VIP The following Communications have been judged by at least two referees to be "very important papers" and will be published online at www.angewandte.org soon:

*T. Lewis, M. Faubel, B. Winter, J. C. Hemminger**
CO_2 Capture in an Aqueous Solution of an Amine: Role of the Solution Interface

J. Liu, S. Z. Qiao, H. Liu, J. Chen, A. Orpe, D. Zhao, G. Q. Lu**
Extension of the Stöber Method to the Preparation of Monodisperse Spheres of Resorcinol–Formaldehyde Resin Polymer and Carbon

*Y. H. Kim, S. Banta**
Complete Oxidation of Methanol in an Enzymatic Biofuel Cell by a Self-Assembling Hydrogel Created from Three Modified Dehydrogenases

R. B. Bedford, M. F. Haddow, C. J. Mitchell, R. L. Webster*
Mild C–H Halogenation of Anilides and the Isolation of an Unusual Pd^{I}–Pd^{II} Species

*W. Gan, B. Xu, H.-L. Dai**
Activation of Reactions of Thiols at the Silver-Nanoparticle Surface

*M. Sasaki, Y. Kondo, M. Kawahata, K. Yamaguchi, K. Takeda**
Enantioselective Synthesis of Siloxyallenes from Alkynoyl Silanes by Reduction and a Brook Rearrangement and Their Subsequent Trapping in a [4+2] Cycloaddition with Unusual Facial Selectivity

H. S. Choi, K. Nasr, S. Alyabyev, D. Feith, J. H. Lee, S. H. Kim, Y. Ashitate, H. Hyun, G. Patonay, L. Strekowski, M. Henary, J. V. Frangioni**
Zwitterionic Near-Infrared Fluorophores and Their Fate In Vivo

A. Bonet, C. Pubill-Ulldemolins, C. Bo, H. Gulyás,* E. Fernández**
Transition-Metal-Free Diboration by the Activation of Diboron Compounds with Simple Lewis Bases

M. Evangelisti, O. Roubeau, E. Palacios, A. Camón, T. N. Hooper, E. K. Brechin, J. J. Alonso*
Cryogenic Magnetocaloric Effect in a Ferromagnetic Molecular Dimer

Editorial

Author Profile

"If I could be anyone for a day, I would be Neil Armstrong on the moon.
In a spare hour I watch stand-up comedy (Bill Hicks is my all time favorite) …"
This and more about Patrik Schmuki can be found on page 5608.

Obituaries

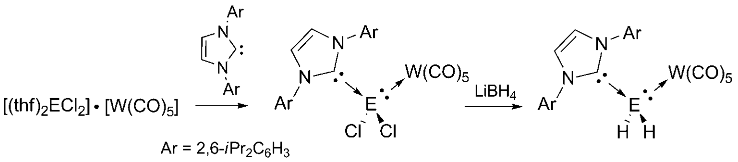
Books

Highlights

Main-Group Chemistry

S. Inoue,* M. Driess* ______ **5614 – 5615**

Parent Heavy Methylenes: Chemical Tricks to Access Isolable Complexes of Elusive H_2E: Species (E = Ge and Sn)

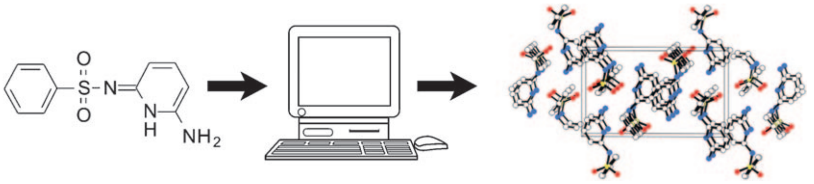


A milestone in main-group chemistry: Elusive heavy methylene analogues **:**EH_2 (E = Ge and Sn) were tamed to give isolable species. This feat was achieved by applying the concept of donor–acceptor stabilization: concomitant coordination of a transition metal or monoborane as a Lewis acid and of an N-heterocyclic carbene as a Lewis base (see scheme).

Crystal Structure Prediction

C. W. Lehmann* ____________ **5616 – 5617**

Crystal Structure Prediction—Dawn of a New Era



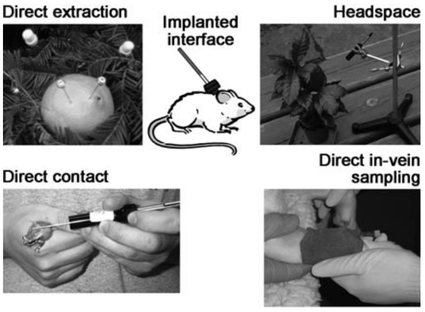
No longer mere speculation? Improved methodology has led to recent progress in predicting crystal structures of organic molecules. The combination of tailor-made force fields and most importantly dispersion-corrected density functional theory calculations are key factors for successful structure predictions.

Minireviews

Analytical Methods

D. Vuckovic, S. Risticevic,
J. Pawliszyn* ______________ **5618 – 5628**

In Vivo Solid-Phase Microextraction in Metabolomics: Opportunities for the Direct Investigation of Biological Systems



How well does the metabolome at the time of analysis represent the true metabolome at the time of sampling? In vivo solid-phase microextraction is a relatively new sample preparation technique used to study cell, plant, animal, and human metabolomics. This technique is particularly suited for capturing unstable and/or short-lived metabolites not observed by traditional methods.

