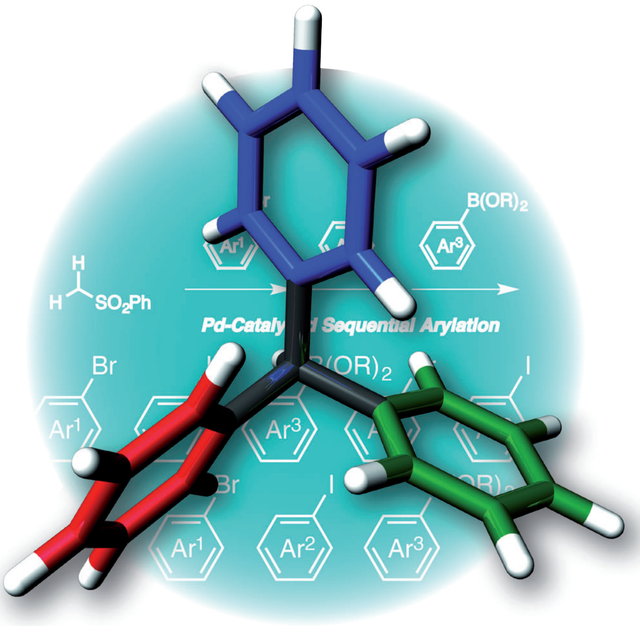
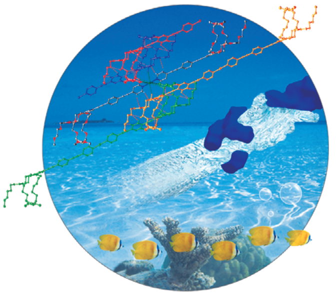
Triarylmethanes were prepared ...

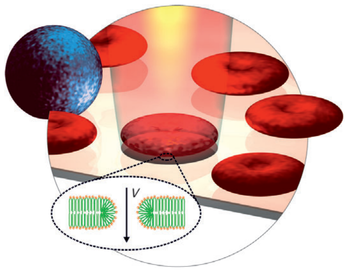


… in three steps from phenyl methyl sulfone, as described by M. Nambo and C. M. Crudden in their Communication on page 742 ff. After two selective C−H arylation reactions, the third aromatic ring was introduced through a novel arylative desulfonation. This sequence permits the synthesis of a wide variety of unsymmetric triarylmethanes from a simple, readily available starting material.

X···H Hydrogen Bonds

Unconventional CH···X hydrogen bonds are strong enough to drive supramolecular polymerization and gelation processes, as described by G. Fernández et al. in their Communication on page 700 ff. The molecular arrangement is maintained in the crystalline state.



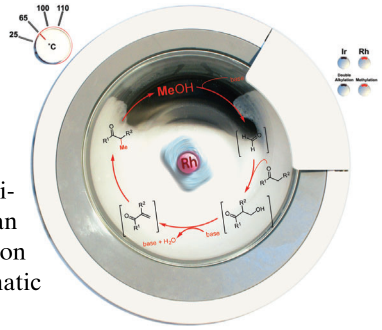


Shape-Dependent Lysis

In their Communication on page 842 ff., J. M. Cooper et al. describe the selective lysis of red blood cells by an electric field. The selectivity results from the shape of the blood cells.

Ketone Alkylation

T. J. Donohoe et al. describe in their Communication on page 761 ff. the use of methanol as an alkylating reagent in a rhodium-catalyzed reaction to generate branched alkyl products from aromatic and aliphatic ketones under mild conditions.



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Editorial

"… The declared goals of the International Year of Crystallography 2014 are to disseminate the role of crystallography for the development of the different branches of science: chemistry, mineralogy, physics, biology, medicine, materials and geosciences, and to emphasize the role of crystallographic research in everyday life. Many activities have been planned across the world, including this special issue of Angewandte Chemie …"
Read more in the Editorial by Gautum R. Desiraju.

Service

Author Profile

"My favorite quote is: "imagination is more important than knowledge" (Einstein).
If I could be any age I would be I would be same age, but young at heart. …"
This and more about Weihong Tan can be found on page 626.

News

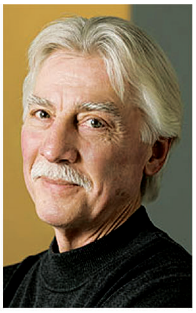

P. J. Guiry


C. Hardacre


G. R. Desiraju


O. Farokhzad


R. S. Langer


P. Wender

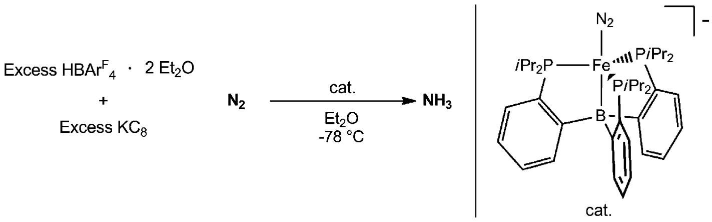

V. Balzani


J.-M. Lehn

Books

Highlights

Nitrogen Fixation



New iron dinitrogen complexes are crucial to a catalytic ammonia synthesis in homogeneous solution and establish new structural motifs related to the iron–molybdenum cofactor of the enzyme nitrogenase (see scheme; BAr^F = $B[3,5\text{-}(CF_3)_2C_6H_3]_4$). These findings are put into the context of 50 years of synthetic nitrogen fixation and latest developments regarding the crystal structure and the molecular mechanism of nitrogenase.

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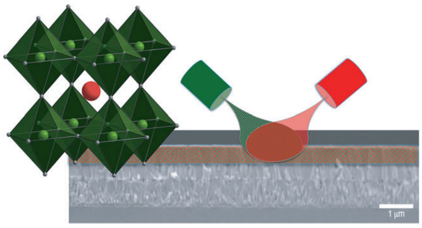
Photovoltaics

B. V. Lotsch* **635 – 637**

New Light on an Old Story: Perovskites Go Solar



All in one: Perovskites are currently undergoing a renaissance as "allrounder" materials for solar cells. For a special type of methylammonium lead halide perovskites, a unique combination of properties, including high charge-carrier mobilities, exciton lifetimes, and panchromatic absorption, was observed, which renders this class of hybrid perovskites one of the most promising absorber and ambipolar charge-transport materials for all-solid-state solar cells.

