

Supporting Information

Efficient monochromatic red-light-emitting PLEDs based on a series of nonconjugated Eu-polymers containing a neutral terpyridyl ligand

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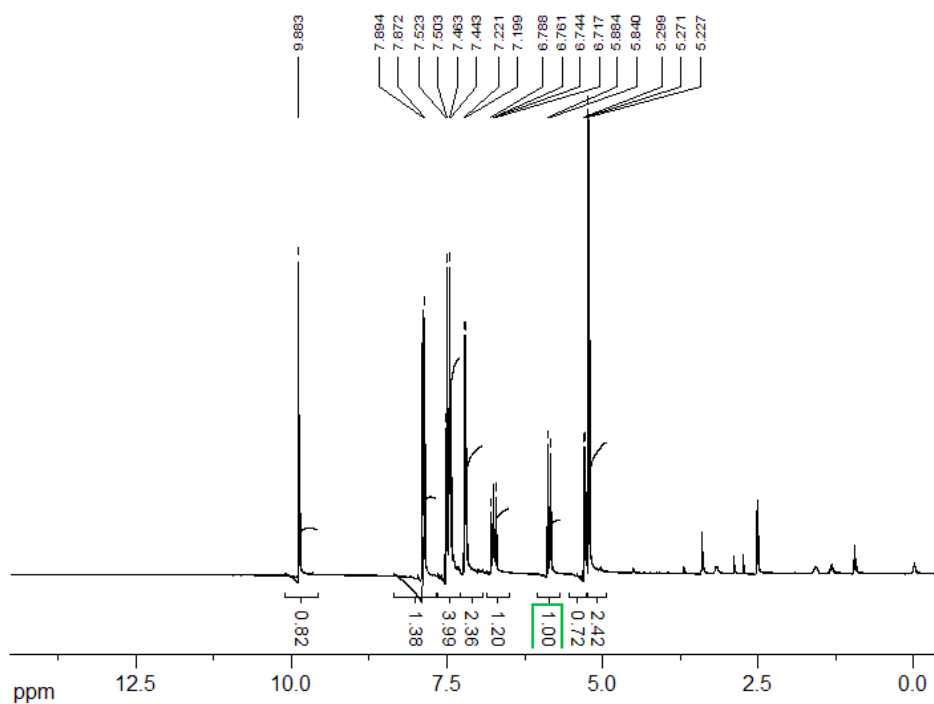
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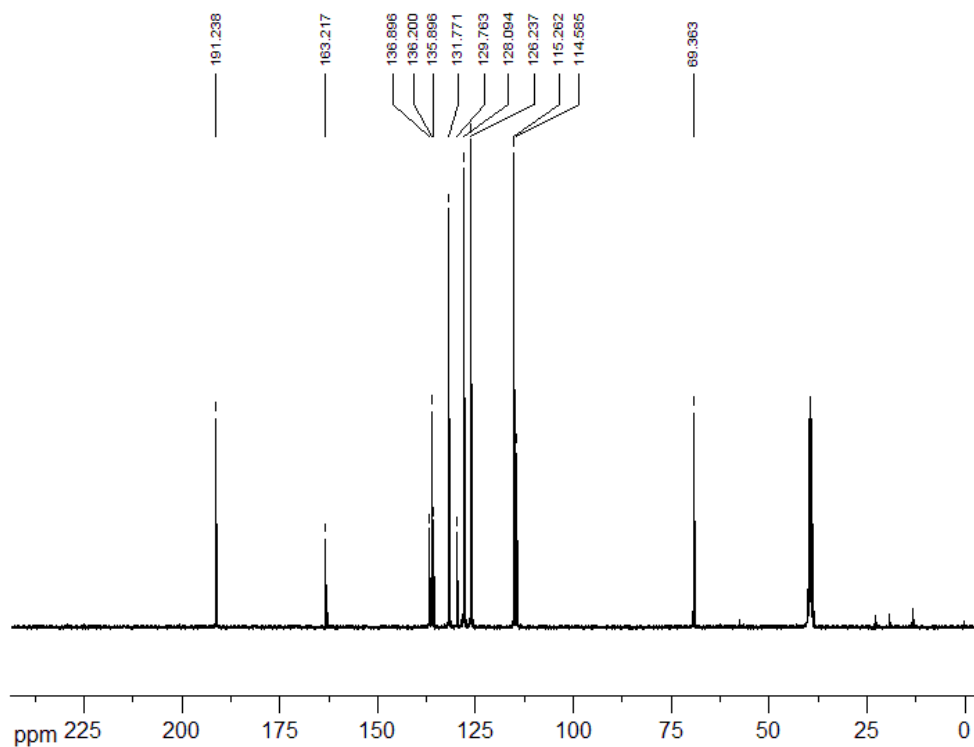
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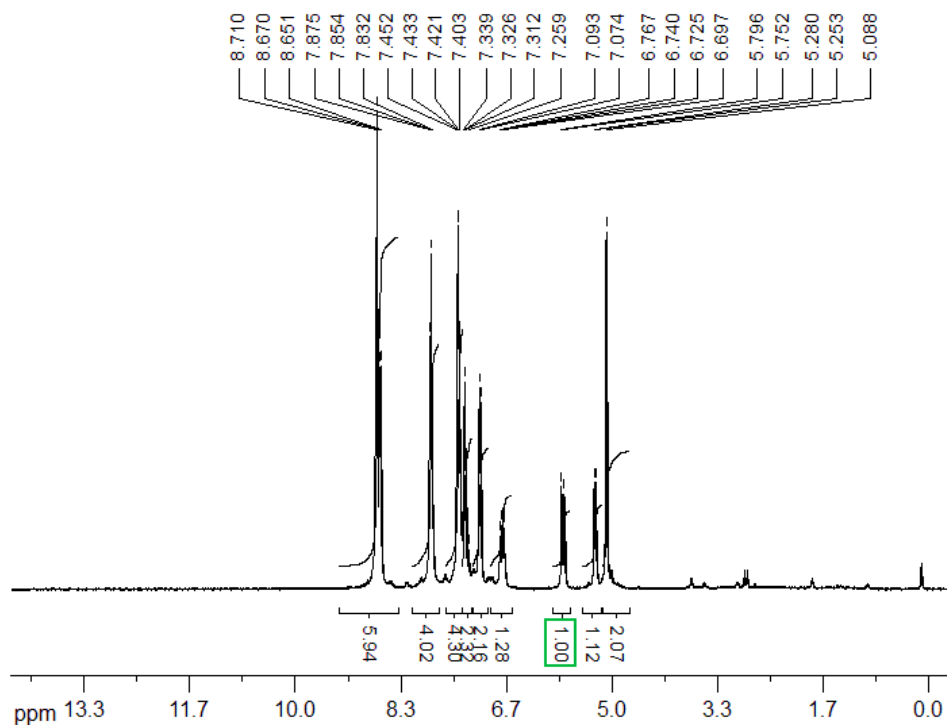
1. The NMR and ESI-MS data of compounds.



