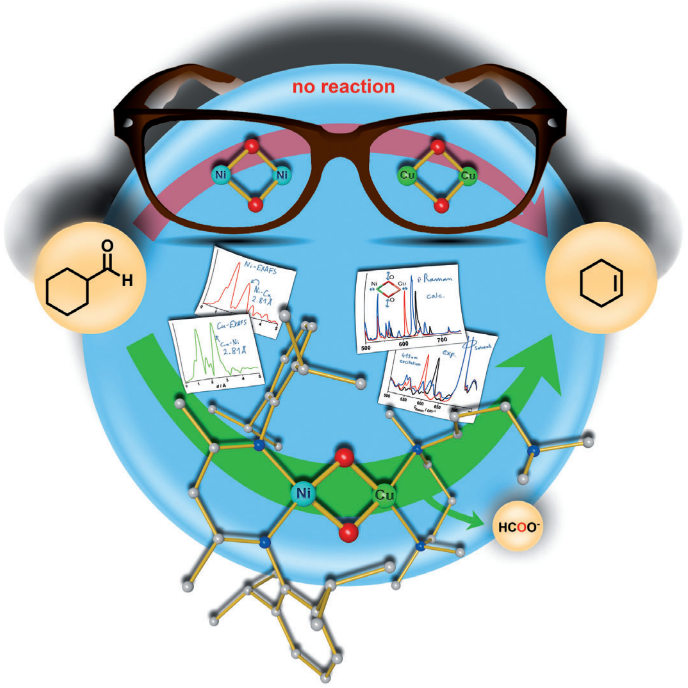
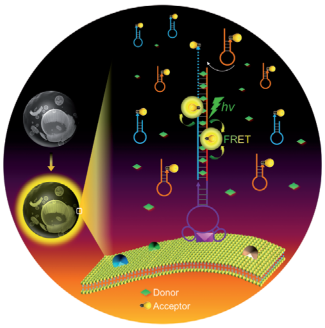
Unlike typical homodinuclear …

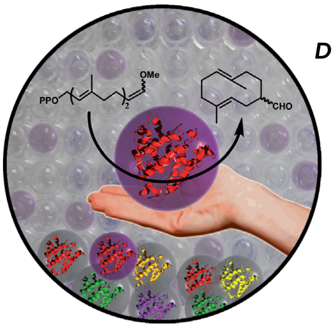


… high-valent $[M_2(\mu\text{-O})_2]^{n+}$ cores, a rare heterobimetallic high-valent CuNi bis(μ-oxo) complex behaves as a nucleophile. In their Communication on page 5622 ff., K. Ray, M. Driess, C. Limberg et al. show that this complex can initiate deformylation of aldehydes, indicating that mixed-metal bis(μ-oxo) cores are viable intermediates in the deformylation of fatty aldehydes by cyanobacterial aldehyde decarbonylase, for which a similar cofactor has been suggested, but not isolated.

Fluorescence

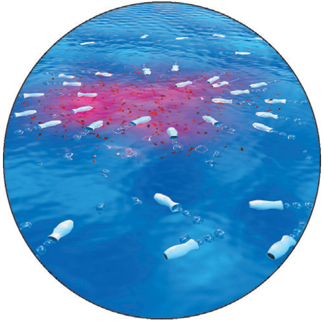
W. Tan and co-workers report fluorescent DNA nanodevices that undergo fluorescence resonance energy transfer (FRET) and can be anchored on living cell surfaces in their Communication on page 5490 ff.





Directed Evolution

In their Communication on page 5571 ff., F. H. Arnold and co-workers describe a synthetic substrate that can be used in a colorimetric screen for terpene synthase cyclization activity, thereby facilitating the optimization of these enzymes.



Micromotors

S. Sanchez et al. show in their Communication on page 5552 ff. that self-propelled micromotors in a solution change their trajectory when hydrogen peroxide is added. This response resembles the chemotactic behavior of some living organisms.

How to contact us:

Editorial Office:
E-mail: angewandte@wiley-vch.de
Fax: (+49) 6201–606-331
Telephone: (+49) 6201–606-315

Reprints, E-Prints, Posters, Calendars:
Carmen Leitner
E-mail: chem-reprints@wiley-vch.de
Fax: (+49) 6201–606-331
Telephone: (+49) 6201–606-327

Copyright Permission:
Bettina Loycke
E-mail: rights-and-licences@wiley-vch.de
Fax: (+49) 6201–606-332
Telephone: (+49) 6201–606-280

Online Open:
Margitta Schmitt, Carmen Leitner
E-mail: angewandte@wiley-vch.de
Fax: (+49) 6201–606-331
Telephone: (+49) 6201–606-315

Subscriptions:
www.wileycustomerhelp.com
Fax: (+49) 6201–606-184
Telephone: 0800 1800536 (Germany only)
+44(0) 1865476721 (all other countries)

Advertising:
Marion Schulz
E-mail: mschulz@wiley-vch.de
jspiess@wiley-vch.de
Fax: (+49) 6201–606-550
Telephone: (+49) 6201–606-565

Courier Services:
Boschstrasse 12, 69469 Weinheim

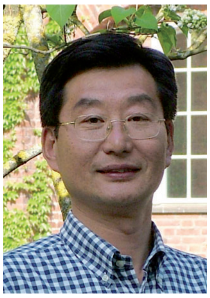
Regular Mail:
Postfach 101161, 69451 Weinheim

Angewandte Chemie International Edition is a journal of the Gesellschaft Deutscher Chemiker (GDCh), the largest chemistry-related scientific society in continental Europe. Information on the various activities and services of the GDCh, for example, cheaper subscription to *Angewandte Chemie International Edition*, as well as applications for membership can be found at **www.gdch.de** or can be requested from GDCh, Postfach 900440, D-60444 Frankfurt am Main, Germany.

