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:

*Z. Zhang, Z. Wang, R. Zhang, K. Ding**
Extremely Efficient Titanium Catalyst for the Enantioselective Cyanation of Aldehydes Using Cooperative Catalysis

*Q. Wang, M. Zhang, C. Chen, W. Ma, J. Zhao**
Photocatalytic Aerobic Oxidation of Alcohols on TiO_2: The Acceleration Effect of Brønsted Acids

Y. Fu, Q. Dai, W. Zhang, J. Ren, T. Pan, C. He**
AlkB Domain of Mammalian ABH8 Catalyzes Hydroxylation of 5-Methoxycarbonylmethyluridine at the Wobble Position of tRNA

C. Apostolidis, B. Schimmelpfennig, N. Magnani, P. Lindqvist-Reis, O. Walter, R. Sykora, A. Morgenstern, E. Colineau, R. Caciuffo, R. Klenze, R. G. Haire, J. Rebizant, F. Bruchertseifer, T. Fanghänel*
$[An(H_2O)_9](CF_3SO_3)_3$ (An=U–Cm, Cf): Exploring Their Stability, Structural Chemistry, and Magnetic Behavior by Experiment and Theory

*S. Rizzato, J. Bergès, S. A. Mason, A. Albinati, J. Kozelka**
Dispersion-Driven Hydrogen Bonding: Theoretically Predicted H-bond between H_2O and Platinum(II) Identified by Neutron Diffraction

*D. R. Dreyer, H. Jia, C. W. Bielawski**
Graphene Oxide: A Convenient Carbocatalyst for Facilitating Oxidation and Hydration Reactions

H. Amouri, J. Moussa, A. K. Renfrew, P. J. Dyson, M. N. Rager, L.-M. Chamoreau*
Metal Complex of Diselenobenzoquinone : Discovery, Structure, and Anticancer Activity

*M. Rauschenberg, S. Bomke, U. Karst, B. J. Ravoo**
Dynamic Peptides as Biomimetic Carbohydrate Receptors

Author Profile

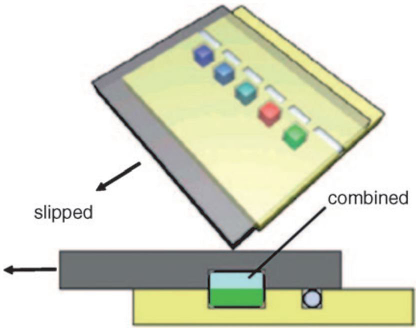
"The part of my job that I enjoy the most is to motivate, support, and educate young people.
The biggest problem that scientists face is to show the importance and beauty of science. …"
This and more about Albert Schenning can be found on page 6482.

Books

Highlights

Lab-on-a-Chip

Slip sliding away: Chemical processes can be executed on microfluidic chips by simply slipping microstructured plates over each other (see picture), like the movement of a valve. This so-called slipchip device requiring no pumps or valves and was successfully applied to high-throughput nanoliter screening for protein crystallography and immunoassays.



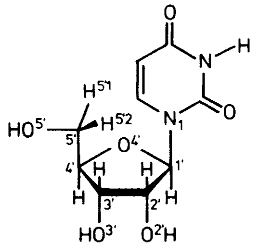
Contents

D-Ribose

W. Saenger* ———— **6487 – 6489**

A Multi-Faceted Approach to Elucidate the Crystal Structure of D-Ribose: Similarities to Protein Structure Determination

Recalcitrant to crystallization: After 50 years, the crystal structure of open-chain D-ribose has been determined. It can occur as pyranose or furanose, but in the solid sate, only α- and β-pyranose is found, which contrasts with the β-furanose form featured exclusively by nucleosides (for example uridine; see figure). This difference arises from the structural flexibility of the β-furanose ring that easily transforms by pseudorotation from the C2′-*endo* to the C3′-*endo* form in DNA, thus carrying out various functions, whereas pyranose is rigid.

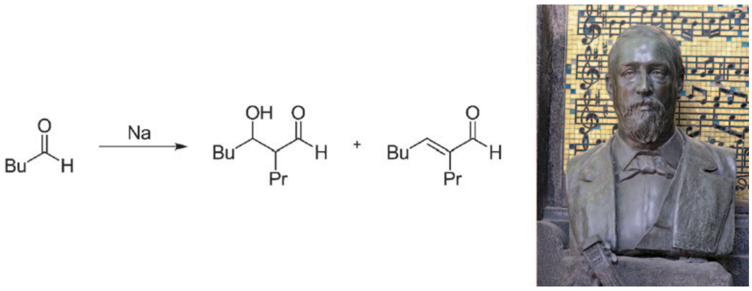


Essays

History of Science

J. Podlech* ———— **6490 – 6495**

"Try and Fall Sick …"—The Composer, Chemist, and Surgeon Aleksandr Borodin



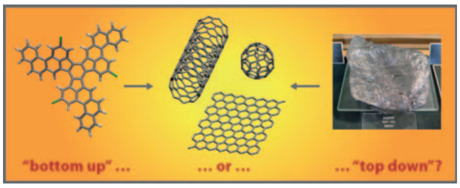
A double life: The Russian Aleksandr Borodin was not only an outstanding composer, he was also an important chemist of his time. It is widely unknown that he was the discoverer of the aldol reaction (see scheme).

Reviews

Carbon Nanostructures

T. N. Hoheisel, S. Schrettl, R. Szilluweit, H. Frauenrath* ———— **6496 – 6515**

Nanostructured Carbonaceous Materials from Molecular Precursors



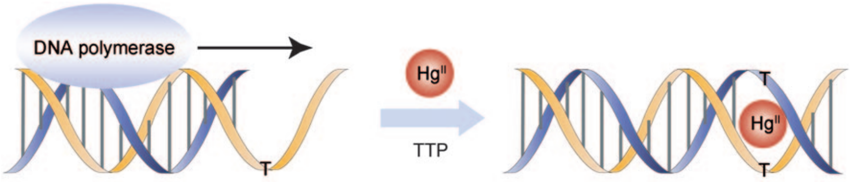
Promising solutions in emerging fields such as microelectronics, efficient energy storage, and sustainable chemical technology are provided by carbon nanostructured materials. New methods for their preparation will be required that afford functional carbon materials with controlled surface chemistry, mesoscopic morphology, and carbon microstructure. Recent approaches starting from molecular precursors may open up new avenues in this regard.