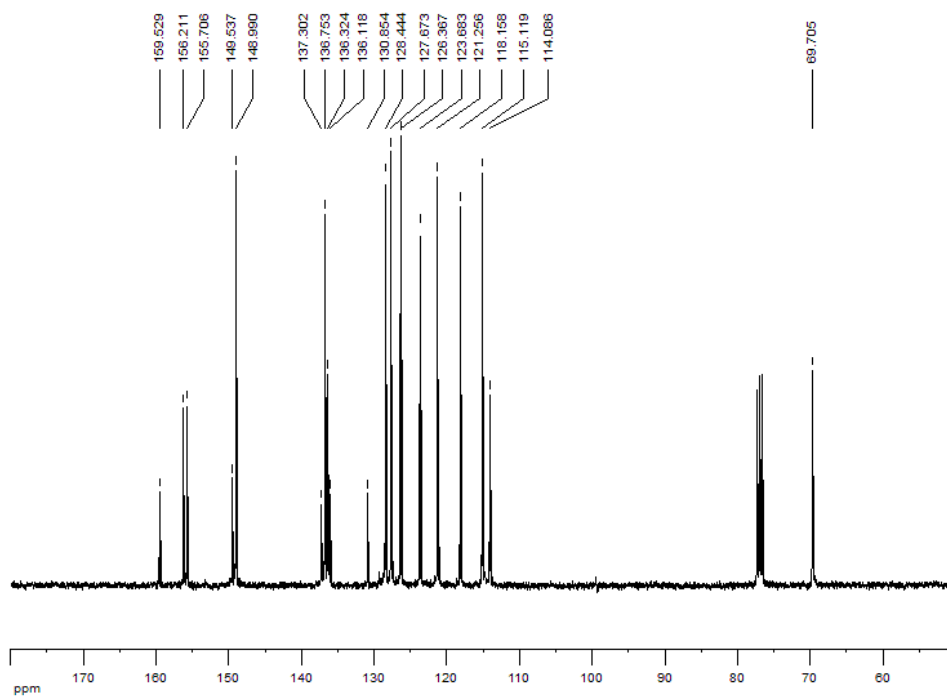
¹H NMR of 4-(4-vinylbenzyloxy)benzaldehyde



