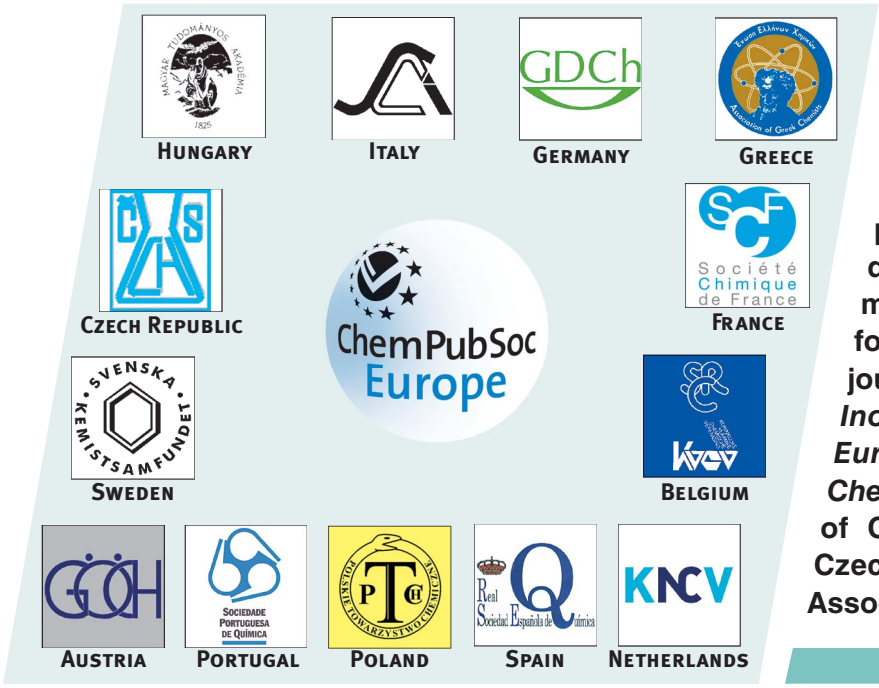

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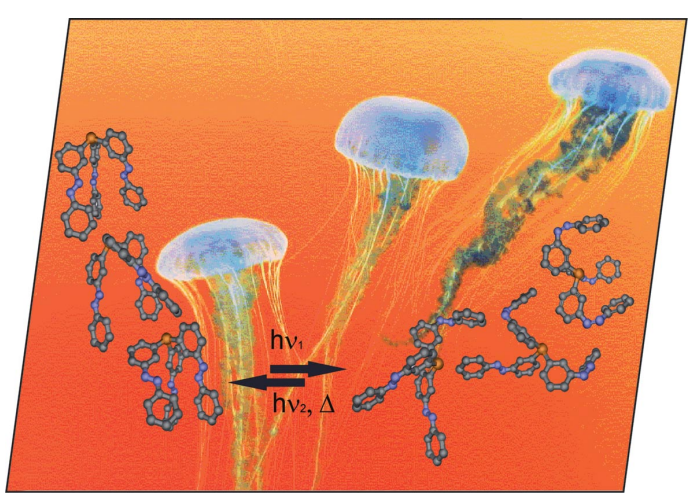
Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

COVER PICTURE

The cover picture shows the light-induced isomerization of (*E*,*E*,*E*)-tris(azobenzene)–phosphane to the (*Z*,*E*,*E*), (*Z*,*Z*,*E*) and (*Z*,*Z*,*Z*) conformers. This photo-triggered skeletal change has been illustrated by the natural umbrella-like shape and movements of jellyfish. Details of the synthesis and switchability of this type of ligands and their platinum complexes are discussed in the Short Communication by Z. Freixa et al. on p. 2075 ff.



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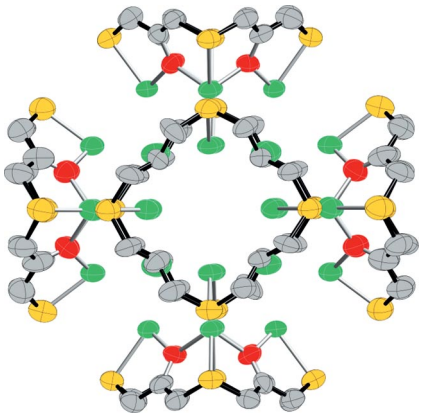
SHORT COMMUNICATIONS

FULL PAPERS

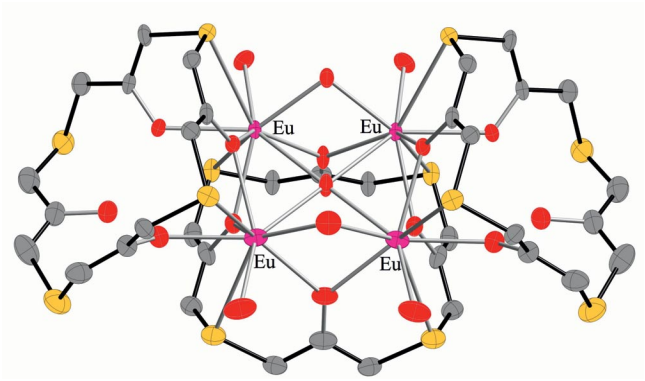
Paramagnetic Clusters



Complexes formed by a variety of transition-metal ions with *p-tert*-butyltetrathiacalix[4]arene show a remarkable range of structures and nuclearity: a hydroxo-cluster involving Ni^{II}, for example, containing 32 metal ions enrobed by six thiacalixarene units disposed in an octahedral array.

