

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

Y. V. Geletii, B. Botar,* P. Kögerler, D. A. Hillesheim, D. G. Musaev, C. L. Hill*

An All-Inorganic, Stable, and Highly Active Tetraruthenium Homogeneous Catalyst for Water Oxidation

Z. Liu, A. Kumbhar, D. Xu, J. Zhang, Z. Sun, J. Fang*
Corededuction Colloidal Synthesis of III-V Nanocrystals: The Case of InP

Y. H. Sehlleier, A. Verhoeven, M. Jansen*

Observation of Direct Bonds between Carbon and Nitrogen in Si-B-N-C Ceramic after Pyrolysis at 1400 °C

E. Stavitski, M. H. F. Kox, I. Swart, F. M. de Groot, B. M. Weckhuysen*

In-Situ Synchrotron-Based IR Microspectroscopy To Study Catalytic Reactions in Zeolite Crystals

Medicinal Chemistry:

F. von Nussbaum _____ 3086

Honored Solid-State Chemistry:

Prize to T. Loiseau _____ 3086

News

Literature:

100 Years of CAS _____ 3086

Four Laws that Drive the Universe

Peter Atkins

Intelligent Materials

Mohsen Shahinpoor, Hans-Jörg Schneider

Books

reviewed by A. Cooper _____ 3088

reviewed by P. Hilgers, A. Riechers, B. König _____ 3089

Better channeling: The insertion of amphiphilic, charged homo, graft, or block copolymers into lipid membranes is a way of forming defined membrane channels or pores. New insights into the mechanism of pore formation are discussed; for example, the picture shows the carpet mechanism for the insertion of amphiphilic graft polymers into a membrane.



Artificial Membrane Pores

W. H. Binder* _____ 3092–3095

Polymer-Induced Transient Pores in Lipid Membranes

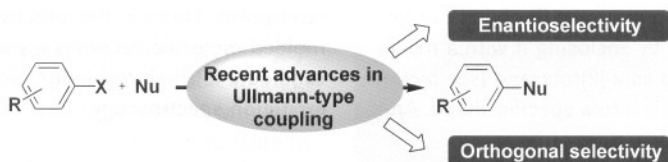
Angew. Chem. Int. Ed. 2008, 47, 3071–3081

© 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Arylation

F. Monnier,* M. Taillefer* — 3096–3099

Catalytic C–C, C–N, and C–O Ullmann-Type Coupling Reactions: Copper Makes a Difference



Copper makes the difference: Important challenges have been overcome in copper-catalyzed Ullmann reactions since its renaissance in the early 2000s. Significant advances in this field have recently been

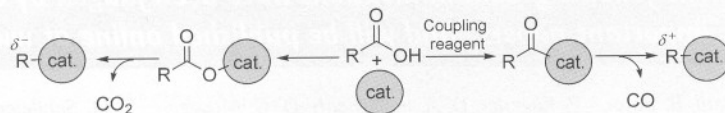
made in regards to carrying out enantioselective and chemoselective arylation of nucleophiles (Nu) by using a copper catalyst (see scheme).

Reviews

Carboxylic Acids

L. J. Gooßen,* N. Rodríguez,
K. Gooßen — 3100–3120

Carboxylic Acids as Substrates in
Homogeneous Catalysis



Ever increasing attention is being paid to transition-metal catalytic methods in which carboxylic acid derivatives act as substrates. Examples to be presented in this Review include the syntheses of

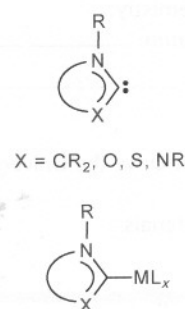
esters, vinyl esters, biaryls, vinyl arenes, aldehydes, and ketones. The importance of these methods, especially in the context of sustainable synthetic chemistry, will be discussed.

Heterocyclic Carbenes

F. E. Hahn,* M. C. Jahnke — 3122–3172

Heterocyclic Carbenes: Synthesis and
Coordination Chemistry

Carbene chameleons: Heterocyclic carbenes (see scheme) have gained great importance in synthetic organic and organometallic chemistry. The variation of the ring size and of the heteroatoms allows the properties of the carbenes and their metal complexes to be fine-tuned of over a wide range.



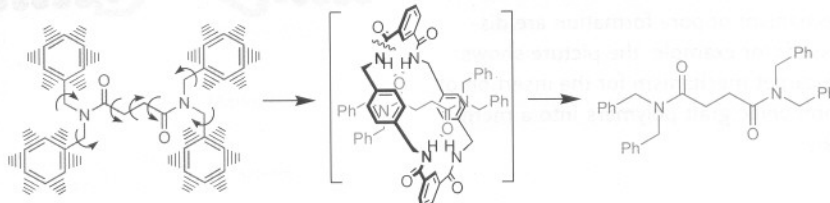
Communications

Conformational Control

A. M. Rijs, B. O. Crews, M. S. de Vries,*
J. S. Hannam, D. A. Leigh,* M. Fanti,
F. Zerbetto,* W. J. Buma* — 3174–3179



Shaping of a Conformationally Flexible
Molecular Structure for Spectroscopy



Chaperones for wild molecules: A molecule's conformational flexibility can be eliminated by enclosing it with a macrocyclic mold as a [2]rotaxane (see picture) that forces it into a specific shape. After

