Supplementary Information

Hyperbranched fluorene-alt-carbazole with copolymers spiro[3.3]heptane-2,6-dispirofluorene their as the and core application in white polymer light-emitting devices Yuling Wu,^{ab} Jie Li, ^{ab} Wenging Liang, ^{ab} Junli Yang, ^{ab} Jing Sun, ^{ab} Hua Wang, ^{ab} Xuguang Liu, ^cBingshe Xu, ^{*ab} Wei Huang, ^d ^a Key Laboratory of Interface Science and Engineering in Advanced Materials, Taiyuan University of Technology, Taiyuan, 030024, China. ^b Research Center of Advanced Materials Science and Technology, Taiyuan University of Technology, Taiyuan, 030024, China. ^c College of Chemistry and Chemical Engineering, Taiyuan University of Technology, Taiyuan, 030024, China. ^d Key Laboratory for Organic Electronics & Information Displays (KLOEID) and Institute of Advanced Materials, Nanjing University of Posts and Telecommunications (NUPT), Nanjing, 210046, China.

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Figure S2. ¹³C NMR spectrum of **DBrCz**.



Figure S4. ¹H NMR spectrum of **PFCzSDF10DBT7**.



Figure S5.UV-vis absorption of DBT and PL spectra of **PFCz** in CHCl₃ solution (10⁻⁵ mol/L) (a), and PL spectra of **DBT** in CHCl₃ solution (10⁻⁵ mol/L) (b).