Electronic Supplementary Material (ESI) for Journal of Materials Chemistry C.
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Supporting Information

Photo-Polymerization Induced Tightened Domain Enhancing the Room-Temperature Phosphorescence Emission

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KEYWORDS: Room Temperature Phosphorescence, Photo-Polymerization, Polydiacetylene

^{1}H NMR and ^{13}C NMR spectra of CZEO-PCDA monomers:

^{1}H NMR (300 MHz, $CDCl_3$) δ 8.03(d, *J*=7.8 Hz, 2H), δ 7.40(m, 4H), δ 7.21(d, *J*=6.1, 1.7 Hz, 2H), δ 4.50（t, *J*=5.6 Hz, 2H), δ 4.40(t, *J*=5.6 Hz, 2H), δ 2.19(m, 6H), δ 1.41(m, 8H), δ1.14(d, *J*=22.9 Hz, 24H), δ 0.88(t, *J*=6.6 Hz 3H).

^{13}C NMR (75 MHz, $CDCl_3$) δ 173.64, 140.44, 125.79, 123.05, 120.40, 119.27, 108.58, 65.02, 61.98, 41.70, 34.09, 31.94, 29.33, 28.63, 24.62, 22.71, 19.23, 14.15.

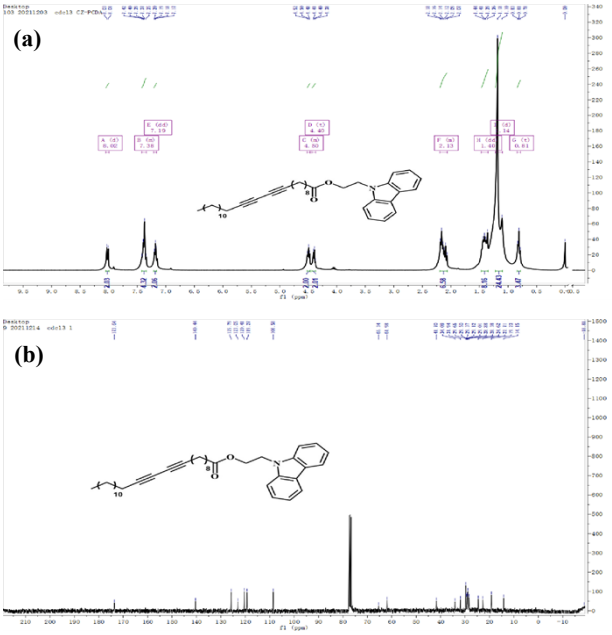

Figure S1. (a) ^{1}H NMR and (b) ^{13}C NMR spectra of CZEO-PCDA monomers.

^{1}H NMR specta of Br-CZEO, Br-CZEO-PCDA monomers and ^{13}C NMR spectra of Br-CZEO-PCDA monomers.