GDCh
GESELLSCHAFT
DEUTSCHER CHEMIKER

Service

Author Profile

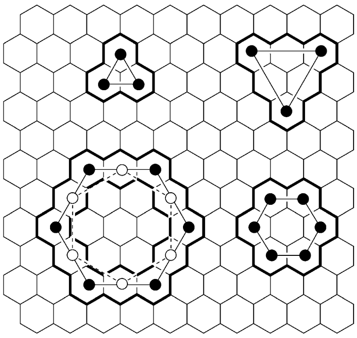


"My worst nightmare is transcontinental travel for more than 36 hours.
My favorite piece of research is CO_2 activation ..."
This and more about Licheng Sun can be found on page 5434.

Books

Highlights

All things graphene: Within the graph of graphene one finds subgraphs for a myriad of novel aromatic hydrocarbons. For example, defining the vertices of a C3 subgraph within graphene evokes higher-order structures simply by changing the length of the ring fusion links. Analogously, the C6 transformation yields coronene and kekulene (see scheme).

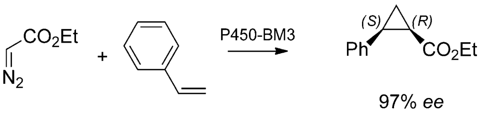


Nanostructures

Promiscuous Biocatalysis

G.-D. Roiban, M. T. Reetz* _ **5439 – 5440**

Enzyme Promiscuity: Using a P450 Enzyme as a Carbene Transfer Catalyst



How about this for a change: The promiscuous enzyme cytochrome P450-BM3 catalyzes the cyclopropanation of olefins, sometimes with high stereoselectivity (see scheme). The highlighted paper demonstrates that it is possible to design unusual enzyme promiscuity.

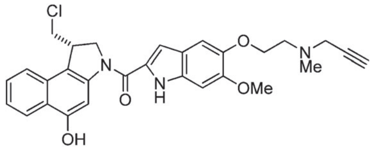
Correspondence

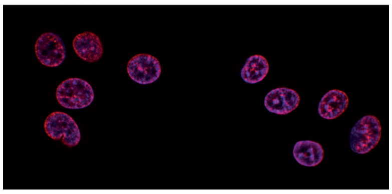
Antitumor Agents (1)

M. Tercel,* S. P. McManaway, E. Leung, H. D. S. Liyanage, G.-L. Lu, F. B. Pruijn* ______ **5442 – 5446**

The Cytotoxicity of Duocarmycin Analogues is Mediated through Alkylation of DNA, not Aldehyde Dehydrogenase 1: A Comment

The answer lies in the DNA: Recent claims that the alkylation of a particular protein contributes to the cytotoxicity of the duocarmycins could not be substantiated. The evidence, like the fluorescent signal derived from a clickable analogue, points instead to a reaction occurring in the nucleus.



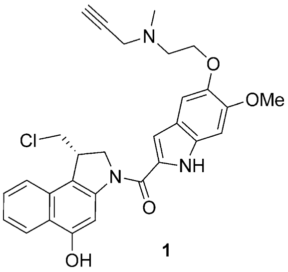


Antitumor Agents (2)

L. F. Tietze,* S. A. Sieber* _ **5447 – 5449**

Duocarmycin Analogues without a DNA-Binding Indole Unit Associate with Aldehyde Dehydrogenase 1A1 and not DNA: A Reply

An open question: Activity-based protein profiling using seco-CBI derivative **1**, containing a DNA-binding indole unit, showed that besides binding to DNA, compound **1** also interacts with aldehyde dehydrogenase 1. However, for CBI compounds without an indole unit, the origin of their cytotoxicity has not been identified, yet.



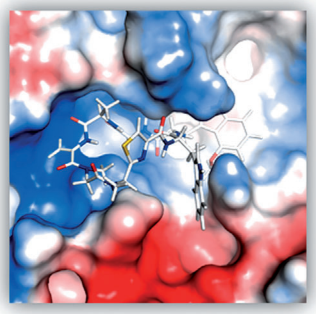
1

Reviews

Proteasome Inhibitors

A. Rentsch, D. Landsberg, T. Brodmann, L. Bülow, A.-K. Girbig, M. Kalesse* ______ **5450 – 5488**

Synthesis and Pharmacology of Proteasome Inhibitors

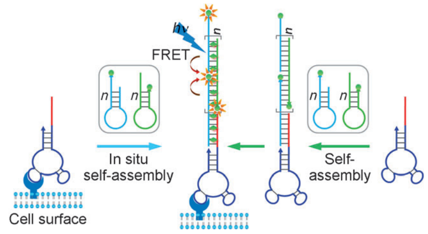


The ubiquitin–proteasome system controls fundamental processes such as cell cycle regulation, DNA repair, apoptosis, and immune and inflammatory responses, as well as hereditary disorders such as cystic fibrosis. This Review covers the synthesis of the most important proteasome inhibitors as well as their mode of action and clinical development.

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$ 11.738/10.206 (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.

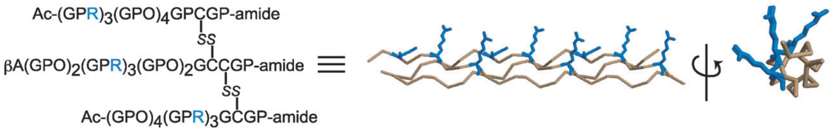
Fluorescence

Frontispiece



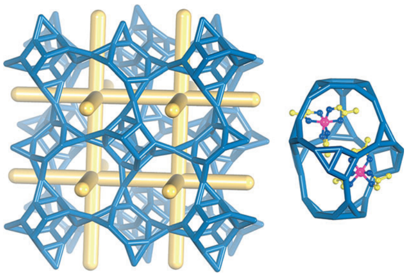
DNA nanotrain: Anchoring of preformed fluorescent DNA nanodevices (NDs; see picture) and in situ self-assembly of fluorescent DNA NDs on target living cell surfaces are reported. The in situ self-assembly of the nanodevice was further shown on surfaces of living cells in cell mixtures. These DNA NDs exhibited fluorescence emission and underwent fluorescence resonance energy transfer (FRET) on living cell surfaces.

