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

Main-chain Chirality and Photophysical Property Relations in Chiral Conjugated Polymers

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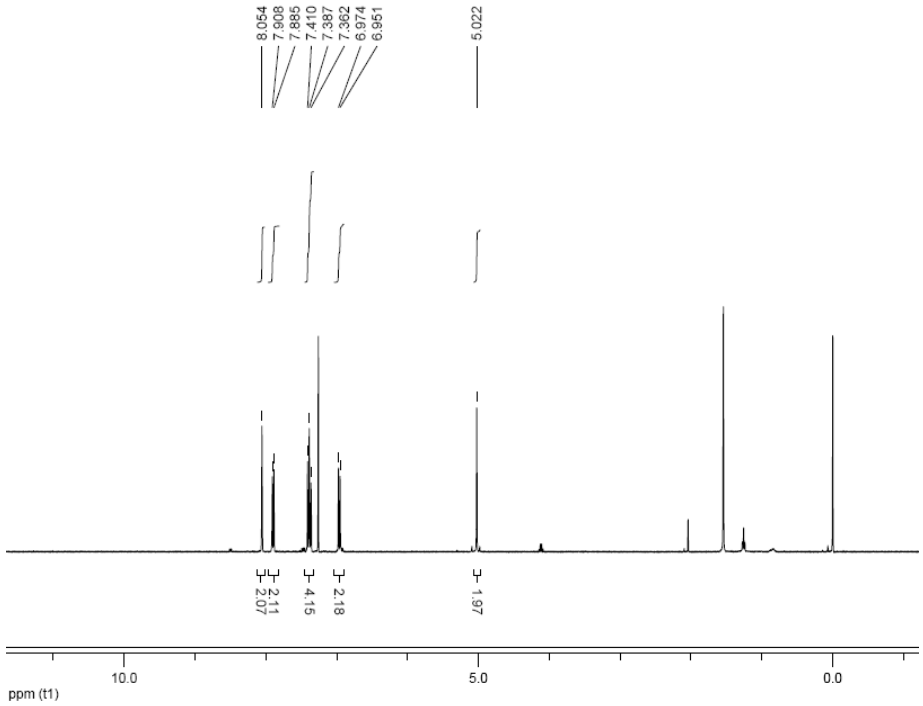

Figure S1: ^{1}H NMR spectrum of (S)-6,6'-Dibromo-2,2'-dihydroxy-1,1'-dinaphthyl. ^{1}H NMR ($CDCl_3$, 400 MHz, ppm): δ= 8.05 (s, 2H); 7.89 (d, 2H, *J* = 9.2); 7.41~7.36 (t, 4H, *J* = 9.2); 6.96 (d, 2H, *J* = 9.2); 5.02 (s, 2H).