For the USA and Canada: ANGEWANDTE CHEMIE International Edition (ISSN 1433-7851) is published weekly by Wiley-VCH, PO Box 191161, 69451 Weinheim, Germany. Air freight and mailing in the USA by Publications Expediting Inc., 200 Meacham Ave., Elmont, NY 11003. Periodicals postage paid at Jamaica, NY 11431. US POSTMASTER: send address changes to *Angewandte Chemie*, Journal Customer Services, John Wiley & Sons Inc., 350 Main St., Malden, MA 02148-5020. Annual subscription price for institutions: US$ 9442/8583 (valid for print and electronic / print or electronic delivery); for 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.

Mismatched Base Pairing

H. Urata,* E. Yamaguchi, T. Funai, Y. Matsumura, S.-i. Wada ____ **6516 – 6519**

Incorporation of Thymine Nucleotides by DNA Polymerases through T–Hg^{II}–T Base Pairing

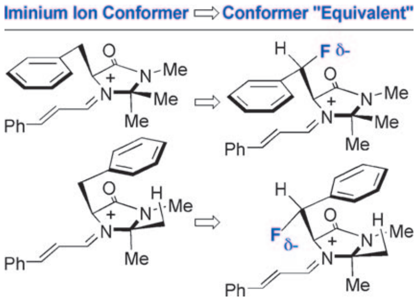


A dangerous matchmaker: In the presence of Hg^{II} ions, DNA polymerases incorporated thymidine 5′-triphosphate (TTP) at the site opposite thymine in a template strand and made a phosphodiester bond to elongate the primer strand. This unusual metal-mediated base pair was recognized by the DNA polymerases, which went on to synthesize the full-length product (see picture).

Conformational Analysis

C. Sparr, R. Gilmour* ______ **6520 – 6523**

Fluoro-Organocatalysts: Conformer Equivalents as a Tool for Mechanistic Studies



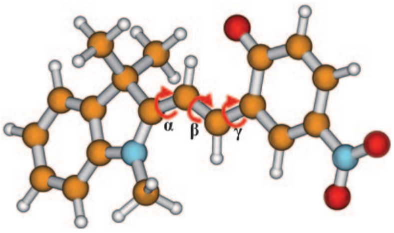
Fluorine in charge! The fluorine–iminium ion *gauche* effect has been exploited in the design of conformational probes for organocatalysis (see scheme). Stabilizing hyperconjugative $[\sigma_{C-H}\rightarrow\sigma^{*}_{C-F}]$ and/or electrostatic $[N^{+}\cdots F^{\delta-}]$ interactions render the C–F bond an excellent steering group for controlling molecular topology without introducing additional steric constraints.

Conformational Analysis

A. Gahlmann, I-R. Lee, A. H. Zewail* ____________ **6524 – 6527**

Direct Structural Determination of Conformations of Photoswitchable Molecules by Laser Desorption–Electron Diffraction

Anfractuous paths: Electron diffraction reveals the involvement of multiple structures in the complex photochemistry of photoswitchable nitro-substituted 1,3,3-trimethylindolinobenzospiropyran. The spiropyran-to-merocyanine isomerization due to ring opening produces primarily the *cis–trans–cis* structure (see picture; red O, blue N, yellow C), while competing nonradiative pathways lead to other structures, namely the closed forms in their triplet and singlet ground states.



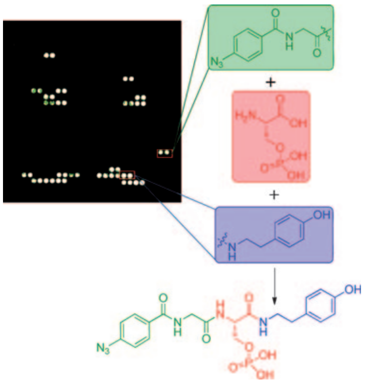
Protein–Protein Interactions

VIP

H. Wu, J. Ge, S. Q. Yao* ____ **6528 – 6532**

Microarray-Assisted High-Throughput Identification of a Cell-Permeable Small-Molecule Binder of 14-3-3 Proteins

The way to a 14-3-3 binder: A fragment-based combinatorial small-molecule microarray generates affinity-based fingerprints of the 14-3-3σ protein. One small molecule (see picture; in red box) that disrupts the 14-3-3/protein interaction (green/blue) has been identified. The compound is cell-permeable and possesses both in vitro and in-cell activities.

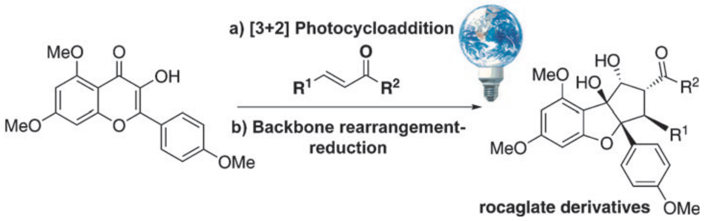


Contents

Photochemical Synthesis

S. P. Roche, R. Cencic, J. Pelletier,
J. A. Porco, Jr.* ____________ **6533 – 6538**

Biomimetic Photocycloaddition of 3-Hydroxyflavones: Synthesis and Evaluation of Rocaglate Derivatives as Inhibitors of Eukaryotic Translation

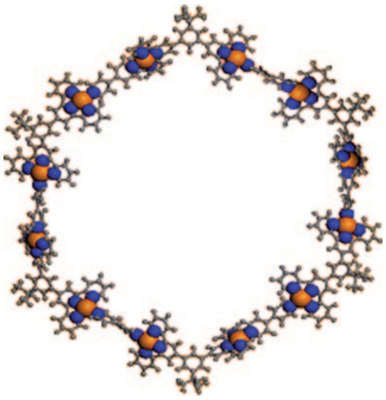


Shedding light on translation: A light-driven, biomimetic [3+2] cycloaddition has been achieved with the synthesis of a series of rocaglate derivatives. Mechanistic data suggest the possibility for donor–acceptor interactions and the involvement of triplet biradicaloids in the photoexcited state. Several new rocaglate derivatives approach the potency of the anticancer agent silvestrol.

