

Supporting Information

**Novel phenyl-substituted pyrazinoporphyrazine complexes
of rare-earth elements: optimized synthetic protocols and
physicochemical properties**

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Figure S2. FT-IR spectra of ligand **4** in ZnSe.

Figure S3. Effect of the scan rate on the peak current Red_1 and Red_1' (A) and the same voltammograms normalized on square root of the scan rate.

Table S1. Oxidation-reduction potentials $E_{1/2}$ (V) for complex **2e** in comparison with analogous complexes.

Supporting references.

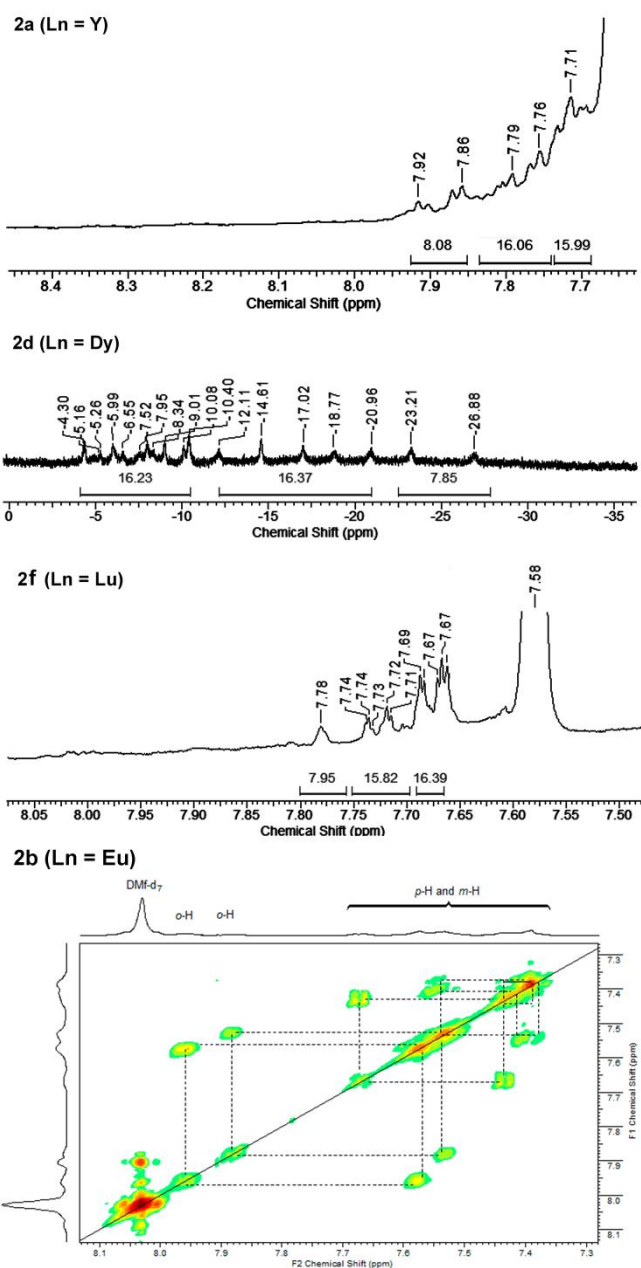


Figure S1. ^1H NMR spectra of complexes **2a**, **2d**, **2f** in $[\text{D}_5]\text{Py}$ and ^1H - ^1H COSY NMR spectrum of complex **2b** in $[\text{D}_7]\text{DMF}$.

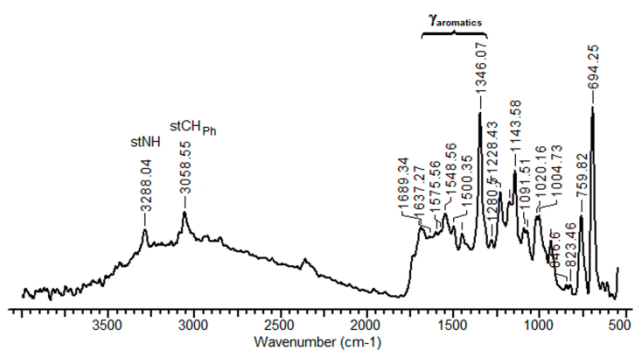


Figure S2. FT-IR spectra of ligand **4** in ZnSe.