Protein Transduction



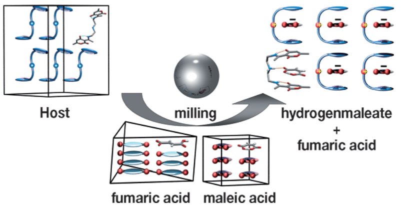
Arginine-rich heterotrimeric collagen-like peptides were prepared, and their cellular uptake efficiency was evaluated. The spatial arrangement of the Arg residues (blue in picture) on the triple-helix surface significantly affected the efficacy of the cellular uptake. The collagen-like triple-helical conformation provides these cell-penetrating peptides with a high resistance to proteases. O = L-4-hydroxyproline.

Zeolite Analogues



Ring the change: The gallogermanate zeolite $|(\mathrm{Ni}(\mathrm{C_3H_{10}N_2})_3)_{36}\mathrm{Ni}_{4.7}|$ $[\mathrm{Ga}_{81.4}\mathrm{Ge}_{206.6}\mathrm{O}_{576}]$, which has three-dimensional intersecting 11-membered-ring channels (see picture, left), was synthesized. It has the lowest framework density of all known oxide zeolites and features pairs of chiral $[3^{12}.4^{3}.6^{2}.11^{6}]$ cavities, induced by chiral $[\mathrm{Ni}(1,2\text{-PDA})_3]^{2+}$ cations formed in situ (see picture, right). 1,2-PDA = 1,2-diaminopropane.

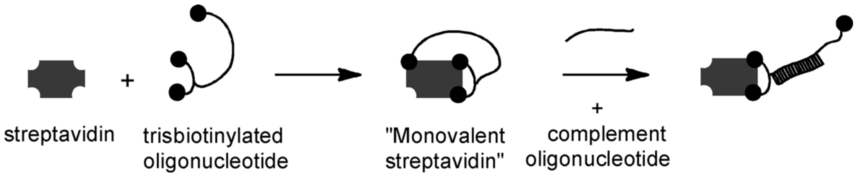
Molecular Recognition



Flexible even if constrained: A polyamine host recognizes dicarboxylic acids in solution and in the solid state, with the highest selectivity towards maleic acid, binding it from mixtures with up to five other dicarboxylic acids, including fumaric acid (see picture). Recognition using mechanochemistry is a dynamic process involving intermediate phases, resulting in the same selectivity as achieved by crystallization from solution.

Fruitful Research
Angewandte Chemie
Eine Zeitschrift der Gesellschaft Deutscher Chemiker
GDCh
www.angewandte.de
2010–122/22
WILEY-VCH
Ursprung des Lebens
U. J. Meierhenrich et al.
Elektrochemisch zu adressierbaren Bibliotheken
J. Yoshida und A. Nagaki
Wasserstofferzeugung
M. T. M. Koper und E. Bouwman

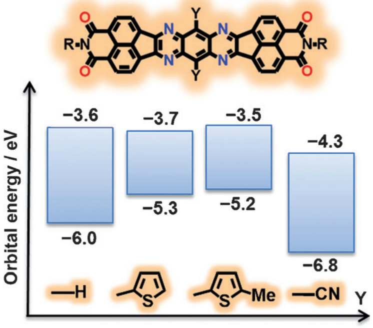
Biosensors



Only one place available: Monovalent streptavidin is prepared in a one-step process based on a trisbiotinylated oligonucleotide that blocks three of streptavidin's four biotin-binding sites. The complex is highly sensitive to single-base differences: perfectly matched oligonucleotides trigger dissociation of the biotin–streptavidin interaction at higher rates than strands with single-base mismatches.

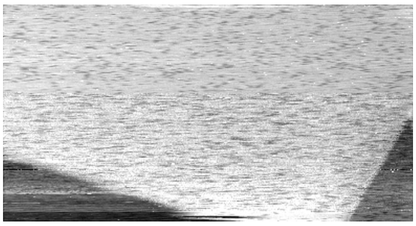
Organic Semiconductors

11-Ring heterocyclic diimides were synthesized and found to be planar and to exhibit a slipped face-to-face π stacking. Variation of the substituents tunes the electronic structure and properties. In n-channel organic field-effect transistors, the new organic semiconductors have a high electron mobility. When they were used as acceptor material in polymer solar cells, a power conversion efficiency of 1.8% was obtained.

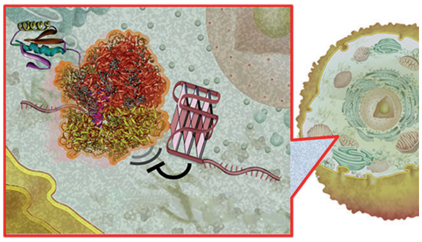


Heterogeneous Catalysis

The active state of a catalyst: A high-pressure scanning tunneling microscope (STM) was used to bridge the pressure gap for the Ag-catalyzed ethylene epoxidation. An active oxygen species on an Ag(111) single crystal was characterized under ultrahigh vacuum conditions. The same species was identified with STM in an ethylene/oxygen mixture (see picture). In the STM cell the formation of ethylene oxide was detected.



Protein Translation

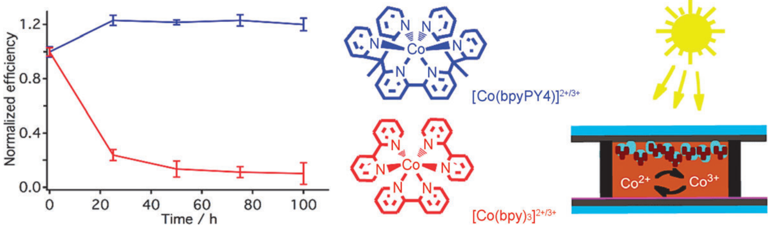


Suppressing the urge to translate: Sequences with the potential to form G-quadruplexes were identified in the open reading frames of *E. coli* genes. These sequences were found to form parallel G-quadruplexes and to suppress translation (see picture) of the mRNAs into proteins both in vitro and in cells.