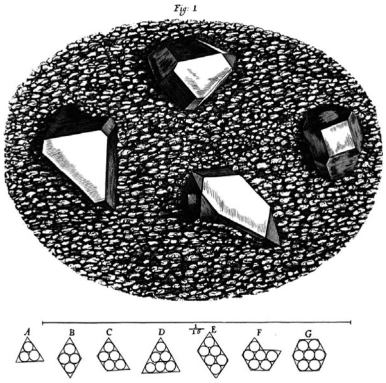
Essays

History of Science

K. Molčanov,* V. Stilinović* **638 – 652**

Chemical Crystallography before X-ray Diffraction

2012/2013 mark the 100th anniversary of von Laue's diffraction of X-rays from single crystals of copper sulfate, the postulation of Bragg's law, and the solution of the first X-ray structure. However, even before 1912, the study of crystals was an integral part of chemistry and it played a major role in development of modern chemical science, including key concepts such as atoms, molecules, isomerism, and chirality.

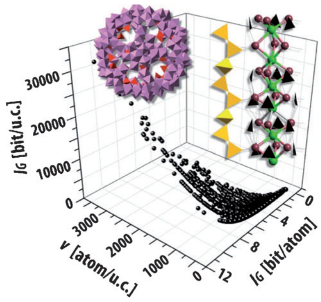


Minireviews

Inorganic Crystal Structures

S. V. Krivovichev* **654 – 661**

Which Inorganic Structures are the Most Complex?

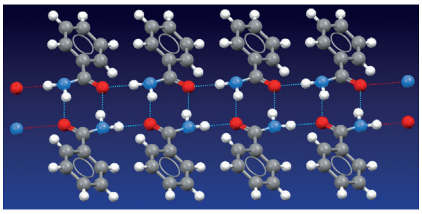


Cause and complexity: Analysis of inorganic crystal structures using information-based complexity measures indicates that structural complexity is generated by the assembly of nanoscale building blocks, modularity induced by complex chemical compositions, and the formation of superlattices as a result of local atomic ordering or displacive phase transitions.

Structural Databases

C. R. Groom,* F. H. Allen* **662 – 671**

The Cambridge Structural Database in Retrospect and Prospect



Crystal-clear data: The Cambridge Crystallographic Data Centre (CCDC) was established in 1965; its core product, the Cambridge Structural Database (CSD), stores numerical, chemical, and bibliographic data for nearly 700000 crystal structures. As X-ray crystallography celebrates its centenary, the CCDC nears its own 50th anniversary. The origins of the CCDC and development of the CSD system is presented. The CCDC's funding model in relation to open access paradigms is also considered.

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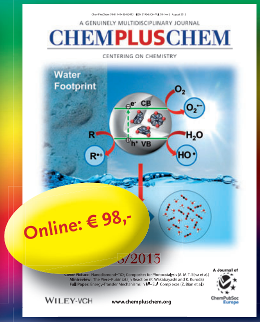

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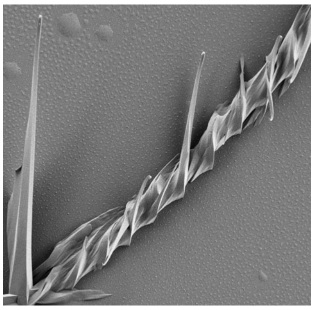
Reviews

Crystal Growth

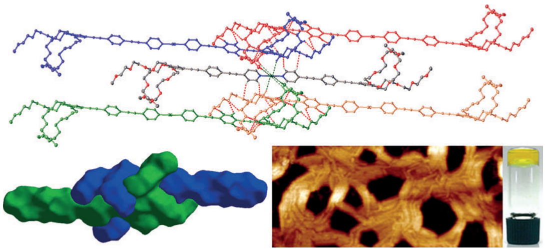
Twisted crystals: Crystals of many substances, including hippuric acid (see picture), will bend or twist as they grow under some conditions. These deviations are often activated by particular additives. How and why so many materials choose dramatic non-crystallographic distortions is analyzed for molecular crystals, high polymers, minerals, elements, and salts.



Communications

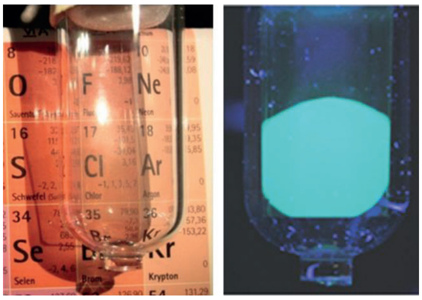
Weak Interactions

Frontispiece



Growing hand in hand! Multiple unconventional C–H⋯X (X = O, Cl) hydrogen-bonding interactions, assisted by π–π interactions, are strong enough to drive the cooperative formation of supramolecular polymers and gels in polar and aqueous media. The aggregates consolidate themselves in the crystals, as shown by combined studies in solution and crystalline state.

Luminescent Thin Films

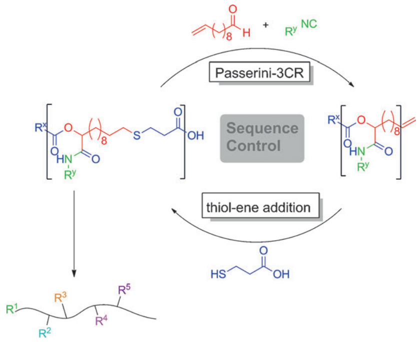


A scanning laser ablation technique with a femtosecond laser was used to deposit highly luminescent thin films of the dense framework ${}^{3}_{\infty}[\mathrm{EuIm}_2]$. The polycrystalline films can be switched between transparent with visible light and nontransparent upon excitation with UV light due to the intrinsic luminescence of the hybrid material. This new PLD method is a suitable new approach for the preparation of coatings consisting of framework compounds and coordination polymers.

Sequence-Controlled Polymers

S. C. Solleder, M. A. R. Meier* 711 – 714

Sequence Control in Polymer Chemistry through the Passerini Three-Component Reaction



The iterative application of the Passerini three-component reaction and the thiol–ene addition reaction provides sequence-defined macromolecules without the utilization of any protecting group.

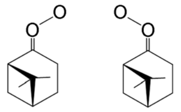
Atmospheric Chemistry

J. Ahrens, P. T. M. Carlsson, N. Hertl, M. Olzmann, M. Pfeifle, J. L. Wolf, T. Zeuch* 715 – 719

Infrared Detection of Criegee Intermediates Formed during the Ozonolysis of β-Pinene and Their Reactivity towards Sulfur Dioxide

Inside Cover

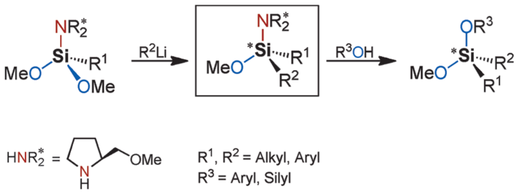
How is sulfuric acid formed in the troposphere? One route is the oxidation of SO_2 by hydroxyl radicals. Now, the relevance of an alternative path, oxidation of SO_2 by reaction with large, biogenic Criegee intermediates, has been proven. Criegee intermediates are formed along with a carbonyl compound in the ozonolysis of alkenes. This study was conducted with β-pinene and its possible Criegee intermediates are shown.



