Supporting Information

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

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

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

<table>
<thead>
<tr>
<th>Compound</th>
<th>Solvent</th>
<th>Red$_1$</th>
<th>Red$_2$</th>
<th>Red$_3$</th>
<th>Ox$_1$</th>
<th>Ox$_2$</th>
<th>$\Delta E_{Red1-Ox1}$</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>2e</td>
<td>Pyridine</td>
<td>−1.24</td>
<td>−0.98</td>
<td>−0.74</td>
<td>+0.86</td>
<td>+1.20</td>
<td>0.610</td>
<td>This work</td>
</tr>
<tr>
<td>Ph$_8$PcLuOAc</td>
<td>o-DCB</td>
<td>−1.32</td>
<td>−0.85</td>
<td>+0.75</td>
<td>+1.44</td>
<td>0.640</td>
<td>1.60</td>
<td>[1]</td>
</tr>
<tr>
<td>Ph$_8$DzPzZn</td>
<td>Pyridine</td>
<td>−1.33$^{[6]}$</td>
<td>−1.04</td>
<td>−0.72</td>
<td>+0.64</td>
<td>+0.96</td>
<td>0.55$^{[6]}$</td>
<td>1.36$^{[6]}$</td>
</tr>
<tr>
<td>Ph$_8$TPyzPzZn</td>
<td>Pyridine</td>
<td>−1.38$^{[6]}$</td>
<td>−0.72</td>
<td>−0.34</td>
<td></td>
<td></td>
<td>0.55</td>
<td>[3,4]</td>
</tr>
<tr>
<td>Ph$_8$TPyzPzMg</td>
<td>Pyridine</td>
<td>−1.43$^{[6]}$</td>
<td>−0.79</td>
<td>−0.40</td>
<td>−</td>
<td>−</td>
<td>0.55</td>
<td>[3,4]</td>
</tr>
<tr>
<td>Py$_8$TPyzPzMg</td>
<td>DMSO</td>
<td>−0.89</td>
<td>−0.38</td>
<td>−0.04</td>
<td>−</td>
<td>−</td>
<td>0.465</td>
<td>[5]</td>
</tr>
<tr>
<td>Cl$_8$TPyzPAH$_2$</td>
<td>CH$_2$Cl$_2$</td>
<td>−</td>
<td>−</td>
<td>−0.41</td>
<td>−</td>
<td>−</td>
<td>ca. 0.5$^{[6]}$</td>
<td>[6]</td>
</tr>
</tbody>
</table>

$^{[6]}$ two additional reduction processes (Red$_4$ and Red$_5$) observed at −1.49 and −1.72 V; $^{[6]}$ 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; $^{[6]}$ two additional reduction processes (Red$_4$ and Red$_5$) observed at −1.66 and −1.83 V; $^{[6]}$ additional reduction process (Red$_4$) observed −1.70 V; $^{[6]}$ 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
Ph$_8$PcLuOAc = Octaphenyl-phthalocyaninato lutetium(III) acetate
Ph$_8$DzPzZn = Tetraakis-2,3-(5,7-diphenyl-1,4-diazepino)porphyrzinato zinc(II)
Ph$_8$TPyzPzZn = Tetraakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrzinato zinc(II)
Ph$_8$TPyzPzMg = Tetraakis-2,3-[5,6-di(2-pyridyl)pyrazino]porphyrzinato magnesium(II)
Cl$_8$TPyzPAH$_2$ = Octachlorotetrapyrazinoporphyazine
Cl$_8$TPyzPAH$_2$ = Octadodecyltetrapyrazinoporphyazine

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