



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](http://www.angewandte.org) soon:

K. Ohmori, T. Shono, Y. Hatakoshi, T. Yano, K. Suzuki\*

**An Integrated Synthetic Strategy for Higher Catechin Oligomers**

K. Nakano, S. Hashimoto, M. Nakamura, T. Kamada, K. Nozaki\*

**Synthesis of Stereogradient Poly(propylene carbonate) by Stereo- and Enantioselective Copolymerization of Propylene Oxide with Carbon Dioxide**

C. A. Naini, S. Franzka, S. Frost, M. Ulbricht, N. Hartmann\*

**Probing the Intrinsic Switching Kinetics of Ultrathin Thermoresponsive Polymer Brushes**

X. Wurzenberger, H. Piotrowski, P. Klüfers\*

**A Stable Square-Planar High-Spin- $d^6$  Molecular  $\text{Fe}^{II}\text{O}_4$  Chromophore From Rare Iron(II) Minerals**

R. Linser, M. Dasari, M. Hiller, V. Higman, U. Fink, J.-M. Lopez del Amo, S. Markovic, L. Handel, B. Kessler, P. Schmieder,

D. Oesterheld, H. Oschkinat, B. Reif\*

**Proton-Detected Solid-State NMR Spectroscopy of Fibrillar and Membrane Proteins**

I. Piel, M. Steinmetz, K. Hirano, R. Fröhlich, S. Grimme,\*  
F. Glorius\*

**Highly Asymmetric NHC-Catalyzed Hydroacylation of Unactivated Alkenes and Mechanistic Insights**

Y. Han-ya, H. Tokuyama, T. Fukuyama\*

**Total Synthesis of (–)-Conophylline and (–)-Conophyllidine**

N. Dietl, C. van der Linde, M. Schlangen, M. K. Beyer, H. Schwarz\*  
**The Final Piece in an Intriguing Puzzle: Diatomic  $[\text{CuO}]^+$  and Its Role in Spin-Selective Hydrogen- and Oxygen-Atom Transfer in the Thermal Activation of Methane**

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

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



*If I could be anyone for a day, I would be Tiger Woods (before the scandal).*

*The greatest scientific advance of the last decade was making C–C bonds with alkanes. ...*

This and more about Daniel J. Mindiola can be found on page 4046.

## Author Profile

Daniel J. Mindiola \_\_\_\_\_ 4046



M. G. Humphrey



S. Matsunaga



F. Dean Toste

## News

H. G. Smith Memorial Medal:  
M. G. Humphrey \_\_\_\_\_ 4047

Merck–Banyu Lectureship Award:  
S. Matsunaga \_\_\_\_\_ 4047

Mukaiyama Award:  
F. D. Toste \_\_\_\_\_ 4047

## Books

Chemistry of Nanocarbons

Takeshi Akasaka, Fred Wudl, Shigeru Nagase

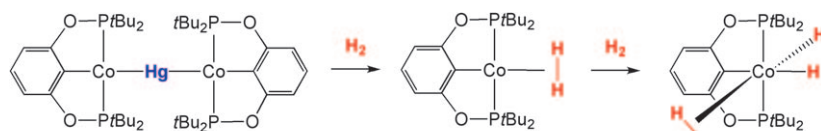
reviewed by X. Feng \_\_\_\_\_ 4048

## Highlights

### H<sub>2</sub> Complexes

R. M. Bullock\* — 4050–4052

A Mercurial Route to a Cobalt Dihydrogen Complex



**Mercury for protection?** Mercury protects the highly reactive 14-electron {Co(POCOP)} fragment in a Co–Hg–Co complex, but reaction with H<sub>2</sub> gives a rare

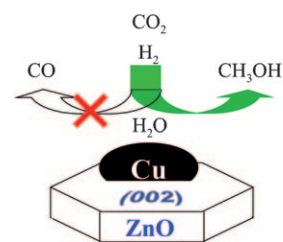
dihydrogen complex of cobalt, and a second H<sub>2</sub> molecule is added at higher pressures and low temperature (see scheme).

### CO<sub>2</sub> Utilization

F. C. Meunier\* — 4053–4054

Mixing Copper Nanoparticles and ZnO Nanocrystals: A Route towards Understanding the Hydrogenation of CO<sub>2</sub> to Methanol?

**The shape of things to come:** The preparation and combination of nanoparticles of copper and zinc oxide with controlled morphology opens new avenues in the understanding of metal–support interactions and may help resolving the intricacy of methanol synthesis during the hydrogenation of CO<sub>2</sub>. The improved selectivity to methanol formation observed with some of the morphology combinations suggests that the reverse water–gas–shift side-reaction to give CO could be dramatically minimized (see scheme).

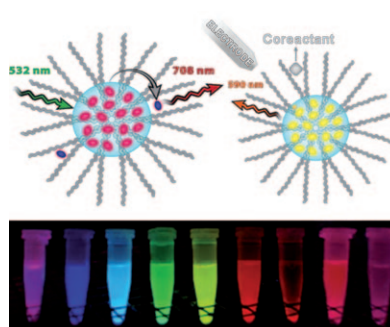


## Minireviews

### Fluorescent Nanoparticles

S. Bonacchi, D. Genovese, R. Juris, M. Montalti, L. Prodi,\* E. Rampazzo, N. Zaccheroni — 4056–4066

Luminescent Silica Nanoparticles: Extending the Frontiers of Brightness



**All aglow:** Silica nanoparticles are extremely versatile platforms with unique potential in the nanotechnology arena. Further improvement of these materials will enable ambitious applications in fields of high social and economic impact.