Silicon-Stereogenic Aminomethoxysilanes

J. O. Bauer, C. Strohmann* 720 – 724

Stereoselective Synthesis of Silicon-Stereogenic Aminomethoxysilanes: Easy Access to Highly Enantiomerically Enriched Siloxanes

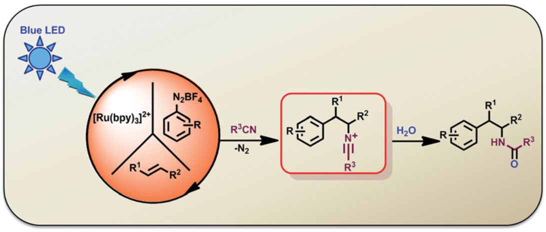


Broad access to silicon-stereogenic N,O-functionalized organosilanes in optically pure form is provided by a highly chemo- and diastereoselective substitution on aminodimethoxysilanes. The novel compounds could be further transformed stereoselectively with alcohols and a silanol and are predestined as building blocks for a controlled development of chiral siloxane units.

Photo Meerwein Addition

D. Prasad Hari, T. Hering, B. König* 725 – 728

The Photoredox-Catalyzed Meerwein Addition Reaction: Intermolecular Amino-Arylation of Alkenes

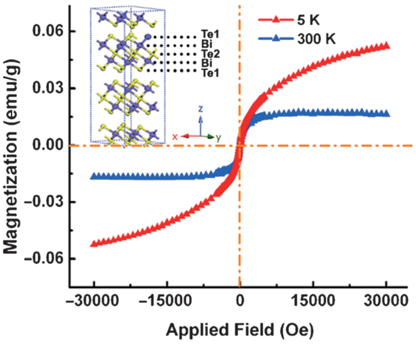


From elimination to addition: A variety of amides are efficiently accessible under mild conditions by intermolecular amino-arylation using a photo Meerwein addition with visible light. The reaction has a broad substrate scope, tolerates a large range of functional groups, and was applied to the synthesis of 3-aryl-3,4-dihydroisoquinoline.

Ferromagnetism

G. Xiao, C. Zhu, Y. Ma,* B. Liu, G. Zou, B. Zou* ______ **729 – 733**

Unexpected Room-Temperature Ferromagnetism in Nanostructured Bi_2Te_3

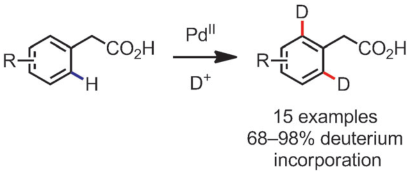


Research with BiTe: Intriguing room-temperature ferromagnetism can be observed in a nanostructured topological insulator, Bi_2Te_3, without introducing any exotic magnetic dopants. These findings may pave the way for developing Bi_2Te_3-based dissipationless spintronics and fault-tolerant quantum computing.

C–H Activation

S. Ma, G. Villa, P. S. Thuy-Boun, A. Homs, J.-Q. Yu* ______ **734 – 737**

Palladium-Catalyzed *ortho*-Selective C–H Deuteration of Arenes: Evidence for Superior Reactivity of Weakly Coordinated Palladacycles

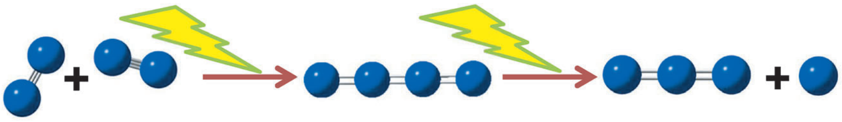


Weaker is better! Phenylacetic acids and benzoic acids are suitable substrates for a palladium-catalyzed *ortho*-selective C–H deuteration of arenes with deuterated acetic acid (see scheme; R = H, alkyl, CF_3, OMe, NO_2, Cl, F). This reaction demonstrates the superior reactivity of weakly coordinated palladacycle intermediates in C–H functionalization reactions.

Solid-State Nitrogen

S.-L. Chou, J.-I. Lo, M.-Y. Lin, Y.-C. Peng, H.-C. Lu, B.-M. Cheng* ______ **738 – 741**

Production of N_3 upon Photolysis of Solid Nitrogen at 3 K with Synchrotron Radiation

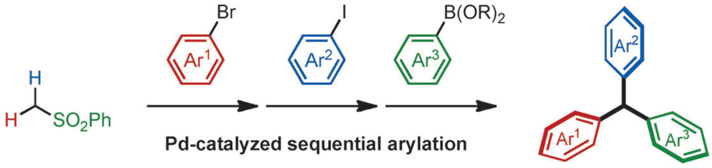


Now on solid ground: Irradiation of pure solid nitrogen at 3 K with vacuum-ultraviolet light generated product *l*-N_3. This formation possibly occurs through an activated complex *l*-N_4 upon photoexcitation.

Palladium Catalysis

M. Nambo,* C. M. Crudden* _ **742 – 746**

Modular Synthesis of Triarylmethanes through Palladium-Catalyzed Sequential Arylation of Methyl Phenyl Sulfone



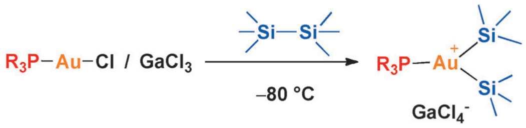
Unsymmetric triarylmethanes have been synthesized starting from methyl phenyl sulfone as an inexpensive and readily available template. The three aryl groups were installed through two sequential palladium-catalyzed C–H arylation reactions, followed by an arylative desulfonation.

Front Cover

Gold Complexes

M. Joost, P. Gualco, Y. Coppel, K. Miqueu, C. E. Kefalidis, L. Maron,* A. Amgoune,* D. Bourissou* ______ **747 – 751**

Direct Evidence for Intermolecular Oxidative Addition of σ(Si–Si) Bonds to Gold

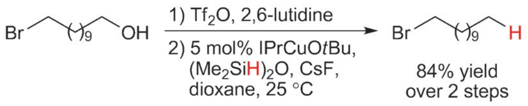


Oxidative addition is the most elusive elementary step in reactions with gold. Now, evidence for the intermolecular oxidative addition of σ(Si–Si) bonds is reported. Phosphine gold chlorides readily reacted with disilanes at low temperature in the presence of $GaCl_3$. The ensuing bis(silyl) gold(III) complexes were characterized by ^{31}P and ^{29}Si NMR spectroscopy, and their structures were analyzed by DFT calculations.