Macrocycles

S. Perera, X. Li, M. Soler, A. Schultz,
C. Wesdemiotis,* C. N. Moorefield,
G. R. Newkome* ____________ **6539 – 6544**

Hexameric Palladium(II) Terpyridyl Metallomacrocycles: Assembly with 4,4′-Bipyridine and Characterization by TWIM Mass Spectrometry

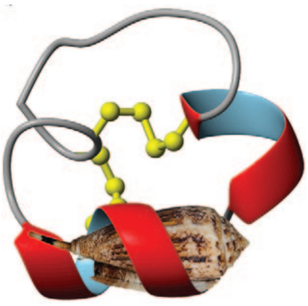


TWIM peaks: A macrocycle containing 12 Pd^{II} terpyridyl centers was assembled using 4,4′-bipyridyl ligands and characterized by NMR and traveling wave ion mobility mass spectrometry (TWIM-MS). The macrocyclic architecture was also examined by tandem mass spectrometry and collisionally activated dissociation (CAD) experiments (see picture; C gray, N blue, Pd orange), and the resulting fragments were monitored by time-of-flight mass analysis.

Pain Relief Drugs

R. J. Clark, J. Jensen, S. T. Nevin,
B. P. Callaghan, D. J. Adams,
D. J. Craik* ____________ **6545 – 6548**

The Engineering of an Orally Active Conotoxin for the Treatment of Neuropathic Pain

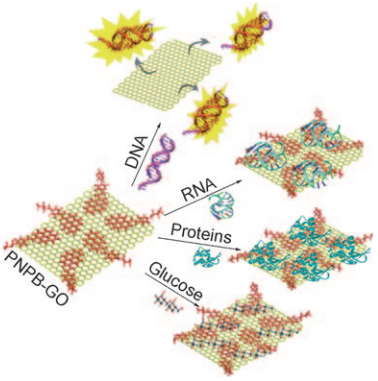


From killers to curers: Peptides from cone snail venoms are potential therapeutic agents for the treatment of neuropathic pain. Unfortunately, these peptides suffer from the disadvantage of short biological half-lives and poor activity when taken orally. A new orally active conotoxin was developed to solve these problems.

Graphene-Based Sensor

J. Balapanuru, J.-X. Yang, S. Xiao,
Q. L. Bao, M. Jahan, L. Polavarapu, J. Wei,
Q. H. Xu, K. P. Loh* ________ **6549 – 6553**

A Graphene Oxide–Organic Dye Ionic Complex with DNA-Sensing and Optical-Limiting Properties

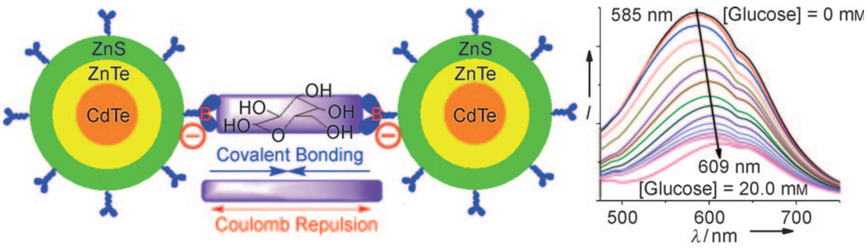


A charge-transfer complex between graphene oxide (GO) and pyrene dye PNPB has been synthesized by a simple ion-exchange process. Its highly specific interactions with DNA compared to other biomolecules (see scheme) allows selective and rapid detection of DNA in biological mixtures. It also exhibits broadband optical limiting.

Cell-Permeable Probes

W. T. Wu, T. Zhou, A. Berliner, P. Banerjee, S. Q. Zhou* ______ **6554–6558**

Glucose-Mediated Assembly of Phenylboronic Acid Modified CdTe/ZnTe/ZnS Quantum Dots for Intracellular Glucose Probing

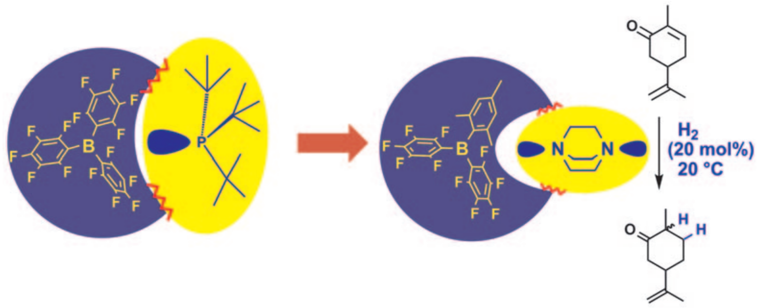


Effective, if dotty: Quantum-dot (QD) emission was modulated through the reversible covalent bonding of glucose to boronic acids on the surface of the QDs (see picture). The highly selective ratiometric probe was sensitive to glucose in the physiologically important concentration range of 0.4–20.0 mM and was used to determine the amount of glucose within living cells.

Hydrogen Activation

G. Erős, H. Mehdi, I. Pápai, T. A. Rokob, P. Király, G. Tárkányi, T. Soós* ______ **6559–6563**

Expanding the Scope of Metal-Free Catalytic Hydrogenation through Frustrated Lewis Pair Design



No metal causes frustration: Based on a conceptual framework, novel frustrated Lewis acid–base catalyst systems with orthogonal reactivity have been developed. Aside from enhanced functional-group tolerance, unique chemoselectivity can be achieved in catalytic metal-free hydrogenations (see scheme).

Functional Metal Carbides

Z. Schnepp, W. Yang, M. Antonietti, C. Giordano* ______ **6564–6566**

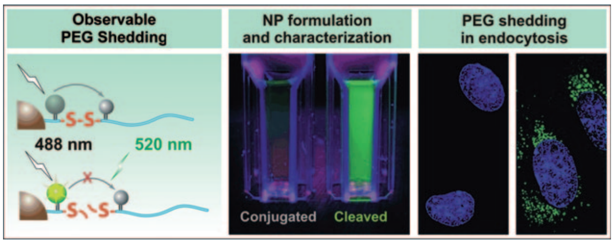
Biotemplating of Metal Carbide Microstructures: The Magnetic Leaf

Turning a new leaf: Complex, hierarchical structures of magnetic and conductive iron carbide (Fe_3C) have been synthesized from a biological template. By dispersing aqueous metal precursors over the surface of a leaf skeleton, the intricate vascular structure is replicated in the ceramic product (see picture: Fe_3C leaf structures attached to a magnet).