For the USA and Canada:
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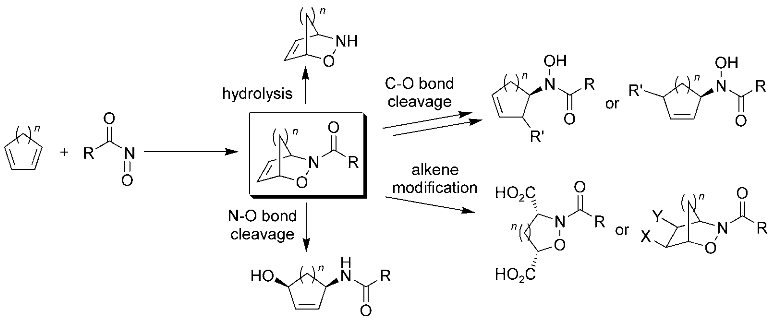
Reviews

Hetero-Diels–Alder Reactions

B. S. Bodnar, M. J. Miller* **5630 – 5647**

The Nitrosocarbonyl Hetero-Diels–Alder Reaction as a Useful Tool for Organic Syntheses



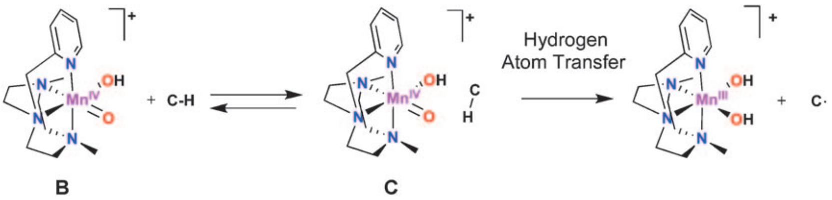
Utility like N-O other! Nitrosocarbonyl hetero-Diels–Alder (HDA) reactions allow for the simultaneous stereospecific introduction of carbon–nitrogen and carbon–oxygen bonds in one synthetic step and provide direct access to 3,6-dihydro-1,2-oxazines. This Review describes the development of the nitrosocarbonyl HDA reaction and the utility of the resulting oxazine ring in the synthesis of a variety of important, biologically active molecules.

Communications

C–H Activation

I. Garcia-Bosch, A. Company, C. W. Cady, S. Styring, W. R. Browne, X. Ribas, M. Costas* **5648 – 5653**

Evidence for a Precursor Complex in C–H Hydrogen Atom Transfer Reactions Mediated by a Manganese(IV) Oxo Complex



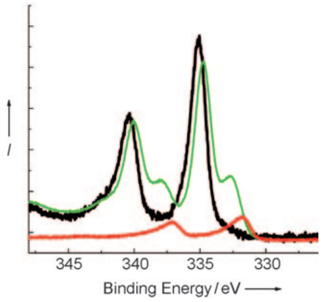
HAT trick: $[Mn^{IV}(OH)_2(^{H,Me}Pytacn)]^{2+}$ (**A**) and $[Mn^{IV}(O)(OH)(^{H,Me}Pytacn)]^{+}$ (**B**) differ in their reactions with C–H bonds: compound **A** engages in typical single-step hydrogen atom transfer (HAT) reactions, whereas **B** first forms a substrate–**B** encounter complex (**C**; see scheme). This equilibrium alters the relative C–H reactivity from that expected from C–H bond dissociation energies.

Electrostatic Interactions

S. Piperno, H. Cohen, T. Bendikov, M. Lahav, I. Lubomirsky* **5654 – 5657**

The Absence of Redox Reactions for Palladium(II) and Copper(II) on Electrostatically Charged Teflon: Relevance to the Concept of "Cryptoelectrons"

Rub-a-dub-dub: The hypothesis of contact electrification through the transfer of cryptoelectrons was tested by scrutinizing the evidence for the reduction of Pd^{2+} and Cu^{2+} by static charges on rubbed Teflon. X-ray photoelectron spectroscopy studies indicated that neither of these ions is reduced (see picture; black: Pd^{2+} adsorbed, red: Pd^0 adsorbed and then reduced by formadehyde, green: mixture of Pd^{2+} and Pd^0 arising from partial reduction after 2 h under the XPS probe) by the static charge. The presented alternative interpretation challenges the role of cryptoelectrons.