Alcohol Deoxygenation

H. Dang, N. Cox, G. Lalic* ______ **752 – 756**

Copper-Catalyzed Reduction of Alkyl Triflates and Iodides: An Efficient Method for the Deoxygenation of Primary and Secondary Alcohols

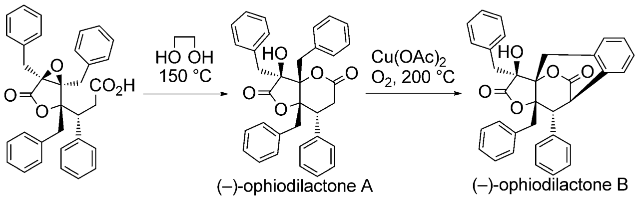


Primarily reduced: The copper-catalyzed reduction of 1° alkyl sulfonates, and 1° and 2° iodides, which is effective in the presence of a wide range of functional groups, provides a means for the effective deoxygenation of alcohols. A preliminary study of the reaction mechanism suggests that the reduction does not involve free-radical intermediates.

Natural Product Synthesis

T. Matsubara, K. Takahashi, J. Ishihara, S. Hatakeyama* ______ **757 – 760**

Total Synthesis of (–)-Ophiodilactone A and (–)-Ophiodilactone B



(–)-ophiodilactone A

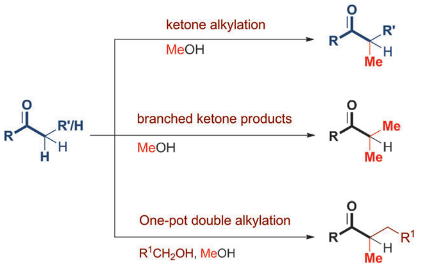
(–)-ophiodilactone B

Bioinspired synthesis: The first total synthesis of the title compounds has been accomplished in a highly stereocontrolled manner. Key features of the synthesis include an asymmetric epoxidation, a diastereoselective iodolactonization, an intramolecular epoxide opening with a carboxylic acid, and a biomimetic radical cyclization of ophiodilactone A to ophiodilactone B.

Ketone Alkylation

L. K. M. Chan, D. L. Poole, D. Shen, M. P. Healy, T. J. Donohoe* ______ **761 – 765**

Rhodium-Catalyzed Ketone Methylation Using Methanol Under Mild Conditions: Formation of α-Branched Products



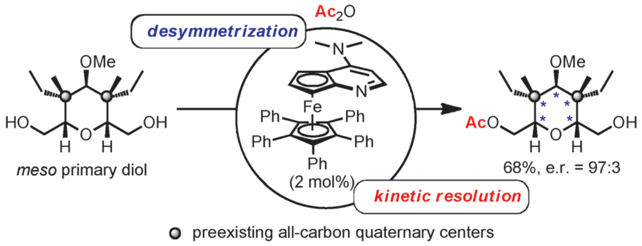
Back Cover

Uniquely effective for making branched alkyl products from ketones (see scheme): The scope of the presented reaction includes aromatic and aliphatic ketones and consecutive one-pot double alkylation reactions to provide a convenient route to branched ketones from simple methyl ketones. A brief study into the mechanism of the reaction has given evidence for an aldol-based reaction pathway.

Organocatalysis

C. Roux, M. Candy, J.-M. Pons, O. Chuzel,*
C. Bressy* 766 – 770

Stereocontrol of All-Carbon Quaternary Centers through Enantioselective Desymmetrization of *Meso* Primary Diols by Organocatalyzed Acyl Transfer

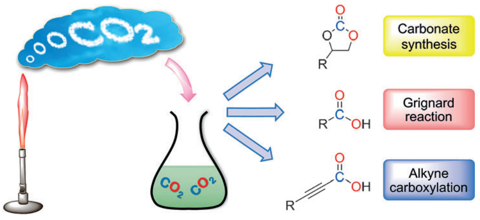


Smashing the mirror: The symmetry breaking of *meso* primary diols was employed to control all-carbon quaternary stereocenters using catalytic asymmetric acyl transfer. The planar chiral Fu DMAP catalyst was used to reach a high degree of enantioselectivity (up to 97:3 e.r.) through a synergic effect, combining a desymmetrization step and a kinetic resolution.

Sustainable Chemistry

S. H. Kim, K. H. Kim,
S. H. Hong* 771 – 774

Carbon Dioxide Capture and Use: Organic Synthesis Using Carbon Dioxide from Exhaust Gas

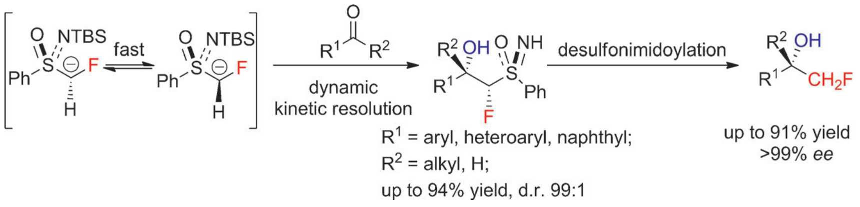


Exhaust gas is good enough! Carbon dioxide captured directly from exhaust gas was used for organic syntheses (see picture) as efficiently as hyper-pure CO_2 gas from a commercial source, even for highly air- and moisture-sensitive reactions. The CO_2 capturing aqueous ethanolamine solution could be recycled continuously without any diminished reaction efficiency.

Fluoroalkylation

X. Shen, W. Miao, C. Ni, J. Hu* 775 – 779

Stereoselective Nucleophilic Fluoromethylation of Aryl Ketones: Dynamic Kinetic Resolution of Chiral α-Fluoro Carbanions

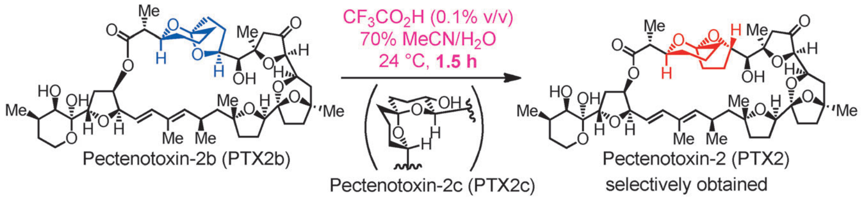


Fluoromethyl fix: An efficient and easy-to-handle protocol for the stereoselective synthesis of optically pure monofluoromethyl tertiary alcohols was developed, which showed higher facial selectivity than the corresponding difluoromethylation and proceeded via a different type of transition state. Stereoselective control at the fluorinated carbon chiral center is believed to be facilitated by the dynamic kinetic resolution of the chiral α-fluoro carbanions.

