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Electronic Supplementary Information

Towards White-Light Emission of Fluorescent Polymeric Nanoparticles with a Single Luminogen Possessing AIE and TICT Properties

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Measurement of PL spectra of PNPs without TPE-TCF.

For measuring the PL spectra of emulsions of PNPs without TPE-TCF, 200 μL of each emulsion was diluted with 2 mL of water and added to a quartz cuvette. The PL spectra were measured on the same fluorescence spectrofluorometer at an excitation wavelength of 460 or 360 nm.

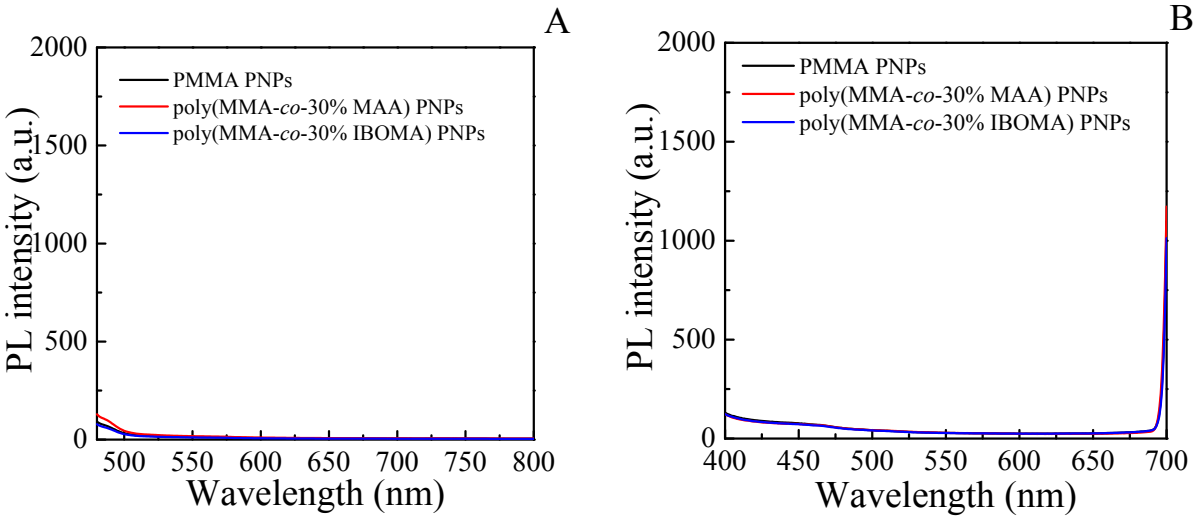


Fig. S1. PL spectra of PMMA, poly(MMA-*co*-30%MAA), and poly(MMA-*co*-30%IBOMA) PNPs excited at 460 nm (A) and 360 nm (B), respectively.