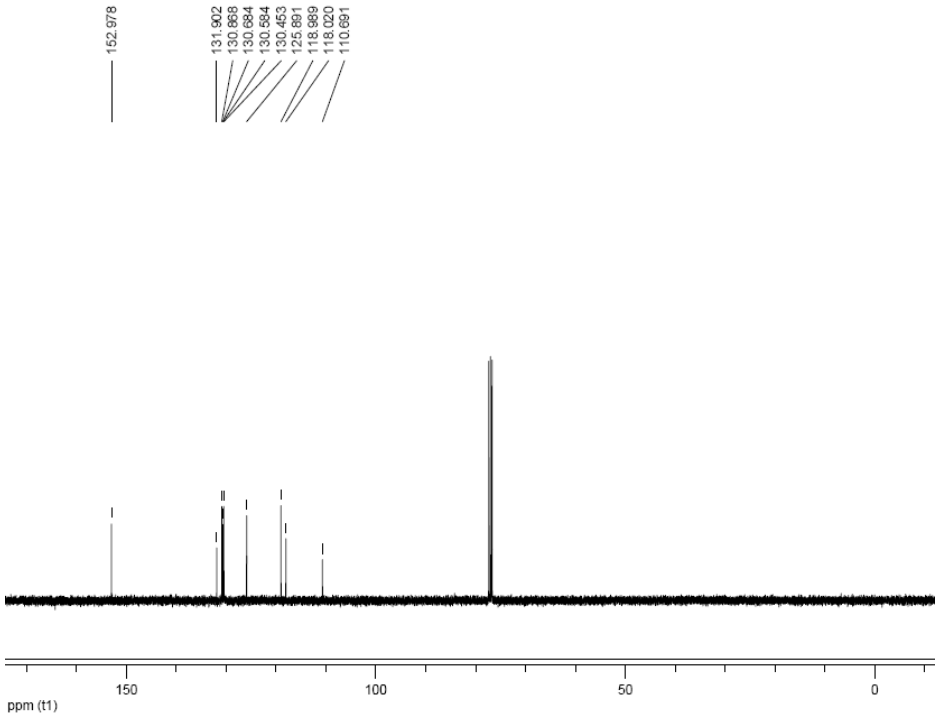

Figure S2: ^{13}C NMR spectrum of (S)-6,6'-Dibromo-2,2'-dihydroxy-1,1'-dinaphthyl. ^{13}C NMR ($CDCl_3$, 100 MHz, ppm): 110.69; 118.02; 118.98; 125.89; 130.45; 130.58; 130.68; 130.86; 131.90; 152.97.

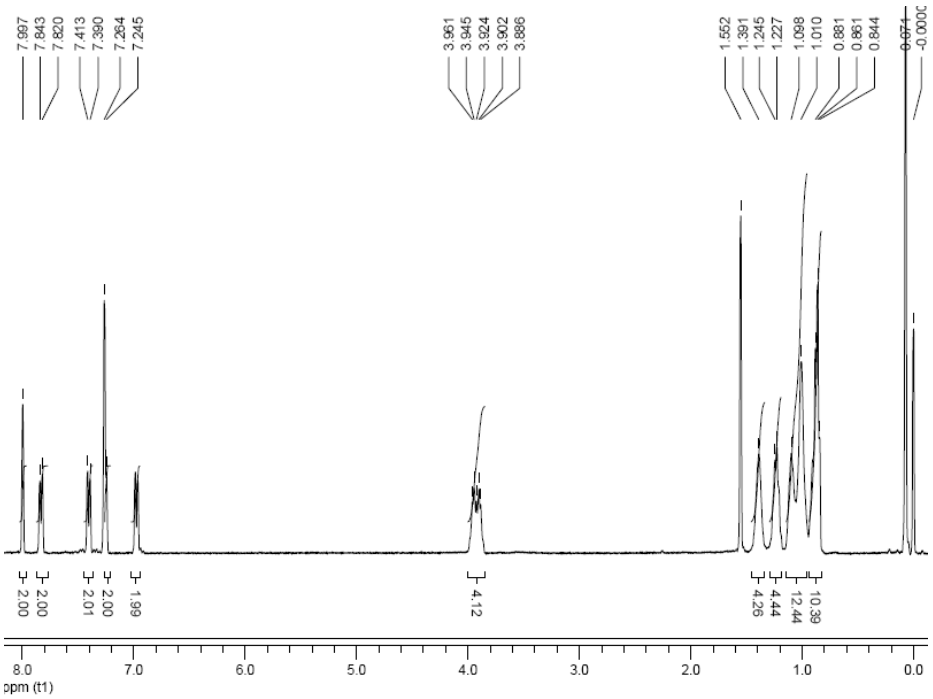

Figure S3: ^{1}H NMR spectrum of (S)-6,6'-Dibromo-2,2'-bis(octyloxy)-1,1'-binaphthyl. ^{1}H NMR ($CDCl_3$, 400 MHz, ppm): δ =7.99 (s, 2H); 7.83 (d, 2H, *J* = 8.8 Hz); 7.40 (d, 2H); 7.24 (d, 2H, *J* = 8.4 Hz); 6.97 (d, 2H, *J* = 8.8 Hz); 3,92 (m, 4H); 1.39 (s, 4H); 1.23 (s, 4H); 1.09~1.01 (m, 12H); 0.91~0.85 (m, 10H).

