Supporting Information

Optimizing Spatial Effect in Quaternary Phosphine Oxide Host Materials for
High-Efficiency Blue Organic Light-Emitting Diodes

Dongxue Ding, Zhen Zhang, Ying Wei, Pengfei Yan and Hui Xu*
Key Laboratory of Functional Inorganic Material Chemistry, Ministry of Education, Heilongjiang
University, 74 Xuefu Road, Harbin 150080 (P. R. China)

Thermal Properties of 9CzFxPO

Figure S1. TGA and DSC (inset) curves of 9CzFxPO.
Solid-State Optical Properties of 9CzFxPO

Figure S2. Absorption and emission curves of 9CzFxPO in thin films.
Volt-Ampere Characteristics of Light-Emitting Diodes

Figure S3. $I-V$ characteristics of 9CzFxPO based blue phosphorescence (solid symbol) and TADF light-emitting diodes (hollow symbol).
Doping Concentration Dependence of EL Performance for Blue PHOLEDs

Figure S4. (a) Brightness-J-V curves of 9CzFDPESPO based blue PHOLEDs with various doping concentrations; (b) the dependence of device efficiencies on doping concentration for blue PHOLEDs.
Doping Concentration Dependence of EL Performance for Blue TADF OLEDs

Figure S5. (a) Brightness-$J$-$V$ curves of 9CzFDPESPO based blue TADF OLEDs with various doping concentrations; (b) the dependence of device efficiencies on doping concentration for blue TADF OLEDs.