Functional Materials

W. Gao, R. Langer, O. C. Farokhzad* ______ **6567–6571**

Poly(ethylene glycol) with Observable Shedding

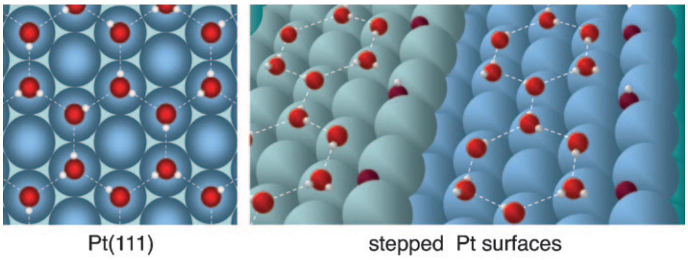


A FRET-bearing poly(ethylene glycol) (PEG) conjugate fluoresces at 520 nm when it is cleaved off nanoparticles (NPs; see picture). When the NPs were targeted on cancer cell lines, the reducing endosomal environment caused the cleavage of the disulfide bond and the shedding of the PEG layer.

Surface Chemistry

M. J. T. C. van der Niet, A. den Dunnen,
L. B. F. Juurlink,
M. T. M. Koper* ________ **6572 – 6575**

Co-adsorption of O and H_2O on Nanostructured Platinum Surfaces: Does OH Form at Steps?



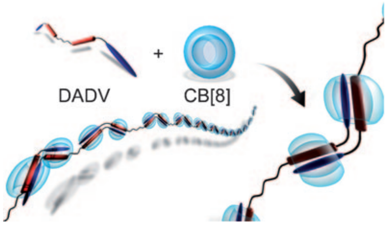
Step on it: On stepped platinum surfaces OH_{ad} is less readily formed than on a flat Pt(111) surface. This situation leaves O_{ad} species on step sites when H_2O and O_{ad} are co-adsorbed at the step sites.

Supramolecular Polymers

Y. L. Liu, Y. Yu, J. Gao, Z. Q. Wang,
X. Zhang* ________ **6576 – 6579**

Water-Soluble Supramolecular Polymerization Driven by Multiple Host-Stabilized Charge-Transfer Interactions

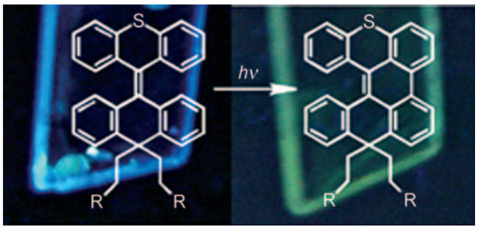
Interacting on all levels: A supramolecular polymer with a high degree of polymerization has been constructed on the basis of multiple host-stabilized charge-transfer interactions (see picture; DADV is a dianthracenyl bis(bipyridinium bromide), CB[8] = cucurbit[8]uril). Through interactions between supramolecular polymer chains, a reversible gel can also be obtained.



Energy Transfer

A. C. Coleman, J. Areephong, J. Vicario,
A. Meetsma, W. R. Browne,
B. L. Feringa* ________ **6580 – 6584**

In Situ Generation of Wavelength-Shifting Donor–Acceptor Mixed-Monolayer-Modified Surfaces

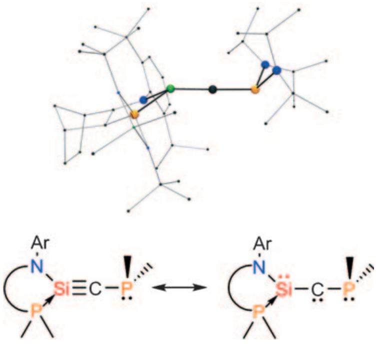


Given the green light: Irradiation of a monolayer of an overcrowded-alkene-based molecular switch (see picture, left) results in generation of a mixed monolayer containing its photocyclized analogue. An efficient energy-transfer process between these compounds is evident from the observed red-shifted emission of the photocyclized switch.

Main-Group Triple Bonds

D. Gau, T. Kato,* N. Saffon-Merceron,
A. De Cózar, F. P. Cossío,
A. Baceiredo* ________ **6585 – 6588**

Synthesis and Structure of a Base-Stabilized *C*-Phosphino-*Si*-Amino Silyne

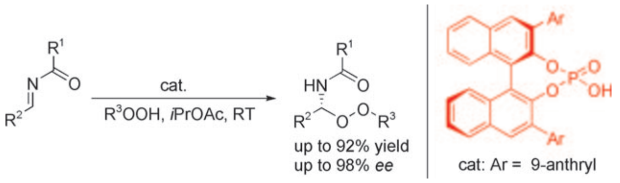


A silyne seeker: The synthesis of the first isolable silyne, which is stabilized by a phosphine ligand, has been achieved (see picture). An X-ray diffraction study reveals a very short silicon–carbon bond, as predicted computationally for Si≡C bonds. This species has a certain degree of carbenic character, and this result shows that the phosphonium sila-ylide fragment acts as a strong π-donating and π-accepting substituent.

Asymmetric Catalysis

W. Zheng, L. Wojtas,
J. C. Antilla* **6589–6591**

Chiral Phosphoric Acid Catalyzed Peroxidation of Imines

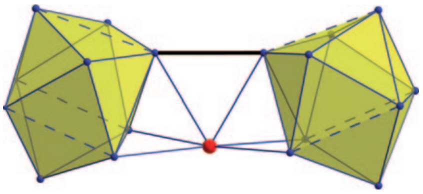


Something to COO about: The title reaction provides direct access to α-amino peroxides with high enantioselectivity (see scheme). The phosphoric acid catalyst is thought to activate both the nucleophile and electrophile through hydrogen-bonding interactions.

