

## Supplementary Information

for

### **Influence of polyhedral oligomeric silsesquioxanes (POSS) on the luminescence properties of non-conjugated copolymers based on iridium complex and carbazole units**

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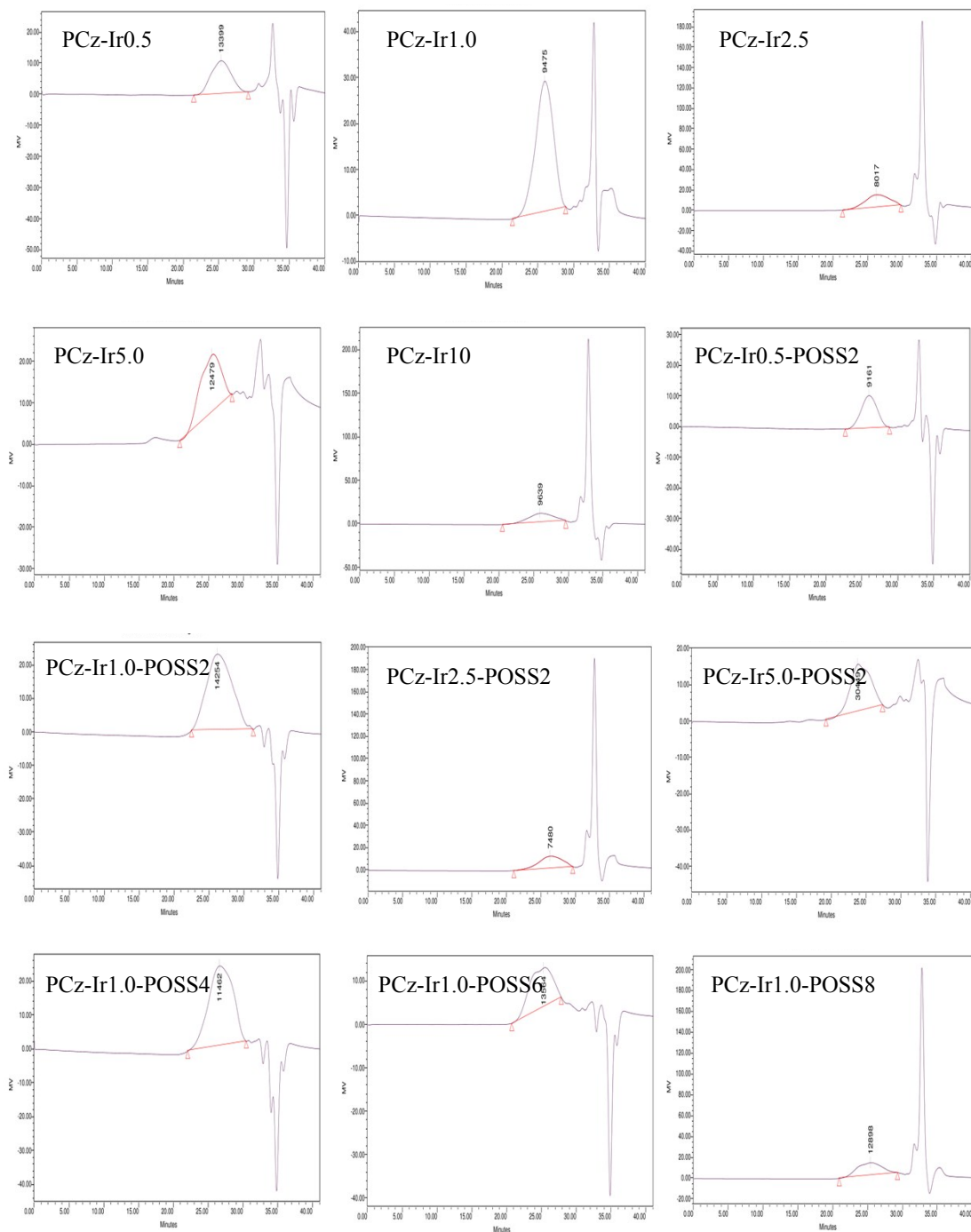
**Fig. S1** GPC chromatograms curves of the copolymers

**Fig. S2** Time-resolved fluorescence decay curves and their lifetimes of the donor PCz for the polymers in  $\text{CH}_2\text{Cl}_2$  at 293 K