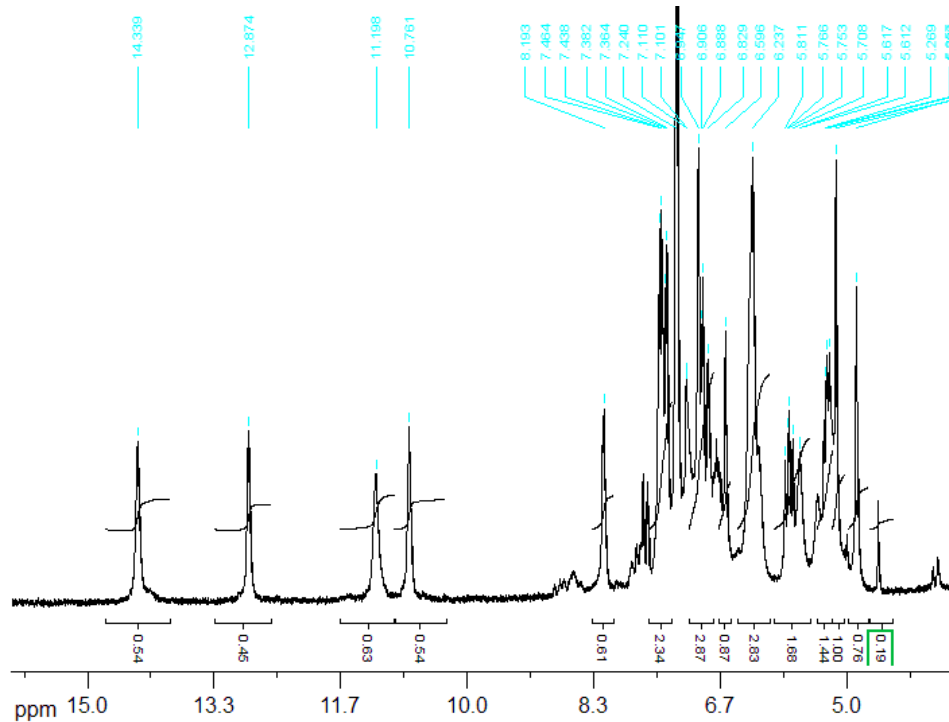
¹³C NMR of 4-(4-vinylbenzyloxy)benzaldehyde



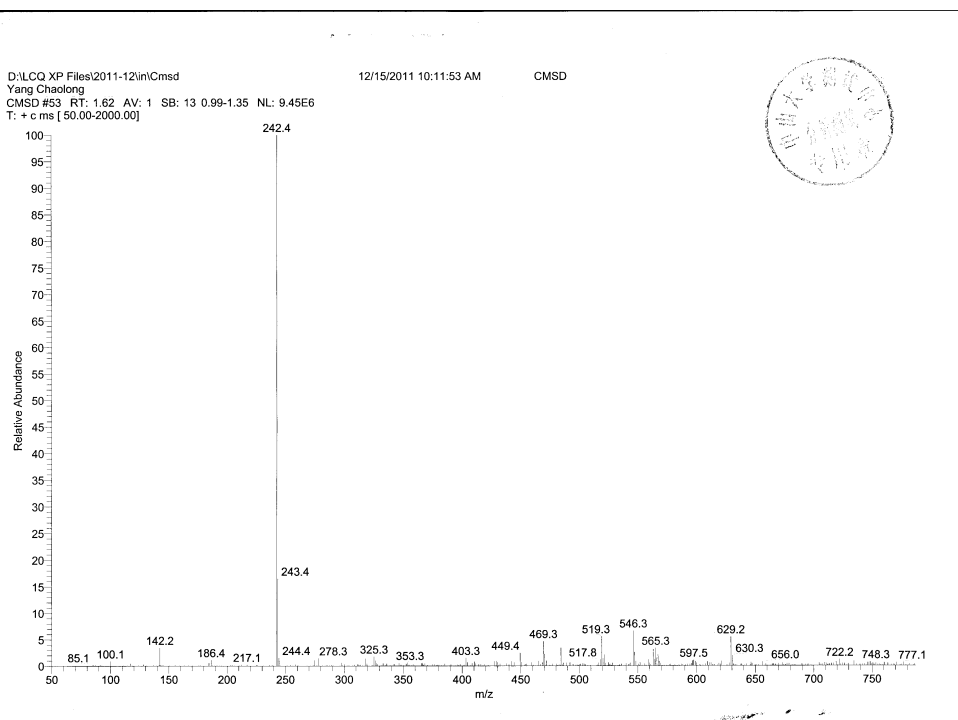
^1H NMR of 4'-(4-((4-vinylbenzyl)oxy)phenyl)-2,2':6',2''-terpyridine