Dye-Sensitized Solar Cells

M. K. Kashif, M. Nippe, N. W. Duffy, C. M. Forsyth, C. J. Chang,* J. R. Long,* L. Spiccia,* U. Bach* ______ **5527 – 5531**

Stable Dye-Sensitized Solar Cell Electrolytes Based on Cobalt(II)/(III) Complexes of a Hexadentate Pyridyl Ligand

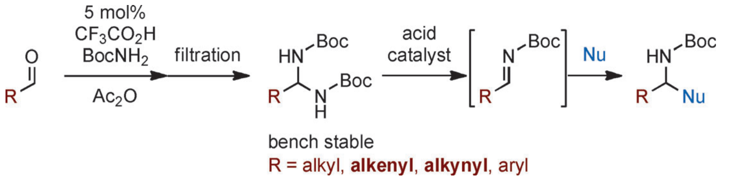


Energy conversion: A cobalt redox mediator, $[Co(bpyPY4)]^{2+/3+}$, based on a hexadentate polypyridyl ligand, was developed. Dye-sensitized solar cells (DSCs) made with this redox mediator showed improved stability and slightly higher efficiencies compared to $[Co(bpy)_3]^{2+/3+}$-based devices. Long-term stability evaluation of DSCs based on $[Co(bpyPY4)]^{2+/3+}$ revealed excellent stability under full irradiation conditions (see picture).

Imine Generation

T. Kano, T. Yurino, D. Asakawa, K. Maruoka* ______ **5532 – 5534**

Acid-Catalyzed In Situ Generation of Less Accessible or Unprecedented *N*-Boc Imines from *N*-Boc Aminals

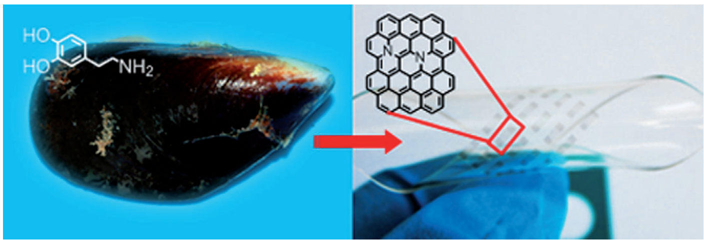


Crafty aminals: The in situ generation of hitherto unattainable alkynyl-substituted *N*-Boc-protected imines was realized by the acid-catalyzed elimination of *tert*-butyl carbamate from *N*-Boc aminals. A wide variety of *N*-Boc imines can be generated, which can then be utilized for subsequent carbon–carbon bond-forming reactions, such as Mannich-type reactions.

Carbon Electrodes

R. Li, K. Parvez, F. Hinkel, X. Feng,* K. Müllen* ______ **5535 – 5538**

Bioinspired Wafer-Scale Production of Highly Stretchable Carbon Films for Transparent Conductive Electrodes

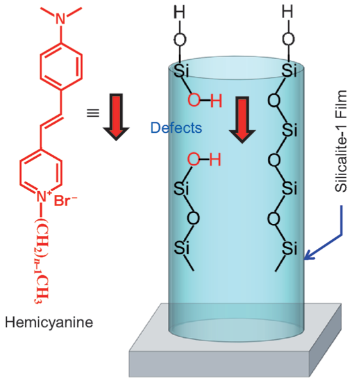


Carbon-based films: Dopamine was used as the precursor for the facile yet controllable production of a highly stretchable transparent conductive film (see picture). The film synthesized is transparent and can reversibly withstand mechanical deformations (such as being stretched to 20% for 100 cycles).

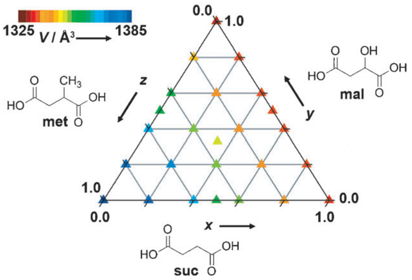
Mesoporous Materials

T. C. T. Pham, H. S. Kim, K. B. Yoon* ______ **5539 – 5543**

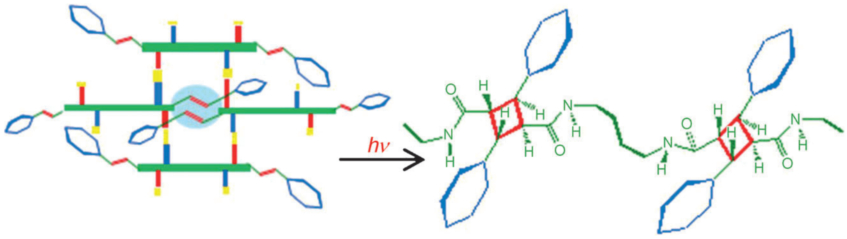
Large Increase in the Second-Order Nonlinear Optical Activity of a Hemicyanine-Incorporating Zeolite Film



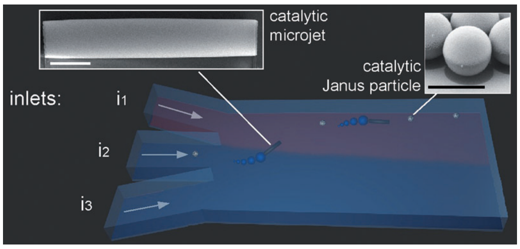
Nonlinear optics: A hemicyanine-incorporating silicalite-1 film with second-order nonlinear optical properties supported on a glass plate was prepared. For the nonlinear optical properties of this material the number of hemicyanine dye moleclues included in the zeolite channels is important. Defects arising from Si deficiency along the channels prohibit the diffusion of the dyes into the interior of the zeolite film (see picture).