Zintl Ions

J.-Q. Wang, B. Wahl,
T. F. Fässler* **6592–6595**

$[Ag(Sn_9{-}Sn_9)]^{5-}$: A Homoleptic Silver Complex of A Dimeric Sn_9 Zintl Anion

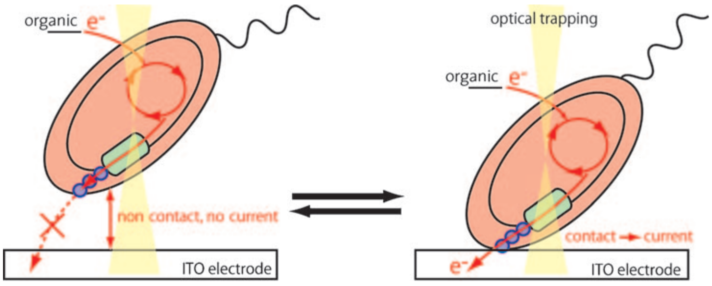


Finally, a dimeric nonastannide Zintl anion: The cluster anion $[Ag(Sn_9{-}Sn_9)]^{5-}$ (**1**; see picture; blue Sn, red Ag) is obtained from Zintl anion $[Sn_9]^{4-}$ by an oxidative coupling reaction. An X-ray structure determination reveals that the Sn–Sn exo bond is also supported by a silver cation. Moreover, **1** is the first cluster consisting only of silver and tin atoms.

Bacterial Electron Transfer

H. Liu, G. J. Newton, R. Nakamura,
K. Hashimoto,*
S. Nakanishi* **6596–6599**

Electrochemical Characterization of a Single Electricity-Producing Bacterial Cell of *Shewanella* by Using Optical Tweezers

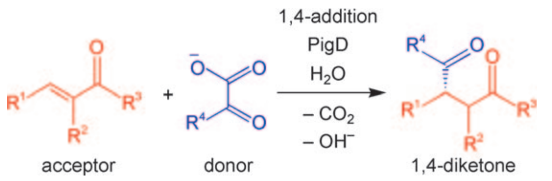


Only connect: Members of genus *Shewanella* are Gram-negative bacteria that can utilize solid-state metal oxide as a terminal electron acceptor for respiration. The direct electrical connection between a single cell and a microelectrode is characterized by an optical tweezers technique (see picture; ITO = indium tin oxide).

Enzyme Catalysis

C. Dresen, M. Richter, M. Pohl, S. Lüdeke,
M. Müller* **6600–6603**

The Enzymatic Asymmetric Conjugate Umpolung Reaction



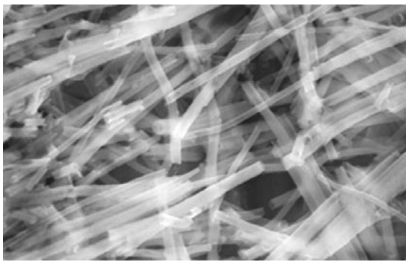
The Stetter reaction employs synthetically useful umpolung reactivity to provide catalytic access to 1,4-bifunctional molecules. The first enzymatic 1,4-addition is described, with the ThDP-dependent enzyme PigD, which makes the challenging asymmetric intermolecular Stetter reaction accessible.

Catanionic Tubules

N. Manghisi, C. Leggio, A. Jover, F. Meijide, N. V. Pavel, V. H. Soto Tellini, J. Vázquez Tato, R. G. Agostino, L. Galantini* ____________ **6604 – 6607**

Catanionic Tubules with Tunable Charge

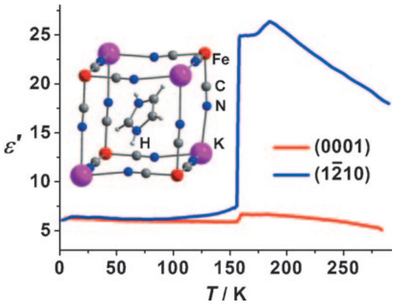
Balancing the positives and negatives: A new behavior in the field of catanionic mixtures was observed in solutions of anionic and cationic forms of rigid nonconventional amphiphiles. Dilute aqueous mixtures of anionic and cationic bile salt derivatives form catanionic tubules with charge ranging from negative to positive values depending on the surfactant molar ratio of the mixtures.



Molecular Dielectrics

W. Zhang,* Y. Cai, R.-G. Xiong,* H. Yoshikawa, K. Awaga ____ **6608 – 6610**

Exceptional Dielectric Phase Transitions in a Perovskite-Type Cage Compound



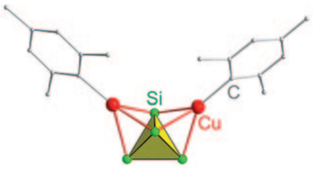
Rotation does work! The organic–inorganic hybrid cage compound $(HIm)_2[KFe(CN)_6]$ (**1**, HIm = imidazolium) with a perovskite-type structure exhibits two phase transitions at 158 K and 187 K (see picture showing anisotropic dielectric permittivities of the single crystal). These transitions are due to order–disorder behavior of rotatable guest molecules. Compound **1** is a new class of switchable molecular dielectric with striking anomalies and anisotropy.

Cluster Compounds

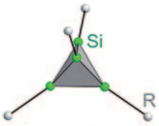
M. Waibel, F. Kraus, S. Scharfe, B. Wahl, T. F. Fässler* ____________ **6611 – 6615**

$[(MesCu)_2(\eta^3\text{-}Si_4)]^{4-}$: A Mesitylcopper-Stabilized Tetrasilicide Tetraanion

$[Si_4]^{4-}$



$[(MesCu)_2Si_4]^{4-}$



R_4Si_4

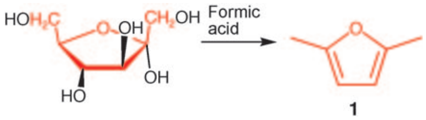
Between Zintl and Wiberg: The tetrahedral silicon cluster $[(MesCu)_2Si_4]^{4-}$ was obtained from the reaction of $K_6Rb_6Si_{17}$ and MesCu (Mes = 2,4,6-$Me_3C_6H_2$) in liquid ammonia. Through stabilization with transition metal fragments, highly charged silicon clusters can thus be transferred and handled in solution.

Biofuels

T. Thananatthanachon, T. B. Rauchfuss* _________ **6616 – 6618**

Efficient Production of the Liquid Fuel 2,5-Dimethylfuran from Fructose Using Formic Acid as a Reagent

Three in one: New reagents are needed to generate liquid fuels from biomass, but the reagents must serve multiple roles. For the conversion of fructose into the title compound **1**, formic acid serves three roles: assists in the isomerization/dehydration, serves as an H_2 source for hydrogenation, and helps deoxygenate the alcohol functional groups.