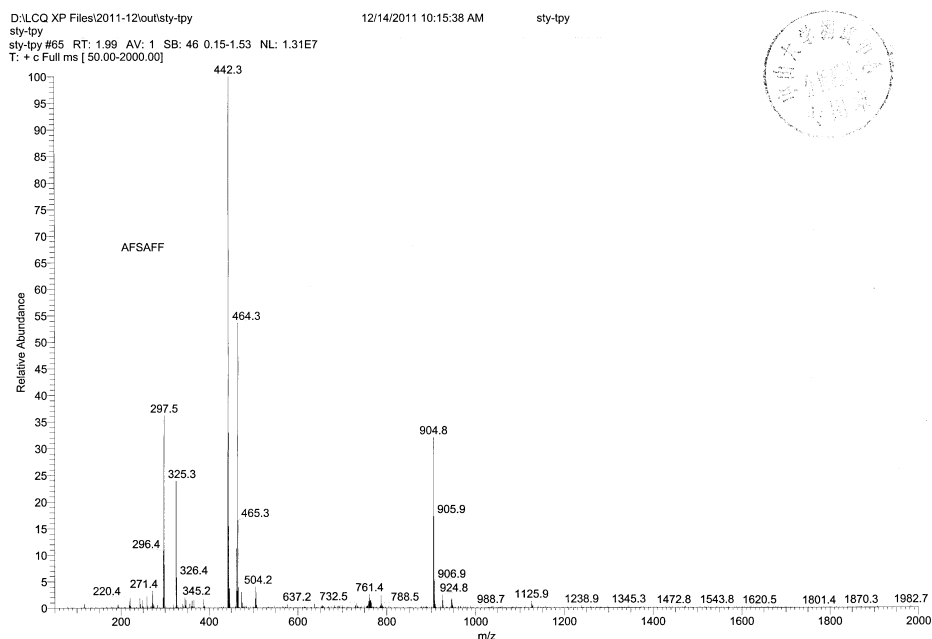
^{13}C NMR of 4'-(4-((4-vinylbenzyl)oxy)phenyl)-2,2':6',2''-terpyridine