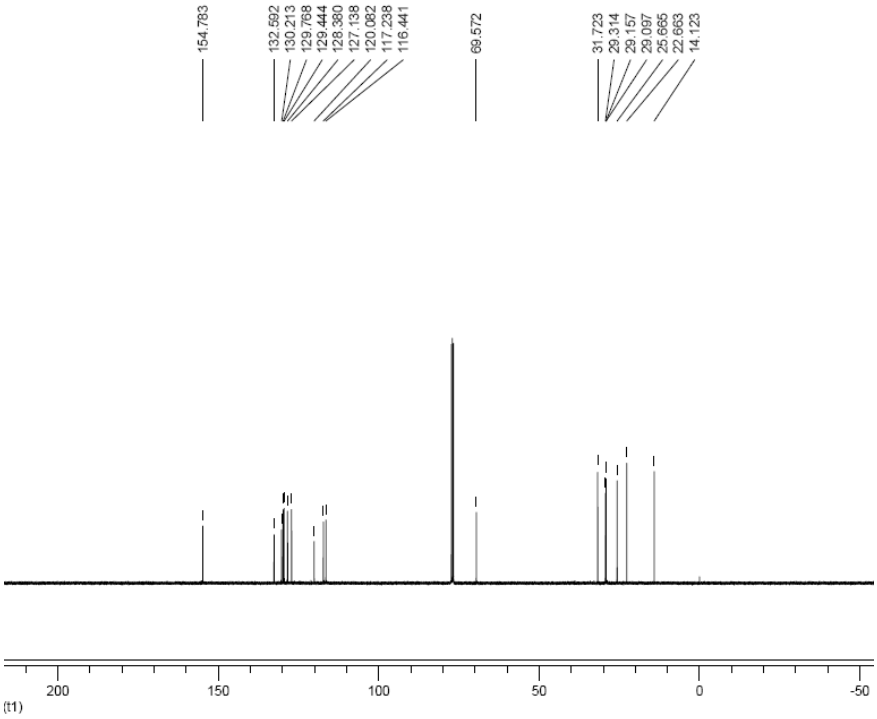

Figure S4: ^{13}C NMR spectrum of (S)-6,6'-Dibromo-2,2'-bis(octyloxy)-1,1'-binaphthyl. ^{13}C NMR (CDCl3, 100 MHz, ppm): 14.12; 22.66; 25.66; 29.09; 29.15; 29.31; 31.72; 69.57; 116.44; 117.23; 120.08; 127.13; 128.37; 129.44; 129.76; 130.21; 132.59; 154.78.

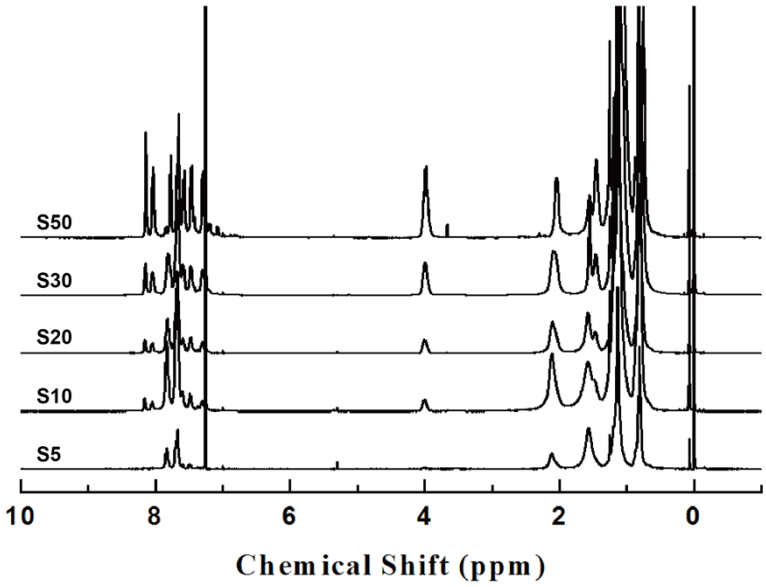

Figure S5: ^{1}H NMR spectra of S- copolymers of S5, S10, S20, S30, and S50.