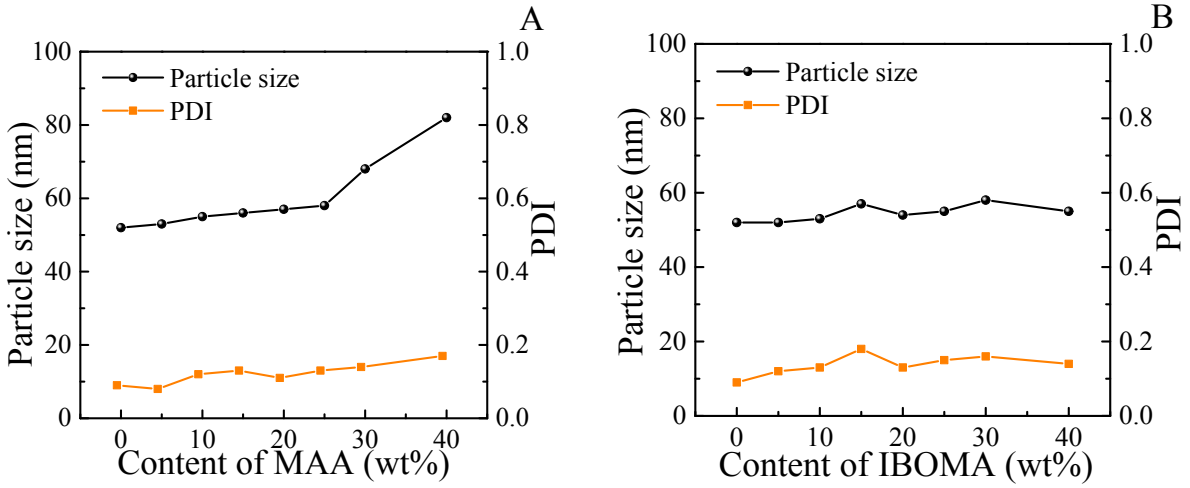


Fig. S2. (A) Particle sizes and PDIs of poly(MMA-*co*-MAA) with various MAA contents. (B) Particle sizes and PDIs of poly(MMA-*co*-IBOMA) with various IBOMA contents.

^{1}H nuclear magnetic resonance (^{1}H NMR) measurement.

In order to obtain purified polymer samples, the solid polymer samples were firstly dissolved in tetrahydrofuran, and then were precipitated by addition of ethanol. The precipitated samples were collected by centrifugation at 12,000 rpm for 10 min. The dissolution–precipitation cycle was repeated for three times to remove the unreacted

monomers and other impurities.

^{1}H NMR spectra of PMMA, poly(MMA-*co*-30%MAA), and poly(MMA-*co*-30%IBOMA) PNPs were determined on a Bruker AV 400 NMR spectrometer using tetramethylsilane as the internal standard. Considering the solubility of copolymers in various solvents, the ^{1}H NMR spectra of PMMA and poly(MMA-*co*-30%MAA) in Fig. S3A were measured by using dimethyl sulfoxide-d6 as the solvent, while the ^{1}H NMR spectra of PMMA and poly(MMA-*co*-30%IBOMA) in Fig. S3B were determined by using chloroform-d as the solvent.

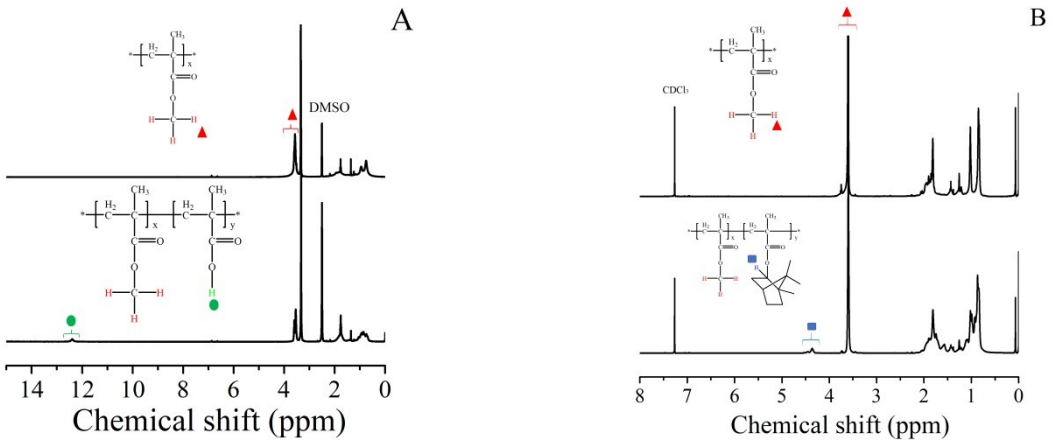


Fig. S3. (A) ^{1}H NMR spectra of PMMA and poly(MMA-*co*-30%MAA) by using dimethyl sulfoxide-d6 as the solvent. (B) ^{1}H NMR spectra of PMMA and poly(MMA-*co*-30%IBOMA) by using chloroform-d as the solvent.

