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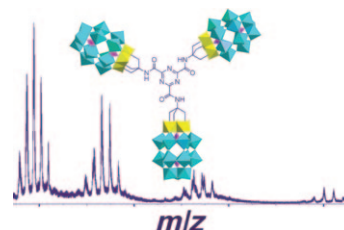


## Polyoxometalates

C. P. Pradeep, F.-Y. Li, C. Lydon, H. N. Miras, D.-L. Long, L. Xu, L. Cronin\*

Design and Synthesis of “Dumb-bell” and “Triangular” Inorganic–Organic Hybrid Nanopolyoxometalate Clusters and Their Characterisation through ESI-MS Analyses

**ESI-MS it!** A new class of nanometer-sized “dumb-bell” and “triangular” inorganic–organic hybrids are developed by covalent functionalisation of  $V_3$ -capped Dawson type cluster with linear and triangular bis-(TRIS) and tris(TRIS) ligands, respectively. These huge hybrids are unambiguously characterised by using high-resolution ESI-MS.



Chem. Eur. J.  
DOI: 10.1002/chem.201100257

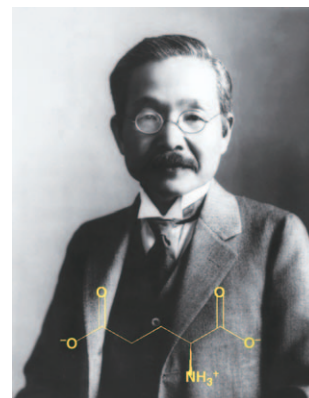


## Umami Compounds

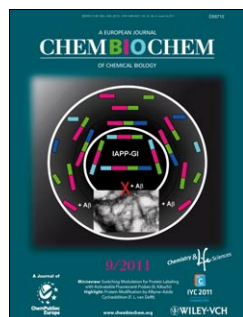
E. Nakamura\*

One Hundred Years since the Discovery of the “Umami” Taste from Seaweed Broth by Kikunae Ikeda, who Transcended his Time

**So close you can almost taste it:** In 1908, Prof. Ikeda found that glutamate was essential for a meal to taste good. He isolated it from seaweed broth, found it also in asparagus, tomato, cheese, and meat, synthesized it by hydrolysis of wheat gluten, and developed into a food additive like sugar, salt, and vinegar. His primary intention was to improve nutrition with the aid of chemistry.



Chem. Asian J.  
DOI: 10.1002/asia.201000899

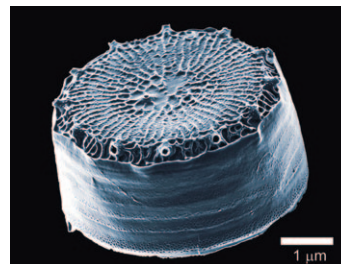


## Biom mineralization

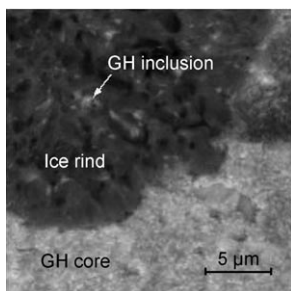
P. Richthammer, M. Börmel, E. Brunner, K.-H. van Pée\*

Biom mineralization in Diatoms: The Role of Silacidins

**Hardware applications:** Biosilica from the diatom *Thalassiosira pseudonana* is a composite material containing proteins (silaffins, silacidins) and long-chain polyamines. These organic constituents are important players in silica biom mineralization. The concentration of silacidins associated with the silica cell wall increases at low silicic acid levels. Their influence on silica precipitation strictly depends on the phosphorylation of serine.



ChemBioChem  
DOI: 10.1002/cbic.201000775



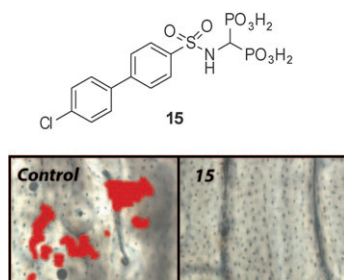
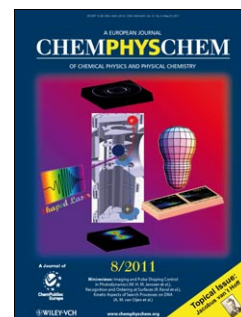
*ChemPhysChem*  
DOI: 10.1002/cphc.201100079

## Gas Hydrates

H. Ohno,\* O. Nishimura, K. Suzuki, H. Narita, J. Nagao\*

Morphological and Compositional Characterization of Self-Preserved Gas Hydrates by Low-Vacuum Scanning Electron Microscopy

**Unequal interactions:** A backscattering electron microscopy study reveals that some Kr hydrates can be trapped in ice products during dissociation (see image) whereas no clear evidence of such a phenomenon is found for Ar samples. Also, the texture of ice from Ar-hydrate decomposition is more cohesive than that observed for Kr samples. The different dissociation behavior between the two systems may be attributed to differences in the interaction between gas and water molecules.