Natural Product Synthesis

K. Fujiwara,* Y. Suzuki, N. Koseki, Y. Aki,
Y. Kikuchi, S. Murata, F. Yamamoto,
M. Kawamura, T. Norikura, H. Matsue,
A. Murai, R. Katoono, H. Kawai,
T. Suzuki 780 – 784

Total Synthesis of Pectenotoxin-2

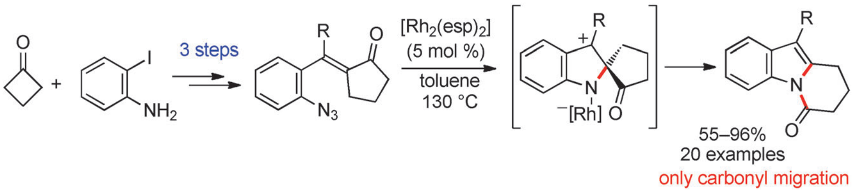


A shellfish toxin: Non-anomeric spiroacetal pectenotoxin-2 was synthesized by the acidic isomerization of anomeric spiroacetal pectenotoxin-2b. In the isomerization step, [6,6]-spiroacetal pectenotoxin-2c was the major product at equilibrium. However, the early termination of a dynamic transition process to equilibrium in the step produced pectenotoxin-2 selectively.

Heterocycles

C. Jones, Q. Nguyen, T. G. Driver* ———— **785 – 788**

Dirhodium(II) Carboxylate Catalyzed Formation of 1,2,3-Trisubstituted Indoles from Styryl Azides

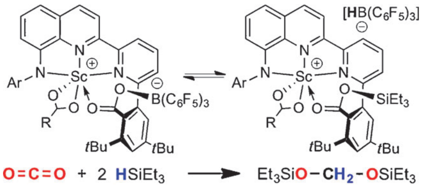


Selective migration of acyl groups in trisubstituted styryl azides leads to the formation of 1,2,3-trisubstituted indoles. The styryl azides are readily available in three steps from cyclobutanone and 2-iodoaniline. esp = α,α,α′,α′-tetramethyl-1,3-benzenedipropionic acid.

Homogeneous Catalysis

F. A. LeBlanc, W. E. Piers,* M. Parvez ———— **789 – 792**

Selective Hydrosilation of CO_2 to a Bis(silylacetal) Using an Anilido Bipyridyl-Ligated Organoscandium Catalyst

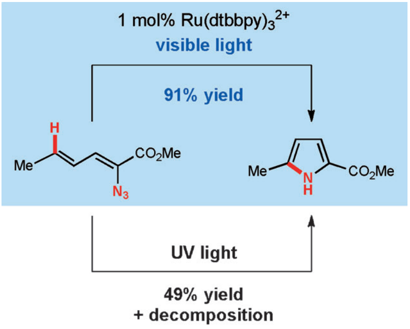


Lewis acid shuffle: Selective hydrosilation of CO_2 to a bis(silylacetal) is mediated by a scandium-based catalyst activated by $B(C_6F_5)_3$. The selectivity derives from the ability of the scandium complex to moderate the propensity of borane to further hydrosilate the $Et_3SiOCH_2OSiEt_3$ product by limiting the amount of free $B(C_6F_5)_3$ present in solution.

Photocatalysis

E. P. Farney, T. P. Yoon* ———— **793 – 797**

Visible-Light Sensitization of Vinyl Azides by Transition-Metal Photocatalysis

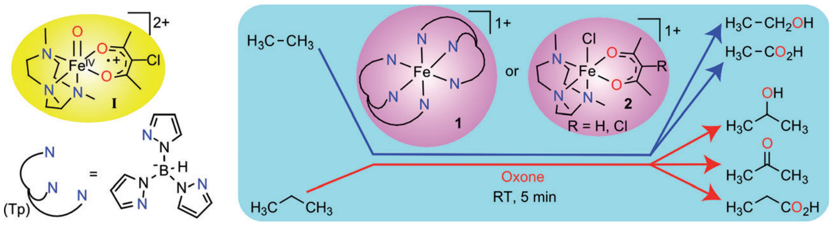


Rock and pyrrole: Irradiation of vinyl and aryl azides with visible light in the presence of Ru photocatalysts results in the formation of reactive nitrenes, which can undergo a variety of C–N bond-forming reactions. The ability to use low-energy visible light instead of UV in the photochemical activation of azides (see picture) avoids competitive photodecomposition processes.

C–H Oxidation

C.-W. Tse, T. W.-S. Chow, Z. Guo, H. K. Lee, J.-S. Huang, C.-M. Che* ———— **798 – 803**

Nonheme Iron Mediated Oxidation of Light Alkanes with Oxone: Characterization of Reactive Oxoiron(IV) Ligand Cation Radical Intermediates by Spectroscopic Studies and DFT Calculations

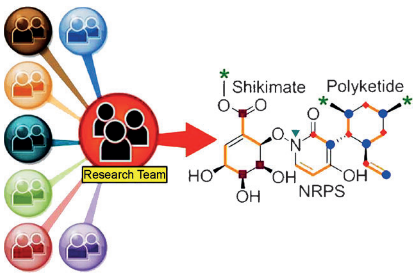


Highly reactive {Fe=O} intermediates, such as $[Fe(Tp)_2(O)]^+$ or complex **I** (see Scheme), are likely to be involved in the oxidation of propane and ethane with oxone that is either mediated by $[Fe^{III}(Tp)_2]^+$ (**1**) or catalyzed by iron complex **2**. The cationic intermediate **I** features an {Fe=O} moiety and is stabilized by a combination of tridentate and bidentate ligands.