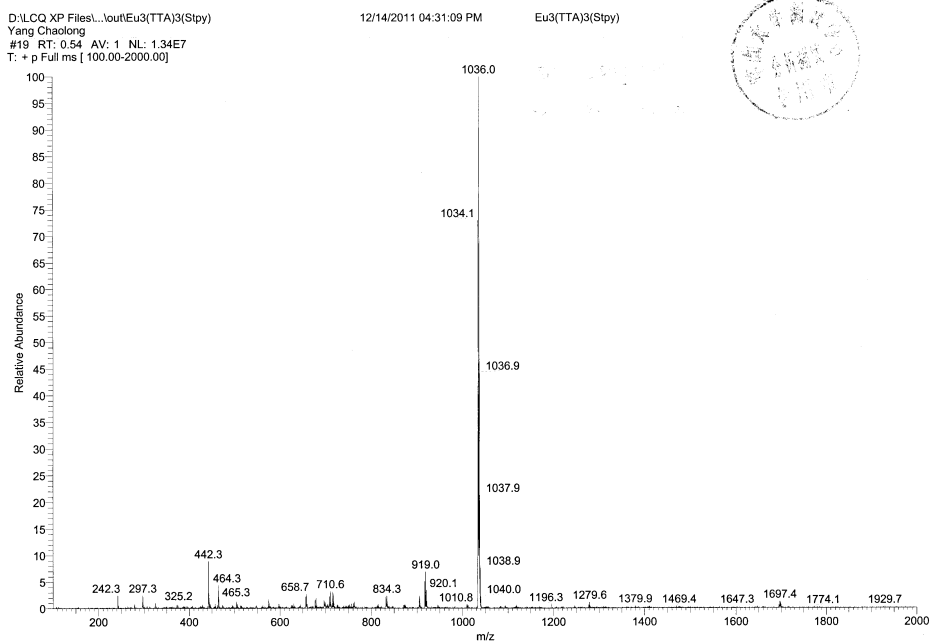
¹H NMR of Eu(TTA)₃VTPY



ESI-MS of 4-(4-vinylbenzyloxy)benzaldehyde



ESI-MS of 4'-(4-((4-vinylbenzyl)oxy)phenyl)-2,2':6',2''-terpyridine



ESI-MS of Eu(TTA)₂VTPY

2. Additional Fig.S (Fig. S1-S8).

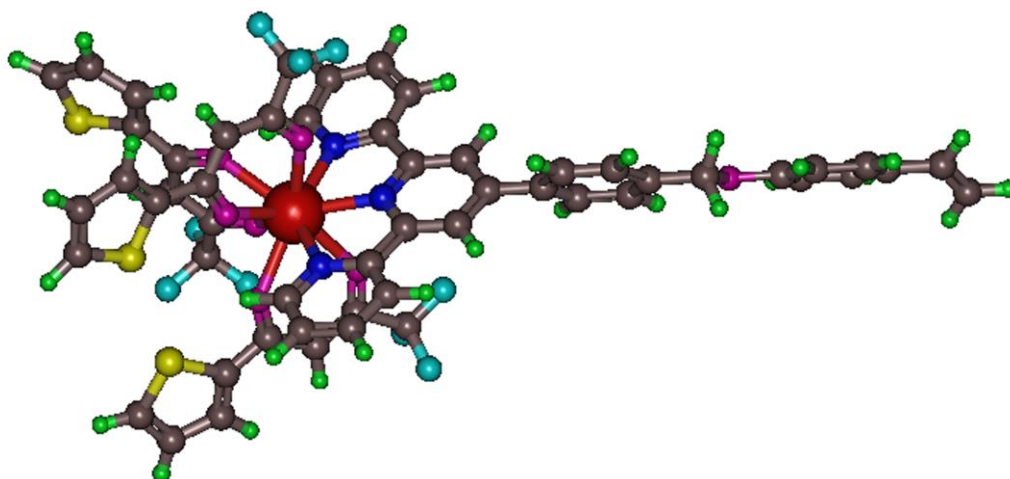


Figure S1 The ground state geometry of the monomer EuVTPY calculated using Sparkl/PM6 model. (Light green, black, blue, pink, blue-green, yellow, and red balls correspond to hydrogen, carbon, nitrogen, oxygen, fluorine, sulfur, and europium atoms, respectively.)

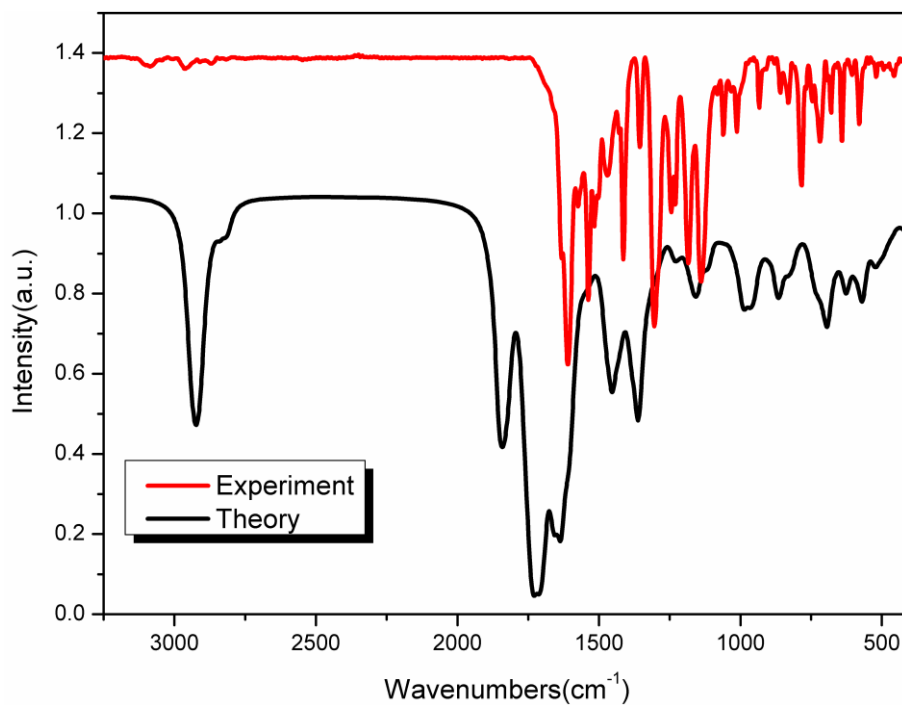


Figure S2 The experimental and simulated FTIR spectra of EuVTPY.