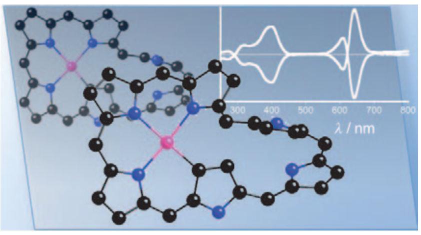


1

Aromaticity

T. Tanaka, T. Sugita, S. Tokuji, S. Saito, A. Osuka* ______ 6619 – 6621

Metal Complexes of Chiral Möbius Aromatic [28]Hexaphyrin(1.1.1.1.1.1): Enantiomeric Separation, Absolute Stereochemistry, and Asymmetric Synthesis

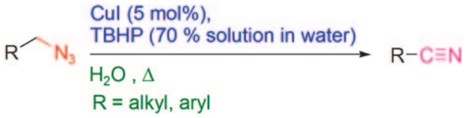


Twist and sort out! Chiral separation of Pd^{II}, Ni^{II}, and Pt^{II} complexes of [28]hexaphyrin(1.1.1.1.1.1) was achieved by HPLC on a chiral stationary phase (see inset for CD trace). The absolute configuration for the Pd^{II} complex was determined by X-ray crystallography. Asymmetric metalation of hexaphyrin, achieved with a Pd^{II} binap salt, resulted in 23% *ee*. This is the first example of asymmetric synthesis of Möbius-twisted molecules.

Oxidation of Azides

M. Lamani, K. R. Prabhu* ______ 6622 – 6625

An Efficient Oxidation of Primary Azides Catalyzed by Copper Iodide: A Convenient Method for the Synthesis of Nitriles



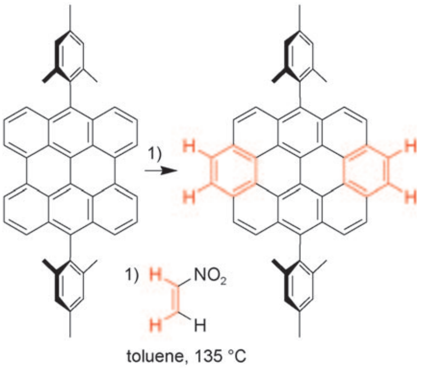
A wide range of primary azides have been efficiently oxidized by a catalytic amount of CuI and TBHP into their corresponding nitriles in aqueous solution. A variety of oxidizable functional groups were well tolerated under the reaction conditions, and oxidation of secondary azides furnished their corresponding ketones (see scheme; TBHP = *tert*-butyl hydroperoxide).

Nanotube Synthesis

E. H. Fort, L. T. Scott* ______ 6626 – 6628

One-Step Conversion of Aromatic Hydrocarbon Bay Regions into Unsubstituted Benzene Rings: A Reagent for the Low-Temperature, Metal-Free Growth of Single-Chirality Carbon Nanotubes

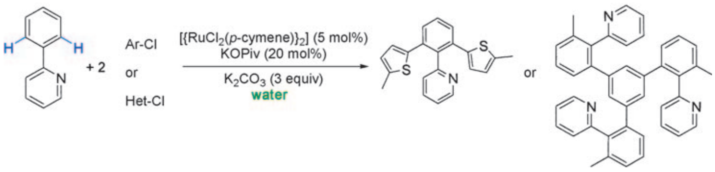
A tube ride: The controlled chemical synthesis of uniform, single-walled carbon nanotubes from short hydrocarbon templates, such as aromatic belts and geodesic nanotube end-caps, by a Diels–Alder cycloaddition/rearomatization strategy requires a potent “masked acetylene” capable of transforming hydrocarbon bay regions into new unsubstituted benzene rings in a single operation. Nitroethylene has been found to effect such benzannulations (see scheme).



Catalysis in Water

P. B. Arockiam, C. Fischmeister, C. Bruneau, P. H. Dixneuf* 6629 – 6632

C−H Bond Functionalization in Water Catalyzed by Carboxylato Ruthenium(II) Systems

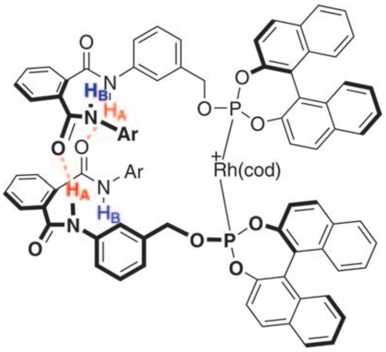


In water it’s better: In-situ-generated $[Ru(O_2CR)_2(arene)]$ catalysts efficiently perform the direct *ortho*-arylation of functional arenes with chloroarenes or chloroheterocycles in water (see scheme; KOPiv = potassium pivalate), without the need for a surfactant. The activity of these catalysts is higher in water than in organic solvents.

Supramolecular Ligands

L. Pignataro, S. Carboni, M. Civera,
R. Colombo, U. Piarulli,*
C. Gennari* ________________ **6633 – 6637**

PhthalaPhos: Chiral Supramolecular Ligands for Enantioselective Rhodium-Catalyzed Hydrogenation Reactions

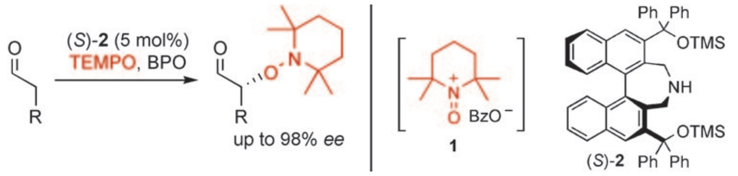


Interligand hydrogen bonding of chiral monodentate phosphite ligands bearing H-bond donor and acceptor groups leads to formation of supramolecular bidentate ligands, rhodium complexes of which (see picture) afford excellent enantiomeric excesses in catalyzed hydrogenation of classical benchmark and industrially relevant substrates. cod = 1,5-cyclooctadiene.