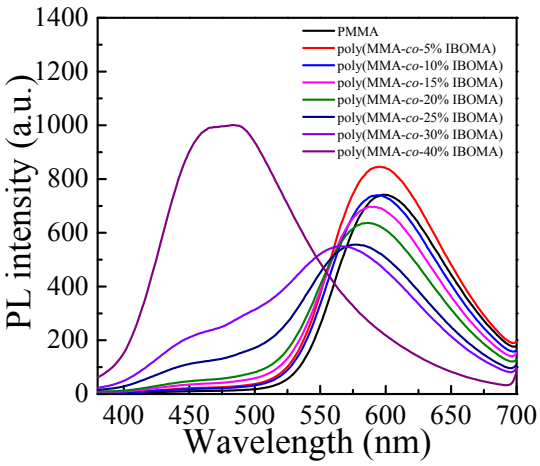
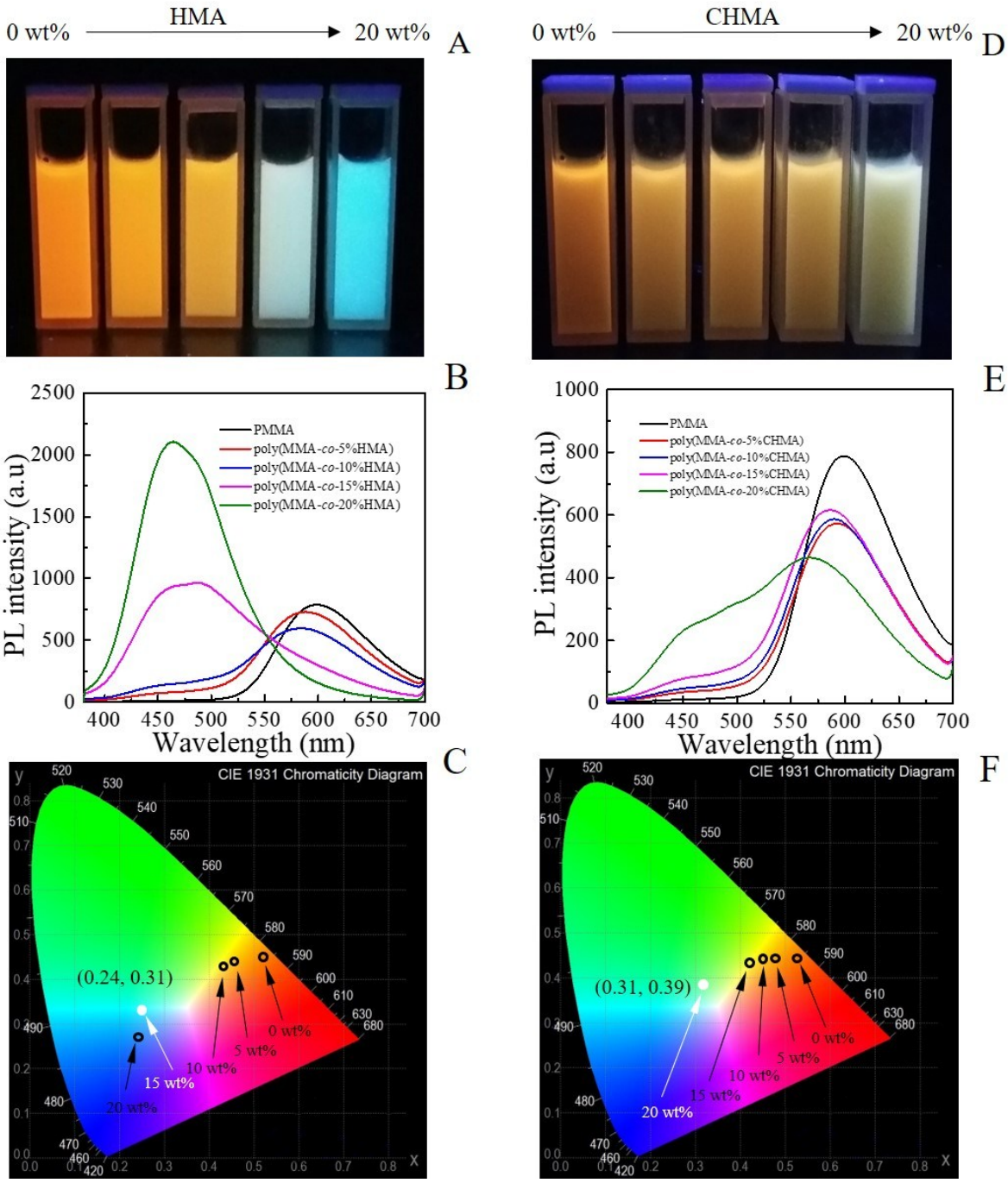
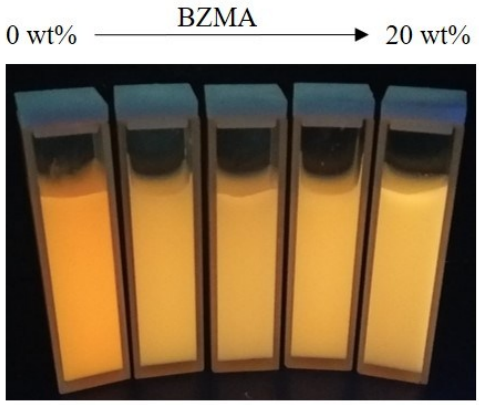
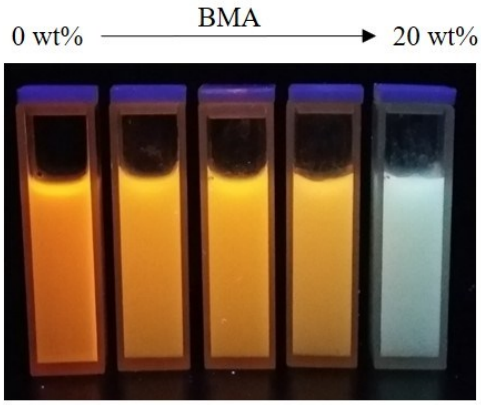