Natural Products Discovery

L. Du, A. J. Robles, J. B. King, D. R. Powell,
A. N. Miller, S. L. Mooberry,*
R. H. Cichewicz* ———— **804–809**

Crowdsourcing Natural Products Discovery to Access Uncharted Dimensions of Fungal Metabolite Diversity

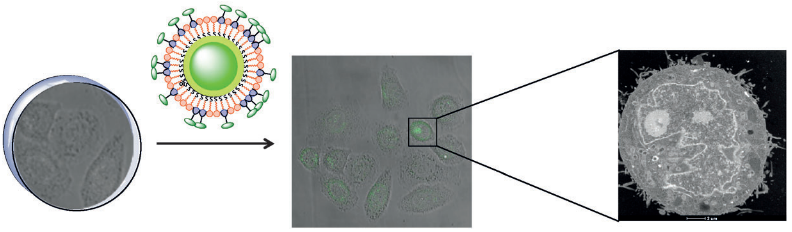


A fungus among us: A new *Tolypocladium* sp. was obtained through a crowdsourcing initiative. The expression of a silent biosynthetic pathway in this fungus was triggered through chemical epigenetics, culture medium manipulation, and co-culture to yield the unique polyketide-shikimate-NRPS-hybrid compound, maximiscin, which demonstrated in vivo antitumor activity. NRPS = non-ribosomal peptide synthetase.

Intracellular Localization

D. Benito-Alifonso, S. Tremel, B. Hou,
H. Lockyear, J. Mantell, D. J. Fermin,
P. Verkade, M. Berry,*
M. C. Galan* ———— **810–814**

Lactose as a "Trojan Horse" for Quantum Dot Cell Transport

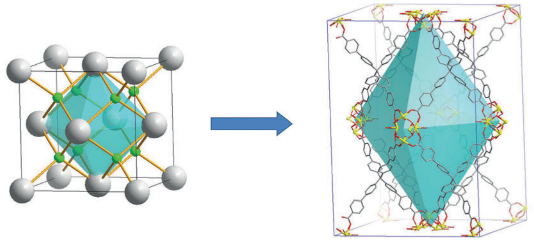


With a spoonful of sugar... Glycan-coated quantum dots were used to probe the effect of glycan presentation in intracellular localization in HeLa and SV40 epithelial cells. Glycan density was found to mostly impact cell toxicity, whereas glycan type affects cell uptake and intracellular localization. Also, lactose was found to help the intracellular delivery of other non-internalizable glycan moieties.

Metal–Organic Frameworks

M. Zhang, Y.-P. Chen, M. Bosch,
T. Gentle, III, K. Wang, D. Feng,
Z. U. Wang, H.-C. Zhou* ——— **815–818**

Symmetry-Guided Synthesis of Highly Porous Metal–Organic Frameworks with Fluorite Topology

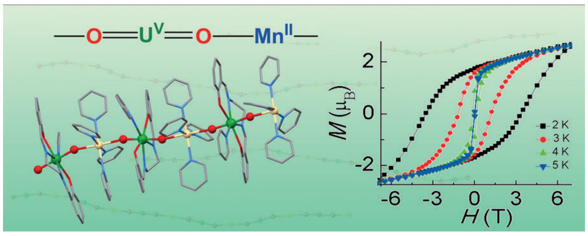


Meet me at the symmetry gates: Using a symmetry-guided design strategy, two stable, non-interpenetrated MOFs, were synthesized by augmenting the fluorite topology with tetrahedral linkers, thus expanding the cavity size (see scheme) and giving the largest pore size of any MOF with tetrahedral ligands.

Molecular Magnets

V. Mougel, L. Chatelain, J. Hermle,
R. Caciuffo, E. Colineau, F. Tuna,
N. Magnani, A. de Geyer, J. Pécaut,
M. Mazzanti* ———— **819–823**

A Uranium-Based UO_2^+–Mn^{2+} Single-Chain Magnet Assembled trough Cation–Cation Interactions

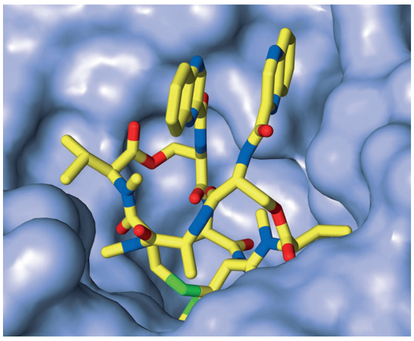


Uranium in chains: 5f–3d heterometallic 1D chains are assembled from the reaction of pentavalent uranyl and Cd^{II} or Mn^{II}. The Mn-UO_2-Mn coordination polymer exhibits slow relaxation of magnetization with a high relaxation barrier, and shows an open hysteresis cycle, thus affording the first example of an actinide-based single-chain magnet.

Natural Product Biosynthesis

K. Hotta, R. M. Keegan, S. Ranganathan, M. Fang, J. Bibby, M. D. Winn, M. Sato, M. Lian, K. Watanabe, D. J. Rigden, C.-Y. Kim* ______ **824 – 828**

Conversion of a Disulfide Bond into a Thioacetal Group during Echinomycin Biosynthesis

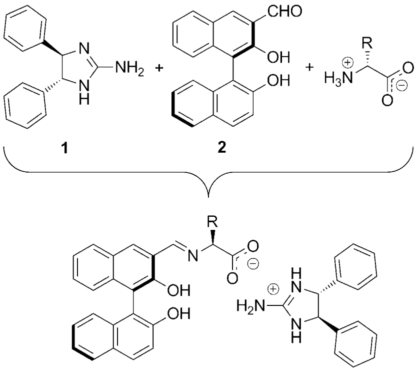


Disulfide to thioacetal: The *S*-adenosyl-L-methionine (SAM)-dependent methyltransferase Ecm18 converts the disulfide bond of triostin A into a thioacetal linkage to form echinomycin. The 1.50 Å crystal structure of Ecm18 in complex with its reaction products *S*-adenosyl-L-homocysteine (SAH) and echinomycin provides insight into how Ecm18 catalyzes this unusual transformation.

Molecular Recognition

S. M. So, K. Moozeh, A. J. Lough, J. Chin* ______ **829 – 832**

Highly Stereoselective Recognition and Deracemization of Amino Acids by Supramolecular Self-Assembly

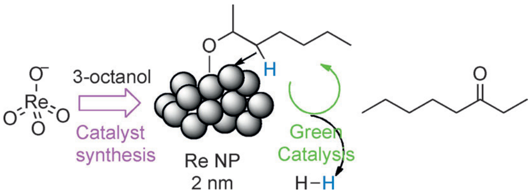


A communal effort: A chiral guanidine derivative **1** and a chiral aldehyde **2** underwent self-assembly with amino acids to promote inversion of the stereogenic center of the guest (see scheme). The supramolecular self-assembly exhibited high stereoselectivity for amino acid recognition and was found to be useful for the separation of racemic mixtures of amino acids as well as for their deracemization.