Contents

Cyclase Enzyme Mimics

J. G. Sokol, C. S. Korapala, P. S. White, J. J. Becker, M. R. Gagné* —— **5658–5661**

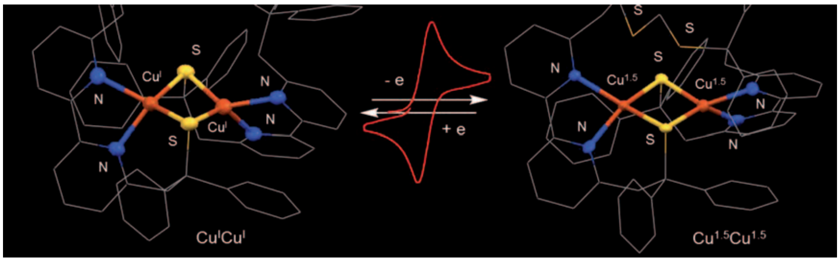
Terminating Platinum-Initiated Cation-Olefin Reactions with Simple Alkenes

All for one: Phosphine-ligated platinum(II) electrophiles can activate polyalkenes for cyclase enzyme mimicking cascade cyclizations without the need for special terminating groups (see scheme). Like the cyclase enzymes, terminal alkenes that generate tertiary cations are good substrates, although the details of the cation termination depend on the alkene arrangement.

Bioinorganic Chemistry

M. Gennari, J. Pécaut, S. DeBeer, F. Neese, M.-N. Collomb, C. Duboc* —— **5662–5666**

A Fully Delocalized Mixed-Valence Bis-µ(Thiolato) Dicopper Complex: A Structural and Functional Model of the Biological Cu_A Center

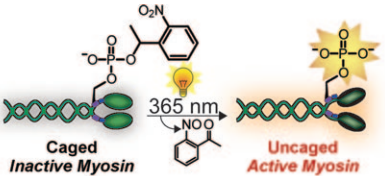


A $\{Cu_2S_2\}$ diamond core has been stabilized thanks to the synthesis of a novel dinucleating ligand. The resulting dicopper complex has been isolated in the two formal oxidation states (see picture) that mimic most of the essential structural, spectroscopic, and functional properties of the Cu_A center.

Caged Proteins

B. N. Goguen, B. D. Hoffman, J. R. Sellers, M. A. Schwartz, B. Imperiali* —— **5667–5670**

Light-Triggered Myosin Activation for Probing Dynamic Cellular Processes

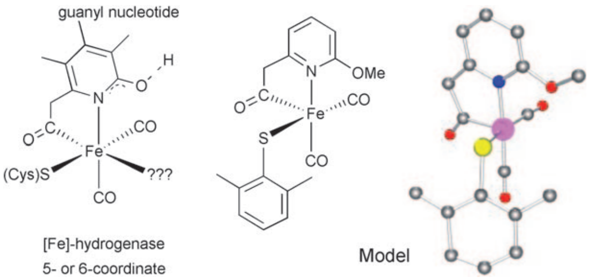


Shining light on myosin: The incorporation of a caging group onto the essential phosphoserine residue of myosin by protein semisynthesis enables light-triggered activation of the protein (see picture). Caging eliminates the myosin activity, but exposure to 365 nm light restores its function to native levels. The caged protein can also be introduced into cells to facilitate studies of myosin with precise spatial and temporal resolution.

Hydrogenase

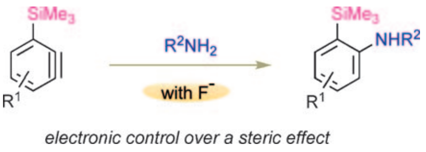
D. Chen, R. Scopelliti, X. L. Hu* —— **5671–5673**

A Five-Coordinate Iron Center in the Active Site of [Fe]-Hydrogenase: Hints from a Model Study



What's your number? The synthesis, structure, and reactivity of a five-coordinate model complex of [Fe]-hydrogenase are described. The work suggests that the iron center in [Fe]-hydrogenases could be five-coordinate in the resting state.

Synthetic Methods



Cause and effect: The first *ortho*-selective nucleophilic addition reaction of amines to 3-substituted benzynes has been achieved. Despite a large trimethylsilyl substituent, primary amines attack the C2 position of 3-silylbenzynes to produce 2-silylanilines (see scheme). This outcome is likely to result from the inductive electron-donating effect of the silyl group, which overrides its steric repulsion with the approaching amines.

T. Ikawa, T. Nishiyama, T. Shigeta, S. Mohri, S. Morita, S. Takayanagi, Y. Terauchi, Y. Morikawa, A. Takagi, Y. Ishikawa, S. Fujii, Y. Kita, S. Akai* **5674 – 5677**

ortho-Selective Nucleophilic Addition of Primary Amines to Silylbenzynes: Synthesis of 2-Silylanilines

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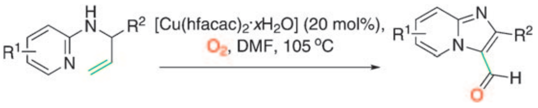
Oxygen Activation



A direct synthesis of carbaldehydes through intramolecular dehydrogenative aminooxygenation has been developed. The process uses a catalytic amount of copper(II) in DMF or DMA under oxygen and does not require additional oxidants (see scheme). Mechanistic studies suggest that the carbonyl oxygen atom of the aldehyde is derived from oxygen through a copper-mediated oxygen activation process via a peroxy–copper(III) intermediate.

