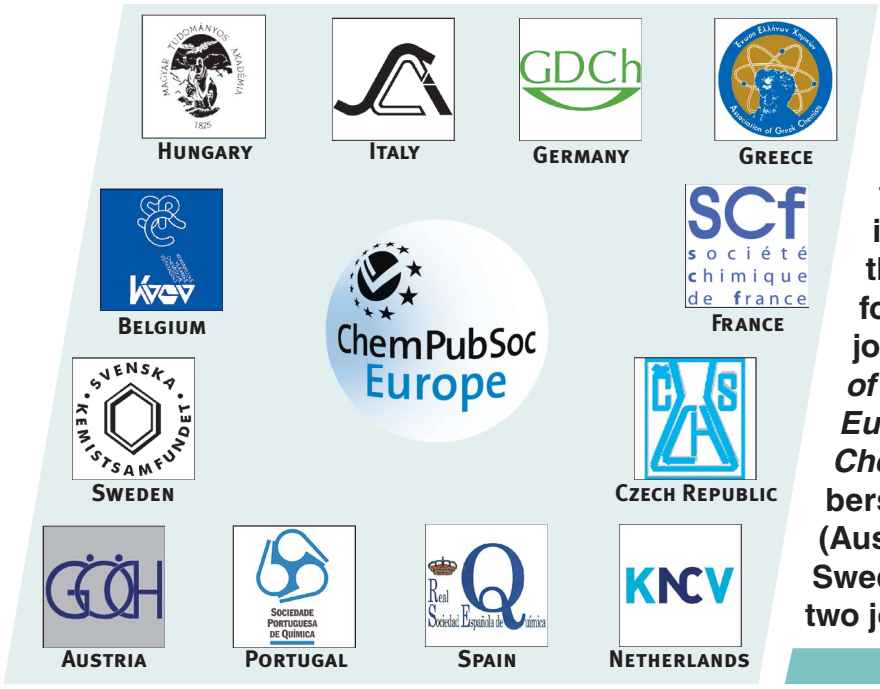
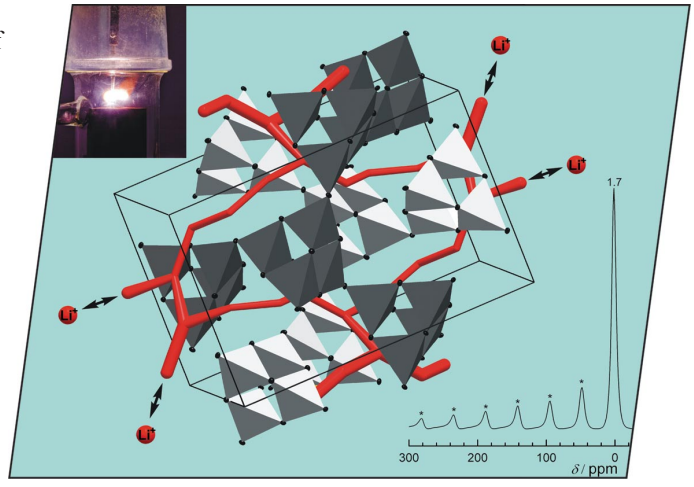


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows the $[SiN_2]^{2-}$ framework of the lithium ion conductor Li_2SiN_2. The hitherto unknown crystal structure reveals possible Li^+ pathways (red channels) for lithium ion conductivity. Li_2SiN_2 was synthesized from "$Si(CN_2)_2$", highlighted as a promising precursor for nitridosilicates in arc-welded (top left) tantalum crucibles. The structure was solved from single crystals, and the ^7Li MAS solid-state NMR spectrum (bottom right) is presented. Details are discussed in the article by W. Schnick et al. on p. 1579ff.

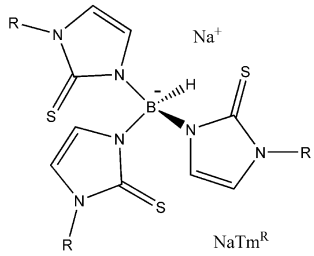


CONTENTS

MICROREVIEW

Soft Scorpionates

Keywords: Tripodal ligands / S ligands / Scorpionate ligands / Imidazole-2-thione / Metal complexes / Transition metals / Coordination modes

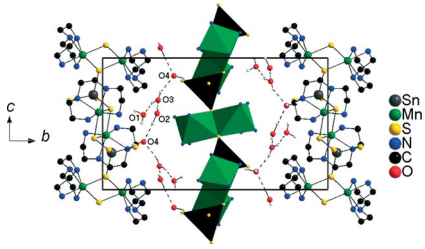


The development of a series of soft scorpionate ligands based on imidazole-2-thiones is discussed. The coordination chemistry with both transition metals and main-group elements is reviewed and the key features of the chemistry are outlined, including bonding modes, steric and electronic effects, metal to borohydride interactions and boratrane formation.

