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**Lanthanide complexes with phosphorylated 2-naphthylsulfonamides ligands as  
electromagnetic radiation converters**

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The lanthanide complexes of the type Na[Ln(L)<sub>4</sub>] (**LnL1**) (Ln = Nd<sup>3+</sup>, Eu<sup>3+</sup>, Tb<sup>3+</sup>, Yb<sup>3+</sup>), with di(4-methylphenyl) 2-naphthylsulfonylamidophosphate (HL<sup>1</sup>), as well as sodium salt (**NaL**), were synthesized. Single-crystal X-ray diffraction, IR, absorption and emission spectroscopies at 300, 77 and 4K were used to characterize the compounds. The ligand-to-metal energy transfer processes were analyzed. The dominant role of the ligand singlet state in intramolecular energy transfer processes was discussed and the main channels of the ligand-to-metal energy transfer for **EuL1** are proposed as S<sub>1</sub> → <sup>5</sup>G<sub>3</sub>, <sup>5</sup>G<sub>6</sub>, <sup>5</sup>D<sub>4</sub>, <sup>5</sup>L<sub>6</sub> with a fast

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