H. Wang, Y. Wang, D. Liang, L. Liu, J. Zhang,* Q. Zhu* **5678 – 5681**

Copper-Catalyzed Intramolecular Dehydrogenative Aminooxygenation: Direct Access to Formyl-Substituted Aromatic N-Heterocycles

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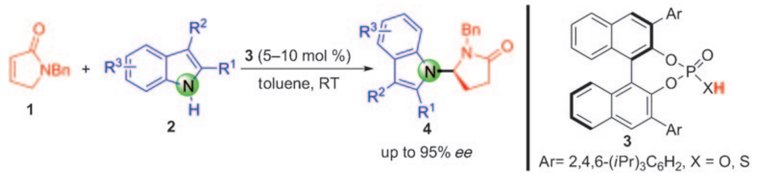
Asymmetric Catalysis



Nitrogen revives: Cyclic *N*-acyliminium ions were generated from α,β-unsaturated γ-lactams (**1**) and underwent intermolecular addition by indole nucleophiles (**2**) under the catalysis of a chiral Brønsted acid (**3**). A variety of N-functionalized indole derivatives containing a pyrrolidinone moiety (**4**) were assembled with high enantioselectivity. Bn = benzyl.

Y. Xie, Y. Zhao, B. Qian, L. Yang, C. Xia, H. Huang* **5682 – 5686**

Enantioselective N–H Functionalization of Indoles with α,β-Unsaturated γ-Lactams Catalyzed by Chiral Brønsted Acids

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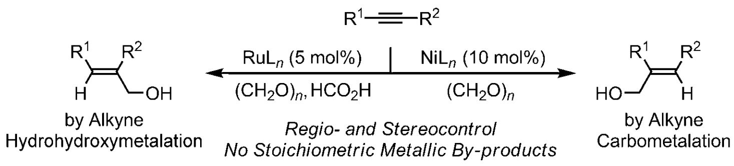
Homogeneous Catalysis



Stoichiometric metals banned: Nonsymmetrically disubstituted alkynes were converted into primary trisubstituted allylic alcohols upon exposure to paraformaldehyde in the presence of nickel or ruthenium catalysts, which exhibit complementary regioselectivity and complete stereoselectivity in the absence of exogenous reducing agents (see scheme).

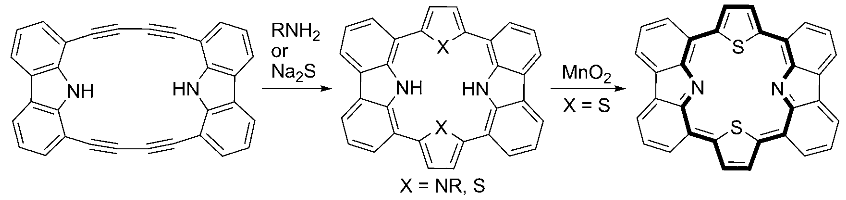
C. C. Bausch, R. L. Patman, B. Breit,* M. J. Krische* **5687 – 5690**

Divergent Regioselectivity in the Synthesis of Trisubstituted Allylic Alcohols by Nickel- and Ruthenium-Catalyzed Alkyne Hydrohydroxymethylation with Formaldehyde

Porphyrins

C. Maeda,* T. Yoneda, N. Aratani,
M.-C. Yoon, J. M. Lim, D. Kim,*
N. Yoshioka,* A. Osuka* ___ **5691 – 5694**

Synthesis of Carbazole-Containing Porphyrinoids by a Multiple Annulation Strategy: A Core-Modified and π-Expanded Porphyrin

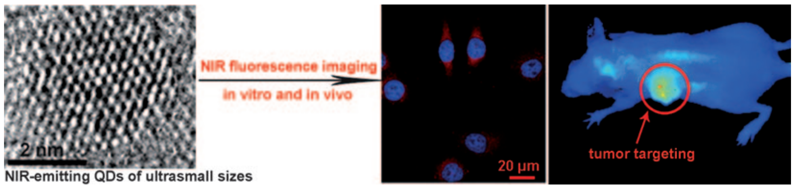


Going around in circles: The copper(I)-mediated annulation of a doubly 1,3-butadiyne-bridged carbazole dimer with amines or Na_2S provides isophlorins containing carbazole or thiophene-carbazole moieties, respectively (see scheme). Oxidization of the thiophene-containing isophlorin with MnO_2 gives the corresponding porphyrin, which displays distinct aromaticity and remarkably intensified and red-shifted absorption bands in the near IR region.

Near-Infrared Bioimaging

Y. He,* Y. L. Zhong, Y. Y. Su, Y. M. Lu,
Z. Y. Jiang, F. Peng, T. T. Xu, S. Su,
Q. Huang, C. H. Fan,*
S. T. Lee* ___ **5695 – 5698**

Water-Dispersed Near-Infrared-Emitting Quantum Dots of Ultrasmall Sizes for In Vitro and In Vivo Imaging

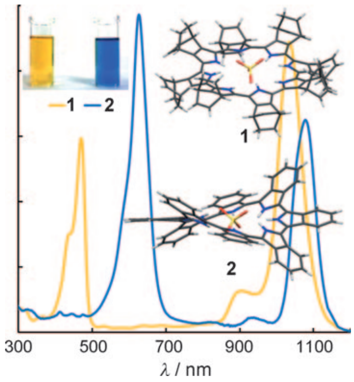


Small but powerful: NIR-emitting CdTe quantum dots (QDs) are directly prepared in aqueous phase through a one-step microwave synthesis. The QDs display excellent aqueous dispersibility, strong luminescence, and high stability. In vitro and in vivo imaging applications show high spectral and spatial resolution. The QDs are efficiently accumulated in tumors of live mice (see picture).