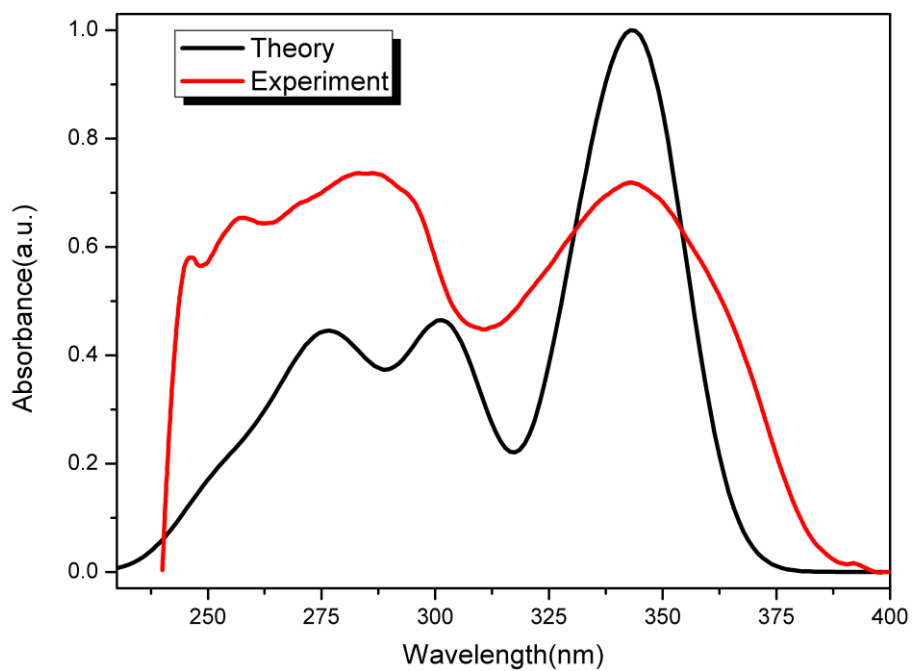


Figure S3 The experimental and simulated UV-vis absorption of EuVTPY.

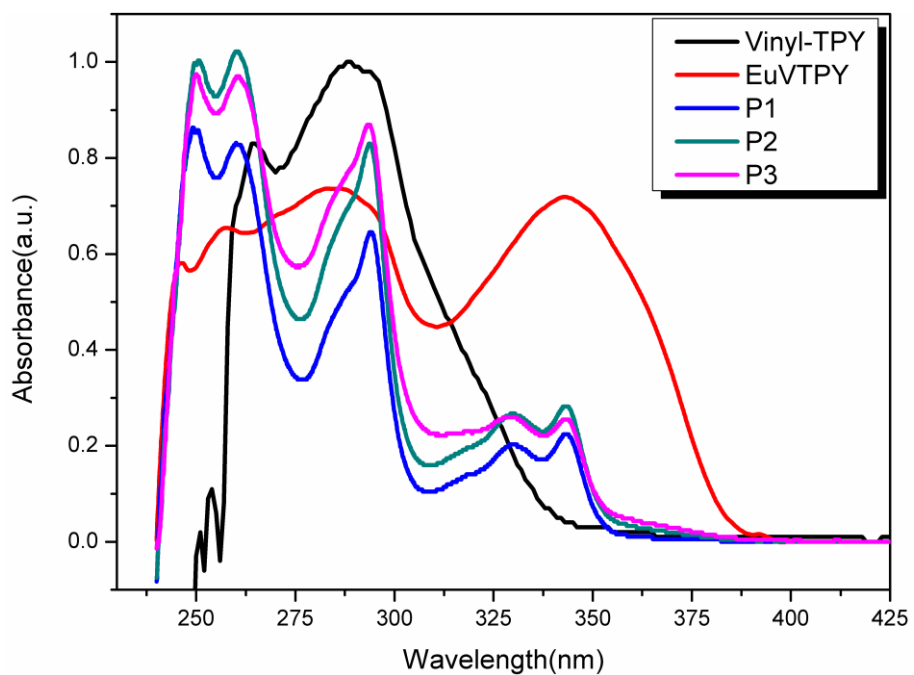


Figure S4 UV-vis absorption of ligands and Eu-polymers (1×10^{-5} mol/L)

