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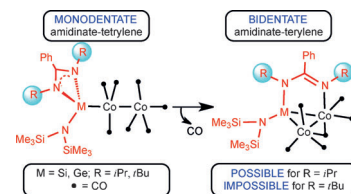


Ligand Effects

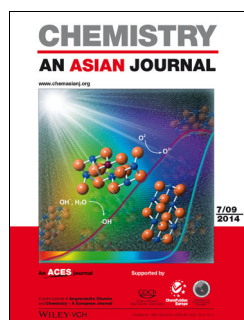
J. A. Cabeza,* P. García-Álvarez,* E. Pérez-Carreño, D. Polo

Ring Opening and Bidentate Coordination of Amidinate Germynes and Silylenes on Carbonyl Dicobalt Complexes: The Importance of a Slight Difference in Ligand Volume

A bit bulkier is too much: A combined experimental and computational DFT study has shown that the terminal to bridging transformation of an amidinate–tetrylene unit on a dicobalt carbonyl complex is negligibly influenced by the nature of the tetrylene Group 14 donor atom (Si or Ge; see figure) but is strongly dependent upon the steric hindrance exerted by the amidinate N–R groups because the reaction is thermodynamically favorable for R = *i*Pr but not for R = *t*Bu.



Chem. Eur. J.
DOI: 10.1002/chem.201402295

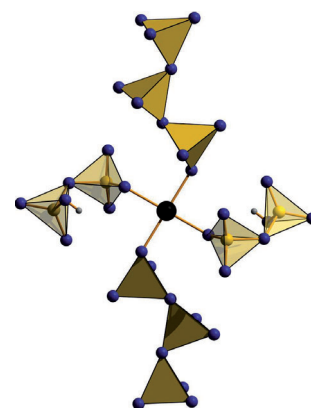


Palladium Polysulfates

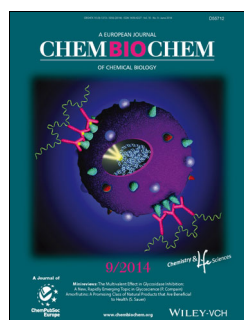
J. Bruns, T. Klüner, M. S. Wickleder*

Ba₂[Pd(HS₂O₇)₂(S₃O₁₀)₂]: A Heteroleptic Polysulfatopalladate

Two in one: The oxidation of elemental palladium with oleum in the presence of BaCO₃ under harsh conditions led to the unprecedented heteroleptic palladate [Pd(HS₂O₇)₂(S₃O₁₀)₂]⁴⁻, which shows a Pd atom coordinated by two different polysulfate species (see figure).



Chem. Asian J.
DOI: 10.1002/asia.201402067

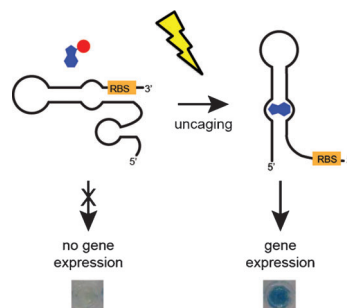


Riboswitches

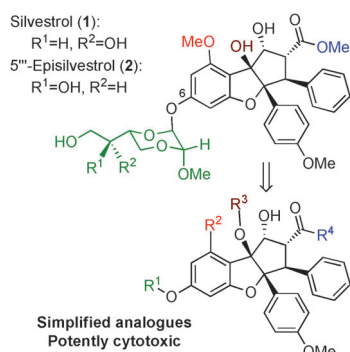
S. Walsh, L. Gardner, A. Deiters, G. J. Williams*

Intracellular Light-Activation of Riboswitch Activity

Light switches: The combination of a cell-permeable, photocaged ligand and a theophylline riboswitch provided a simple and efficient strategy to control gene expression within bacterial cells by using light. This approach can be used to regulate artificial genetic circuits.