SHORT COMMUNICATION

Inorganic–Organic Hybrids

Keywords: Tin / Sulfur / Structure elucidation / Organic-inorganic hybrid composites / Coordination modes

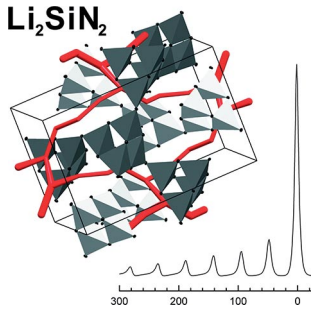


$Mn_2S_2N_8$ di-octahedra are connected into a one-dimensional chain by μ_3-type S atoms of the $[SnS_4]^{4-}$ anion. The $\{[Mn(trien)]_2SnS_4\}_\infty$ chain may be viewed as an inorganic–organic hybrid compound with the di-octahedra as nodes and the $[SnS_4]^{4-}$ anion as linkers. Water chains surround the inorganic–organic hybrid compound.

FULL PAPERS

Lithium Nitridosilicates

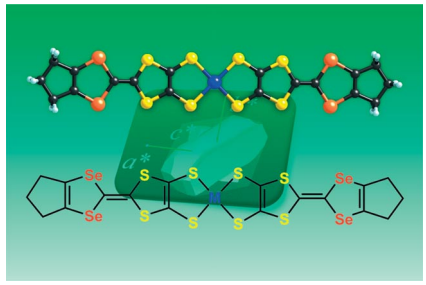
Keywords: Lithium / Silicon / Nitridosilicates / Solid-state structures



"$Si(CN_2)_2$" has been identified as a novel precursor for nitridosilicates. The crystal structure of the Li^+ ion conductor Li_2SiN_2 has been determined. Li_2SiN_2 consists of two interpenetrating cristobalite type nets which are made up from hetero-adamantane-like $[Si_4N_6]N_{4/2}$ groups. The ^7Li and ^{29}Si solid-state NMR spectra of Li_2SiN_2 are reported.

Molecular Conductors

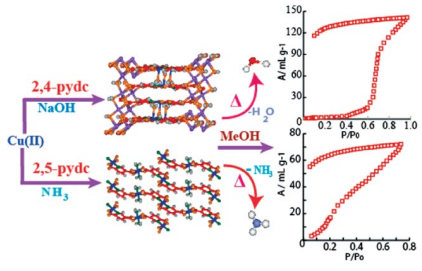
The single-component molecular conductors [M(tmstfdt)$_2$] (M = Ni, Au; tmstfdt = trimethylenediselenadithiafulvalenedithiolate) substituted with selenium atoms are isostructural with [M(tmdt)$_2$] (M = Ni, Au; tmdt = trimethylenetetrathiafulvalenedithiolate). [Ni(tmstfdt)$_2$] has essentially metallic properties down to low temperature, and [Au(tmstfdt)$_2$] undergoes a magnetic transition at around 5K.



Keywords: Selenium / Conducting materials / Nickel / Gold / Sulfur heterocycles

Metal–Organic Frameworks

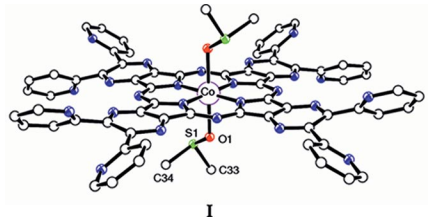
Two flexible metal–organic frameworks of Cu^{II} were synthesized and characterized. The nonporous dehydrated framework of **1** exhibits guest-induced structural transformation with gated hysteretic sorption, regulated by the unsaturated Lewis acidic sites. The desolvated framework of **2** contains supramolecular channels and exhibits MeOH sorption properties driven by the unsaturated Cu^{II} sites.



Keywords: Host–guest systems / Flexible frameworks / Adsorption / Copper / Magnetic properties

Porphyrazinato Co Complexes

The Co^{I} (rare), Co^{II} (structurally elucidated, **I**) and Co^{III} (stable to air) complexes prepared from [Py$_8$TPyzPzCo] {Py$_8$TPyzPz = tetrakis[5,6-di(2-pyridyl)-2,3-pyrazino]-porphyrazinato dianion} – namely Na[Py$_8$TPyzPzCo], [Py$_8$TPyzPzCo(DMSO)$_2$] and [Py$_8$TPyzPzCo](SbCl$_6$) – were studied by IR, UV/Vis, EPR and X-ray spectral measurements.

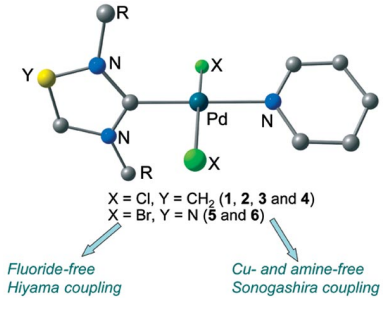


I

Keywords: Porphyrazines / Cobalt / Redox chemistry

Hiyama and Sonogashira Couplings

A new series of robust, user-friendly and highly active PEPPSI-themed (pyridine-enhanced precatalyst preparation, stabilization and initiation) precatalysts **1**–**6** have been designed for the fluoride-free Hiyama and Cu- and amine-free Sonogashira couplings in air in a mixed aqueous medium.