Fig. S4. PL spectra of poly(MMA-*co*-IBOMA)/TPE-TCF AIE-PNPs with various IBOMA contents excited at 360 nm.

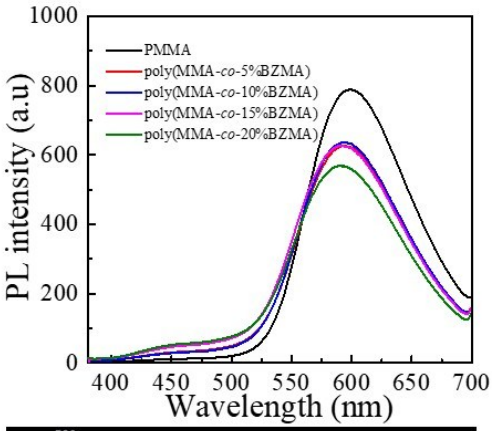

0 wt%
HMA
20 wt%
A
B
PMMA
poly(MMA-co-5%HMA)
poly(MMA-co-10%HMA)
poly(MMA-co-15%HMA)
poly(MMA-co-20%HMA)
PL intensity (a.u)
Wavelength (nm)
C
CIE 1931 Chromaticity Diagram
(0.24, 0.31)
0 wt%
5 wt%
10 wt%
15 wt%
20 wt%
0 wt%
CHMA
20 wt%
D
E
PMMA
poly(MMA-co-5%CHMA)
poly(MMA-co-10%CHMA)
poly(MMA-co-15%CHMA)
poly(MMA-co-20%CHMA)
PL intensity (a.u)
Wavelength (nm)
F
CIE 1931 Chromaticity Diagram
(0.31, 0.39)
0 wt%
5 wt%
10 wt%
15 wt%
20 wt%