Keywords: Calixarenes / Transition metals / Solvent inclusion / Solid-state structures

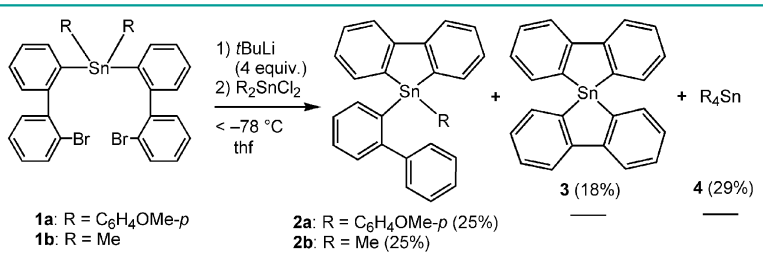
Lanthanide Aggregates



Keywords: Calixarenes / Rare earths / Solvent inclusion / Solid-state structures

Complexes of lanthanide(III) ions with *p-tert*-butyltetrathiacalix[4]arene show forms that depend both on the particular lanthanide ion and a variety of subtle factors, probably including kinetic effects. Typically, the structures involve a sandwich-like array of calixarene units incorporating three or four metal ions, although Eu^{III}, in particular, shows a remarkable variety in its complexes.

Pentaorganostannates



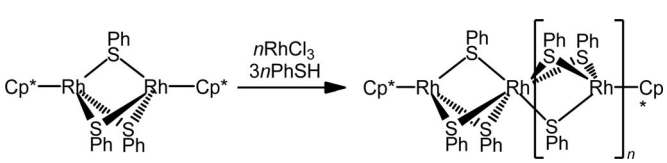
1a: R = C_6H_4OMe-*p*
1b: R = Me

2a: R = C_6H_4OMe-*p* (25%)
2b: R = Me (25%)

Keywords: Stannanes / Nucleophilic substitution / Hypervalent compounds

The reaction of bis(2-bromo-2′-biphenyl)-stannanes **1** with *tert*-butyllithium in the presence of diaryl- and dialkyldichlorostannanes leads to the extrusion of aryl and alkyl groups on the tin atom, affording 9-stannafluorene derivatives bearing biphenyl groups. The intermediates of the reactions were assigned to the corresponding pentaorganostannates, which were characterized by NMR spectroscopy.

Rhodium Thiolato Oligomers



Keywords: Rhodium / S ligands / Mass spectrometry / Oligomerization / Cluster compounds

Ligand exchange and coordination studies were done on the dinuclear thiolato-briged complex [Cp*Rh(μ-SPh)$_3$RhCp*]Cl. Oligomeric materials of the general formula [Cp*Rh(μ-SPh)$_x$(μ-Cl)$_{3-x}${Rh(μ-SPh)$_3$}$_n$-RhCp*] (x = 1 to 3; n = 1 to 4) were formed by insertion of [Rh(SPh)$_3$] units when the bridging coordination mode of the thiophenolato ligands was altered.

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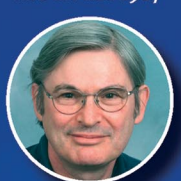
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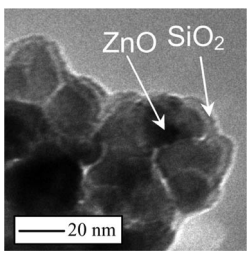
Dye-Sensitized Solar Cells

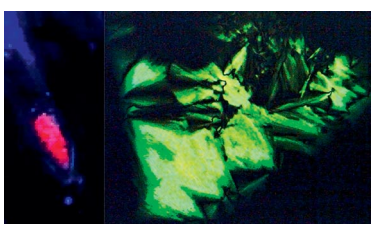
Silica nanolayers were coated on ZnO electrodes by a simple sol−gel transformation under precise control of the coating methods, coating periods, and solution composition. The open-circuit photovoltage of dye-sensitized solar cells can be substantially enhanced by using SiO_2-coated ZnO electrodes.



Keywords: Photovoltaic materials / Semiconductors / Nanostructures / Sol−gel processes

Luminescent Ionic Liquid

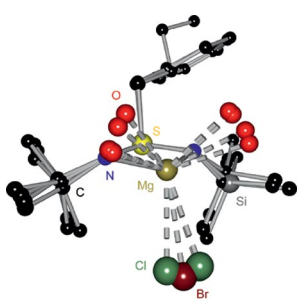
$[C_{12}mim]_4[EuBr_6]Br$ in the temperature range of −3 to 98 °C adopts a smectic liquid crystal phase. At 77 K it shows a strong red emission with a lifetime of about 2.6 ms. The quantum efficiency of emission is about 0.45.



Keywords: Europium / Ionic liquids / Ionic liquid crystals / Lanthanides / Luminescence / Thermobehavior

Sulfur Diimide Grignards

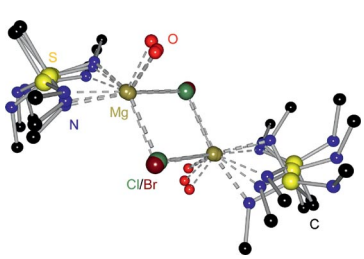
Sulfur diimides react readily with different Grignard reagents to form highly pure magnesium diimidosulfinates in excellent yields. These diimidosulfinates have been studied in solution and in the solid state.



Keywords: Sulfur / Imides / Magnesium / Grignard reaction / Structure elucidation

Sulfur Triimide Grignards

In contrast to bulky organolithium complexes, the sulfur triimide $S(NtBu)_3$ reacts readily with Grignard reagentss to form magnesium triimidosulfonates with a third pendent imido group in an ideal position to coordinate a second metal. The conformation of these novel Mg complexes is studied in the solid state and in solution.



Keywords: Sulfur / Imides / Magnesium / Grignard reaction / Structure elucidation

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* Author to whom correspondence should be addressed.

Supporting information on the WWW (see article for access details).

If not otherwise indicated in the article, papers in issue 13 were published online on April 26, 2010