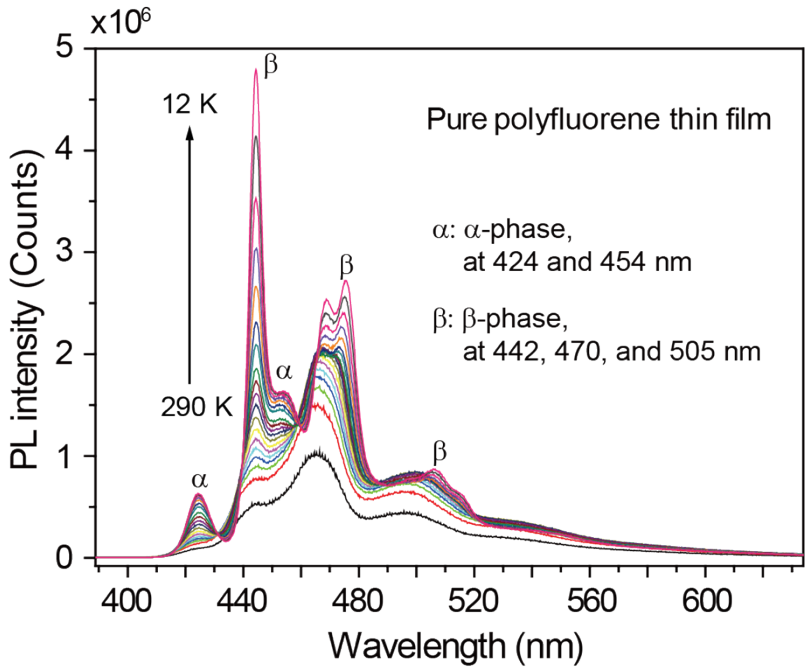

Figure S6: Photoluminescence spectra of poly(9,9'-dioctylfluorene) film at various temperatures under the excitation of 350 nm UV-light.

