Electronic Supplementary Information (ESI)

for

Encapsulating ruthenium(II) complex into metal organic frameworks to engender high sensitivity for dopamine electrochemiluminescence detection

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Supporting figures

**Figure S1.** TEM image (A) N₂ gas sorption isotherm (B) of Ru-MOFs

**Figure S2.** ECL intensities of 0.5mg/ml Ru(bpy)₃²⁺ and Ru-MOFs with 5mM TPrA as coreactant.

**Figure S3.** Optimization of the pH on the Ru-MOFs ECL system
Figure S4. Optimization of the concentration of TPrA on the Ru-MOFs ECL system

Table S1. A comparison of different analytical techniques for the determination of dopamine.

<table>
<thead>
<tr>
<th>Detection method</th>
<th>Materials</th>
<th>LOD</th>
<th>Linear range</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorimetry</td>
<td>AHMT-AuNPs</td>
<td>70 nM</td>
<td>0.2-1.1 μM</td>
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<tr>
<td>Colorimetry</td>
<td>AgNPs</td>
<td>60 nM</td>
<td>0-0.6 μM</td>
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<td>Electrochemical</td>
<td>F-CuInS₂ QDs</td>
<td>200 nM</td>
<td>0.5-40 μM</td>
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<tr>
<td>Electrochemical</td>
<td>Graphene/SnO₂</td>
<td>80 nM</td>
<td>0.1-10 μM</td>
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<tr>
<td>Electrochemiluminescence</td>
<td>CdTe QDs</td>
<td>26 pM</td>
<td>50 pM-10 nM</td>
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<tr>
<td>Electrochemiluminescence</td>
<td>TiO₂ NPs</td>
<td>10 pM</td>
<td>10 pM-100 nM</td>
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<tr>
<td>Electrochemiluminescence</td>
<td>g-C3N4-PTCA</td>
<td>2.4 pM</td>
<td>6 pM - 30 nM</td>
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<td>Electrochemiluminescence</td>
<td>Ru-MOFs</td>
<td>0.024 pM</td>
<td>0.1 pM-10 nM</td>
<td>This work</td>
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</tbody>
</table>

References


7. Fu, X.; Feng, J.; Tan, X.; Lu, Q.; Yuan, R.; Chen, S., Electrochemiluminescence sensor for dopamine with a dual molecular recognition strategy based on graphite-like carbon nitride nanosheets/3,4,9,10-perylenetetracarboxylic acid hybrids. *RSC
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