Multipyrrolic Macrocycles

T. Okujima,* G. Jin, N. Matsumoto,
J. Mack, S. Mori, K. Ohara, D. Kuzuhara,
C. Ando, N. Ono, H. Yamada, H. Uno,
N. Kobayashi* ___ **5699 – 5703**

Cyclo[8]isoindoles: Ring-Expanded and Annelated Porphyrinoids

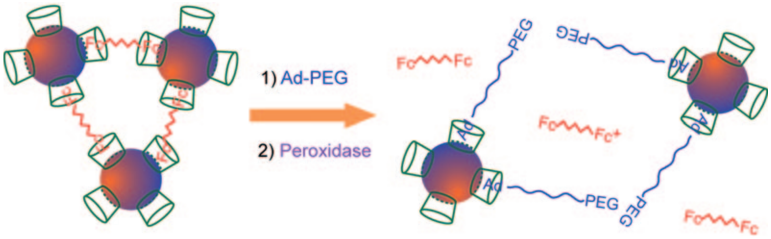


Retro: Cyclo[8]isoindole, which has a saddle-shaped geometry (see picture, **2**), was synthesized by oxidative coupling of a bicyclo[2.2.2]octadiene(BCOD)-fused 2,2′-bipyrrole followed by a retro-Diels–Alder reaction of BCOD-fused cyclo[8]pyrrole (**1**). Key trends in the optical spectra of ring-annelated cyclo[8]pyrroles are identified based on magnetic circular dichroism spectra and theorectical calculations.

Biosensors

R. de la Rica,* R. M. Fratila, A. Szarpak,
J. Huskens, A. H. Velders* _ **5704 – 5707**

Multivalent Nanoparticle Networks as Ultrasensitive Enzyme Sensors

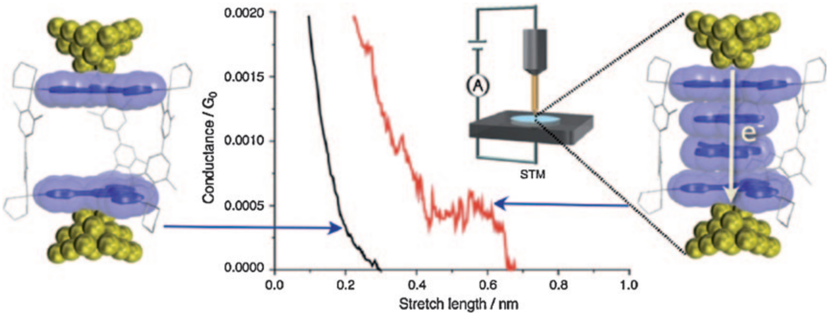


As few as 23 enzyme molecules could be detected on the basis of the dispersion of Au nanoparticles in a model bioassay whose sensitivity was boosted by the interplay between multivalent and monovalent supramolecular interactions: a diferrocenyl ligand (red) caused the assembly of nanoparticle clusters; upon its oxidation, a competing monovalent guest molecule (blue) favored the formation of monovalent interactions for more efficient disassembly.

Single-Molecule Conductance

M. Kiguchi,* T. Takahashi, Y. Takahashi, Y. Yamauchi, T. Murase, M. Fujita,* T. Tada, S. Watanabe ——— **5708 – 5711**

Electron Transport through Single Molecules Comprising Aromatic Stacks Enclosed in Self-Assembled Cages

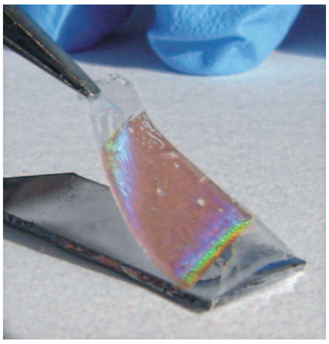


Face-to-face communication: Electron transport through single-molecule π stacks was directly measured between gold nanogap electrodes by using STM (see scheme). Self-assembled coordination cages containing π-stacked aromatic molecules are conductive (right), whereas the empty cage is not (left).

Photonic Films

A. Mihi, C. Zhang, P. V. Braun* ——— **5712 – 5715**

Transfer of Preformed Three-Dimensional Photonic Crystals onto Dye-Sensitized Solar Cells



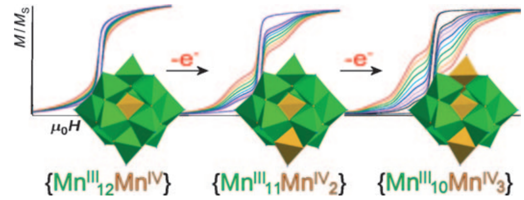
Film star: Preformed self-assembled 3D photonic crystals (see picture) can be infilled with a polycarbonate matrix for mechanical stability and transferred onto rough and porous optoelectronic and photovoltaic devices. This technique allows the incorporation of photonic crystals onto independently processed devices, in which the transferred films have high optical quality.

