

SYNTHESIS, MAGNETISM AND PHOTOPHYSICS OF HETEROMETALLIC LANTHANIDE COORDINATION COMPLEXES

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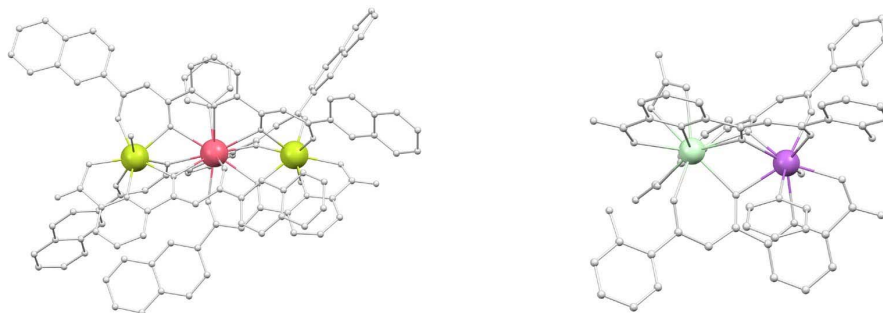
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Lanthanide coordination complexes are of interest to a variety of fields of technological relevance.^[1, 2] There is an added value to systems exhibiting two different lanthanide atoms in the structure, in view of the possible synergies between them. They are, however, very difficult to prepare in one step reactions because of the chemical similarity among this group of elements, which prevents their selective allocation in different positions of the molecule. We have discovered a family of ligands that furnish with remarkable selectivity heterometallic complexes of the type [LnLn'] and [LnLn'Ln].^[3] We will discuss the single crystal X-ray diffraction molecular structure of these two types of complexes as well as their stability towards scrambling as calculated by DFT calculations.^[4] Their use in diverse research areas will also be introduced. On the one hand, some selected members of these two families have shown the potential to behave as two or three qubit quantum gates within quantum computing protocols.^[5, 6] On the other hand, photoluminescent activity following intramolecular Ln-to-Ln' energy transfer events has also been demonstrated.^[7, 8]



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