Heterogeneous Catalysis

J. Yi, J. T. Miller, D. Y. Zemlyanov, R. Zhang, P. J. Dietrich, F. H. Ribeiro, S. Suslov, M. M. Abu-Omar* ______ **833 – 836**

A Reusable Unsupported Rhenium Nanocrystalline Catalyst for Acceptorless Dehydrogenation of Alcohols through γ-C–H Activation



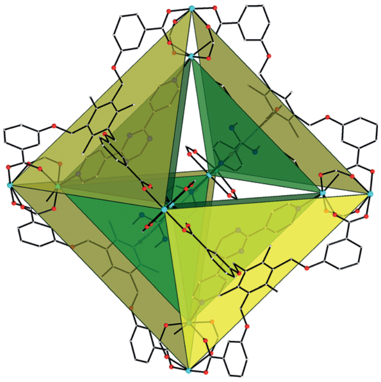
Active particles: A rhenium nanoparticle (Re NP) catalyst is generated from NH_4ReO_4 under mild solution conditions in neat 3-octanol at 180 °C. The resulting Re NPs catalyze acceptorless dehydrogenation of alcohols through a novel C–H activation pathway, and are fully recyclable.

Metal–Organic Frameworks

D. Tian, Q. Chen, Y. Li, Y. H. Zhang, Z. Chang, X. H. Bu* ______ **837 – 841**

A Mixed Molecular Building Block Strategy for the Design of Nested Polyhedron Metal–Organic Frameworks

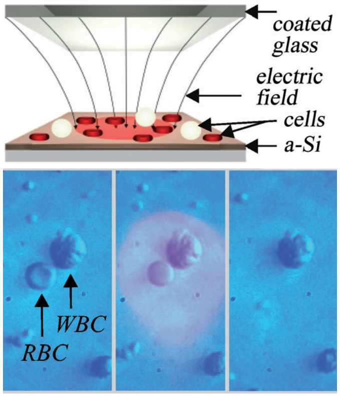
MOF in a MOF: The integration of two size-matching C_3-symmetric ligands with different rigidities leads to two porous metal–organic frameworks built from unprecedented double-walled metal–organic octahedra. A new and reliable mixed molecular building block strategy for the synthesis of cage-within-cage materials is provided.



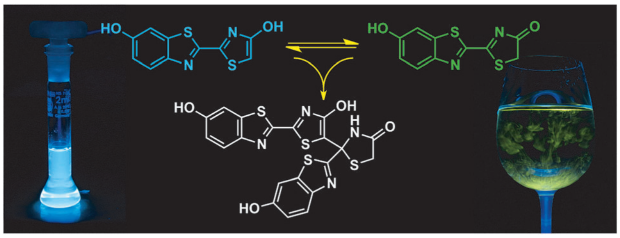
Cell lysis

Inside Back Cover

Selective lysis of specific cells in a mixture of different cell types is based upon the shape of the cells, a phenomenon that is explained by the electrical "shadow" that is cast by the cells. The technique is implemented on an optoelectronic platform, where light, focused onto a semiconductor surface by a projector, creates a reconfigurable pattern of electrodes over large areas. RBCs and WBCs are red and white blood cells, respectively, and a-Si is amorphous silicon.

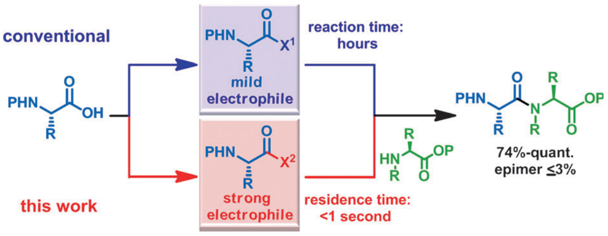


Bioluminescence



Light into the darkness: Firefly oxyluciferin, the emitter of firefly bioluminescence, is notoriously difficult to handle. The cause behind its chemical lability is now ascribed to autodimerization of the coexisting enol (showing blue fluorescence in DMSO) and keto forms (contributing to the green fluorescence in water) in a Mannich reaction.

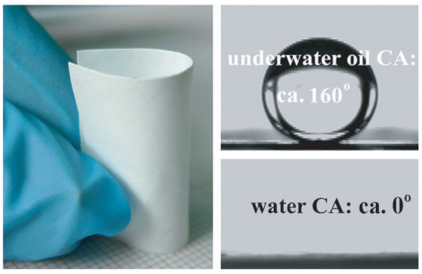
Peptides



In the fast lane: The title reaction is described for the synthesis of peptides. Various carboxylic acids including easily epimerizable amino acids were rapidly converted into highly electrophilic species, and then reacted with various amines, including less nucleophilic *N*-methyl amino acids, to afford the desired peptides in high yields without significant epimerization.

Surface Chemistry

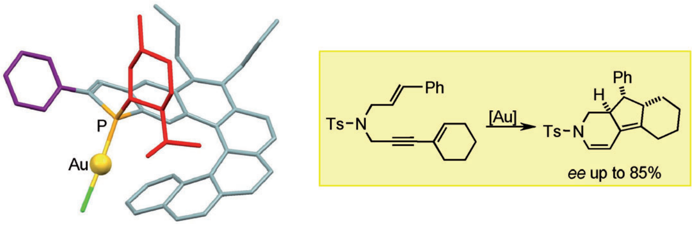
Salting away: The title membranes having different PAA graft ratios were fabricated by using a salt-induced phase-inversion process. The membrane can separate both surfactant-free and surfactant-stabilized oil-in-water emulsions under either a small applied pressure (0.1 bar) or gravity, with a high separation efficiency and high flux. CA = contact angle.



Asymmetric Gold Catalysis

K. Yavari, P. Aillard, Y. Zhang, F. Nuter, P. Retailleau, A. Voituriez,* A. Marinetti* ______ **861 – 865**

Helicenes with Embedded Phosphole Units in Enantioselective Gold Catalysis

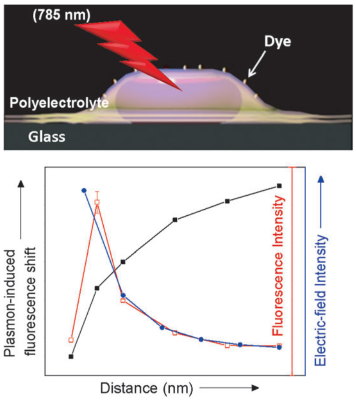


A twist of gold: Phosphahelicenes were for the first time used as chiral ligands in transition-metal catalysis. Unlike all helical phosphines used so far in catalysis, the phosphorus atom of phosphahelicenes is embedded within the helical structure (see scheme). Structural design allowed both high catalytic activity and good *ee* values to be attained in gold-promoted cycloisomerizations of N-tethered 1,6-enynes and dienynes.