0 wt%
BZMA
20 wt%

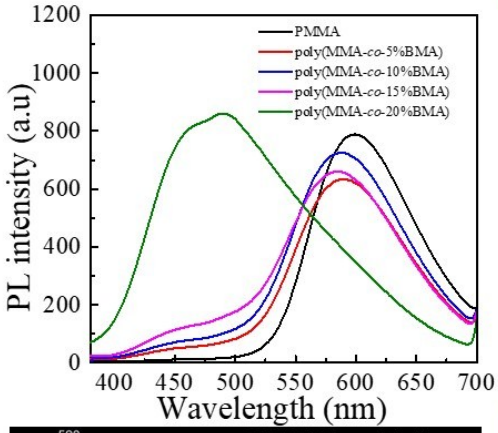
G


0 wt%
BMA
20 wt%

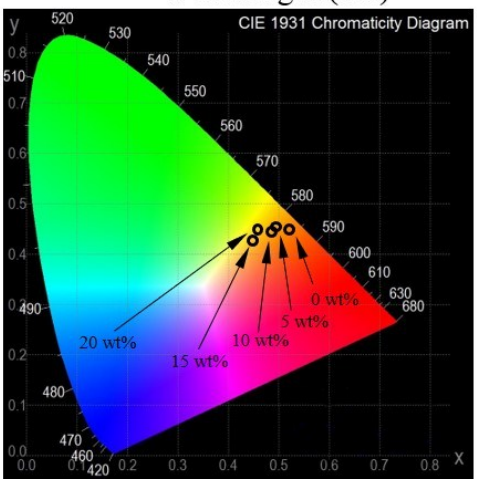
J


PMMA
poly(MMA-co-5%BZMA)
poly(MMA-co-10%BZMA)
poly(MMA-co-15%BZMA)
poly(MMA-co-20%BZMA)
PL intensity (a.u)
Wavelength (nm)

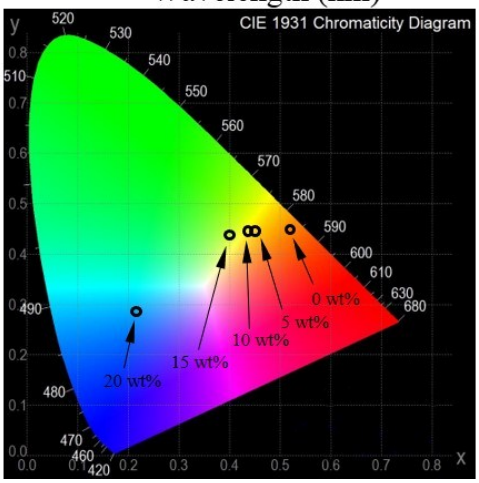
H


PMMA
poly(MMA-co-5%BMA)
poly(MMA-co-10%BMA)
poly(MMA-co-15%BMA)
poly(MMA-co-20%BMA)
PL intensity (a.u)
Wavelength (nm)