High-Spin Keggin Systems

VIP

G. N. Newton, S. Yamashita, K. Hasumi, J. Matsuno, N. Yoshida, M. Nihei, T. Shiga, M. Nakano, H. Nojiri, W. Wernsdorfer, H. Oshio* ——— **5716 – 5720**

Redox-Controlled Magnetic $\{Mn_{13}\}$ Keggin Systems

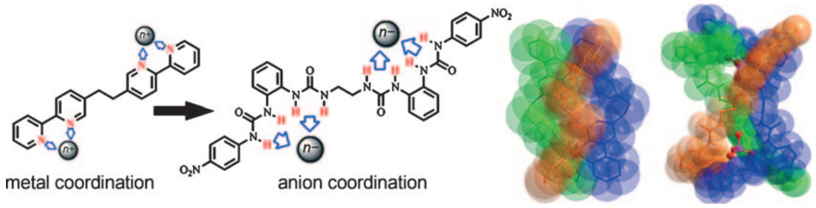


Stronger magnetic moment with fewer electrons: An α-Keggin-type $\{Mn_{13}\}$ single-molecule magnet (SMM) was synthesized and subsequently oxidized (see picture); its one- and two-electron-oxidized derivatives could be isolated. The spin ground states of the more oxidized species are higher despite the electron loss, resulting in amplification of the SMM properties.

Self-Assembly

S. Li, C. Jia, B. Wu,* Q. Luo, X. Huang, Z. Yang, Q.-S. Li,* X.-J. Yang **5721 – 5724**

A Triple Anion Helicate Assembled from a Bis(biurea) Ligand and Phosphate Ions

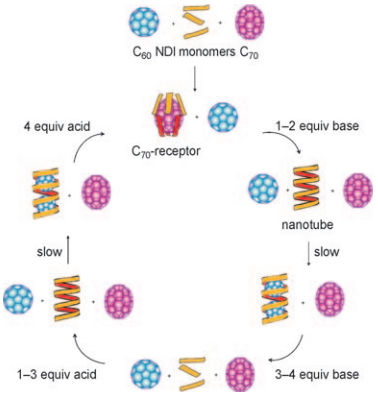


A word in urea: A strategy of mimicking the scaffold and metal coordination behavior of oligo-2,2′-bipyridine ligands was used to obtain a triple anion helicate from a bis(biurea) receptor and phosphate ions. The successful assembly of the triple helical structure provides guidelines for the design of new anion ligands by taking advantage of the similarities of metal and anion coordination.

Dynamic Nanoreceptors

A. R. Stefankiewicz, E. Tamanini,
G. D. Pantoş,*
J. K. M. Sanders* ________ **5725 – 5728**

Proton-Driven Switching Between Receptors for C_{60} and C_{70}

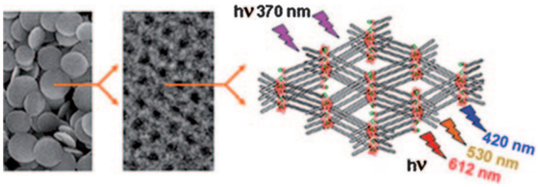


Buckybinding: The selective binding of either C_{60} and C_{70} in a mixture of the two fullerenes occurs by proton-induced, reversible, and controllable morphological switching between receptors for different fullerenes (see picture). Using hydrogen bonding as the exchange reaction, the response of the naphthalenediimide (NDI) building blocks to the presence of fullerene guests depends on the concentration of protons as a third component.

Metal–Organic Frameworks

X. Zhang, M. A. Ballem, Z.-J. Hu,
P. Bergman, K. Uvdal* ____ **5729 – 5733**

Nanoscale Light-Harvesting Metal–Organic Frameworks



Highly crystalline nanoparticles of metal–organic frameworks with efficient light-harvesting properties were prepared by coordination-directed assembly (see picture). Functionalization of the ligands with long alkyl chains effectively stabilizes the nanoparticles and increases crystallinity. Different metal ions and ligands are organized into single nanoparticles and both organic acceptors and lanthanide ions can be co-sensitized within the frameworks.

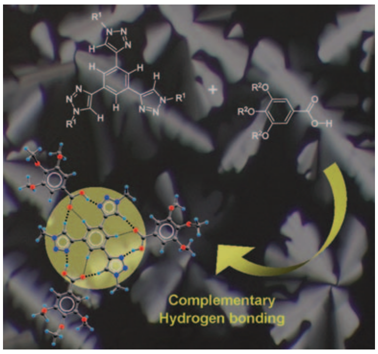
Reprogramming

J. Staerk, C. A. Lyssiotis, L. A. Medeiro,
M. Bollong, R. K. Foreman, S. Zhu,
M. Garcia, Q. Gao, L. C. Bouchez,
L. L. Lairson, B. D. Charette, L. Supekova,
J. Janes, A. Brinker, C. Y. Cho, R. Jaenisch,*
P. G. Schultz* __________ **5734 – 5736**

Pan-Src Family Kinase Inhibitors Replace Sox2 during the Direct Reprogramming of Somatic Cells

Small molecules do the job: Somatic cells are reprogrammed into iPS cells upon ectopic expression of Oct4, Sox2, Klf4 and c-Myc. Application of a cell-based, high-throughput chemical screen led to the identification of Src family kinase (SFK) inhibitors as chemical replacements for retroviral Sox2 delivery. These compounds are used to study the mechanisms underlying direct reprogramming and may ultimately help to bring iPS cell technology one step closer to clinical application.