Asymmetric Organocatalysis

T. Kano, H. Mii,
K. Maruoka* ________________ **6638 – 6641**

Metal-Free Direct Asymmetric Aminoxylation of Aldehydes Catalyzed by a Binaphthyl-Based Chiral Amine

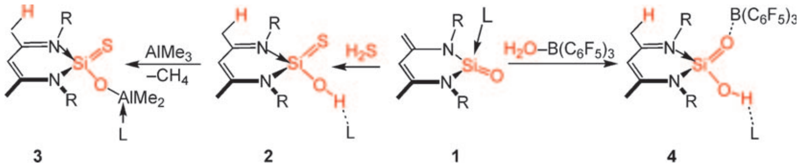


And I'm free, metal-free fallin': A metal-free direct asymmetric aminoxylation of aldehydes with the oxoammonium salt **1**, generated in situ from TEMPO and benzoyl peroxide (BPO), was found to be catalyzed by a binaphthyl-based secondary amine (*S*)-**2**. This method provides a new approach to bench-stable optically active α-aminoxy aldehydes as useful chiral building blocks. TMS = trimethylsilyl.

Silacarboxylate Ligands

Y. Xiong, S. Yao, M. Driess* **6642 – 6645**

Silicon Analogues of Carboxylic Acids: Synthesis of Isolable Silanoic Acids by Donor–Acceptor Stabilization

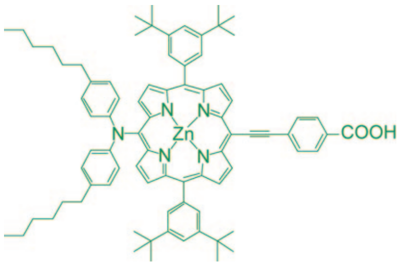


How to cope with instability? Storable complexes of silacarboxylic acids were prepared through addition of H_2S and $H_2O{-}B(C_6F_5)_3$, respectively, to the silanone precursor complex **1**. Metalation of the OH group in the acid–base adduct **2** gave the novel silathiocarboxylate **3**. Likewise, the synthesis of the first donor–acceptor stabilized silanoic acid **4** was realized. L = 4-dimethylaminopyridine, R = 2,6-diisopropylphenyl.

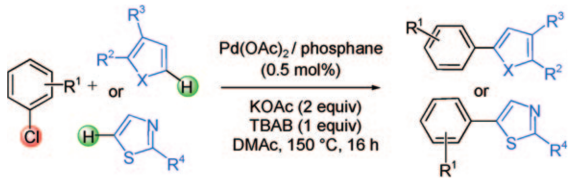
Solar Cells

T. Bessho, S. M. Zakeeruddin, C.-Y. Yeh,*
E. W.-G. Diau,* M. Grätzel* **6646 – 6649**

Highly Efficient Mesoscopic Dye-Sensitized Solar Cells Based on Donor–Acceptor-Substituted Porphyrins



To dye for: A porphyrin chromophore, which is integrated into a donor–acceptor dye as a π-conjugated bridge (see picture), exhibits an unprecedented efficiency of 11% when used as a photosensitizer in a double-layer TiO_2 film. A greatly enhanced photovoltaic performance is observed when the porphyrin dye is cosensitized with a metal-free dye that has a complementary spectral response.



Put a ring on it: The use of an air-stable, robust palladium/tridentate phosphane catalyst in direct C–H and C–Cl activation reactions is reported (see scheme; DMAc = *N*,*N*-dimethylacetamide, TBAB = tetra-*n*-butylammonium bromide). Electron-rich, electron-poor, and polysubstituted furans (X = O), thiophenes (X = S), pyrroles (X = NR^5), and thiazoles were arylated with chloroarenes in the presence of the catalyst.

C–H Activation

D. Roy, S. Mom, M. Beaupérin,
H. Doucet,* J.-C. Hierso* ____ **6650–6654**

A Versatile Palladium/Triphosphane System for Direct Arylation of Heteroarenes with Chloroarenes at Low Catalyst Loading

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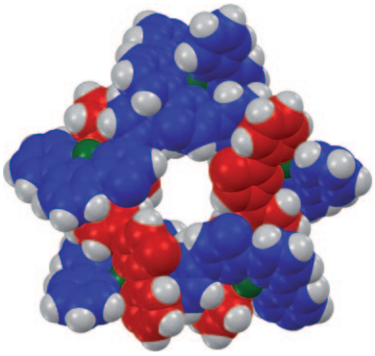

Everybody form a circle: Careful design of ligand strands and their reaction with Cu^{2+} ions leads to the formation of the title helicates. Incorporation of differing numbers of N-donor units within a ligand strand containing a phenyl spacer results in a pentanuclear head-to-tail circular helicate, whereas reaction of two different ligands results in a heteroleptic pentanuclear circular helicate (see picture; green: Cu, red and blue: ligands).

Supramolecular Chemistry

K. E. Allen, R. A. Faulkner, L. P. Harding,
C. R. Rice,* T. Riis-Johannessen,
M. L. Voss, M. Whitehead ____ **6655–6658**

Head-To-Tail and Heteroleptic Pentanuclear Circular Helicates

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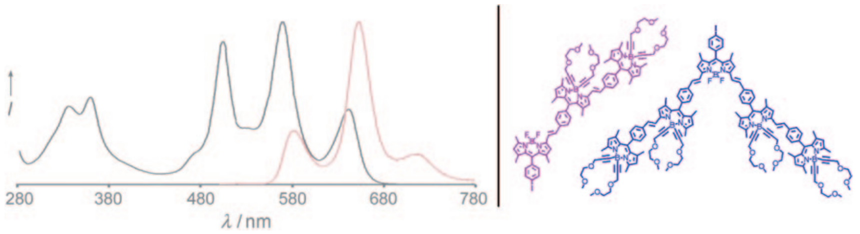

Channel your energy: Bodipy dyes were linked covalently by a method involving three key steps, including a carboformylation reaction. All multichromophoric dyes exhibited highly efficient photoinduced energy transfer to the terminal Bodipy modules, which fluoresced at 652 nm with 57% quantum efficiency (see absorption (gray) and emission (orange) spectra of a dye containing five Bodipy units).

