SUPPLEMENTARY MATERIAL

Dinuclear Lanthanide(III) Complexes Showing Single-Molecule Magnet Behaviour and Optical Property

Ruo-Xi Chen,⁴ Ou Sun,⁴ Yuan-Yi Xu,⁴ Yue Qi,⁴ Bo-Yu Xie,⁴ and Ting Gao⁵,⁶

⁴Key Lab of Functional Inorganic Material Chemistry (MOE), School of Chemistry and Materials Science, Heilongjiang University, No. 74, Xuefu Road, Nangang District, Harbin 150080, China.

⁵Technology Centre of Dalian Customs District, No. 60, Changjiang East Road, Zhongshan District, Dalian 116000, China.

⁶Corresponding author. Email: gaotingmail@sina.cn

Fig. S1 Infrared spectra of complex 1-3, H₂salen and Eu(TTA)₃·2H₂O
Fig. S2 PXRD patterns for 1-3

Fig. S3 The luminescence excitation spectrum for complex 1 in the solid state at room temperature.
Fig. S4 a) Luminescence decay profiles for complex 1 in solid state; b) Luminescence decay profiles for complex 1 in CH$_3$OH solution

Fig. S5 Visible emission spectrum of complex 3 in the solid state at room temperature.
Fig. S6 Phosphorescence spectrum of [Gd₂L₂(TTA)_4(OAc)_2] at 77 K

<table>
<thead>
<tr>
<th></th>
<th>Eu(1)–O(1)</th>
<th>Eu(1)–O(3)</th>
<th>Eu(1)–O(5)</th>
<th>Eu(1)–O(6)</th>
<th>Eu(1)–O(62)</th>
<th>Eu(1)–O(5a)</th>
<th>Eu(1)–O(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2.289(4)</td>
<td>2.385(4)</td>
<td>2.343(4)</td>
<td>2.378(5)</td>
<td>2.390(4)</td>
<td>2.512(4)</td>
<td>2.563(4)</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>