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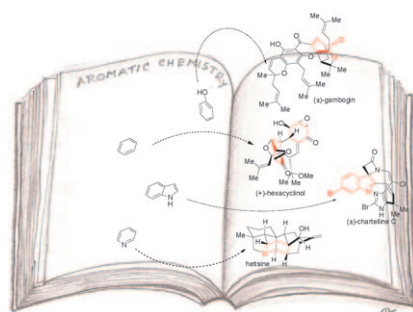
individuals who are personal members of a national chemical society prices are available on request. Postage and handling charges included. All prices are subject to local VAT/sales tax.

## Reviews

### Total Synthesis

S. P. Roche, J. A. Porco, Jr.\* 4068–4093

Dearomatization Strategies in the Synthesis of Complex Natural Products



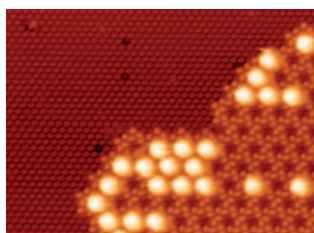
**1, 2, ... 3 dearomaticity:** The conversion of planar, aromatic scaffolds (arenes, phenols, and heteroarenes) into three-dimensional molecular architectures is a powerful strategy for the total synthesis of complex natural products. This Review highlights recent developments and outlines future perspectives and opportunities for catalytic, enantioselective dearomatization processes.

## Communications

### Surface Chemistry

B. Baris, V. Luzet, E. Duverger, P. Sonnet, F. Palmino, F. Cherioux\* 4094–4098

Robust and Open Tailored Supramolecular Networks Controlled by the Template Effect of a Silicon Surface

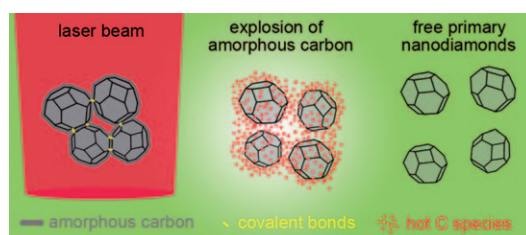


**Fullerenes framed:** The combination of molecule–molecule interactions and molecule–silicon substrate interactions leads to the formation of a large-scale 2D open supramolecular framework with improved thermal stability up to 400 K on a semiconductor surface. The robust open honeycomb network controls the growth of and serves as a template for a noncompact hexagonal fullerene array at room temperature (see picture).

### Nanoparticles

K. Y. Niu, H. M. Zheng, Z. Q. Li, J. Yang, J. Sun, X. W. Du\* 4099–4102

Laser Dispersion of Detonation Nanodiamonds



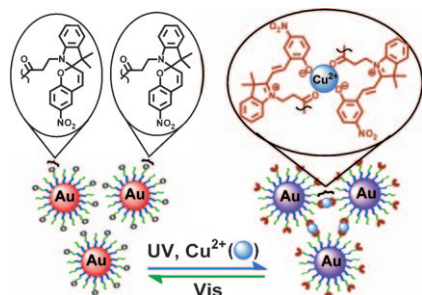
**Laser blasting:** Complete dispersion of detonation nanodiamonds was realized by laser irradiation. The infrared laser could selectively destroy the agglomerant of detonation nanodiamonds (see pic-

ture), resulting in well-dispersed nanodiamonds in solution. The optical properties of nanodiamonds were modified by changing their surface ligands in situ.

### Logic Gates

D. B. Liu, W. W. Chen, K. Sun, K. Deng, W. Zhang, Z. Wang,\* X. Y. Jiang\* 4103–4107

Resettable, Multi-Readout Logic Gates Based on Controllably Reversible Aggregation of Gold Nanoparticles



**A resettable logic system** based on spiropyran-modified gold nanoparticles that is capable of AND, OR, and INHIBIT logic operations has been constructed. Several methods can record the output of this process, including the naked eye, UV/Vis spectroscopy, determination of the  $\zeta$  potential, and dynamic light scattering. These logic gates can also detect copper(II) ions in aqueous media.



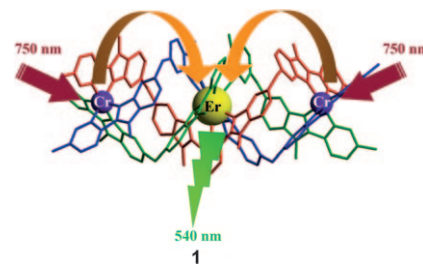
## Photochemistry

L. Aboshyan-Sorgho, C. Besnard,  
P. Pattison, K. R. Kittilstved, A. Aebischer,  
J.-C. G. Bünzli, A. Hauser,\*  
C. Piguet\* ————— **4108–4112**



Near-Infrared→Visible Light  
Upconversion in a Molecular Trinuclear  
d–f–d Complex

**Giving the green light:** The connection of two Cr<sup>III</sup> sensitizers around a central Er<sup>III</sup> acceptor in a self-assembled cation provides high local metal concentrations that favor efficient nonlinear energy transfer upconversion luminescence (see picture). Upon selective low-energy near-infrared irradiation of Cr<sup>III</sup>-centered transitions, **1** displays an unprecedented molecular two-photon upconverted green Er<sup>III</sup>-centered emission.