Panchromatic Dyes

T. Bura, P. Retailleau,
R. Ziessel* ____________ **6659–6663**

Efficient Synthesis of Panchromatic Dyes for Energy Concentration

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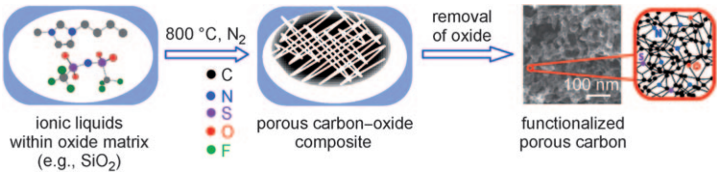


Back to black: Thermolysis of an ionic liquid (IL) gives no char residue, whereas heating the same IL trapped within an oxide framework affords high carbonization yields (see picture). This confinement method allows incorporation of heteroatoms from the parent IL in the final products, for the development of functionalized porous carbon and carbon–oxide composite materials.

Porous Materials

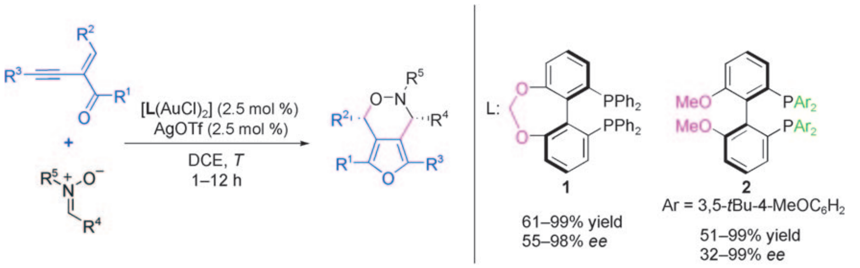
X. Wang, S. Dai* _________ **6664–6668**

Ionic Liquids as Versatile Precursors for Functionalized Porous Carbon and Carbon–Oxide Composite Materials by Confined Carbonization

Gold Catalysis

F. Liu, D. Qian, L. Li, X. Zhao,
J. Zhang* ______ **6669 – 6672**

Diastereo- and Enantioselective Gold(I)-Catalyzed Intermolecular Tandem Cyclization/[3+3]Cycloadditions of 2-(1-Alkynyl)-2-alken-1-ones with Nitrones

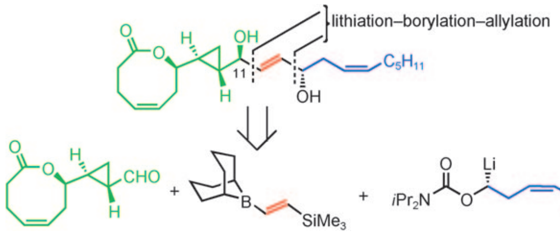


The mysterious cyclizations of gold: An asymmetric gold(I)-catalyzed formal [3+3] cycloaddition of 2-(1-alkynyl)-2-alken-1-ones with nitrones has been developed. Compound **1** was found to be an effective and reliable chiral catalyst, as well as the commonly used **2**, for this gold-catalyzed reaction. Tf = trifluoromethanesulfonyl.

Natural Product Synthesis

A. Robinson,
V. K. Aggarwal* ______ **6673 – 6675**

Asymmetric Total Synthesis of Solandelactone E: Stereocontrolled Synthesis of the 2-ene-1,4-diol Core through a Lithiation–Borylation–Allylation Sequence



A highly stereoselective, 13-step synthesis of solandelactone E is reported which employs the lithiation–borylation–allylation sequence as the key step (see scheme). This synthetic method solves the problem of poor stereocontrol at C11 that had dogged many previous syntheses of this class of molecules.

Cross-Coupling

Z. Lu, G. C. Fu* ______ **6676 – 6678**

Alkyl–Alkyl Suzuki Cross-Coupling of Unactivated Secondary Alkyl Chlorides

No such thing as a problem substrate! In a reaction designed specifically for the title substrates C–C coupling with alkyl boranes occurred in good yield at room temperature with commercially available catalyst components (see scheme). This versatile method is also suitable for Suzuki reactions of secondary and primary alkyl bromides and iodides, as well as primary alkyl chlorides.

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).

Service

Corrigenda

The authors would like to thank Prof. Kai Hultzsch of Rutgers University for alerting them to their erroneous illustration of the tetrasubstituted stereogenic center in the Mosher amide derivatives as *S* in the Supporting Information. The authors have verified, with the assistance of Prof. Hultzsch, that the method and NMR data presented in the Supporting Information gives the correct configuration of 2-methyl-4,4-diphenylpyrrolidine as indicated.[1]

While the illustrated and assigned configuration of the *pyrrolidine products* in both the manuscript and Supporting Information are correct,[1] because of the Cahn–Ingold–Prelog priorities in assigning configuration there is a change from *S* to *R* upon amide synthesis. Thus, the use of (*S*)-Mosher acid chloride gives the (*R*)-Mosher amide products. To ensure that this error is not propagated in the literature, a revised version of the Supporting Information has been filed with all of the corrected illustrations included on the spectra. The sentence at the bottom of the first column on page 356 should be corrected to read “Reported *ee* values were determined by integration of ^{1}H and/or ^{19}F NMR spectra of the (*S*)-Mosher acid chloride derivatives of at least two independent experiments.” The authors regret any confusion that may have arisen from their erroneous illustration.

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[1] D. V. Gribkov, K. C. Hultzsch, F. Hampel, *J. Am. Chem. Soc.* **2006**, *128*, 3748.

Chiral Neutral Zirconium Amidate Complexes for the Asymmetric Hydroamination of Alkenes

M. C. Wood, D. C. Leitch, C. S. Yeung, J. A. Kozak, L. L. Schafer* ____ **354–358**

Angew. Chem. Int. Ed. **2007**, *46*

DOI 10.1002/anie.200603017

Reference [10] in this Communication (DOI: 10.1002/anie.201001305) should read as shown below.

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[10] T. S. Moore, K. M. Mullaugh, R. R. Holyoke, A. N. S. Madison, M. Yucel, G. W. Luther, *Annu. Rev. Mar. Sci.* **2009**, *1*, 91.

Photographing Oxygen Distribution

X. D. Wang, R. J. Meier, M. Link, O. S. Wolfbeis* ____ **4907–4909**

Angew. Chem. Int. Ed. **2010**, *122*

DOI 10.1002/anie.201001305