K


CIE 1931 Chromaticity Diagram
0 wt%
5 wt%
10 wt%
15 wt%
20 wt%

I


CIE 1931 Chromaticity Diagram
0 wt%
5 wt%
10 wt%
15 wt%
20 wt%

L

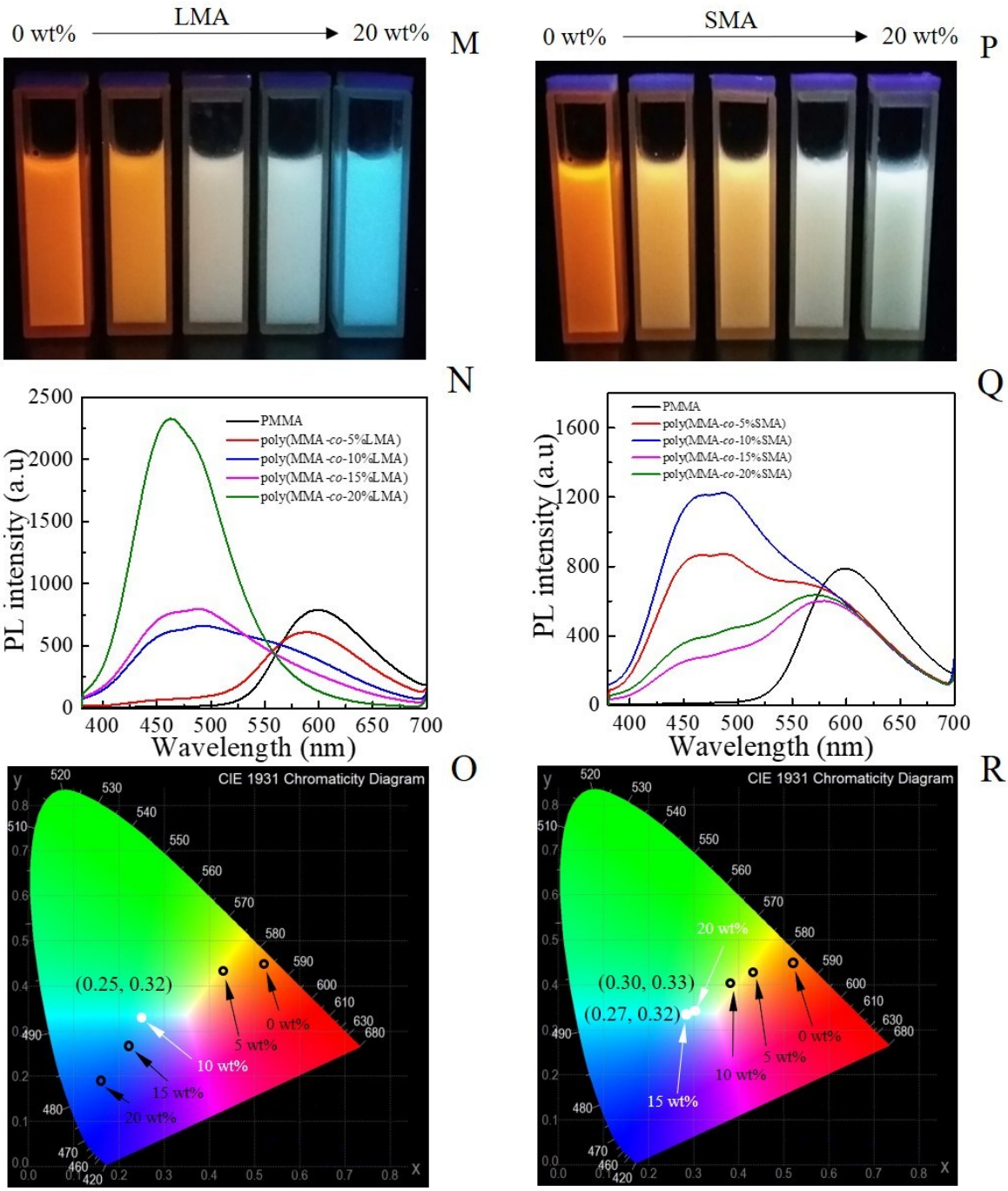


Fig. S5. Photos of polymer/TPE-TCF AIE-PNP emulsions under irradiation of 365 nm UV light (A, poly(MMA-*co*-HMA); D, poly(MMA-*co*-CHMA); G, poly(MMA-*co*-BZMA); J, poly(MMA-*co*-BMA); M, poly(MMA-*co*-LMA); P, poly(MMA-*co*-SMA)). PL spectra of polymer/TPE-TCF AIE-PNPs excited at 360 nm (B, poly(MMA-*co*-HMA); E, poly(MMA-*co*-CHMA); H, poly(MMA-*co*-BZMA); K, poly(MMA-*co*-BMA); N, poly(MMA-*co*-LMA); Q, poly(MMA-*co*-SMA)). CIE coordinates of polymer/TPE-TCF AIE-PNPs with

various monomer combinations and compositions excited by 360 nm UV light (C, poly(MMA-*co*-HMA); F, poly(MMA-*co*-CHMA); I, poly(MMA-*co*-BZMA); L, poly(MMA-*co*-BMA); O, poly(MMA-*co*-LMA); R, poly(MMA-*co*-SMA)).