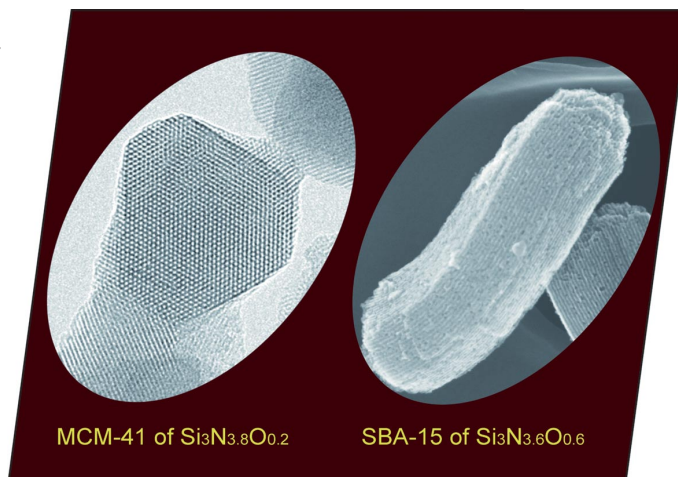


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Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

## COVER PICTURE

The cover picture shows a new family of mesoporous silicon (oxy)nitrides prepared by the nitridation of mesoporous silicas with ammonia. The (oxy)nitrides obtained maintained their respective regular pore structures. The nitrogen contents could be controlled by the amounts of ammonia supplied. The use of a plug-flow reactor instead of a usual boat-type reactor is a key to the successful synthesis of highly nitrided samples. Details are discussed in the article by M. Iwamoto et al. on p. 2235 ff.



# CONTENTS

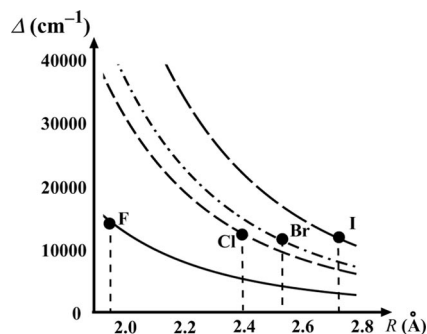
## SHORT COMMUNICATIONS

### Ligand Field Theory

H. Bolvin\* ..... 2221–2223

Ab Initio Investigation of Spectroscopic Parameters for  $\text{CrX}_6^{3-}$ : The Unexpected Role of Bond Length Variation – Size Really Matters

**Keywords:** Ab initio calculations / Ligand field theory / Spectrochemical series / Excited states / Transition metals / Halides



Within the  $\text{CrX}_6^{3-}$  series, it is shown that  $\pi$  effects decrease down the series and that the decrease in the ligand field parameter,  $\Delta$ , is due to the lengthening of the bond.

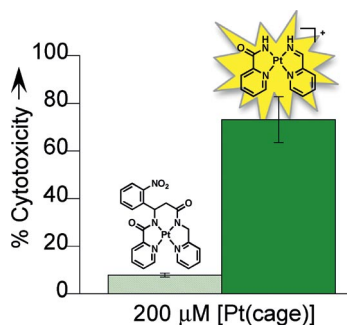
### Cancer Therapy

K. L. Ciesinski, L. M. Hyman,  
D. T. Yang, K. L. Haas, M. G. Dickens,  
R. J. Holbrook,  
K. J. Franz\* ..... 2224–2228



A Photo-Caged Platinum(II) Complex That Increases Cytotoxicity upon Light Activation

**Keywords:** Platinum / Cisplatin / Caged compounds / Phototherapy / Photoactivation / Prodrugs / Cytotoxicity



Photoinitiated drug release is an attractive strategy for increasing drug efficacy only at the irradiated site while minimizing toxicity to surrounding healthy tissue. Here we show that a neutral, nontoxic  $\text{Pt}^{\text{II}}$  complex that is inert to ligand exchange reactions can be converted by UV light to a charged complex with light-dependent cytotoxicity.