ChemBioChem
DOI: 10.1002/cbic.201400024



ChemMedChem

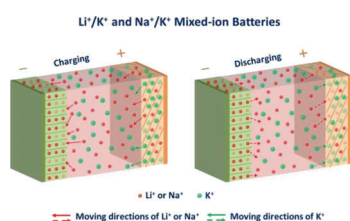
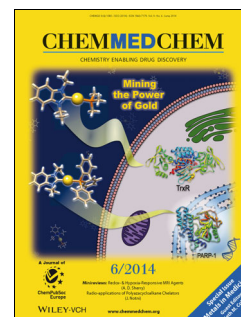
DOI: 10.1002/cmdc.201400024

Drug Discovery

B. C. Hawkins, L. M. Lindqvist, D. Nhu, P. P. Sharp, D. Segal, A. K. Powell, M. Campbell, E. Ryan, J. M. Chambers, J. M. White, M. A. Rizzacasa, G. Lessene, D. C. S. Huang, C. J. Burns*

Simplified Silvestrol Analogues with Potent Cytotoxic Activity

Simplified complexity! The natural products silvestrol (1) and episilvestrol (2) are translation initiation inhibitors with potent anticancer activity. We report replacing the complex pseudo-sugar moiety at C6 with readily accessible and drug-like moieties. Selected compounds show potent anti-leukemic activity in vitro.



ChemSusChem

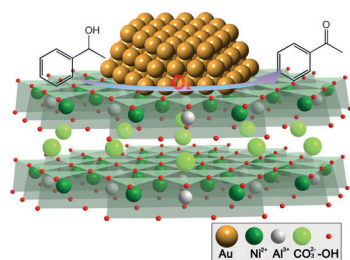
DOI: 10.1002/cssc.201402084

Aqueous Batteries

L. Chen, L. Zhang, X. Zhou,* Z. Liu*

Aqueous Batteries Based on Mixed Monovalence Metal Ions: A New Battery Family

A New Battery Family: Two new aqueous batteries based on monovalence metal ions (Li⁺/K⁺ and Na⁺/K⁺) as charge-transfer ions are demonstrated. They deliver high specific energy, superior to current aqueous battery systems. The establishment of these batteries together with the previous Li⁺/Na⁺ mixed-ion battery not only constitutes a new battery family for energy storage, but also greatly broadens our horizons for battery research.



ChemCatChem

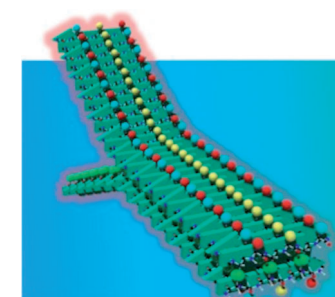
DOI: 10.1002/cctc.201400046

Aerobic Oxidation

J. Wang, X. Lang, B. Zhaorigetu,* M. Jia, J. Wang, X. Guo, J. Zhao*

Aerobic Oxidation of Alcohols on Au Nanocatalyst: Insight to the Roles of the Ni–Al Layered Double Hydroxides Support

Gold–support synergy: Au nanoparticles supported on Ni–Al layered double hydroxides exhibit high chemoselectivity, recyclability, and reproducibility for the liquid-phase aerobic oxidation of alcohols under base-free or even solvent-free conditions. The synergistic effect between the nanoparticles and the layered double hydroxide support dominates the unique catalytic activity, which is also correlated to the complete ordering of cations in the surface layers.



β-sheet-type peptide template

ChemPlusChem

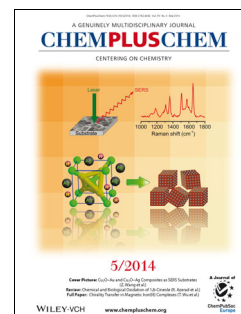
DOI: 10.1002/cplu.201300321

Silica Mineralization

K. Murai, M. Higuchi,* T. Kuno, K. Kato*

Silica Mineralization by a Peptide Template Having a High Charge Relay Effect

In charge: The influence of the charge relay effects of peptide organic templates on silica mineralization has been investigated. β-Sheet-type peptide shows higher catalytic activity toward the condensation of trimethylsilanol than random-coil peptide (see figure). Silica mineralized on the Val-His-Val-Glu-Val-Ser (VHVEVS) peptide template forms a flat surface, which is affected by the peptide morphology.