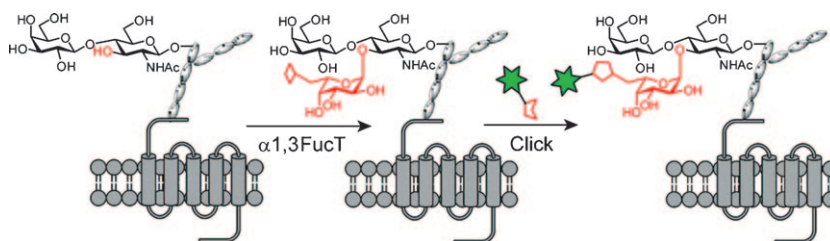


## Glycobiology

T. Zheng, H. Jiang, M. Gros,  
D. Soriano del Amo, S. Sundaram,  
G. Lauvau, F. Marlow, Y. Liu, P. Stanley,  
P. Wu\* ————— **4113–4118**



Tracking *N*-Acetylglucosamine on Cell-  
Surface Glycans In Vivo



**In living color:** Many mammalian glycans associated with signaling receptors contain terminal or penultimate *N*-acetylglucosamine. A highly specific method for labeling this disaccharide on cell-surface glycoproteins of live cultured cells and

zebrafish embryos is reported. The two-step chemoenzymatic approach involves in situ fucosylation followed by a bioorthogonal click reaction (see scheme;  $\alpha(1,3)\text{FucT} = \alpha(1,3)\text{-fucosyltransferase}$ ).

## Catalytic Electrons

D. Davis, V. P. Vysotskiy, Y. Sajeev,\*  
L. S. Cederbaum\* ————— **4119–4122**



Electron Impact Catalytic Dissociation:  
Two-Bond Breaking by a Low-Energy  
Catalytic Electron

**Upon impact** of a low-energy electron on a neutral molecule, an intermediate meta-stable electron–molecule compound is formed. This species can undergo electron-catalyzed two-bond breaking or cycloelimination, as in the simplest case of the cyclobutane–ethylene conversion (see scheme). This mechanism is illustrated for the quadricyclanone–norbornadienone cycloelimination reaction using ab initio methods, and its generality appears promising.



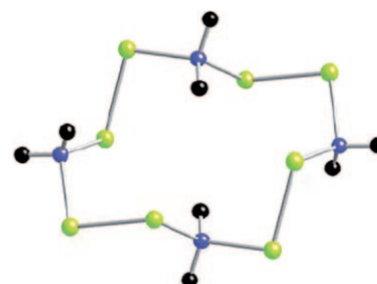
## Selenium Heterocycles

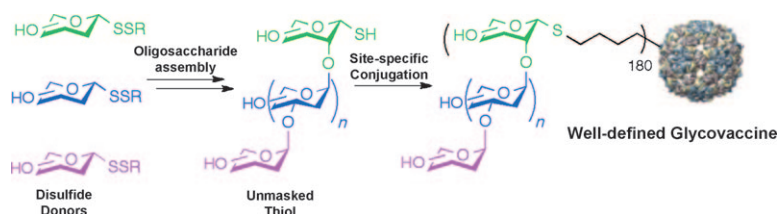
G. Hua, J. M. Griffin, S. E. Ashbrook,  
A. M. Z. Slawin,  
J. D. Woollins\* ————— **4123–4126**



Octaselenocyclododecane

**The first of its kind?** A simple, twelve-membered C–Se heterocycle (see structure; blue C, yellow Se, black H) was obtained by treatment of secondary amines with Woollins' reagent. The ring formation proceeds through diselenoate intermediates and requires a polar solvent like dichloromethane.





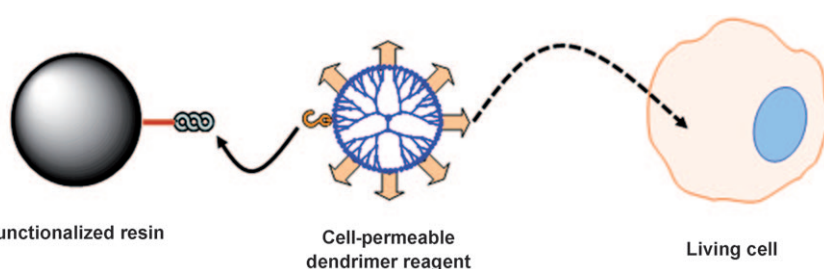
**A sweet solution:** A strategy for the synthesis of well-defined carbohydrate-based vaccines is presented. The approach couples complex oligosaccharide synthesis to

site-specific conjugation methodology to provide pure glycoprotein vaccine candidates (see scheme).

### Glycoprotein Vaccines

E. J. Grayson, G. J. L. Bernardes, J. M. Chalker, O. Boutureira, J. R. Koeppe, B. G. Davis\* — 4127–4132

A Coordinated Synthesis and Conjugation Strategy for the Preparation of Homogeneous Glycoconjugate Vaccine Candidates



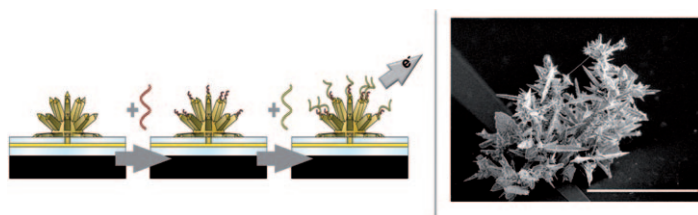
**Getting in where the action is:** Drug-conjugated dendrimers were used in combination with mass spectrometric analysis to identify drug targets in vitro and in living cells. In this proteomic strategy, the drug-conjugated nanopoly-

mer is incubated with cells to ensure efficient delivery (see picture), and the cells are then lysed. Proteins bound to the drug are isolated on a solid support and identified by mass spectrometry.