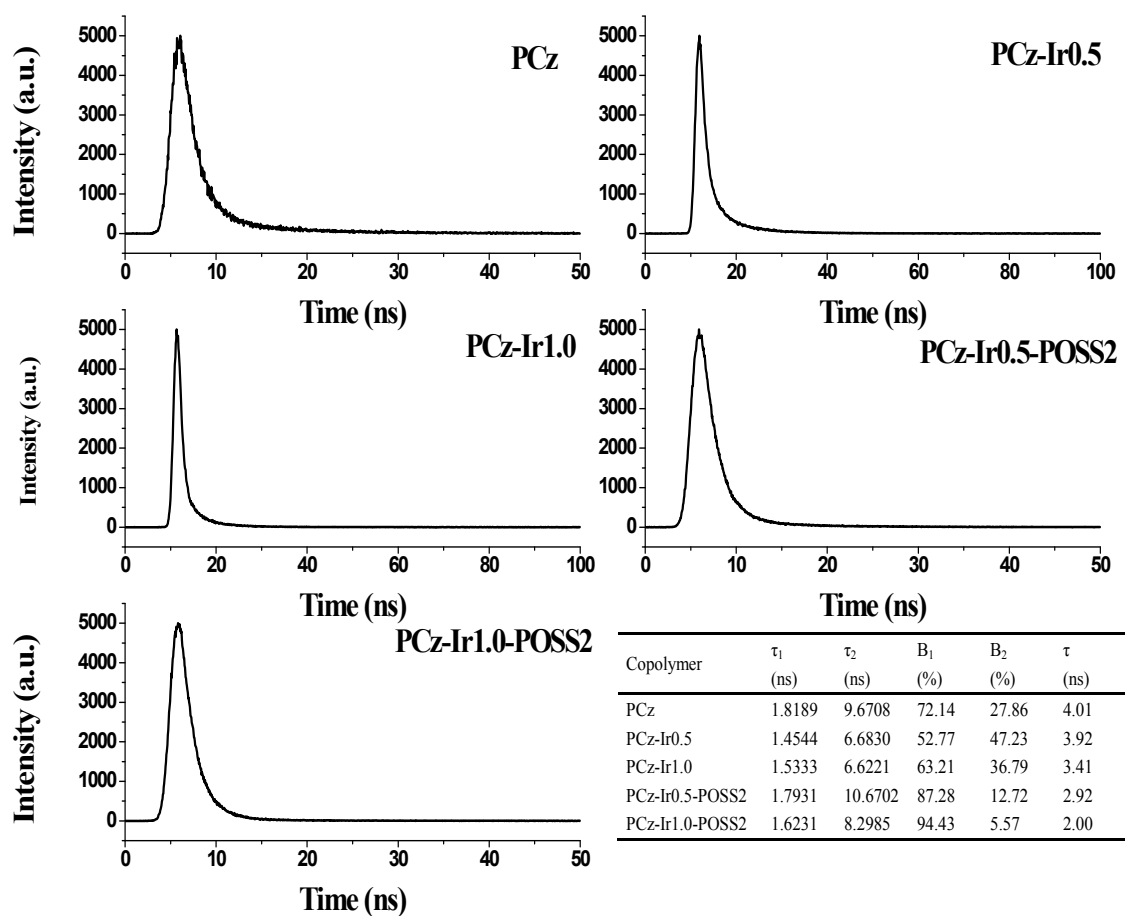
**Fig. S3** Time-resolved phosphorescence decay curves of the copolymers in powder at 293 K