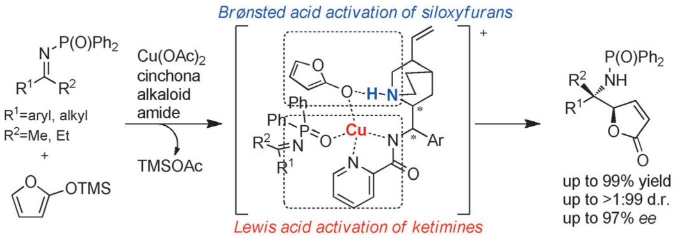
Grounded in fact: Inorganic–organic frameworks with 3D Li–O–Li connectivity can form solid solutions through mechanochemical synthesis. High-resolution synchrotron powder X-ray diffraction and cross-polarization solid-state NMR spectroscopy demonstrate complete ligand mixing in the resulting binary and ternary systems (see picture for trends in unit cell volume (*V*) of the ternary system $\{Li_2(suc)_x(mal)_y(met)_z\}_n$).



Film review: Two amide-containing bis-olefin monomers undergo solid-state polymerization (see example) through a [2+2] reaction in a single-crystal-to-single-crystal fashion. The transformation was favored by the self-templating and shock-absorbing nature of hydrogen-bonding layers. The pyridine-containing polymers were soluble and useful for making plastic films with considerable tensile strengths.



Chemotaxis in practice: Two different artificial catalytic micromotors (tubular and spherical, see scheme) show chemotactic behavior in microfluidic channels demonstrating that catalytic micromotors can sense the gradient of chemical fuel in their environment and be directed towards desired locations.

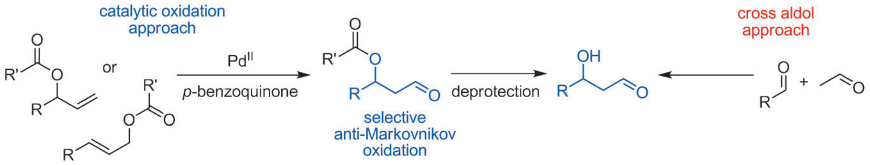


Managing the Mannich: The first enantioselective vinylogous Mannich reaction of siloxyfurans with ketimines derived from unactivated ketones has been developed. Excellent yields and enantioselectivities were obtained using a new class of readily accessible cinchona alkaloid amide/$Cu(OAc)_2$ catalysts on a range of substrates.

Synthetic Methods

J. J. Dong, M. Fañanás-Mastral,
P. L. Alsters, W. R. Browne,*
B. L. Feringa* ________ 5561 – 5565

Palladium-Catalyzed Selective Anti-Markovnikov Oxidation of Allylic Esters

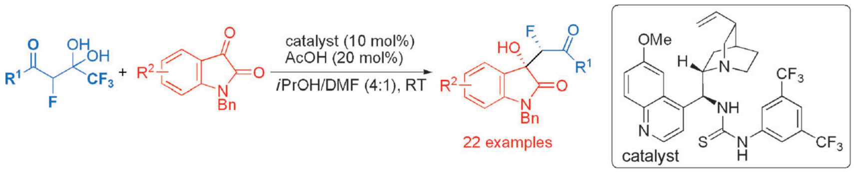


An aldol alternative: The palladium(II)-catalyzed anti-Markovnikov oxidation of allylic esters to aldehydes at room temperature provides a viable alternative to valuable cross aldol products. High regioselectivity towards the aldehyde product was achieved using the ester protecting group for the allylic alcohol. Rapid isomerization and the much higher rate of oxidation of the branched isomer result in the same product forming from both linear and branched allylic esters.

Organocatalysis

I. Saidalimu, X. Fang,* X.-P. He, J. Liang,
X. Yang, F. Wu* ________ 5566 – 5570

Highly Enantioselective Construction of 3-Hydroxy Oxindoles through a Decarboxylative Aldol Addition of Trifluoromethyl α-Fluorinated *gem*-Diols to *N*-Benzyl Isatins



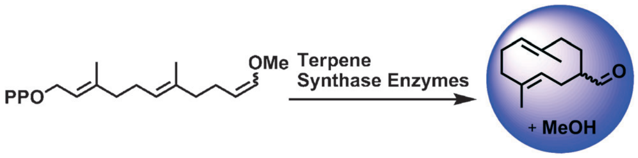
An organocatalytic asymmetric direct aldol addition reaction that involves cleavage of a carbon–carbon bond through the release of trifluoroacetate was developed. The protocol is wide in scope, generating the desired oxindoles of biological interest in nearly quantitative yields (up to 99%) with excellent enantioselectivities (up to 98% *ee*) and diastereoselectivities (up to 99:1 d.r.).

Directed Evolution

R. Lauchli, K. S. Rabe, K. Z. Kalbarczyk,
A. Tata, T. Heel, R. Z. Kitto,
F. H. Arnold* ________ 5571 – 5574

High-Throughput Screening for Terpene-Synthase-Cyclization Activity and Directed Evolution of a Terpene Synthase

Inside Back Cover

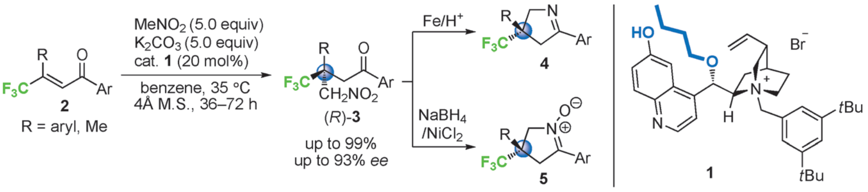


An easy assay: A synthetic substrate enables a colorimetric screen for terpene synthase cyclization activity, thereby facilitating the engineering of these enzymes. By using directed evolution, the thermostability of a sesquiterpene synthase was increased without the loss of other properties. The technique also enabled rapid optimization of conditions for expression and stabilization in lysate of another terpene synthase. PPO = diphosphate.