### Proteomics

L. Hu, A. Iliuk, J. Galan, M. Hans, W. A. Tao\* — 4133–4136

Identification of Drug Targets In Vitro and in Living Cells by Soluble-Nanopolymer-Based Proteomics



**A chip-based platform** is reported that is able to detect as few as 10 cancer cells. By developing sub-milliscscale sensors that are able to capture slow moving biological targets with high efficiency (see picture; scale bar 50 μm), cancer-specific sequen-

ces were detected in crude lysates of leukemia cells. This achievement relied on the development of a new type of molecular probe that improves the solubility and performance of neutral nucleic acids.

### Advanced Biosensing

E. Vasilyeva, B. Lam, Z. Fang, M. D. Minden, E. H. Sargent, S. O. Kelley\* — 4137–4141

Direct Genetic Analysis of Ten Cancer Cells: Tuning Sensor Structure and Molecular Probe Design for Efficient mRNA Capture



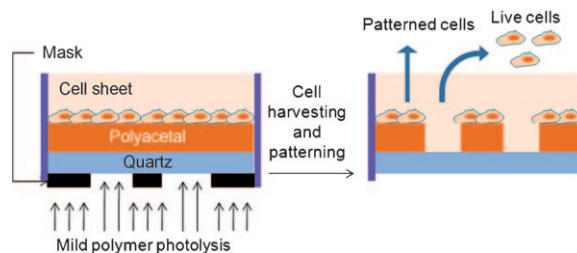


## Cell Patterning

G. Pasparakis,\* T. Manouras, A. Selimis,  
M. Vamvakaki, P. Argitis — 4142–4145



Laser-Induced Cell Detachment and  
Patterning with Photodegradable Polymer  
Substrates



**A glimpse of light is all it takes:** Polymers that undergo main-chain scission at remarkably low photolysis energies were developed as efficient photodegradable substrates for safe laser-mediated cell detachment and patterning. The poly-

mers, which contain acetal or ketal units in their backbone along with suitable absorbing groups, underwent fast degradation to release live cells upon irradiation with an excimer laser (see picture).

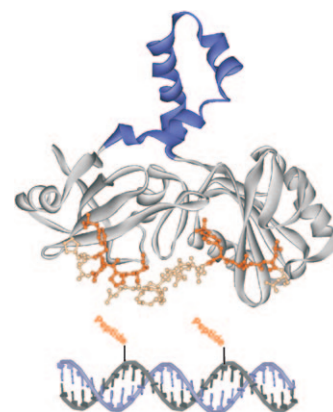
## DNA–Ligand Conjugates

H. Eberhard, F. Diezmann,  
O. Seitz\* — 4146–4150



DNA as a Molecular Ruler: Interrogation  
of a Tandem SH2 Domain with Self-  
Assembled, Bivalent DNA–Peptide  
Complexes

**Two peptides on display:** The self-assembly of DNA complexes enables the bivalent presentation of phosphopeptides. Flexibility and distance in the ligand arrangement can be adjusted through the choice of appropriate DNA templates. Spatial screening of the tandem SH2 domain of Syk kinase with these probes (see picture) indicated the accessible arrangements of the two homologous binding pockets and the flexibility of the connecting protein linker.



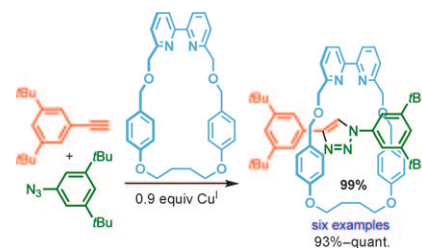
## Rotaxane Synthesis

H. Lahlali, K. Jobe, M. Watkinson,  
S. M. Goldup\* — 4151–4155



Macrocycle Size Matters: “Small”  
Functionalized Rotaxanes in Excellent  
Yield Using the CuAAC Active Template  
Approach

**By shrinking the macrocycle** in the CuAAC active template reaction not only is it demonstrated to be possible to use smaller macrocycles, but, surprisingly, that smaller macrocycles lead to higher yields of rotaxane product (see scheme). The synthesis of “small” functionalized [2]rotaxanes showcases this as a method for the production of materials with potential applications in molecular electronics, drug delivery, sensing, and enantioselective catalysis.



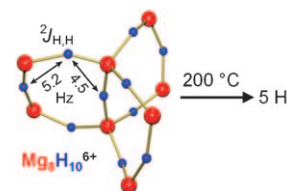
## Hydrogen Storage

S. Harder,\* J. Spielmann, J. Intemann,  
H. Bandmann — 4156–4160

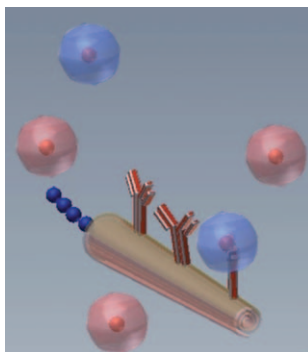


Hydrogen Storage in Magnesium  
Hydride: The Molecular Approach

**Big can be small:** The largest ligand-stabilized magnesium hydride cluster, containing 8 Mg<sup>2+</sup> and 10 H<sup>−</sup> ions, is a model for the smallest sub-nanometer-sized hydrogen storage material. This molecular cluster displays magnetic hydride–hydride coupling (see picture) and complete hydrogen desorption at the record-low temperature of 200 °C.