**Fig. S4** The CV curves of the copolymers

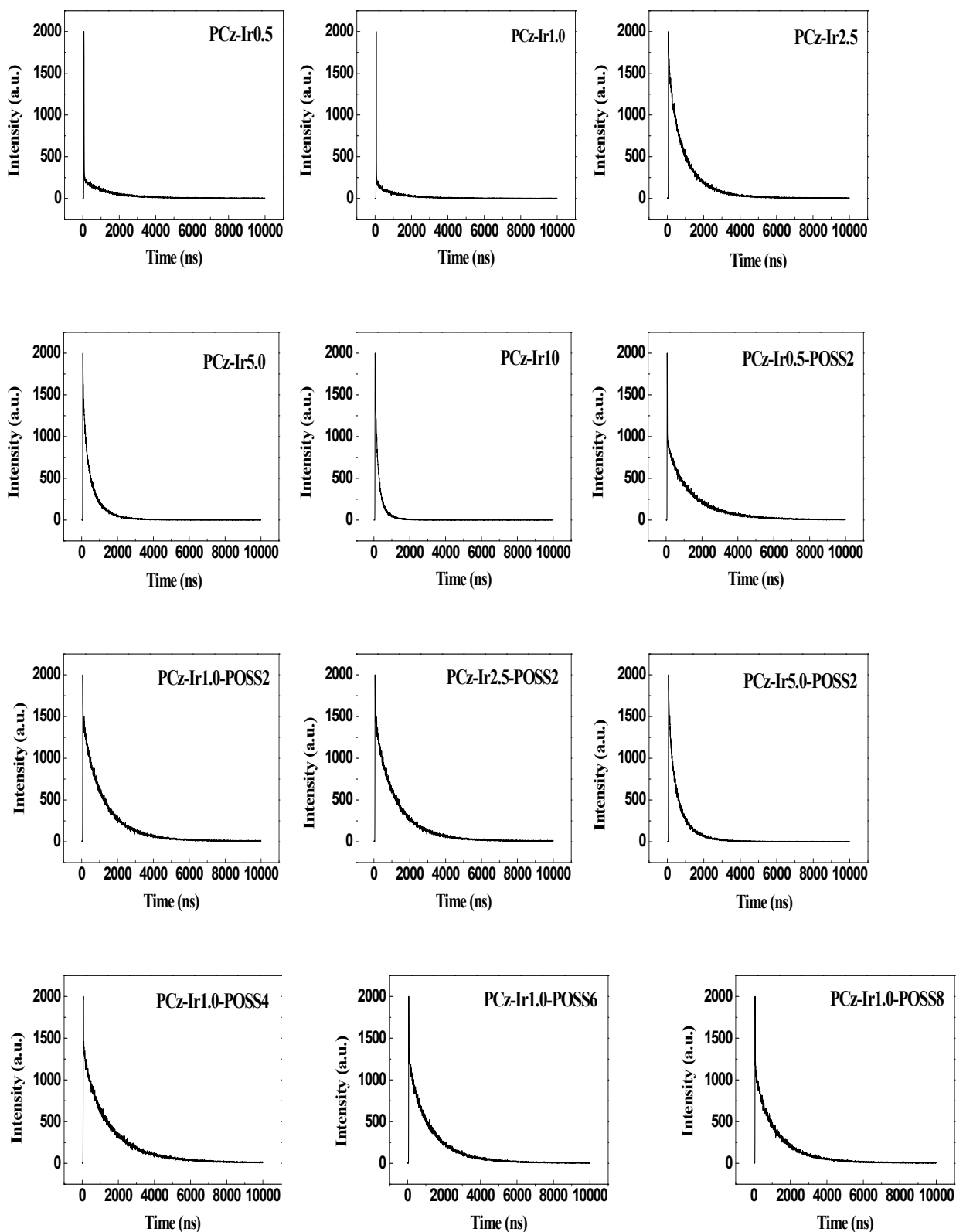
**Table S1** The electrochemical properties of the copolymers