Two's complement: A series of discotic hydrogen-bonded complexes was prepared from a "clicked" triazole derivative with C_3 symmetry and carboxylic acids (see picture; R^1, R^2 = alkyl groups). Owing to the extended rigid core structure, the supramolecular discs could be stacked on top of each other, leading to hexagonal columnar liquid-crystalline phases.



Liquid Crystals

M.-H. Ryu, J.-W. Choi, H.-J. Kim, N. Park,*
B.-K. Cho* ________ 5737 – 5740

Complementary Hydrogen Bonding Between a Clicked C_3-Symmetric Triazole Derivative and Carboxylic Acids for Columnar Liquid-Crystalline Assemblies

---

The yellow hue of a series of samples from wall paintings in several Mayan archaeological sites can be attributed to the presence of indigoid compounds, including isatin and dehydroindigo, attached to palygorskite, a local phyllosilicate clay. SEM/EDX, TEM, UV/Vis spectroscopy, and voltammetry of microparticles show that the ancient Mayas could prepare indigo, Maya Blue, and "Maya Yellow" during successive stages.

Maya Pigments

A. Doménech,* M. T. Doménech-Carbó,
M. L. Vázquez de Agredos-
Pascual ________ 5741 – 5744

From Maya Blue to "Maya Yellow": A Connection between Ancient Nanostructured Materials from the Voltammetry of Microparticles

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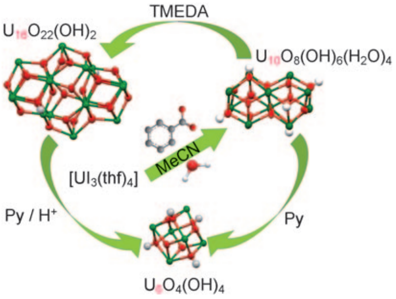
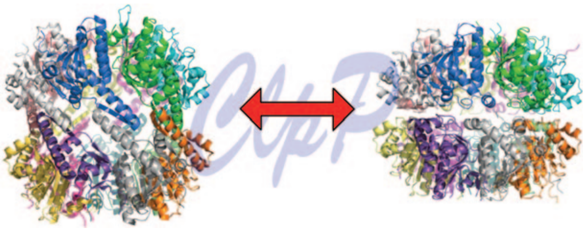
Uranium building blocks: Two new uranium cluster topologies are obtained from the stoichiometric hydrolysis of low-valent uranium in non-aqueous media (see picture). The organic base TMEDA directs the self-assembly process towards the formation of a nanosized oxo-hydroxo U_{16} cluster.



Uranium Clusters

B. Biswas, V. Mougel, J. Pécaut,
M. Mazzanti* ________ 5745 – 5748

Base-Driven Assembly of Large Uranium Oxo/Hydroxo Clusters



A "breathing" protein: The first structure of the virulence regulator and heat shock protein ClpP from *Staphylococcus aureus* reveals a previously unobserved compressed state of the ClpP barrel. A conformational switch in the active center "handle region" results in closure of the active sites and opening of equatorial pores. These results confirm proposed modes of processive substrate degradation and product release for the ClpP protease family.

Protein Structures

S. R. Geiger, T. Böttcher, S. A. Sieber,*
P. Cramer* ________ 5749 – 5752

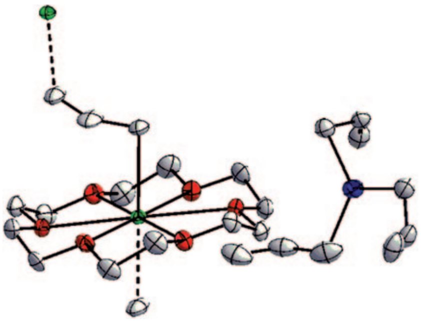
A Conformational Switch Underlies ClpP Protease Function

Organocalcium Chemistry

C. Lichtenberg, P. Jochmann,
T. P. Spaniol, J. Okuda* ____ **5753 – 5756**

The Allylcalcium Monocation: A Bridging Allyl Ligand with a Non-Bent Coordination Geometry

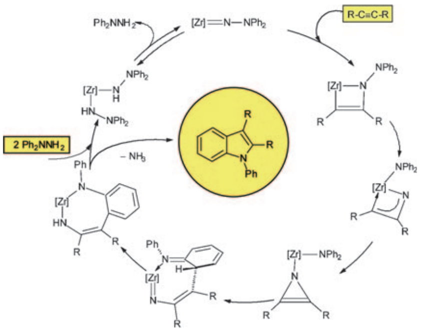
Zigzag bridge: The allylcalcium monocation was found in the solid-state structure of $[Ca(\mu^2\text{-}\eta^1\text{:}\eta^1\text{-}C_3H_5)([18]crown\text{-}6)]^+[Zn(\eta^1\text{-}C_3H_5)_3]^-$. This allyl ligand exhibits an unusual bridging mode within a hexagonal-bipyramidal non-bent coordination geometry (see picture: Ca green, Zn blue, O red, C gray).