**Microrockets detect cancer:** A micromachine is used for the *in vitro* isolation of pancreatic cancer cells in complex media. The strategy is based on the selective binding and transport ability of antibody-functionalized microengine rockets: these microrockets selectively recognize the surface antigens overexpressed by pancreatic cancer cells, and capture and transport the cancer cells over a pre-selected path (see picture).

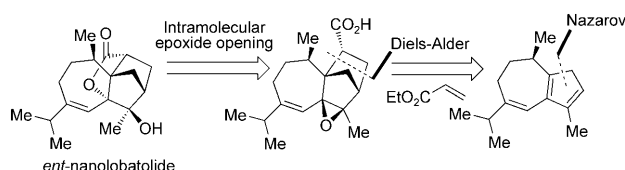


## Cancer Cells



S. Balasubramanian, D. Kagan, C.-M. Jack Hu, S. Campuzano, M. J. Lobo-Castañón, N. Lim, D. Y. Kang, M. Zimmerman, L. Zhang,\*  
J. Wang\* 4161–4164

Micromachine-Enabled Capture and Isolation of Cancer Cells in Complex Media



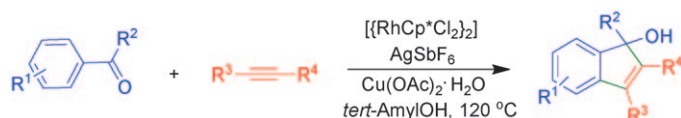
**Efficient and adaptable:** The key steps in the total synthesis of *ent*-nanolobatolide, the enantiomer of the novel and potent neuroprotective agent, involve an oxidative ring expansion of (–)-menthone, a Nazarov cyclization, an intermolecular

Diels–Alder reaction, and an intramolecular epoxide-opening reaction (see scheme). The two latter transformations provided evidence in support of the speculated biosynthetic pathway.

## Natural Products

H. M. Cheng, W. Tian, P. A. Peixoto, B. Dhudshia, D. Y.-K. Chen\* 4165–4168

Synthesis of *ent*-Nanolobatolide



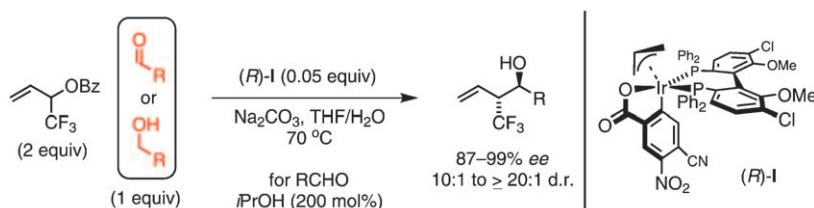
**Ketones and alkynes join together:** The catalytic title reaction proceeds rapidly at 120 °C and requires only 1 hour for completion (see scheme). The reaction mechanism likely involves chelation-

assisted *ortho* C–H activation, insertion of the alkyne moiety, carbocyclization, and protonation. Cp\* = pentamethylcyclopentadienyl.

## C–H Activation

K. Muralirajan, K. Parthasarathy, C.-H. Cheng\* 4169–4172

Regioselective Synthesis of Indenols by Rhodium-Catalyzed C–H Activation and Carbocyclization of Aryl Ketones and Alkynes



**A flourish of fluorine:** Exposure of  $\alpha$ -trifluoromethyl allyl benzoate to alcohols in the presence of an *ortho*-cyclometalated iridium catalyst results in the generation of aldehyde–allyliridium intermediates to form enantiomerically enriched products

of *anti*-( $\alpha$ -trifluoromethyl)allylation. An identical set of products is obtained from aldehydes under related transfer hydrogenation conditions employing isopropyl alcohol as terminal reductant.

## Enantioselective Allylation

X. Gao, Y. J. Zhang, M. J. Krische\* 4173–4175

Iridium-Catalyzed *anti*-Diastereo- and Enantioselective Carbonyl ( $\alpha$ -Trifluoromethyl)allylation from the Alcohol or Aldehyde Oxidation Level

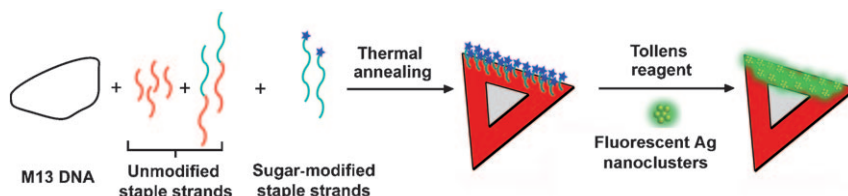


## DNA Nanotechnology

S. Pal, R. Varghese, Z. Deng, Z. Zhao, A. Kumar, H. Yan,\* Y. Liu\* — 4176–4179



Site-Specific Synthesis and In Situ Immobilization of Fluorescent Silver Nanoclusters on DNA Nanoscaffolds by Use of the Tollens Reaction



**Origami embellished with silver:** DNA strands with specific sequences and covalently attached sugar moieties were used for the site-specific incorporation of the sugar units on a DNA origami scaffold. This approach enabled the subse-

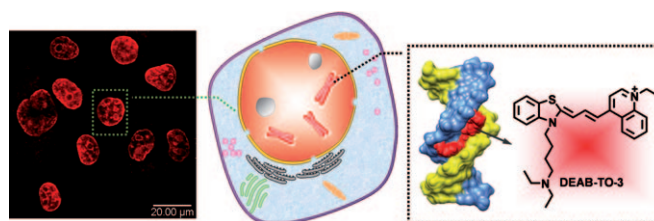
quent site-specific synthesis and in situ immobilization of fluorescent Ag clusters at predefined positions on the DNA nanoscaffold by treatment with the Tollens reagent (see picture).