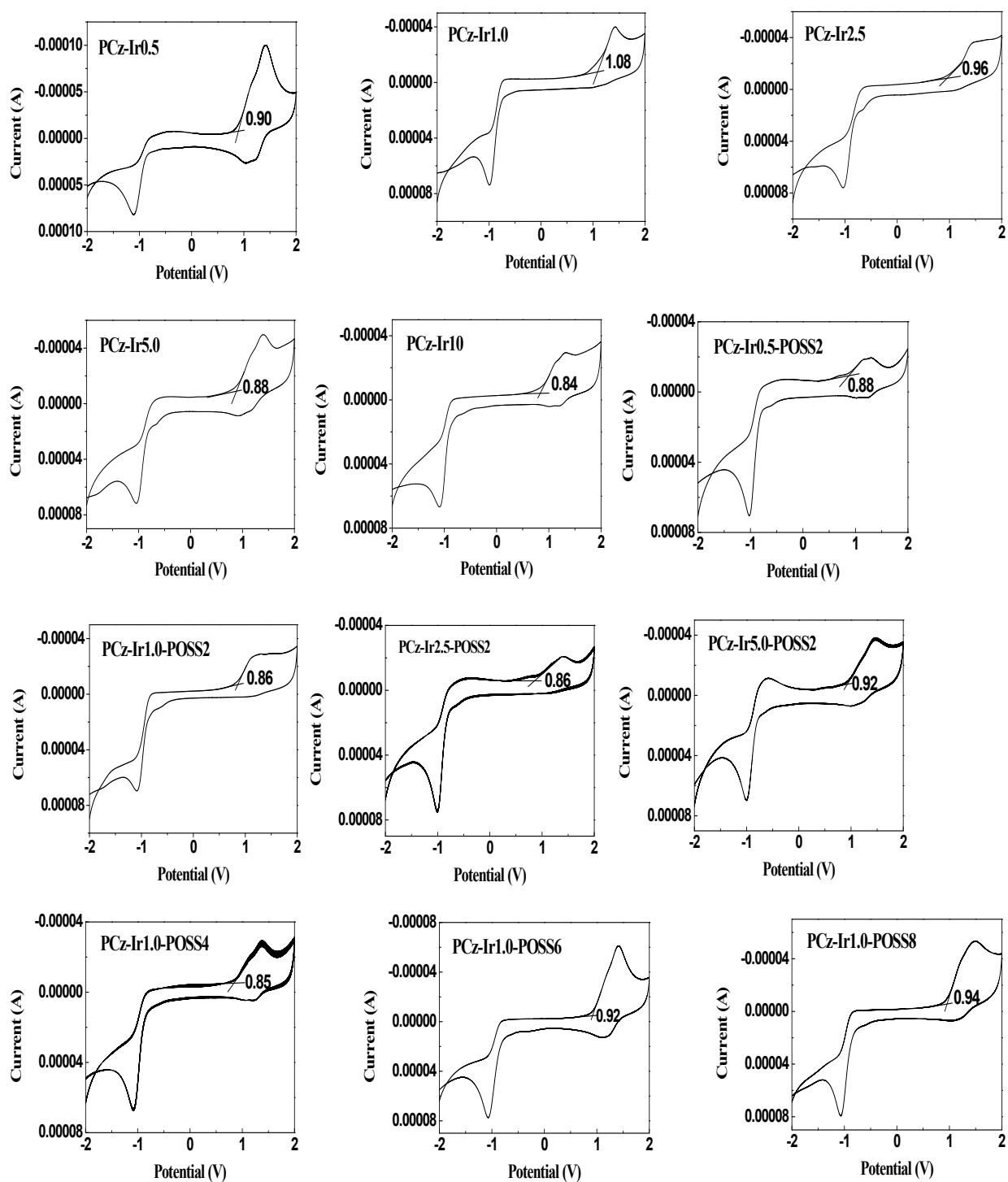
**Fig. S1** GPC chromatograms curves of the copolymers



**Fig. S2** Time-resolved fluorescence decay curves and their lifetimes of the donor for the polymers in  $10^{-5}$ M  $\text{CH}_2\text{Cl}_2$  solution measured at 435 nm blue emission at 293 K using 380 nm excitation, which can be well-fitted by bi-exponential function.



**Fig. S1** Time-resolved phosphorescence decay curves of the copolymers in powder measured at green band around 535 nm at 293 K using an excitation of around 380 nm, which can be well-fitted by bi-exponential function.



**Fig. S4** The CV curves of the copolymers performed with the three electrodes immersed in 0.1 M tetrabutylammonium tetrafluoroborate ( $\text{Bu}_4\text{NBF}_4$ ) in anhydrous acetonitrile at room temperature under nitrogen gas with a scan rate of 50 mV/s.

**Table S1** The electrochemical properties of the copolymers

Copolymer	$E_{\text{onset}}^{\text{ox}}$ (V)	HOMO (eV)	LUMO (eV)	$E_g$ (eV)
PCz-Ir0.5	0.90	-5.70	-2.41	3.29
PCz-Ir1.0	1.08	-5.88	-2.58	3.30
PCz-Ir2.5	0.96	-5.76	-2.43	3.33
PCz-Ir5.0	0.88	-5.68	-2.38	3.30
PCz-Ir10	0.84	-5.64	-2.33	3.31
PCz-Ir0.5-POSS2	0.88	-5.68	-2.46	3.22
PCz-Ir1.0-POSS2	0.86	-5.66	-2.42	3.24
PCz-Ir2.5-POSS2	0.86	-5.66	-2.46	3.20
PCz-Ir5.0-POSS2	0.92	-5.72	-2.49	3.23
PCz-Ir1.0-POSS4	0.85	-5.65	-2.42	3.23
PCz-Ir1.0-POSS6	0.92	-5.72	-2.48	3.24
PCz-Ir1.0-POSS8	0.94	-5.74	-2.54	3.20