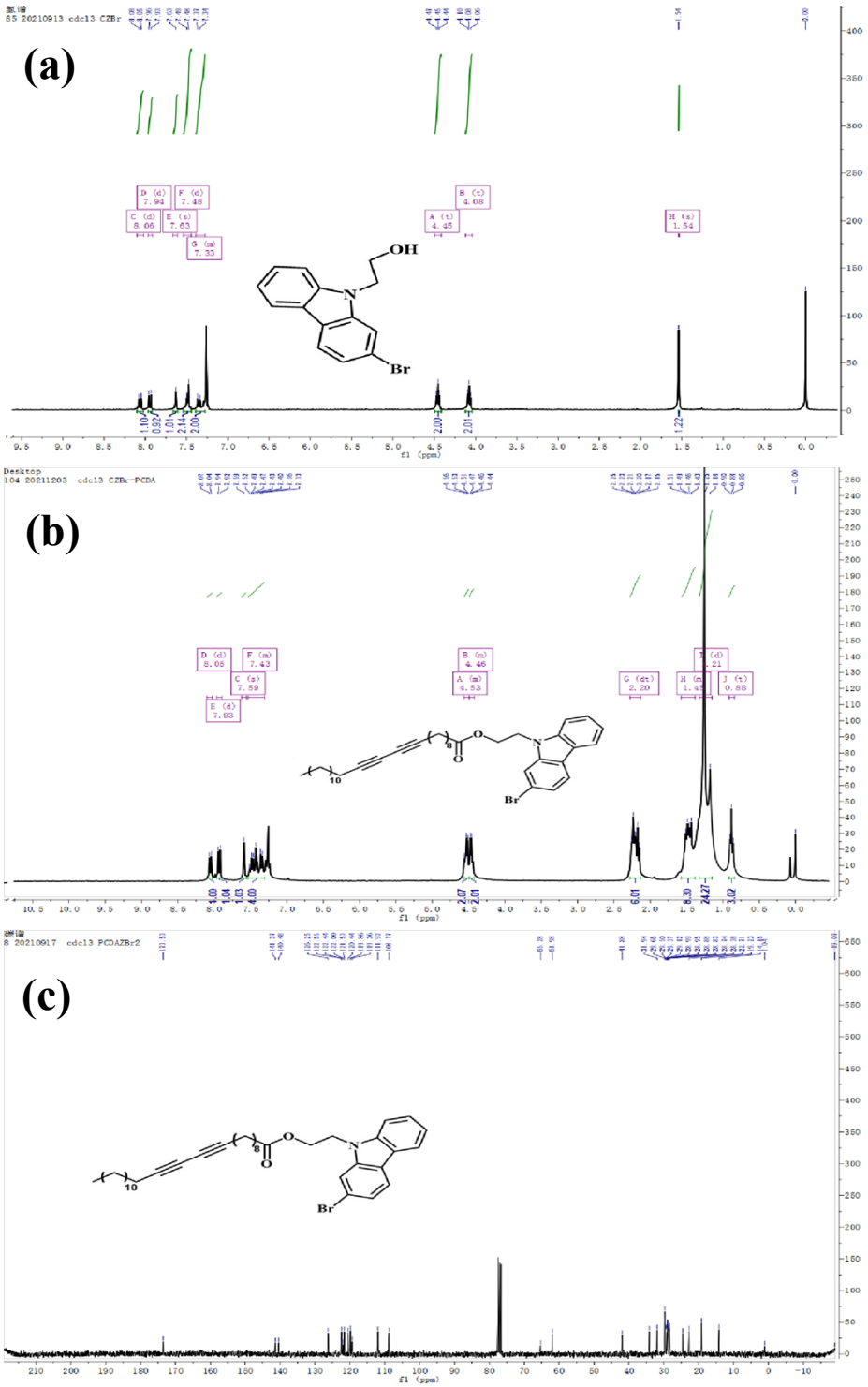

Figure S2. ^{1}H NMR spectra of (a) Br-CZEO and (b) Br-CZEO-PCDA monomers. (c) ^{13}C NMR spectra of Br-CZEO-PCDA monomers.

^{1}H NMR specta of Br_2-CZEO, Br_2-CZEO-PCDA monomers and ^{13}C NMR spectra of Br_2-CZEO-PCDA monomers.