## Fluorescent Probes

X. Peng,\* T. Wu, J. Fan, J. Wang, S. Zhang, F. Song, S. Sun — 4180–4183



An Effective Minor Groove Binder as a Red Fluorescent Marker for Live-Cell DNA Imaging and Quantification



**Seeing red:** DEAB-TO-3 shows a large fluorescence enhancement upon binding to native DNA and a distinct selectivity for double-stranded DNA over total RNA. As a red fluorescent live-cell-permeant DNA

minor groove binder, DEAB-TO-3 is promising for highly sensitive DNA detection in vitro and nucleus-specific imaging and DNA quantification in vivo (see picture).

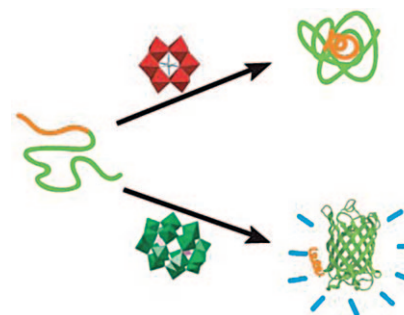
## Drug Discovery

J. Geng, M. Li, J. Ren, E. Wang, X. Qu\* — 4184–4188



Polyoxometalates as Inhibitors of the Aggregation of Amyloid  $\beta$  Peptides Associated with Alzheimer's Disease

**Inorganic amyloid inhibitors:** Four types of polyoxometalates (POMs) were found to be efficient inhibitors of amyloid formation by amyloid  $\beta$  peptides ( $A\beta$ ; see picture: unlike the top POM (red), the bottom POM (dark green) inhibited amyloid formation). The inhibition selectivity of POMs is due to size-specific electrostatic interactions between POMs and  $A\beta$  through binding to the positively charged His13–Lys16 cluster region of  $A\beta$ .

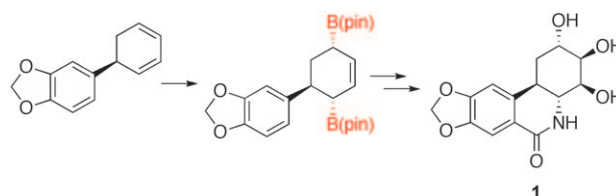


## Natural Products

S. L. Poe, J. P. Morken\* — 4189–4192



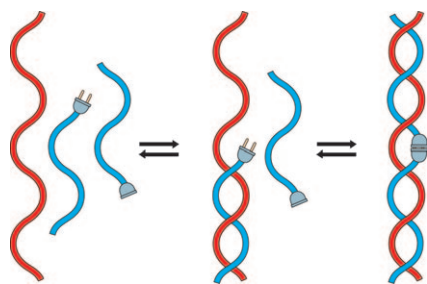
A Boron-Based Synthesis of the Natural Product (+)-*trans*-Dihydrolycoricidine



**Diastereoselective diboration** results in the highly selective 1,4-dihydroxylation of chiral cyclohexadienes (see scheme). Together with the catalytic enantioselective

tive conjugate allylboration, the diene diboration facilitates the asymmetric synthesis of the cytotoxic agent (+)-*trans*-dihydrolycoricidine (**1**). pin = pinacol.



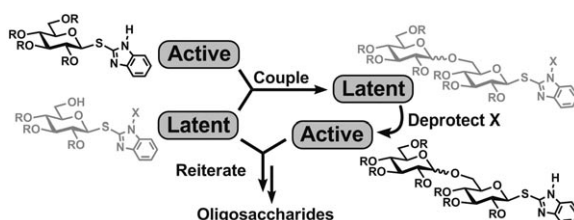


**Plug and play:** A helix with a boronate ester linkage was constructed by DNA- or RNA-templated assembly through the plugging together of appropriately designed half-sequences, one with a boronic acid at its 5' end, the other with a ribonucleotide at its 3' end. The two hybridization steps in the three-component assembly (see picture) could be controlled reversibly by external stimuli, including an acid or base, cyanide ions, or fructose.

## Chemical Ligation

A. R. Martin, I. Barvik,  
D. Luvino, M. Smietana,\*  
J.-J. Vasseur\* 4193–4196

Dynamic and Programmable DNA-  
Templated Boronic Ester Formation



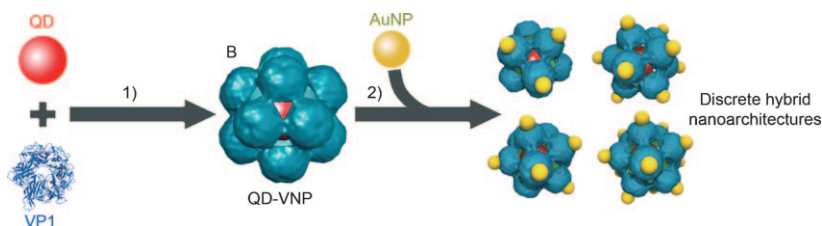
**Doing the Biz:** The *S*-benzimidazolyl (SBiz) anomeric moiety is a new leaving group that can be activated for glycosylation under a variety of conditions, including metal-assisted and alkylation path-

ways. Application of a substituted SBiz moiety (X = anisoyl, see picture) allows active-latent and armed-disarmed types of oligosaccharide assembly.