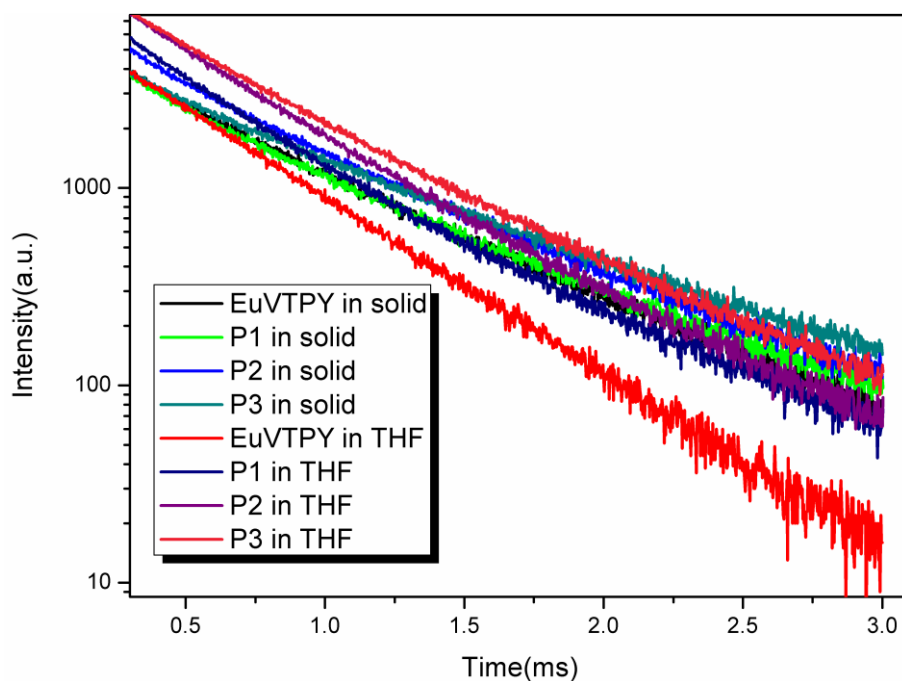


Figure S5 The decay curves of EuVTPY and Eu-polymers in solid state and in THF solutions ($\lambda_{em} = 616$ nm, $\lambda_{ex} = 360$ nm).

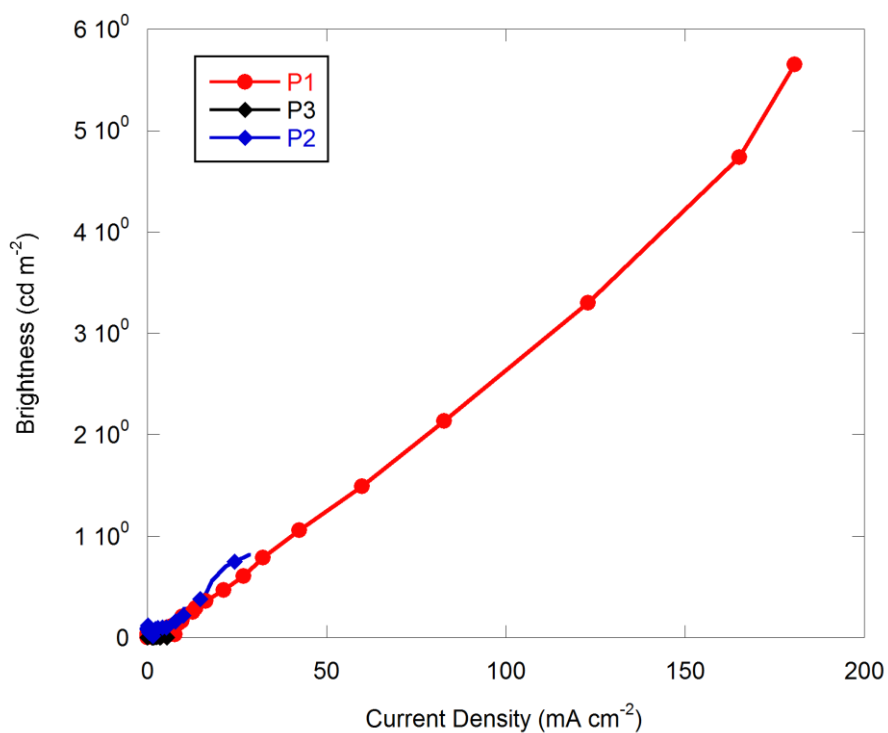


Figure S6 Brightness-Current Density (*B-J*) curves of device A-C.