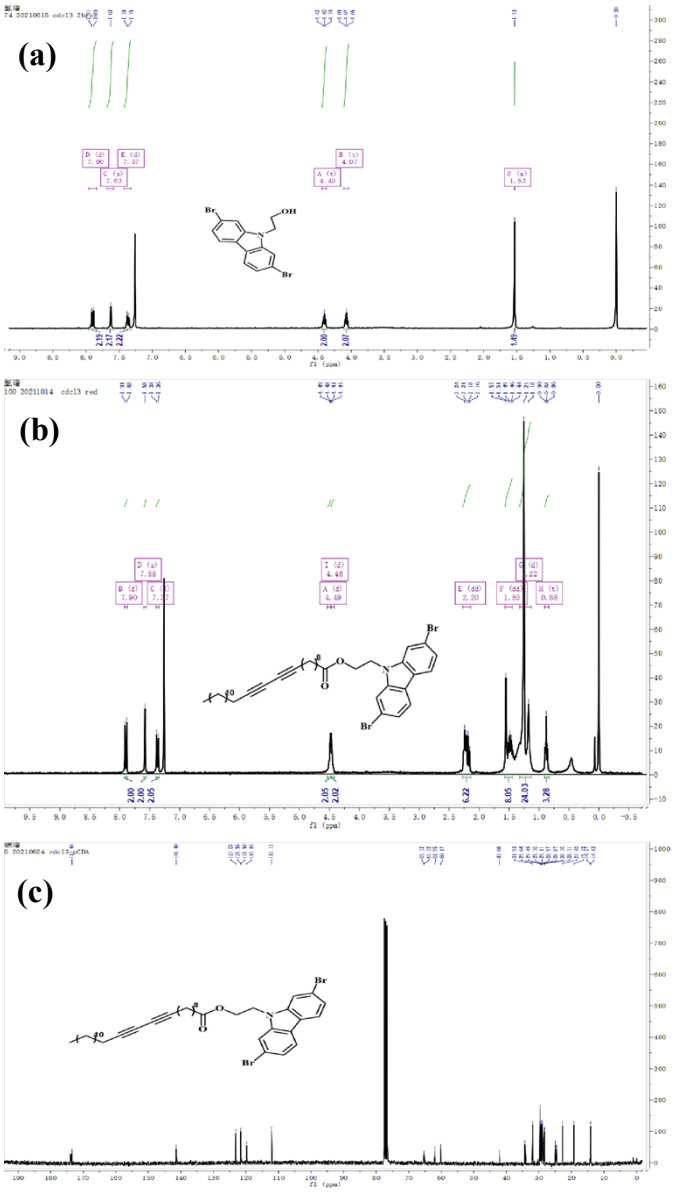

Figure S3. ^{1}H NMR spectra of (a) Br_2-CZEO and (b) Br_2-CZEO-PCDA monomers. (c) ^{13}C NMR spectra of Br_2-CZEO-PCDA monomers.

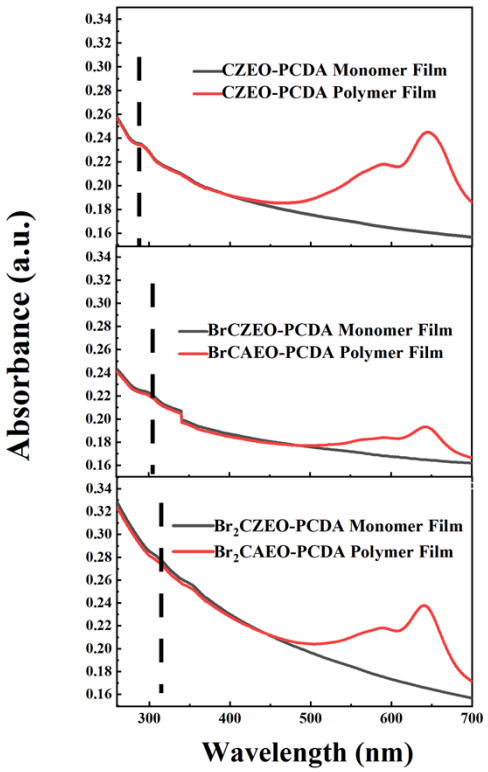

Figure S4. Absorption spectra of CZEO-PCDA/PCDA, Br-CZEO-PCDA/PCDA and Br_2-CZEO-PCDA/PCDA assemblies before (black line) and after (red line) UV-irradiation. Dash line means absorption peak position of the CZEO, Br-CZEO and Br_2-CZEO units.