## Glycosylation

S. J. Hasty, M. A. Kleine,  
A. V. Demchenko\* 4197–4201

*S*-Benzimidazolyl Glycosides as a  
Platform for Oligosaccharide Synthesis by  
an Active-Latent Strategy



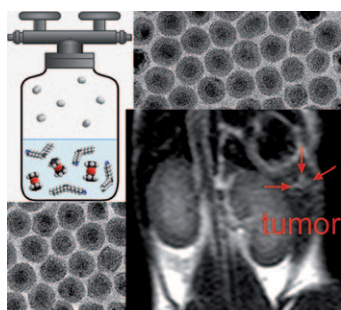
**Virus-based nanoparticle scaffolds** (VNPs) were used for two-step construction of discrete 3D nanoarchitectures (see picture): 1) loading of quantum dots (QDs) into VNPs formed by cysteine-

modified capsid protein VP1 of simian virus 40; 2) attaching controlled numbers of Au nanoparticles (AuNPs) to VNP surfaces through Au-S bond formation.

## Tunable Nanoarchitectures

F. Li, D. Gao, X. Zhai, Y. Chen, T. Fu,  
D. Wu, Z. P. Zhang, X. E. Zhang,\*  
Q. Wang\* 4202–4205

Tunable, Discrete, Three-Dimensional  
Hybrid Nanoarchitectures



**Visualizing small tumors:** A novel, facile synthesis leads to the formation of strongly magnetic single-crystal core/shell iron/iron oxide nanoparticles without the use of highly toxic chemicals. The core/shell nanoparticles are highly effective MRI contrast agents and enable unambiguous detection of small tumors of 1–3 mm in vivo (see picture).

## MRI Contrast Agent

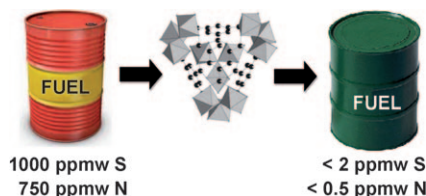
S. Cheong, P. Ferguson, K. W. Feindel,  
I. F. Hermans, P. T. Callaghan, C. Meyer,  
A. Slocombe, C.-H. Su, F.-Y. Cheng,  
C.-S. Yeh, B. Ingham, M. F. Toney,  
R. D. Tilley\* 4206–4209

Simple Synthesis and Functionalization of  
Iron Nanoparticles for Magnetic  
Resonance Imaging



## Metal–Organic Frameworks

M. Maes, M. Trekels, M. Boulhout, S. Schouteden, F. Vermoortele, L. Alaerts, D. Heurtaux, Y.-K. Seo, Y. K. Hwang, J.-S. Chang, I. Beurroies, R. Denoyel, K. Temst, A. Vantomme, P. Horcajada, C. Serre, D. E. De Vos\* — **4210–4214**



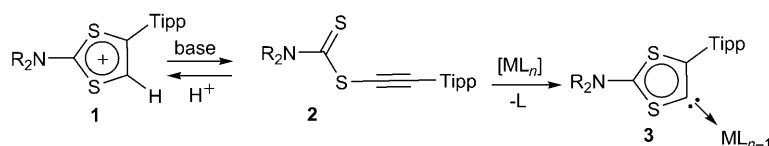
**Bring in the cleaner!** Metal–organic frameworks (MOFs) are able to separate nitrogen and sulfur contaminants from fuel, which may lead to the production of cleaner fuels (see picture; ppmw = parts per million by weight). The separation ability is shown to originate from the Lewis acidity of the metal sites in the MOFs.



Selective Removal of N-Heterocyclic Aromatic Contaminants from Fuels by Lewis Acidic Metal–Organic Frameworks

## Mesoionic Carbenes

G. Ung, D. Mendoza-Espinosa, J. Bouffard, G. Bertrand\* — **4215–4218**



A Stable Acyclic Ligand Equivalent of an Unstable 1,3-Dithiol-5-ylidene

**Substitutes you can rely on:** Mesoionic carbenes (MICs) are not always stable. However, the acyclic ethynylcarbamiidithioate **2** formed (instead of the corresponding MIC) by deprotonation of di-

thiolium salt **1** underwent cyclization to its precursor under acidic conditions and reacted with a variety of transition-metal centers to yield robust MIC complexes **3**; (see scheme; Tipp = 2,4,6-triisopropylphenyl).



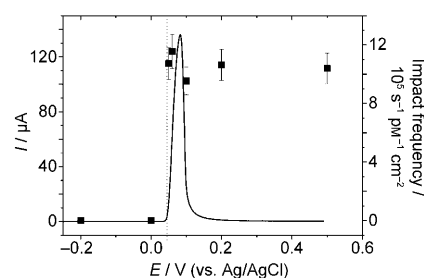
## Electrochemistry

Y.-G. Zhou, N. V. Rees, R. G. Compton\* — **4219–4221**



The Electrochemical Detection and Characterization of Silver Nanoparticles in Aqueous Solution

**Current spikes after collision:** Analysis of current transients arising from impacts between the nanoparticles and an electrode surface (see picture) can be used to detect, identify, and determine the size of silver nanoparticles. This provides an exciting new strategy for the characterization of metal nanoparticles for analytical and environmental monitoring applications.