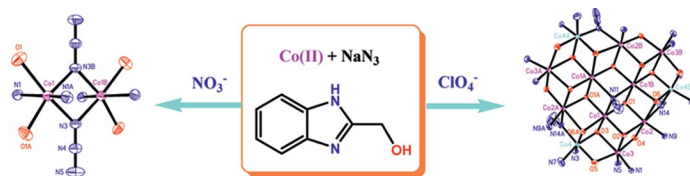
### Mixed-Valence Cobalt Clusters

L.-L. Zheng, J.-D. Leng, R. Herchel,  
Y.-H. Lan, A. K. Powell,  
M.-L. Tong\* ..... 2229–2234



Anion-Dependent Facile Route to Magnetic Dinuclear and Dodecanuclear Cobalt Clusters

**Keywords:** Azides / Cobalt / Cluster compounds / Magnetic properties



A dodecanuclear  $\text{Co}^{\text{III}}_3\text{Co}^{\text{II}}_9$  and a dinuclear  $\text{Co}^{\text{II}}_2$  cluster were synthesized facily from reactions of different cobalt(II) salts with the ligand (1*H*-benzimidazol-2-yl)-

methanol. The cobalt ions in the unprecedented  $\text{Co}_{12}$  supercluster are linked into a disclike structure through  $\mu_3\text{-O}_L$ ,  $\mu\text{-O}_L$ ,  $\mu_3\text{-O}^{2-}$ ,  $\mu_{1,1}\text{-N}_3^-$  and  $\mu_{1,1,1}\text{-N}_3^-$  bridges.

## FULL PAPERS

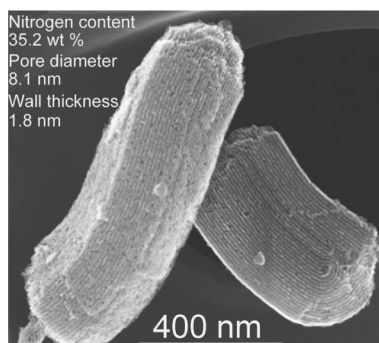
### Mesoporous Silicon (Oxy)Nitride

F. Hayashi, K.-i. Ishizu,  
M. Iwamoto\* ..... 2235–2243



Effect of Pore Structure on the Nitridation of Mesoporous Silica with Ammonia

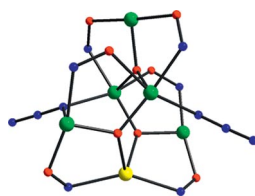
**Keywords:** Mesoporous materials / Nitrides / Nanostructures / Heterogeneous catalysis / Ceramics



Mesoporous silicon (oxy)nitrides with regular pore structures were prepared by nitridation of mesoporous silica MCM-41, SBA-15, and MCM-48 with ammonia. The nitrogen contents were 35–39 wt.-%. The reaction rates were dependent on the surface areas. Characterization revealed no collapse of the regular pore structure through the nitridation.

## Polynuclear Manganese Complexes

Two new hexanuclear, mixed-valence,  $Mn^{II/III}$  cage-like clusters have been obtained from the amalgamation of azide and methyl 2-pyridyl ketone oxime ligands in Mn non-carboxylate chemistry. The complexes both possess small ( $S = 5/2$ ) spin ground states that suggest the presence of spin frustration effects.



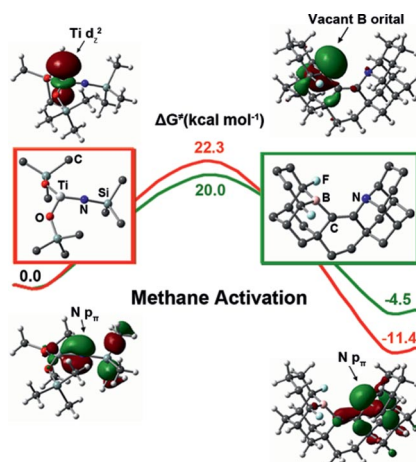
**C. Lampropoulos, T. C. Stamatatos, M. J. Manos, A. J. Tasiopoulos, K. A. Abboud, G. Christou\* ... 2244–2253**