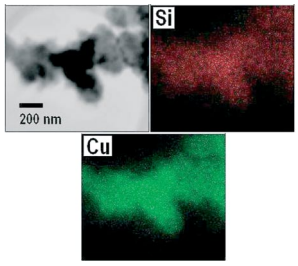


Keywords: Carbenes / Palladium / Cross-coupling / Hiyama reaction / Sonogashira reaction

CONTENTS

Nanoparticles

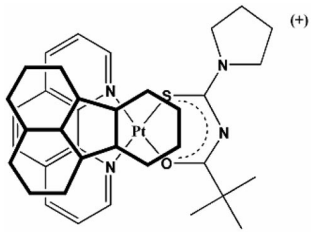
Keywords: Nanoparticles / Hydrothermal synthesis / Silicon / Surface modification / Surface chemistry



The Si-functionalised nanoparticles were synthesised by a hydrothermal reaction of metal salts and subsequent surface modification of the resultant particles by organofunctional silicon compounds. The compositions, shapes and sizes of the resultant particles proved to be significantly affected by the structures of the silicon compounds.

Pt(II) Complex Aggregation

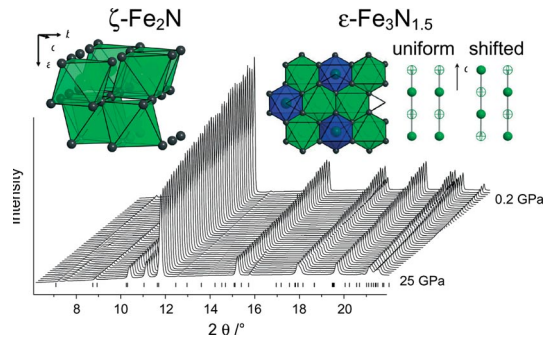
Keywords: Noncovalent interactions / Pi interactions / NMR spectroscopy / Diffusion coefficients / Association constants



Non-covalent π–cation interaction is postulated to be the driving force for the outer-sphere complex formation of [Pt^{II}(phen)(L-*S*,*O*)]$^+$ with itself and with fluoranthene in acetonitrile. In contrast, fluoranthene aggregation through π–π interactions does not occur.

Iron Nitrides

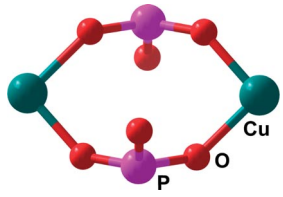
Keywords: Iron / Nitrides / High-pressure chemistry / Ab-initio calculations / X-ray diffraction



Access to single-crystalline iron nitride hard materials is achieved via a novel high-pressure–high temperature transition pathway. Application to ζ-Fe_2N has led to formation of nitrogen-rich ε-$Fe_3N_{1.5}$.

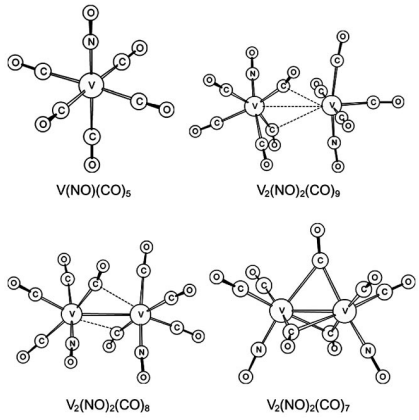
Copper(II) Phosphonates

Keywords: Copper / Phosphorus / Magnetic properties / Dinuclear complex / N ligands



Soluble dinuclear copper(II) phosphonates containing an eight-membered $Cu_2O_4P_2$ ring were synthesized from a Cu^{II} salt, a chelating nitrogen ligand and a lipophilic phosphonic acid. These complexes retain their structures in solution and show excellent nuclease activity in the conversion of supercoiled pBR322 DNA form I into nick form II without the need for any external oxidant.

The structures of $V(NO)(CO)_n$ and $V_2(NO)_2(CO)_n$ have been examined by density functional theory. The optimized structures of the unsaturated derivatives $V(NO)(CO)_4$ and $V(NO)(CO)_3$ can be derived from the octahedral $V(NO)(CO)_5$ structure by loss of one or two carbonyl groups, respectively. Bridging CO groups are preferred over bridging NO groups in $V_2(NO)_2(CO)_n$ (n = 9, 8, 7). The saturated $V_2(NO)_2(CO)_9$ is thermodynamically unstable with respect to dissociation into $V(NO)(CO)_5$ + $V(NO)(CO)_4$.



H. Wang,* Y. Xie, R. B. King,*
H. F. Schaefer III **1647–1656**

Vanadium Carbonyl Nitrosyl Compounds: The Carbonyl Nitrosyl Chemistry of an Oxophilic Early Transition Metal

Keywords: Density functional calculations / Structure elucidation / Carbonyl ligands / Bond energy / Vanadium complexes

* 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 11 were published online on March 30, 2009