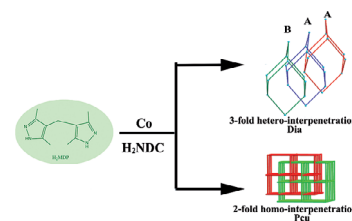


Metal–Organic Frameworks

X.-G. Guo, W.-B. Yang, X.-Y. Wu, L. Lin, C.-Z. Lu*

3D/3D Hetero-Interpenetrating Diamondoid Framework and Homo-Interpenetrating *pcu* Network by a One-Pot Reaction

Two new compounds, one with a 3D/3D hetero-interpenetrating diamondoid framework and the other with a homo-interpenetrating *pcu* network, are synthesized through a one-pot reaction. Their pure phases are obtained by adjusting the metal/ligands ratio. The magnetic properties of the homo-interpenetrating network are investigated.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201402128

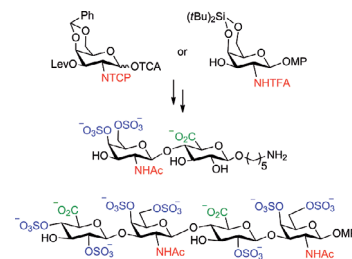


Oligosaccharide Synthesis

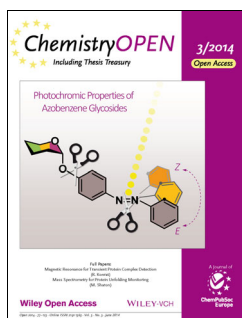
G. Macchione, S. Maza, M. Mar Kayser, J. L. de Paz,* P. M. Nieto*

Synthesis of Chondroitin Sulfate Oligosaccharides Using *N*-(Tetrachlorophthaloyl)- and *N*-(Trifluoroacetyl)galactosamine Building Blocks

We have explored the scope and limitations of *N*-tetrachlorophthaloyl- (*N*-TCP) and *N*-trifluoroacetyl-substituted (*N*-TFA) galactosamine building blocks for the preparation of chondroitin sulfate oligosaccharides. These synthetic routes provided two disaccharides and two tetrasaccharides with different sulfate distribution patterns.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201402222

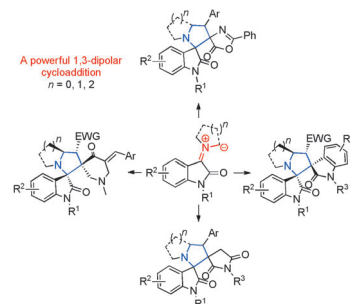


Organic Synthesis

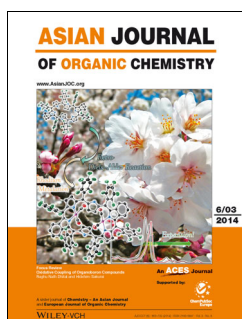
Q. Xu, D. Wang, Y. Wei, M. Shi*

Highly Efficient and Stereoselective Construction of Bispirooxindole Derivatives via a Three-Component 1,3-Dipolar Cycloaddition Reaction

Three compounds, one reaction! A highly regio- and stereoselective synthesis of bispirooxindoles by 1,3-dipolar cycloaddition of in situ generated azomethine ylides from isatin and proline to different electron-deficient alkenes has been developed, affording desired bispiro scaffold compounds in excellent yields.



ChemistryOpen
DOI: 10.1002/open.201402003

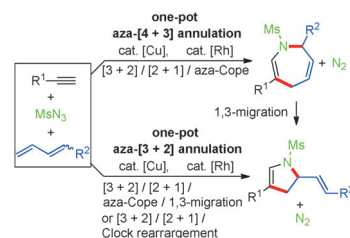


Annulation

S. Kim, J. Mo, J. Kim, T. Ryu, P. H. Lee*

Aza-[4+3] and Aza-[3+2] Annulations for Synthesis of Dihydroazepines and Dihydropyrroles from Alkynes, Sulfonyl Azides, and 1,3-Dienes

We have developed aza-[4+3] annulation via successive [3+2]-[2+1] cycloaddition-aza-Cope rearrangement for the synthesis of dihydroazepines. Aza-[3+2] annulation was accomplished via [3+2]-[2+1]-aza-Cope rearrangement-1,3-migration or [3+2]-[2+1]-Clock rearrangement to give dihydropyrroles along with molecular nitrogen. This procedure was applied to a one-pot process starting from terminal alkynes, azides, and dienes.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201402071



ChemViews magazine
DOI: 10.1002/chemv.201400037

Quiz

Guess the Chemist (30)

This chemist was born in the 1860s. After working at Leipzig University, Germany, amongst some eminent physical chemists, this person developed an interest in this area. In fact, it was in this field that they made their name. In particular, they are recognized for their work in electrochemistry, thermodynamics, solid state chemistry, and photochemistry. Who are we looking for?



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