New Mixed-Valence  $Mn^{II/III}_6$  Complexes Bearing Oximate and Azido Ligands: Synthesis, and Structural and Magnetic Characterization

**Keywords:** Mixed-valent compounds / Polynuclear complexes / Manganese / Azides / Magnetic properties

## Methane Activation

Whereas the transition-metal (TM) complex maintains an active site through symmetry-unmatched orbitals, the designed molecule uses linkages to prohibit electron donation from the N to the B center, thus preserving an effective active site for Lewis acid/base effects. Some of these molecules have kinetics and thermodynamics in activating methane comparable with or better than those of the TM complex.



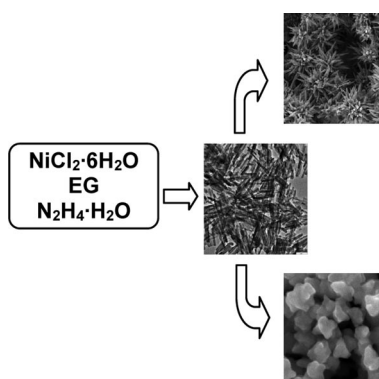
**G. Lu, L. Zhao, H. Li, F. Huang, Z.-X. Wang\* ..... 2254–2260**

Reversible Heterolytic Methane Activation of Metal-Free Closed-Shell Molecules: A Computational Proof-of-Principle Study

**Keywords:** Ab initio calculations / C–H activation / Metal-free methane activation / Frustrated Lewis pair / Lewis acid/base effects

## Ni Nanoflowers

3D hierarchical flower/star-like Ni nanostructures were formed. Once the reagents are mixed, the rod-like morphology of the intermediate products  $[Ni(N_2H_4)_2]Cl_2$  are first synthesized. Depending on the experimental temperature, nickel nanostructures varying from a flower-like superstructure to nanostars can be achieved by the oriented growth of preferred nickel crystal planes.

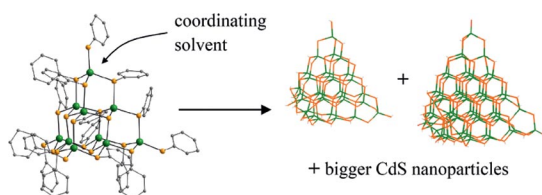


**P. Li, N. Wang,\* R. Wang\* ..... 2261–2265**

Flower-Like Nickel Nanocrystals: Facile Synthesis, Shape Evolution, and Their Magnetic Properties

**Keywords:** Nickel / Nanostructures / Solution synthesis / Magnetic properties

## Cadmium Sulfide Nanoparticles



The molecular cluster  $[Cd_{10}S_4(SPh)_{16}]^{4-}$  undergoes rearrangement reactions in coordinating solvents resulting in larger clusters and eventually formation of CdS nanoparticles. The mechanism of this transformation was investigated.

ters and eventually formation of CdS nanoparticles. The mechanism of this transformation was investigated.

**M. Bendova, M. Puchberger, S. Pabisch, H. Peterlik, U. Schubert\* ..... 2266–2275**

Studies on the Formation of CdS Nanoparticles from Solutions of  $(NMe_4)_4-[Cd_{10}S_4(SPh)_{16}]$

**Keywords:** Cadmium / Cadmium sulfide / Nanoparticles / Cluster compounds / S ligands / Rearrangement

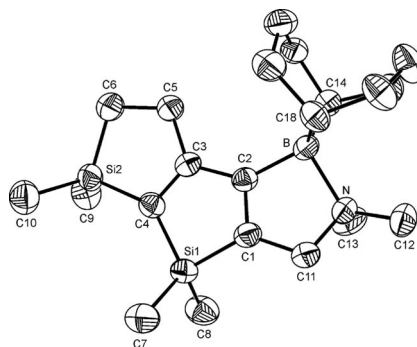
# CONTENTS

## Fused Silacarbacycles

B. Wrackmeyer,\* O. L. Tok,  
E. V. Klimkina, W. Milius..... 2276–2282

Fused Silacarbacycles Containing a Silole Unit: 1,2-Hydroboration and 1,1-Organoboration of Alkynyl(vinyl)silanes