Heterocycle Synthesis

H. Kawai, Z. Yuan, T. Kitayama,
E. Tokunaga, N. Shibata* __ 5575 – 5579

Efficient Access to Trifluoromethyl Diarylpyrrolines and their N-Oxides through Enantioselective Conjugate Addition of Nitromethane to β,β-Disubstituted Enones

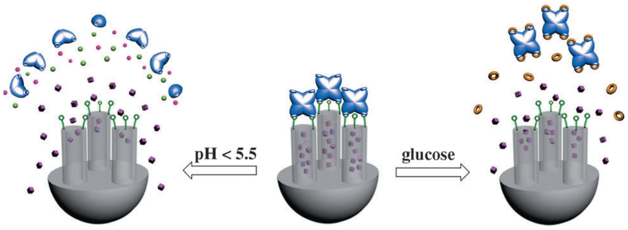


The cupreidinium salt 1 catalyzes the highly enantioselective conjugate addition of nitromethane to β-aryl-β-trifluoromethyl aryl enones (**2**). The biologically important chiral pyrrolines **4** and N-oxide **5**, having a trifluoromethylated all-carbon quaternary chiral center, were easily synthesized from the key intermediate (*R*)-**3** in high to excellent yields. M.S. = molecular sieves.

Drug Delivery

S. Wu, X. Huang, X. Du* ___ 5580 – 5584

Glucose- and pH-Responsive Controlled Release of Cargo from Protein-Gated Carbohydrate-Functionalized Mesoporous Silica Nanocontainers



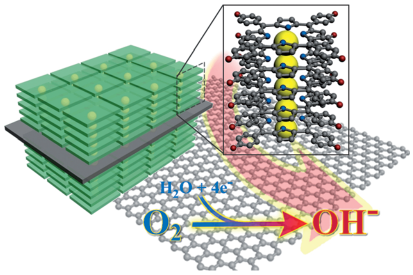
Learning to let go: Controlled release of cargo (purple cubes) from lectin (blue squares)-gated nanopores was achieved using mannose (green loops)-functionalized mesoporous silica (see scheme). The protein nanogates could be opened either by decreasing the pH of the buffer or by adding competing glucose (yellow rings) to release the cargo from the pores.

Metal-Free Electrocatalysts

H. Tang, H. Yin, J. Wang, N. Yang,
D. Wang,* Z. Tang* ___ 5585 – 5589

Molecular Architecture of Cobalt Porphyrin Multilayers on Reduced Graphene Oxide Sheets for High-Performance Oxygen Reduction Reaction

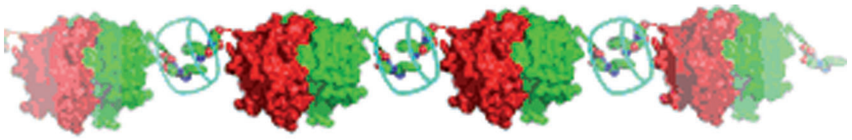
ORR inspiring: Multilayers of Co^{2+} and porphyrin, fabricated on the surface of reduced graphene oxide sheets (see picture) by a layer-by-layer assembly technique, are potentially cost-effective and high-efficient oxygen reduction reaction (ORR) catalysts. The multilayers have comparable electrocatalytic activity to commercial C/Pt catalysts, but much better methanol tolerance and long-term stability toward ORR.



Protein Nanowires

C. X. Hou, J. X. Li, L. L. Zhao, W. Zhang,
Q. Luo, Z. Y. Dong, J. Y. Xu,
J. Q. Liu* ___ 5590 – 5593

Construction of Protein Nanowires through Cucurbit[8]uril-based Highly Specific Host–Guest Interactions: An Approach to the Assembly of Functional Proteins

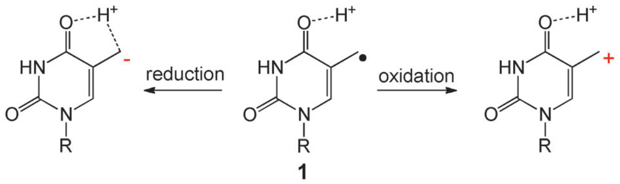


Getting your proteins in a row: Self-assembled protein nanowires were designed by utilizing highly specific supramolecular interactions of cucurbit[8]uril (CB[8]) and a tripeptide FGG-tag attached on the N-termini of dimeric glutathione S-transferase (GST). With the aid of enzyme simulation, model protein GST was converted into a selenoenzyme glutathione peroxidase mimic, and the CB[8]-induced Se-FGG-GST(Y6C) nanowires demonstrated excellent antioxidative capacity.

Biological Radicals

G. Lin, L. Li* ___ 5594 – 5598

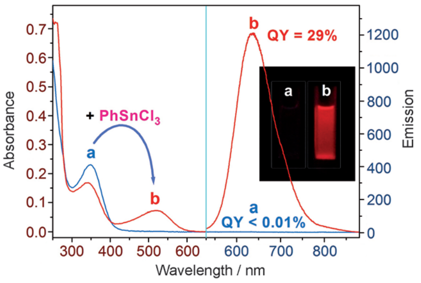
Oxidation and Reduction of the 5-(2′-Deoxyuridinyl)methyl Radical



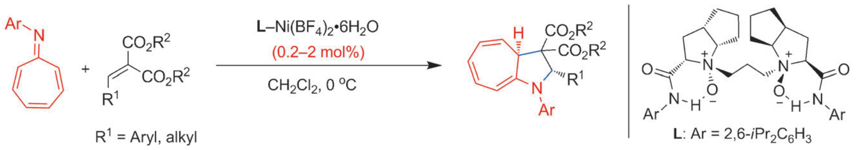
Sleeping beauty: The 5-(2′-Deoxyuridinyl)methyl radical **1** is a key intermediate in the thymine oxidative reaction mediated by reactive oxygen species. Evidence is presented that **1** is prone to both oxidation and reduction reactions at the absence of O_2. These results question the current paradigm and suggest that the redox chemistry of **1**, which has been largely overlooked in the past, may play a major role in determining the fate of **1**.