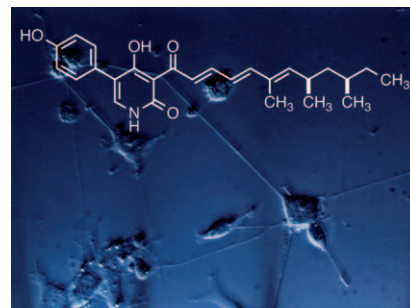
## Natural Product Synthesis

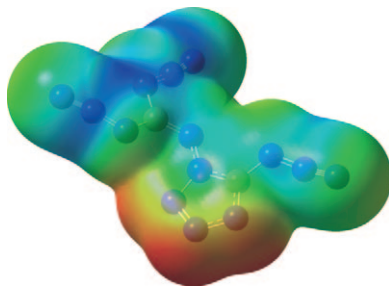
H. J. Jessen, A. Schumacher, T. Shaw, A. Pfaltz, K. Gademann\* — **4222–4226**



A Unified Approach for the Stereoselective Total Synthesis of Pyridone Alkaloids and Their Neuritogenic Activity

**Unus pro omnibus:** The development of compounds inducing neurite outgrowth might constitute a valuable approach for the non-invasive medical treatment of neurodegenerative diseases. With the aid of a bifunctional building block, the total syntheses of a group of pyridone polyenes originally produced by entomopathogenic fungi was achieved (see picture). All of these natural products displayed neuritogenic activity in the PC-12 cell line.



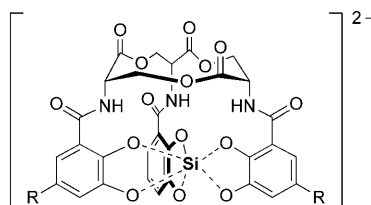


**7:1 to nitrogen!** Diazotization and subsequent dimerization of the triaminoguanidinium cation gave 1-diazidocarbamoyl-5-azidotetrazole (see picture). The structurally and spectroscopically characterized binary CN compound shows great energetic performance and a high heat of formation, but also extremely high sensitivity to friction and shock.

### Binary CN Compounds

T. M. Klapötke,\* F. A. Martin,  
J. Stierstorfer \_\_\_\_\_ **4227–4229**

$C_2N_{14}$ : An Energetic and Highly Sensitive  
Binary Azidotetrazole



**Not limited to iron:** The high affinity of the bacterial iron siderophores enterobactin and salmochelin for  $Fe^{3+}$  ions, which are bound through chelating catecholate groups, is well known. These two siderophores have now been found to also bind silicon ions with high affinity, giving the first examples of silicon complexes of natural products stable under physiological conditions.

### Natural Silicon Complexes

T. Schmiederer, S. Rausch,  
M. Valdebenito, Y. Mantri, E. Mösker,  
T. Baramov, K. Stelmaszyk, P. Schmieder,  
D. Butz, S. I. Müller, K. Schneider,  
M.-H. Baik, K. Hantke,  
R. D. Süssmuth\* \_\_\_\_\_ **4230–4233**

The *E. coli* Siderophores Enterobactin and  
Salmochelin Form Six-Coordinate Silicon  
Complexes at Physiological pH



Supporting information is available  
on [www.angewandte.org](http://www.angewandte.org)  
(see article for access details).



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**Preview** \_\_\_\_\_ **4235**

## Corrigenda

Catalytic Selective Cyclizations of Aminocyclopropanes: Formal Synthesis of Aspidospermidine and Total Synthesis of Goniomitine

F. De Simone, J. Gertsch, J. Waser\* 5767–5770

Angew. Chem. Int. Ed. 2010, 49

DOI 10.1002/anie.201001853

During recent investigations on the antiproliferative effect of goniomitine, different results were obtained than originally reported in this Communication (10.1002/anie.201001853). The new values are given in the updated version of Table 2 below. The reasons for the higher activities (150–450 nM) observed originally are still not clear at this point, as no difference in the sample purity was observed.

**Table 2:** Antiproliferative activity of goniomitine.

Cell lines	IC <sub>50</sub> [μM] <sup>[a]</sup>
A549	47.8 ± 4.3
MCF-7	52.9 ± 3.8
–	–
PC-3M	32.0 ± 2.4
MDCK	29.3 ± 4.0
MDR-1-MDCK	73.2 ± 3.5

[a] IC<sub>50</sub> values for inhibition of human tumor cell growth; A549 (lung), MCF-7 (breast), [–], PC-3M (prostate), MDCK (canine kidney). MDR-1-MDCK is a human P-glycoprotein 170 (P-gp170)-overexpressing multi-drug-resistant cell line.

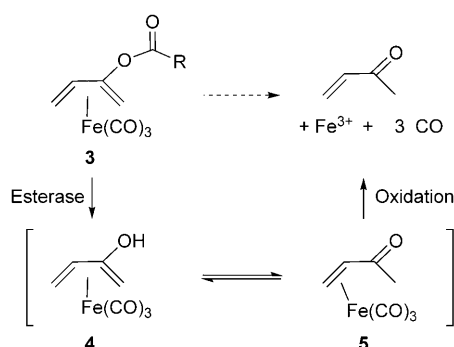
Acyloxybutadiene–Iron Tricarbonyl Complexes as Enzyme-Triggered CO-Releasing Molecules (ET-CORMs)

S. Romanski, B. Kraus, U. Schatzschneider, J.-M. Neudörfl, S. Amslinger,\* H.-G. Schmalz\* 2392–2396

Angew. Chem. Int. Ed. 2011, 50

DOI 10.1002/anie.201006598

In this Communication (10.1002/anie.201006598), the carbonyl oxygen atom of structure **5** in Scheme 2 was inadvertently omitted. The correct version of the scheme is shown below. The editorial staff apologize for this oversight.



**Scheme 2.** Proposed mode of action of enzyme-triggered CO-releasing molecules (ET-CORMs) of type **3**.