**Keywords:** Alkynylsilanes / Hydroboration / Organoboration / Siloles / NMR spectroscopy



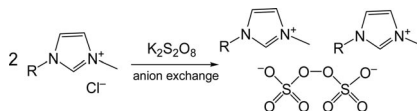
Alkynyl(vinyl)silanes containing two alkynyl groups react with 9-borabicyclo[3.3.1]nonane (9-BBN) by consecutive 1,2-hydroboration of the vinyl group and twofold intramolecular 1,1-organoboration to afford 1,6-disilapentalene derivatives, fused silacarbacycles with a silole unit.

## Task-Specific Ionic Liquids

S. Shi, A. Kong, X. Zhao, Q. Zhang,  
Y. Shan\* ..... 2283–2289

Synthesis and Characterization of Task-Specific Ionic Liquids Based on Peroxydisulfate and Their Application in Oxidation Reactions

**Keywords:** Ionic liquids / Peroxydisulfate salts / Imidazolium salts / Oxidation / Alcohols



Four task-specific ionic liquids based on peroxydisulfate anions were synthesized and characterized. These ionic liquids have the desired properties for given oxidation reactions of alcohols and thiols, and they show excellent performance as both oxidant and medium in solvent- and catalyst-free reaction systems.

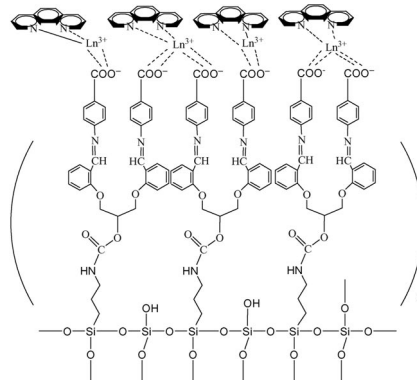
## Luminescent Lanthanide Hybrids

J.-L. Liu, B. Yan,\* L. Guo ..... 2290–2296



Photoactive Ternary Lanthanide-Centered Hybrids with Schiff-Base Functionalized Polysilsesquioxane Bridges and N-Heterocyclic Ligands

**Keywords:** Organic–inorganic hybrid composites / Lanthanides / Schiff bases / Luminescence / Polysilsesquioxane bridges



This work focuses on the synthesis of a series of silica-based organic–inorganic hybrid materials, containing different Schiff-base organic compounds, through a covalent self-assembly process. The resulting materials exhibit regular, uniform microstructures and the organic and inorganic compounds are covalently linked through Si–O bonds.

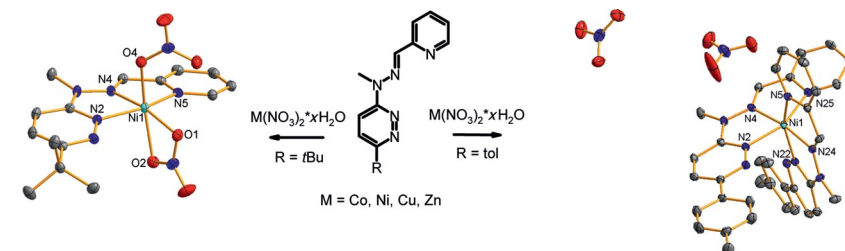
## Schiff Base Pyridazine Complexes

K. R. Grünwald, G. Saischek,  
M. Volpe, F. Belaj,  
N. C. Mösch-Zanetti\* ..... 2297–2305



Pyridazine-Based Ligands and Their Coordinating Ability towards First-Row Transition Metals

**Keywords:** Nitrogen heterocycles / Schiff bases / Tridentate ligands / Chelates



A new class of pyridazine-based ligands was prepared and their coordination of first-row transition metals was tested. Evidence from X-ray diffraction and electro-

chemical analysis shows the formation of 1:1 and 1:2 complexes depending on the electronic influence exerted by the peripheral substituents on the particular ligand.

\* Author to whom correspondence should be addressed.

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