Fluorescence

Fluorescent organotin sensing: Molecular recognition driven by halogen-bonding interactions and the phenomenon of aggregation-induced emission were combined to construct fluorescent chemosensors. Binuclear ruthenium complexes containing multiple isocyanide ligands were synthesized as nonluminescent receptors that emit red fluorescence upon interacting with organotin halides (see picture; QY = quantum yield).



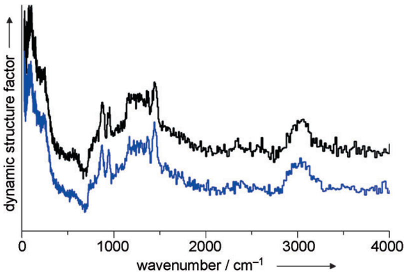
Asymmetric Catalysis



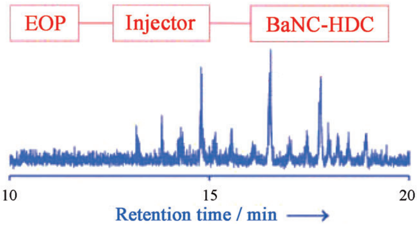
Add a ring: A catalytic asymmetric [8+2] cycloaddition reaction of azaheptafulvenes with alkylidene malonates was developed. When employing catalytic amounts of a chiral *N*,*N*′-dioxide **L**–Ni^{II} complex, the reaction afforded functionalized cycloheptatriene-fused pyrrole derivatives in excellent yields (up to 99%), diastereoselectivities (>95:5 d.r.), and enantioselectivities (91–97% *ee*) under mild conditions.

Heterogeneous Catalysis

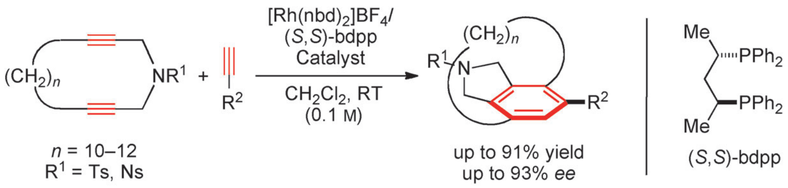
Inelastic neutron scattering (INS) has been used to obtain the vibrational spectrum of a technical-grade iron-based Fischer–Tropsch catalyst that has been taken from an industrial large-scale unit operation. Whereas previous reports on iron Fischer–Tropsch catalysts highlight the presence of retained carbonaceous species, the INS spectra reveal the additional presence of partially hydrogenated aromatic molecules (see picture).



DNA Separation



Turn the volume down: Coupling a high-pressure electroosmotic pump (EOP) and a microfabricated chip-injector with a bare narrow capillary–hydrodynamic chromatographic system (BaNC-HDC), enables samples to be injected at low-picoliter volumes, analytes to be eluted at picoliters per minute, and a wide size range of DNA fragments to be resolved (see picture) rapidly in free solution at the single-molecule level.



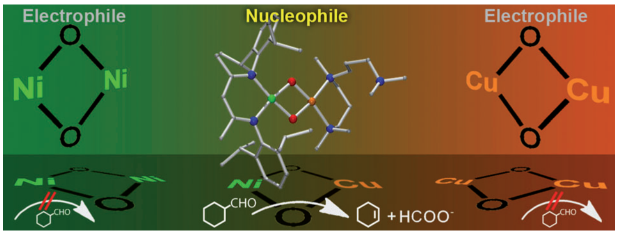
Just ‘plane’ chiral: The high-yielding and highly enantioselective synthesis of carba[10]–[12]paracyclophanes has been achieved with up to 91 % yield and 93 % *ee* by using the cationic rhodium(I)/(*S*,*S*)-bdpp-catalyzed [2+2+2] cycloaddition of cyclic diynes with terminal monoynes under high substrate concentrations. nbd = 2,5-norbornadiene, Ns = *p*-nitrobenzenesulfonyl, Ts = 4-toluenesulfonyl.

Asymmetric Catalysis

T. Araki, K. Noguchi,
K. Tanaka* ——— **5617 – 5621**

Enantioselective Synthesis of Planar-Chiral Carba-Paracyclophanes: Rhodium-Catalyzed [2+2+2] Cycloaddition of Cyclic Diynes with Terminal Monoynes

---



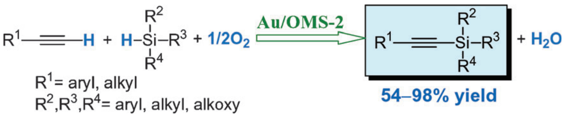
Cores and effect: Unlike homobimetallic analogues, the heterobimetallic CuNi bis(μ-oxo) diamond core has nucleophilic oxo groups. A similar heterobimetallic core may, therefore, act as a viable intermediate during the deformylation of fatty aldehydes by cyanobacterial aldehyde decarbonylase.

Bioinorganic Chemistry

S. Kundu, F. F. Pfaff, E. Miceli,
I. Zaharieva, C. Herwig, S. Yao,
E. R. Farquhar, U. Kuhlmann, E. Bill,
P. Hildebrandt, H. Dau, M. Driess,*
C. Limberg,* K. Ray* ——— **5622 – 5626**

A High-Valent Heterobimetallic $[Cu^{III}(\mu\text{-}O)_2Ni^{III}]^{2+}$ Core with Nucleophilic Oxo Groups

Front Cover



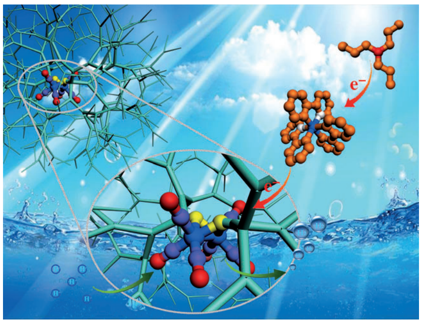
Cross-dehydrogenative coupling of various terminal alkynes and monohydrosilanes efficiently proceeded in the presence of gold supported on OMS-2 (Au/OMS-2) using O_2 as a terminal oxidant, affording the corresponding alkynylsilanes in moderate to high yields (see picture). The observed catalysis was truly heterogeneous, and the catalyst could be reused at least ten times without a significant loss of its high catalytic performance.