Plasmon-Enhanced Fluorescence

N. Gandra, C. Portz, L. Tian, R. Tang, B. Xu, S. Achilefu,* S. Singamaneni* ______ **866 – 870**

Probing Distance-Dependent Plasmon-Enhanced Near-Infrared Fluorescence Using Polyelectrolyte Multilayers as Dielectric Spacers



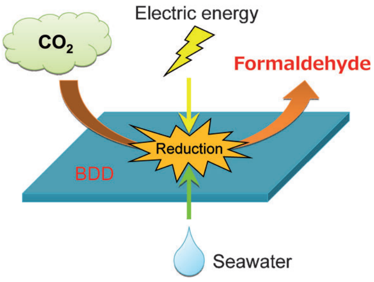
A simple and effective approach to probe distance-dependent plasmon-enhanced fluorescence is developed using polyelectrolyte multilayers to design ultrabright flurophores for near-infrared imaging (see picture). By carefully choosing the plasmonic nanostructures and chromophores with the corresponding maximum spectral overlap, a variety of ultrabright fluorescence probes can be designed.

CO_2 Reduction

K. Nakata,* T. Ozaki, C. Terashima, A. Fujishima, Y. Einaga* ______ **871 – 874**

High-Yield Electrochemical Production of Formaldehyde from CO_2 and Seawater

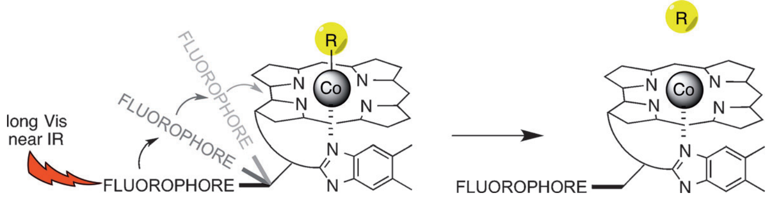
Boron is a diamond's best friend: A boron-doped diamond (BDD) electrode exhibited very high Faradaic efficiency (74 %) for the production of formaldehyde using either methanol, aqueous NaCl, or seawater as the electrolyte at room temperature and ambient pressure.



Photoactivatable Agents

T. A. Shell,* J. R. Shell, Z. L. Rodgers, D. S. Lawrence* ______ **875 – 878**

Tunable Visible and Near-IR Photoactivation of Light-Responsive Compounds by Using Fluorophores as Light-Capturing Antennas

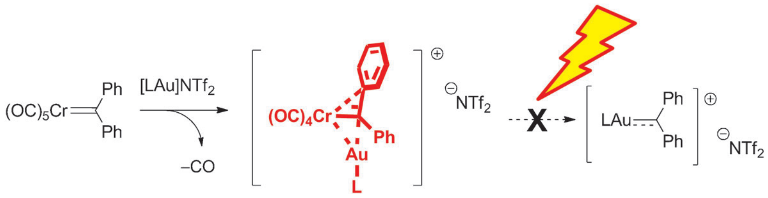


See it split: A palette of photoresponsive agents is described in which the desired activating wavelength is encoded with readily available fluorophores. Photomanipulation is feasible throughout the visible range into the near IR, and in a manner that provides orthogonal control over multiple species. This technology has been used to trigger 1) interorganelle trafficking, 2) disassembly of stress fibers, and 3) light-dose-dependent cell death.

Carbophilic Catalysts

G. Seidel, B. Gabor, R. Goddard,
B. Heggen, W. Thiel,
A. Fürstner* ________ **879 – 882**

Gold Carbenoids: Lessons Learnt from a Transmetalation Approach

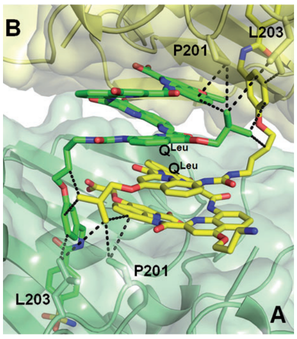


I do not want to be free! Whereas prototype Fischer-type chromium carbene complexes transfer their organic ligand to gold with exceptional ease, chromium complexes devoid of the heteroelement substituent do not want to release unstabilized gold carbenoids of the type that is often invoked in mechanistic discussions of π-acid catalysis. Instead, unusual bimetallic arrays are formed in which charge density gets delocalized over several positions.

Foldamer–Protein Interactions

J. Buratto, C. Colombo, M. Stupfel,
S. J. Dawson, C. Dolain,
B. Langlois d'Estaintot, L. Fischer,
T. Granier, M. Laguerre, B. Gallois,*
I. Huc* ________ **883 – 887**

Structure of a Complex Formed by a Protein and a Helical Aromatic Oligoamide Foldamer at 2.1 Å Resolution



To design a foldamer that binds to a protein surface, a strategy is proposed that uses a known protein ligand to tether the foldamer to the protein surface. Candidates are first screened for induced circular dichroism in presence of the protein. Then, structural information about foldamer–protein interactions is collected before strong binding is established. The crystal structure of human carbonic anhydrase (A, B chains) with helical aromatic amide foldamers (stick models) is shown.

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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The Very Important Papers, marked VIP, have been rated unanimously as very important by the referees.

The Hot Papers are articles that the Editors have chosen on the basis of the referee reports to be of particular importance for an intensely studied area of research.

Angewandte Corrigendum

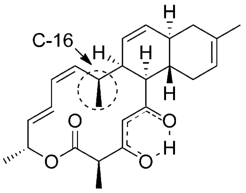
Anthracimycin, a Potent Anthrax Antibiotic from a Marine-Derived Actinomycete

K. H. Jang, S.-J. Nam, J. B. Locke,
C. A. Kauffman, D. S. Beatty, L. A. Paul,
W. Fenical* ________ **7822–7824**

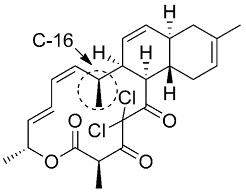
Angew. Chem. Int. Ed. **2013**, *52*

DOI: 10.1002/anie.201302749

The structural drawings in this Communication for anthracimycin (**1**) and its corresponding dichloro derivative **3** should be revised to illustrate the correct configuration at C-16. The structures should be drawn as shown below.



Anthracimycin, **1**



3