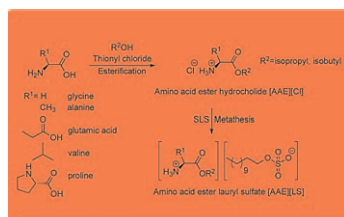
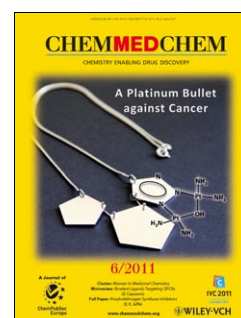
*ChemMedChem*  
DOI: 10.1002/cmdc.2011000540

## Drug Discovery

M. T. Rubino, M. Agamenzone, C. Campestre, P. Campiglia, V. Cremasco, R. Faccio, A. Laghezza, F. Loidice, D. Maggi, E. Panza, A. Rossello, P. Tortorella\*

Biphenyl Sulfonylamino Methyl Bisphosphonic Acids as Inhibitors of Matrix Metalloproteinases and Bone Resorption

**Bone resorption inhibition:** A series of biphenyl sulfonylamino methyl bisphosphonic acids were synthesized and tested both as matrix metalloproteinase (MMP) and bone resorption inhibitors. The most promising compound (**15**) showed nanomolar activity against MMP-2 and good selectivity over MMP-8, -9, and -14; furthermore, it showed a very good antiresorptive activity comparable with that of zoledronic acid.



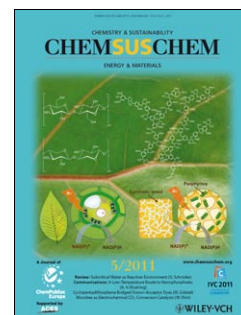
*ChemSusChem*  
DOI: 10.1002/cssc.201100065

## Surfactants

T. J. Trivedi, K. S. Rao, T. Singh, S. K. Mandal, N. Sutradhar, A. B. Panda, A. Kumar\*

Task-Specific, Biodegradable Amino Acid Ionic Liquid Surfactants

**VersatAAIL Surfactants:** Biodegradable, chiral amino acid ionic liquid surfactants (AAILS) with a very high surface activity are synthesized and characterized. The AAILS can be applied as task-specific ionic liquids; two examples given are the mitigation of harmful algal blooms from sea water and the shape- and size-specific synthesis of nanomaterials.



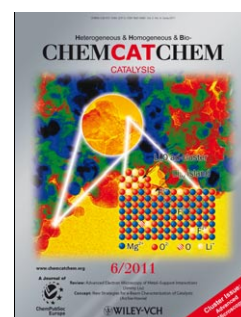
*ChemCatChem*  
DOI: 10.1002/cctc.201100008

## Hydrogenation

N. Mršić, L. Panella, E. G. Ijpeij, A. J. Minnaard,\* B. L. Feringa,\* J. G. de Vries\*

Methylaluminoxane as an Alternative for BARF in the Iridium-Catalyzed Asymmetric Hydrogenation of Imines

**An ionic revolution?** BARF has been the anion of choice for iridium-catalyzed imine hydrogenation; however, for large-scale production its use may be too costly. Methylaluminoxane (MAO) can be used instead in conjunction with  $[\text{Ir}(\text{COD})\text{Cl}]_2$ , although enantioselectivities are somewhat lower than with BARF if 50–500 eq. of MAO are used.



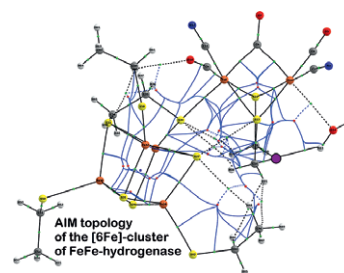


## Electron and Spin Density Topology

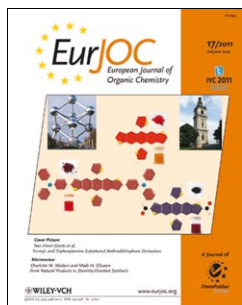
L. J. Giles, A. Grigoropoulos, R. K. Szilagyi\*

Electron and Spin Density Topology of the H-Cluster and Its Biomimetic Complexes

The electronic structures of the H-cluster and its biomimetic complexes were investigated by density functional theory calculations that use advanced electron and spin density analysis methods, such as Atoms-in-Molecule. We revealed a comprehensive picture of the complex network of intra- and intermolecular interactions that govern the electronic and magnetic properties of the H-cluster.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201100318

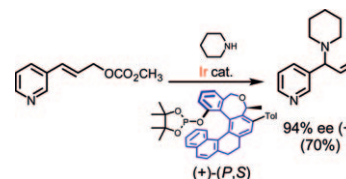


## Helicene Phosphites

Z. Krausová, P. Sehnal, B. P. Bondzic, S. Chercheja, P. Eilbracht,\*  
I. G. Stará,\* D. Šaman, I. Starý\*

Helicene-Based Phosphite Ligands in Asymmetric Transition-Metal Catalysis: Exploring Rh-Catalyzed Hydroformylation and Ir-Catalyzed Allylic Amination

Helically chiral phosphites derived from the [6]helicene-like scaffold were prepared and applied to Rh<sup>I</sup>-catalyzed hydroformylation of terminal alkenes and Ir<sup>I</sup>-catalyzed allylic amination. Excellent regioselectivity in favor of the branched products was observed along with moderate (for hydroformylation) or high (for amination) enantioselectivity.



*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201100259

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