Indole Synthesis

T. Gehrmann, J. Lloret Fillol, S. A. Scholl,
H. Wadepohl, L. H. Gade* _ **5757 – 5761**

Zirconium-Catalyzed Multistep Reaction of Hydrazines with Alkynes: A Non-Fischer-Type Pathway to Indoles

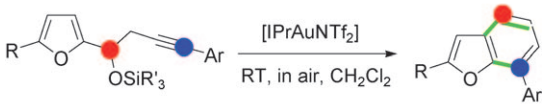


Dominos at zirconium: A cascade of N–N and C–H scissions and C–C and C–N coupling steps in the coordination sphere of zirconium directly converts alkynes and hydrazines into indoles. The reaction pathway differs fundamentally from that of the Fischer indole synthesis.

Gold Catalysis

A. S. K. Hashmi,* W. Yang,
F. Rominger ____________ **5762 – 5765**

Gold(I)-Catalyzed Formation of Benzo[*b*]furans from 3-Silyloxy-1,5-enynes

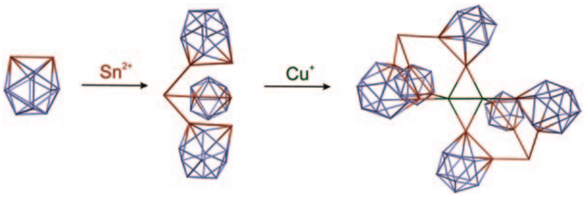


Sport of kings: A new gold(I)-catalyzed transformation has been developed that occurs under mild conditions and proceeds by an expected substituent "castling" (see red and blue circles in scheme) to give efficient access to benzo[*b*]furans from the easy to obtain 3-silyloxy-1,5-enynes (IPr = *N*,*N*′-bis(2,6-diisopropylphenyl)imidazol-2-ylidene, NTf_2 = bis(trifluoromethylsulfonylimide).

Tin Coordination Chemistry

C. Nickl, K. Eichele, D. Joosten, T. Langer,
F. M. Schappacher, R. Pöttgen, U. Englert,
L. Wesemann* __________ **5766 – 5769**

1,1,1-Tris(distanna-*closo*-dodecaborate)stannate: A Tripodal Tin Ligand



Tin tripod: Starting from 1,2-distanna-*closo*-dodecaborate and tin(II) chloride, the first tripodal tin ligand was prepared. It is made up of three clusters and one central tin atom that build a frame of seven tin atoms. The coordination ability is illustrated by reaction with $[Cu(CH_3CN)_4]PF_6$: a binuclear copper complex is formed surrounded by two Sn_7 ligands (see picture).

Supporting information is available on www.angewandte.org (see article for access details).

A video clip is available as Supporting Information on www.angewandte.org (see article for access details).

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Vacancy

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I E C B

Project leader positions at IECB – Bordeaux 2011

The European Institute of Chemistry and Biology, *Institut Européen de Chimie et Biologie* (IECB, www.iecb.u-bordeaux.fr) is a research team incubator placed under the joint authority of the University of Bordeaux, CNRS and INSERM. It is located on the campus of University of Bordeaux, in the Southwest of France. The Institute hosts 15 research groups working at the interface of chemistry and biology in a new building (6000 sq meters) with state-of-the-art equipment and facilities. The scientific policy of the institute is under the responsibility of an International Scientific Advisory Board, in charge of the selection of new group leaders.

IECB is recruiting PROJECT LEADERS in

- **STRUCTURAL BIOLOGY (CRYSTALLOGRAPHY, NMR)**
  We seek biochemists working on the structure/function relationship of biological macromolecules or on molecules of biomedical interest, in particular in the field of neurobiology.
- **MASS SPECTROMETRY**
  We are looking for structural biologists, biophysicists working in the field of nucleic acid macrocomplexes.
- **CRYO-ELECTRON MICROSCOPY**
  We are interested in experts in cryo-electron microscopy developing projects on nanomaterials or protein assemblies
- **BIO-INSPIRED NANOTECHNOLOGY**
  We seek biochemists/biophysicists developing protein/nucleic acid scaffolds, devices of potential interest in the field of technologies for health.
- **MOLECULAR CELL BIOLOGY**
  We are interested in projects on macromolecules or processes related to cell cycle, gene expression or signal transduction in connection with human pathologies.

We are looking for motivated young scientists who will demonstrate a strong potential for the development of an ambitious research programme. Applicants are expected to run independent and creative projects. They should be open to interdisciplinary collaborations with other groups of the institute. Successful candidates will have access to IECB's facilities in structural biology, chemistry, molecular and cellular biology. The candidates might be asked to apply for start-up funding such as ATIP-Avenir Inserm-CNRS programme or ANR support.

The applicants should be fluent in English. Knowledge of French would be useful but not mandatory. Applicants are invited to submit - prior to July 14, 2011- a detailed biography together with a research project and a list of potential referees to:

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