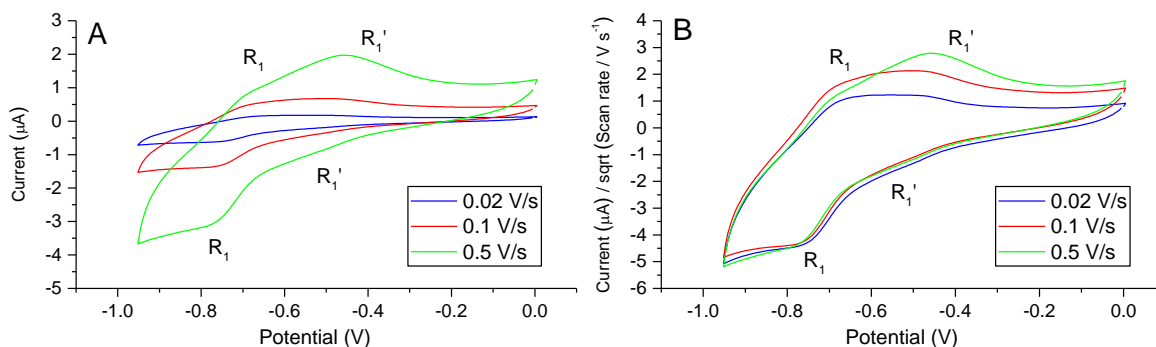


Figure S3. Effect of the scan rate on the peak current Red₁ and Red₁' (A) and the same voltammograms normalized on square root of the scan rate.

Table S1. Oxidation-reduction potentials E_{1/2} (V) for complex **2e** in comparison with analogous complexes.

Compound	Solvent	Red ₃	Red ₂	Red ₁	Ox ₁	Ox ₂	Fc ⁺ /Fc	ΔE _{Red1-Ox1}	Reference
2e	Pyridine	-1.24	-0.98	-0.74	+0.86	+1.20	0.610	1.60	This work
^{Ph8} PcLuOAc	<i>o</i> -DCB	-	-1.32	-0.85	+0.75	+1.44	0.640	1.60	[1]
^{Ph8} DzPzZn	Pyridine	-1.33 ^[a]	-1.04	-0.72	+0.64	+0.96	0.55 ^[b]	1.36	[2]
^{Py8} TPyzPzZn	Pyridine	-1.38 ^[c]	-0.72	-0.34	-	-	0.55	-	[3,4]
^{Py8} TPyzPzMg	Pyridine	-1.43 ^[d]	-0.79	-0.40	-	-	0.55	-	[3,4]
^{Cl8} TPyzPAH ₂	DMSO	-0.89	-0.38	-0.04	-	-	0.465	-	[5]
^{(C12H25)8} PyzPAH ₂	CH ₂ Cl ₂	-	-	-0.41	-	-	ca. 0.5 ^[e]	-	[6]

^[a] two additional reduction process (Red₄ and Red₅) observed at -1.49 and -1.72 V; ^[b] the value of 0.55 V for Fc⁺/Fc couple was reported in a followed publication of the same authors as in the original publication values were measured vs SCE; ^[c] two additional reduction processes (Red₄ and Red₅) observed at -1.66 and -1.83 V; ^[d] additional reduction process (Red₄) observed -1.70 V; ^[e] reported vs SCE, a recommended value for Fc⁺/Fc is given [7] as the value was reported vs SCE.

Abbreviations for the compounds:

2e = Octaphenyl-octaazaphthalocyaninato erbium(III) acetate

^{Ph8}PcLuOAc = Octaphenyl-phthalocyaninato lutetium(III) acetate

^{Ph8}DzPzZn = Tetrakis-2,3-(5,7-diphenyl-1,4-diazepino)porphyrizinato zinc(II)

^{Py8}TPyzPzZn = Tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrizinato zinc(II)

^{Py8}TPyzPzMg = Tetrakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrizinato magnesium(II)

^{Cl8}TPyzPAH₂ = Octachlorotetrapyrazinoporphyrazine

^{(C12H25)8}PyzPAH₂ = Octadodecyltetrapyrazinoporphyrazine

Supporting references:

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