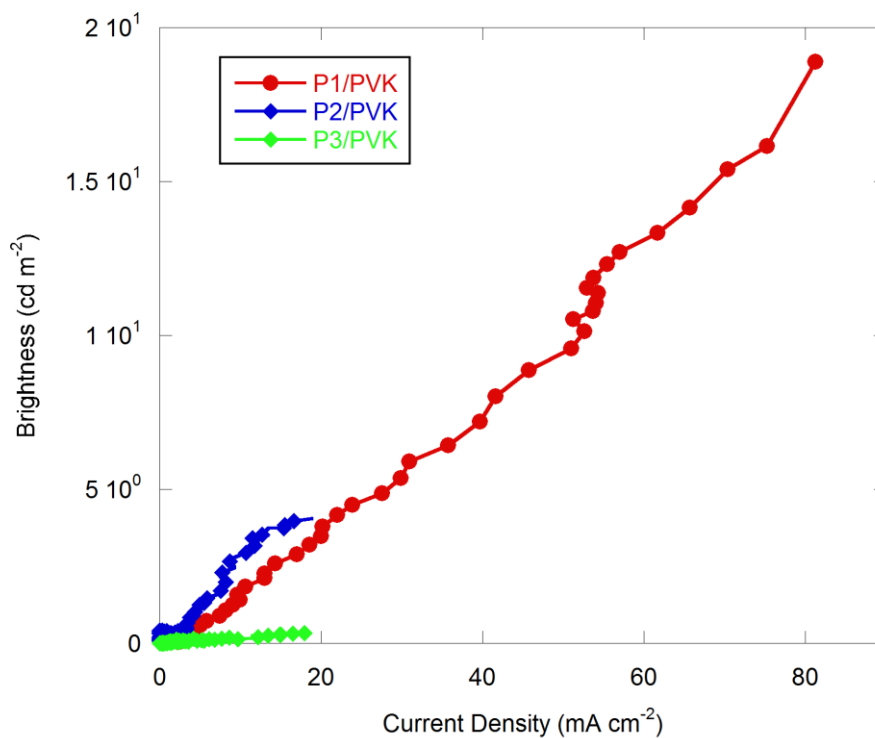


Figure S7 Brightness-Current Density (*B-J*) curves of device D-F.

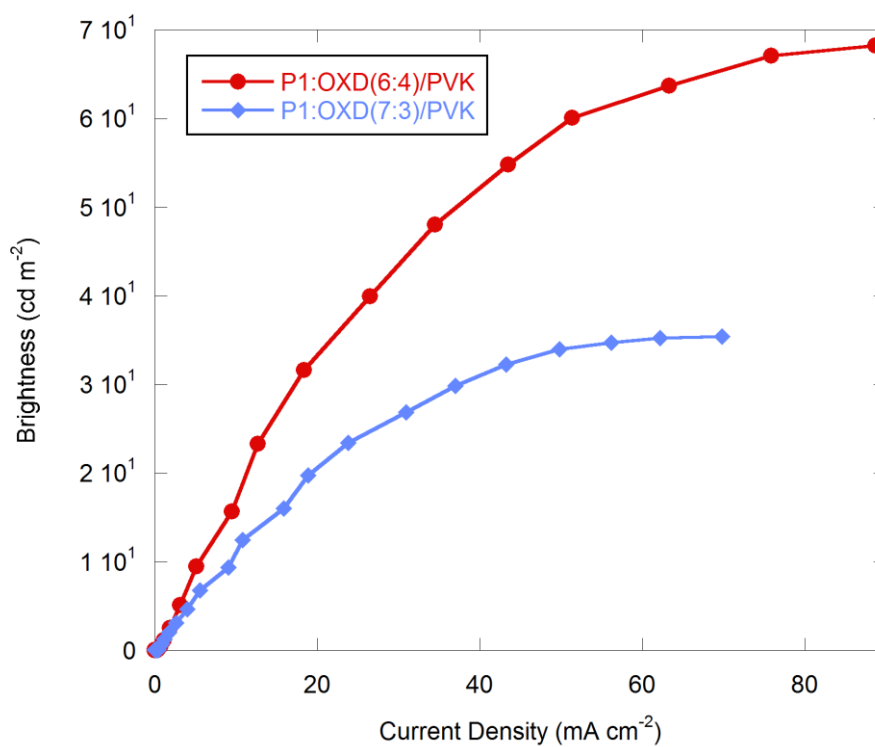


Figure S8 Brightness-Current Density (*B-J*) curves of device G-H.

3. Table S1 and S2.

Table S1 The feed and observed ratio in polymerization experiments of monomers

Copolymer	Feed ratio(EuVTPY:NVK)	Observed ratio	Mn	PDI
P1	1:97	1:100	10053	1.83
P2	1:48	1:50	8228	1.87
P3	1:25	1:30	6226	1.67

Table S2 Spherical atomic coordinates calculated *via* Sparkle/PM6 coordination polyhedron of the complex EuVTPY.

Atom	R (Å)	θ (degree)	φ (degree)
Eu ³⁺	0.000	0.000	0.000
Eu—N(Tpy)	2.551	44.342	12.355
Eu—N(Tpy)	2.555	70.631	299.721
Eu—N(Tpy)	2.548	71.294	84.186
Eu—O(TTA)	2.411	144.309	305.911
Eu—O(TTA)	2.403	88.364	338.014
Eu—O(TTA)	2.398	90.805	46.558
Eu—O(TTA)	2.414	26.952	43.459
Eu—O(TTA)	2.389	140.020	307.423
Eu—O(TTA)	2.403	106.844	16.702