Heterogeneous Catalysis

K. Yamaguchi, Y. Wang, T. Oishi,
Y. Kuroda, N. Mizuno* ——— **5627 – 5630**

Heterogeneously Catalyzed Aerobic Cross-Dehydrogenative Coupling of Terminal Alkynes and Monohydrosilanes by Gold Supported on OMS-2

A three-component homogeneous catalyst system has been prepared with an Ir^{III} complex as the photosensitizer, artificial hydrogenases bearing a diiron core and dendritic frameworks as the proton reduction catalyst, and triethylamine as the sacrificial electron donor. An initial turnover frequency of over 7240 h^{-1} and a quantum yield of up to 28 % were determined for the photocatalytic evolution of hydrogen.



Energy Conversion

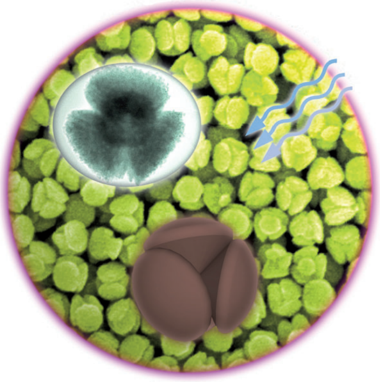
T. J. Yu, Y. Zeng,* J. P. Chen, Y. Y. Li,
G. Q. Yang,* Y. Li* ——— **5631 – 5635**

Exceptional Dendrimer-Based Mimics of Diiron Hydrogenase for the Photochemical Production of Hydrogen

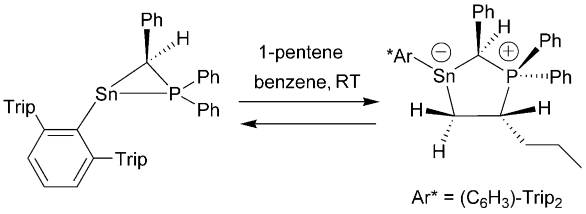
Cadmium Sulfide Nanoparticles

Inside Cover

More than just skin deep: Carbon-coated CdS petalous particles have been synthesized through a one-pot solvothermal method. The carbon nanocoating serves multiple functions, including protection of the CdS surface, enhancement of visible light absorption, and facilitating the separation of photogenerated charges. As a result, this CdS-C nanohybrid photocatalyst exhibits significantly enhanced photostability and photocatalytic activity.

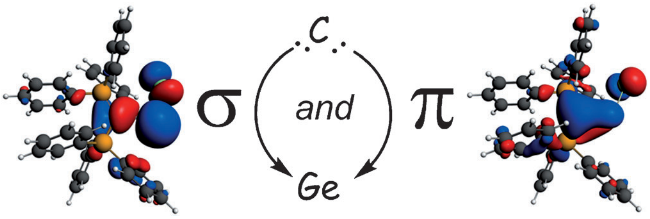


Main-Group Chemistry



Bermuda triangle: The first molecule containing a cyclic three-membered Sn–C–P ring has been synthesized and characterized. This Sn^{II}–P Lewis pair reacts at room temperature with alkynes and pentene to give the five-membered cyclic addition products. In the case of pentene, this reaction is reversible at room temperature. Trip = 2,4,6-iPr$_3$C$_6$H$_2$.

Main-Group Elements



Give me four: The synthesis, structure, and reactivity of [GeCl]$^+$ and [SnCl]$^+$ cations bearing a carbodiphosphorane as ancillary ligand are presented. In the Ge compound, simultaneous σ and π donation from the carbodiphosphorane to Ge is observed (see HOMO (left) and HOMO−1 (right); C black, H white, P orange, Cl green, Ge purple (not visible)), whereas only the σ dative component is present in the Sn analogue.

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

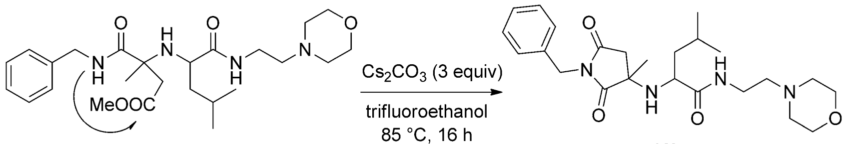
A video clip is available as Supporting Information on www.angewandte.org (see article for access details).

This article is available online free of charge (Open Access).

This article is accompanied by a cover picture (front or back cover, and inside or outside).

Angewandte Corrigendum

By solving several crystal structures the authors of this Communication have found that the structure of compound **10** in Scheme 3 has been misassigned. It is not based on a β-lactame core as originally proposed but rather on the pyrrolidinedione scaffold **10′** which has the same molecular weight and a similar NMR spectrum as the proposed β-lactame. Therefore it is proposed that the cyclization of the intermediate Ugi product under the basic reaction conditions proceeds via the isocyanide-derived amide NH group and the ester moiety.



10'

This correction does not affect the results and conclusions of the other compounds described in the communication. The authors sincerely apologize for this mistake.

Efficient Assembly of Iminodicarboxamides by a "Truly" Four-Component Reaction

K. Khoury, M. K. Sinha,
T. Nagashima, E. Herdtweck,
A. Dömling* ———— **10280–10283**

Angew. Chem. Int. Ed. **2012**, *51*

DOI: 10.1002/anie.201205366

Angewandte Corrigendum

The following sentence should be added to the acknowledgment section of this Communication:
"L.J.T. acknowledges support from NSF-REU program (Grant CHE-1003947)."

Synthesis of *ortho*-Acylphenols through the Palladium-Catalyzed Ketone-Directed Hydroxylation of Arenes

F. Mo, L. J. Trzepkowski,
G. Dong* ———— **13075–13079**

Angew. Chem. Int. Ed. **2012**, *51*

DOI: 10.1002/anie.201207479