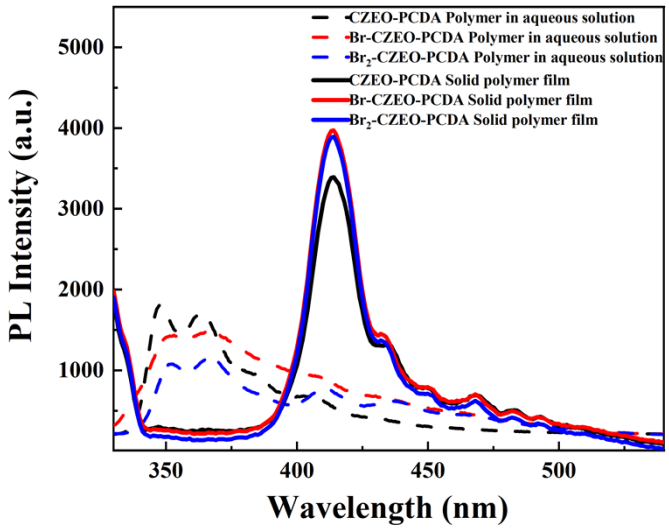

Figure S5. Emission spectra CZEO-PCDA/PCDA, Br-CZEO-PCDA/PCDA and Br_2-CZEO-PCDA/PCDA assemblies dispersed in aqueous solution (dash lines) and casted on glass substrates (solid line) upon UV-irradiation.

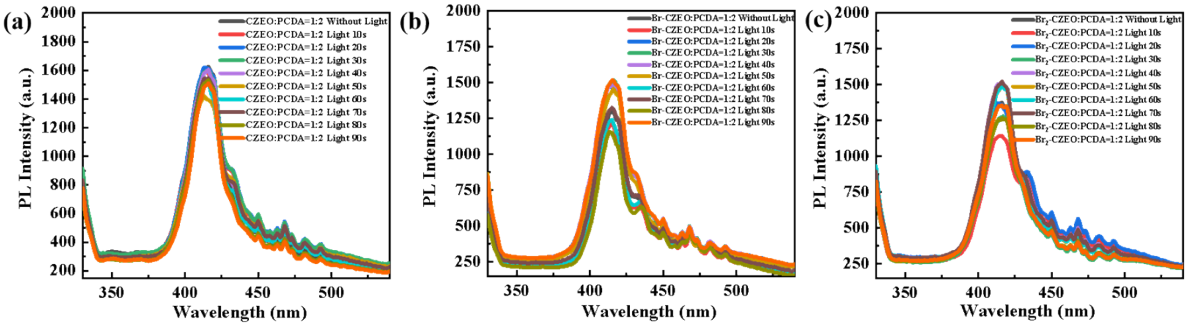

Figure S6. Emission spectra of CZEO, Br-CZEO and Br_2-CZEO molecules mixed with PCDA monomers as a molar ratio of 1:2 and exposed on UV-irradiation for various time.

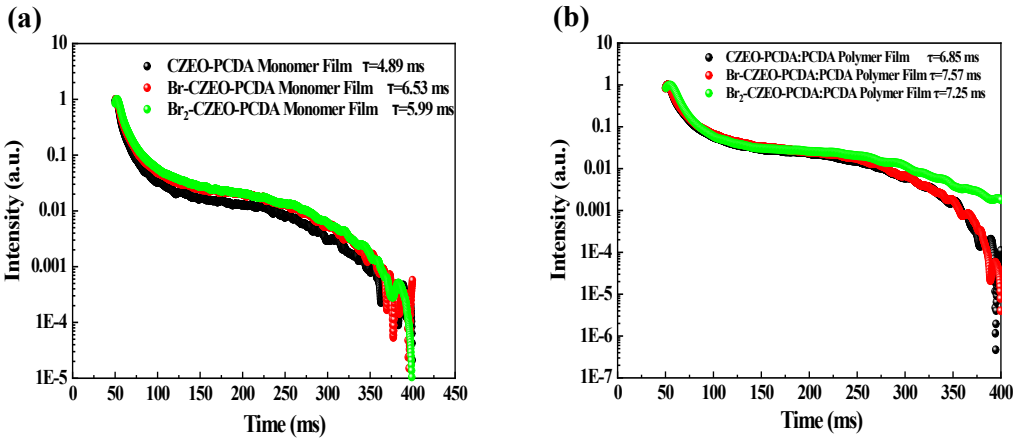

Figure S7. The room temperature phosphorescence (RTP) decay of the (a) monomeric and (b) UV irradiated CZEO-PCDA/PCDA, Br-CZEO-PCDA/PCDA and Br_2-CZEO-PCDA/PCDA assemblies.