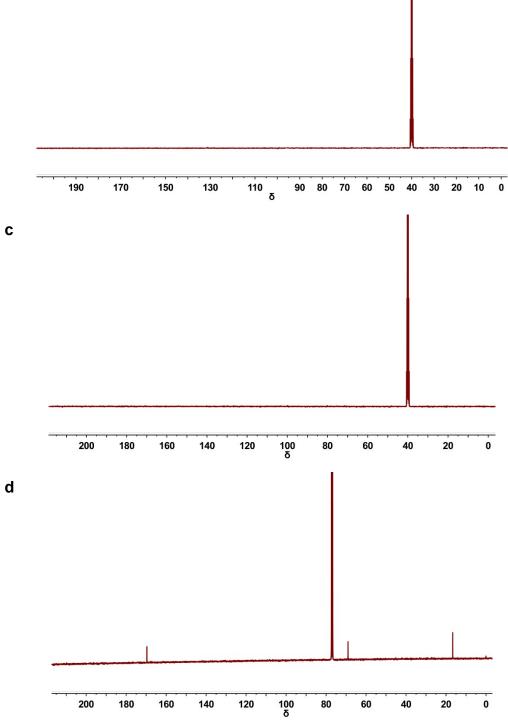


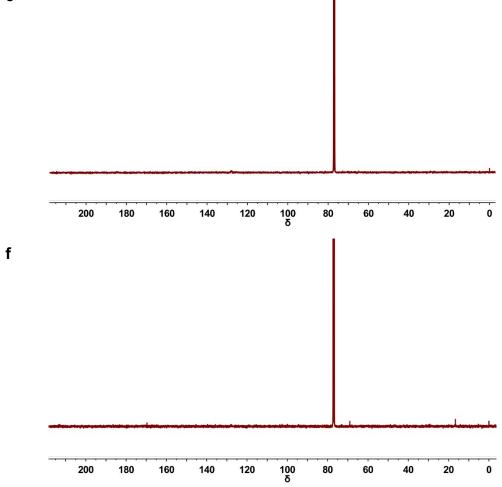




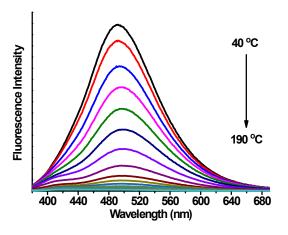
**Figure S1.** The <sup>1</sup>H-NMR of (a) TPE, (b) TPE-2COOH, (c)TPE-4COOH, (d)PLA, (e)PS, (f) PS*b*-PLA.



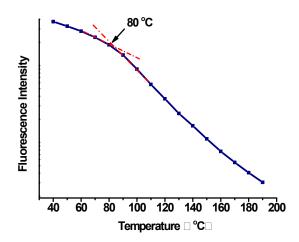




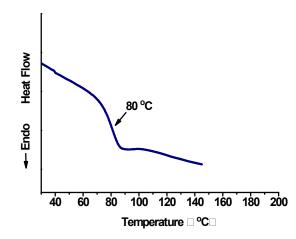
**Figure S2.** The <sup>13</sup>C-NMR of (a) TPE, (b) TPE-2COOH, (c) TPE-4COOH, (d) PLA, (e) PS, (f) PS*b*-PLA.



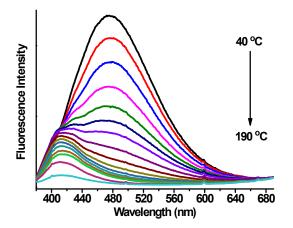
**Figure S3.** The fluorescence spectra of TPE@PS at different temperatures ranging from 40 °C to 190 °C.



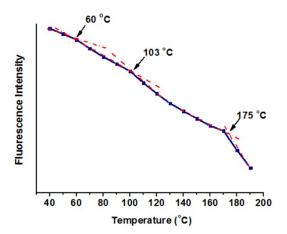
**Figure S4.** The fluorescence intensity of TPE@PS as a function of temperature, indicating one  $T_g$  of PS at 80 °C.



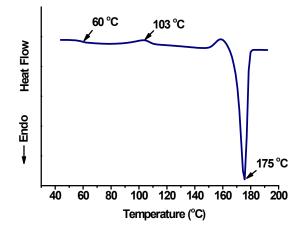
**Figure S5.** The DSC curve of the homopolymer TPE@PS, showing the  $T_g$  of PS at 80 °C, in accordance to the  $T_g$  of PS in Figure S2.



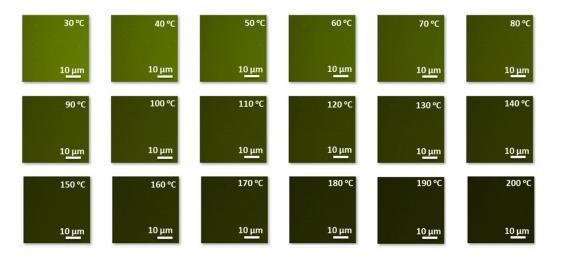
**Figure S6.** The fluorescence spectra of TPE@PLA at different temperatures ranging from 40 °C to 190 °C.