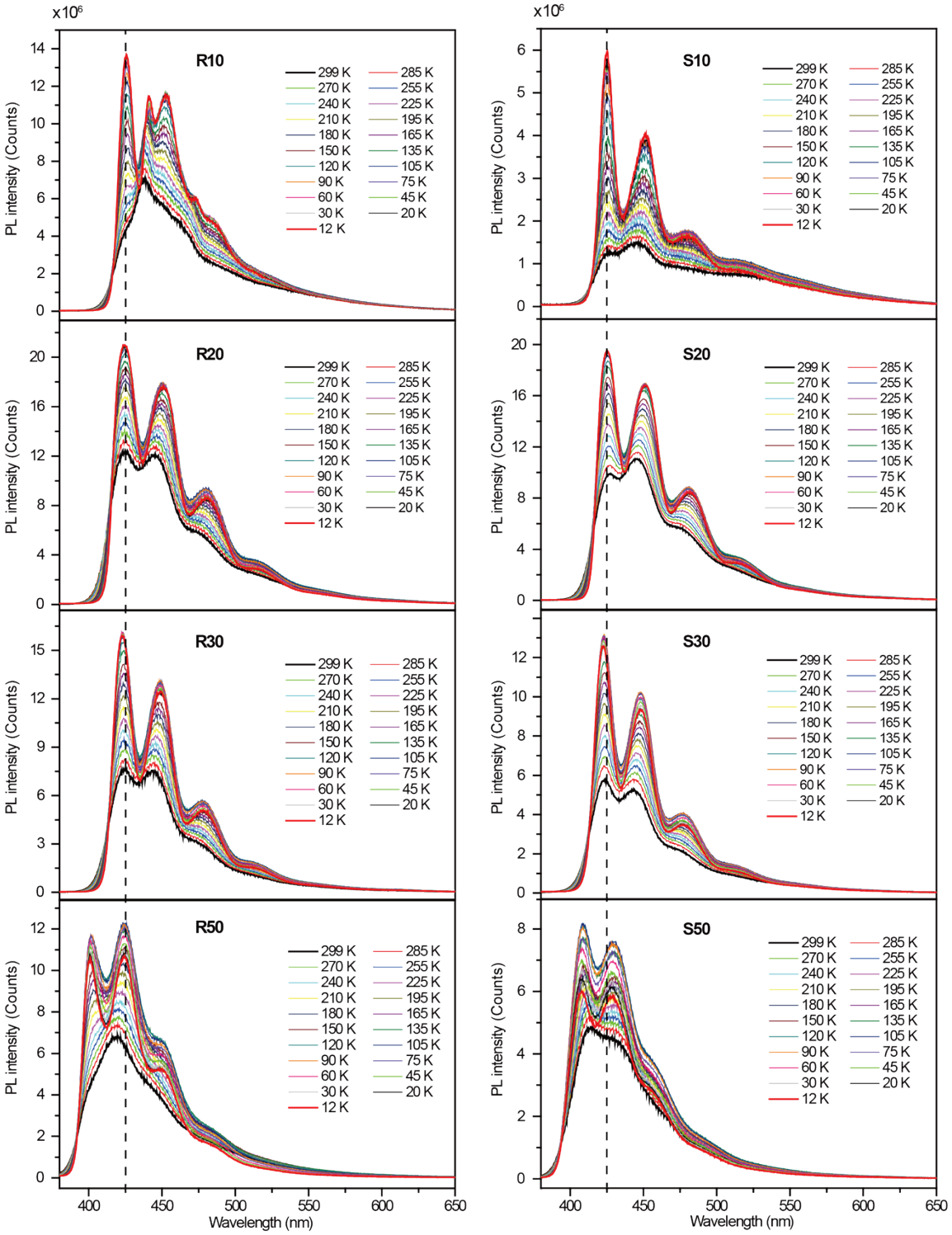

Figure S7: Photoluminescence spectra of *R*- and *S*- copolymer (R10, R20, R30, R50 and S10, S20, S30, S50) films at various temperatures excited at 350 nm.