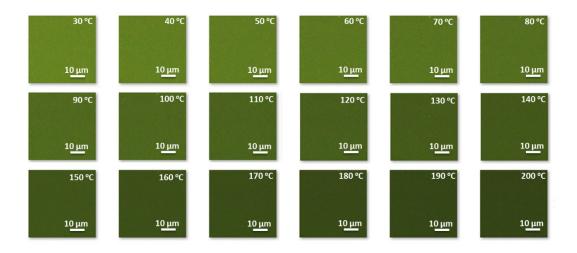
**Figure S7.** The fluorescence intensity of TPE@PLA as a function of temperature, indicating glass transition (60 °C), cold crystallization transition (103 °C) and Melting point ( $T_m$ =175 °C).



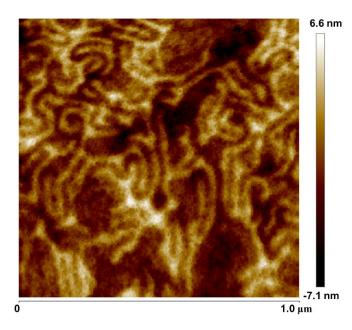
**Figure S8.** The DSC curve of the homopolymer TPE@PLA, showing glass transition (60 °C), cold crystallization transition (103 °C) and Melting point ( $T_m$ =175 °C), in accordance to the results in Figure S5.



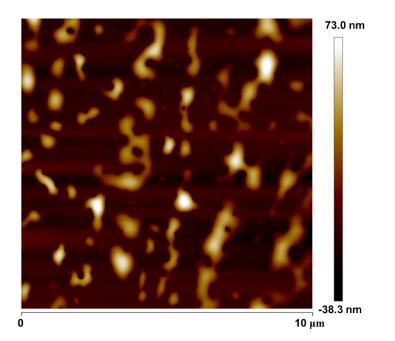
**Figure S9.** The fluorescent microscopy images of TPE@PS-*b*-PLA at different temperatures ranging from 30 °C to 200 °C.



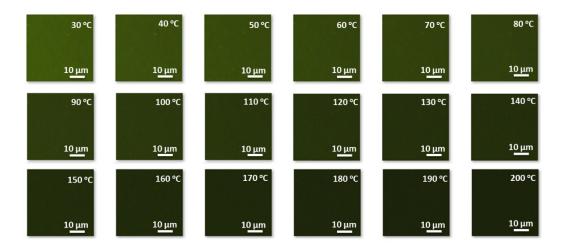
**Figure S10.** The fluorescent microscopy images of TPE@PS/PLA at different temperatures ranging from 30 °C to 200 °C.



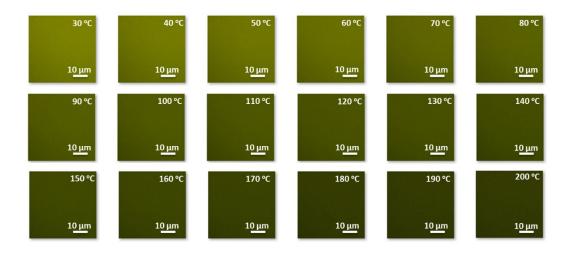
**Figure S11.** The AFM image of the block copolymer PS-*b*-PLA (Height image), indicating microphase separation structure.



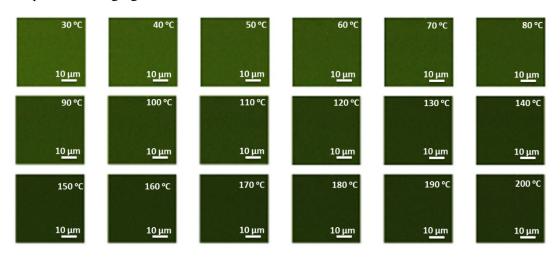
**Figure S12.** The AFM image of the polymer blend PS/PLA (Height image), indicating macrophase separation structure.



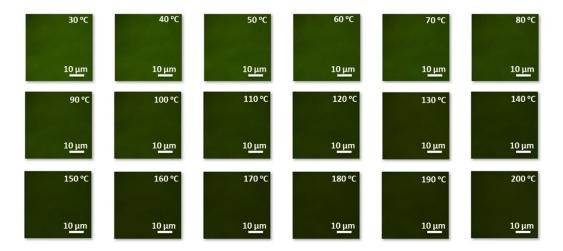
**Figure S13.** The fluorescent microscopy images of TPE-4COOH@PS-b-PLA at different temperatures ranging from 30 °C to 200 °C.



**Figure S14.** The fluorescent microscopy images of TPE-4COOH@PS/PLA at different temperatures ranging from 30 °C to 200 °C.



**Figure S15.** The fluorescent microscopy images of TPE-2COOH@PS-b-PLA at different temperatures ranging from 30 °C to 200 °C.



**Figure S16.** The fluorescent microscopy images of TPE-2COOH@PS/PLA at different temperatures ranging from 30 °C to 200 °C.