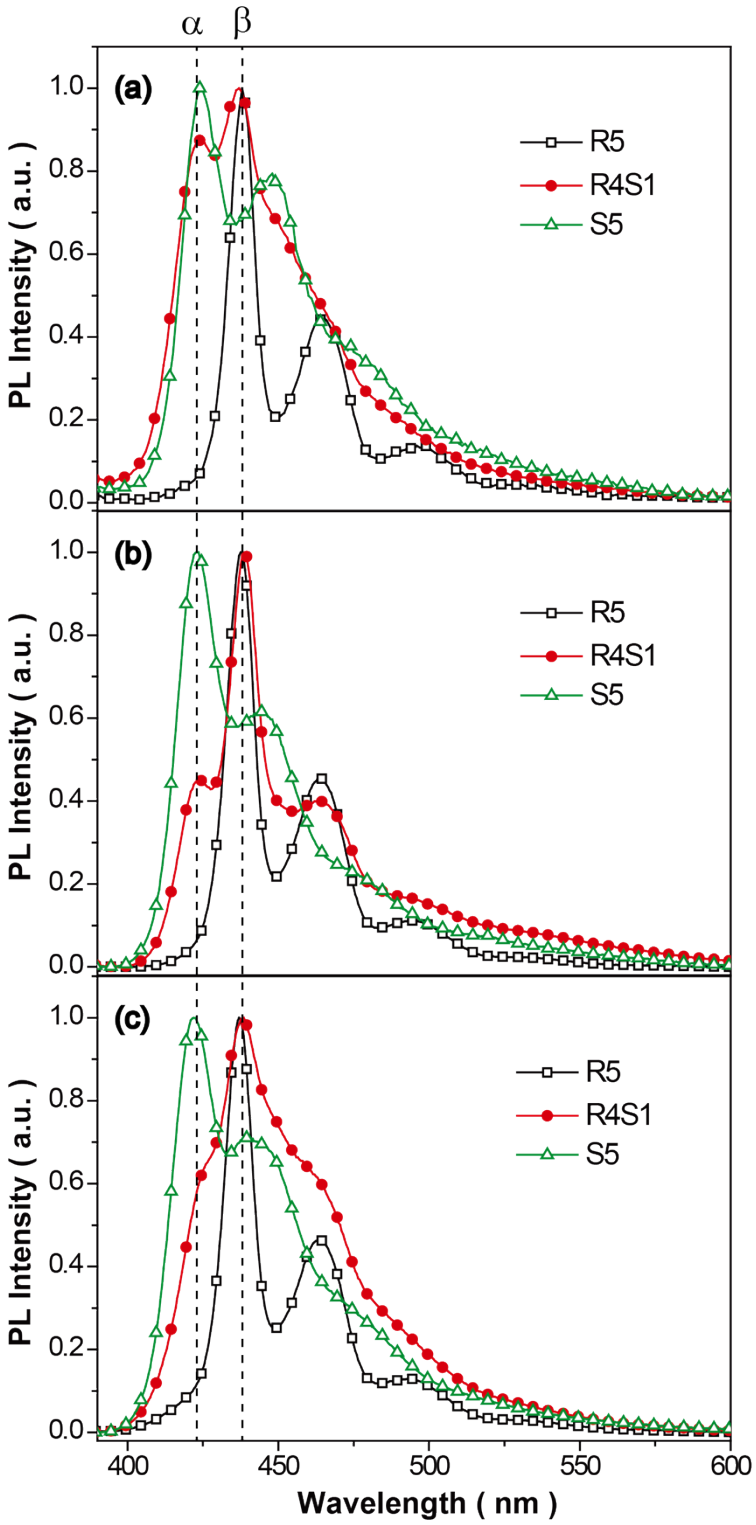

Figure S8: Normalized PL spectra of copolymers made from fluorene and chiral (*R* or *S*) binaphthols comonomers under molar feed content of 5% (R5 and S5) and mixed *R*- and *S*-binaphthols (R4S1, where R type is 4% and S is 1%) in solid film spin-coated on the surface of (a) quartz, (b) silicon wafer, and (c) mica sheet.

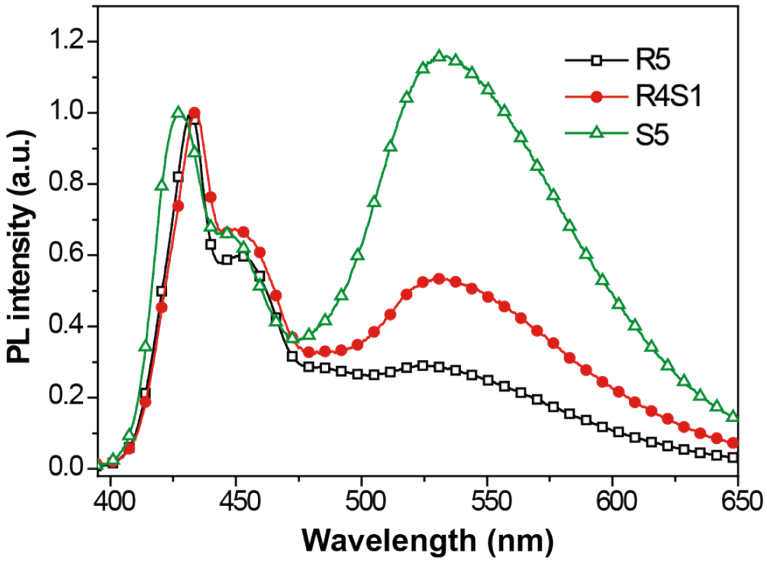

Figure S9: Normalized PL spectra of copolymer solid film made from fluorene and chiral (*R* or *S*) binaphthols comonomers under molar feed content of 5% (R5 and S5) and mixed *R*- and *S*-binaphthols (R4S1, where R type is 4% and S is 1%) after annealing at 200℃ in air for 10 h.