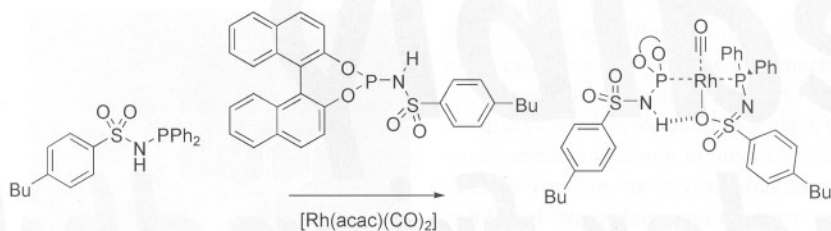
rapid cooling, the mold is removed with a laser pulse. Through this process, the molded molecule becomes a suitable candidate for high-resolution electronic excitation spectroscopy.

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*, Wiley-VCH, 111 River Street, Hoboken, NJ 07030. Annual subscription price for institutions: US\$ 7225/6568 (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.



Adapt to react: METAMORPhos ligands are a class of flexible and adaptive hydrogen-bonded multidentate sulfonamide-based phosphorus ligands. Selective formation of complexes with two different METAMORPhos ligands (see scheme)

that display unusual kinetic behavior leads to the proposal of a new mechanism. These complexes are highly reactive and enantioselective in the rhodium-catalyzed asymmetric hydrogenation of alkenes.

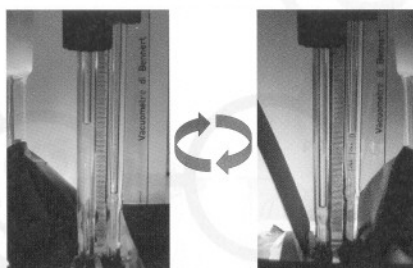
Supramolecular Ligands

F. W. Patureau, M. Kuil, A. J. Sandee, J. N. H. Reek* 3180–3183

METAMORPhos: Adaptive Supramolecular Ligands and Their Mechanistic Consequences for Asymmetric Hydrogenation



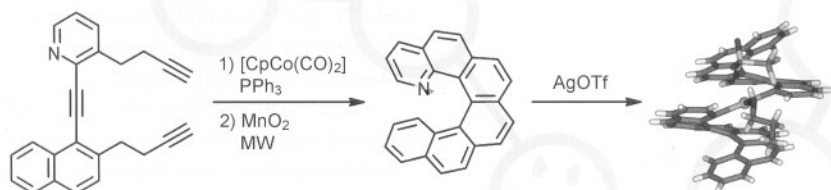
En route to a clean engine: The concentration of a chemical system containing an azobenzene derivative can be varied cyclically by light, and this variation has been exploited to produce continuous work. The cyclic concentration change of the system is the result of a light-controlled self-assembly/disassembly process.



Energy Conversion

S. Masiero,* S. Lena, S. Pieraccini, G. P. Spada 3184–3187

The Direct Conversion of Light into Continuous Mechanical Energy by Photoreversible Self-Assembly: A Prototype of a Light-Powered Engine



The taming of the screw: The Co^I-catalyzed cyclotrimerization of triynes and microwave (MW) assisted aromatization with MnO₂ are central to the practical synthesis of diaza[5]helicene and aza[6]helicenes. The aza[6]helicene racemates

have been resolved, the absolute configuration of the enantiomers assigned, the energy barriers to racemization determined, and X-ray structures of their Ag complexes obtained (see picture; Cp = C₅H₅, OTf = triflate).

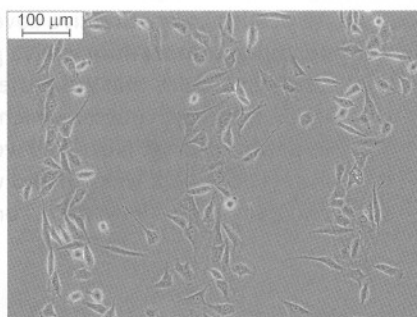
Helical Structures

J. Míšek, F. Teplý, I. G. Stará,* M. Tichý, D. Šaman, I. Čisářová, P. Vojtíšek, I. Stárý* 3188–3191

A Straightforward Route to Helically Chiral N-Heteroaromatic Compounds: Practical Synthesis of Racemic 1,14-Diaza[5]helicene and Optically Pure 1- and 2-Aza[6]helicenes



Restrained potential: A caged cyclic peptide attached to a surface is able to trigger cell attachment to the surface with spatiotemporal definition upon exposure to light ($\lambda = 351$ nm). The peptide shows no integrin-binding activity in its caged form, but mediates cell adhesion effectively after irradiation (see optical microscopy image of cells on a surface irradiated through a mask in bands 100 μ m in width).

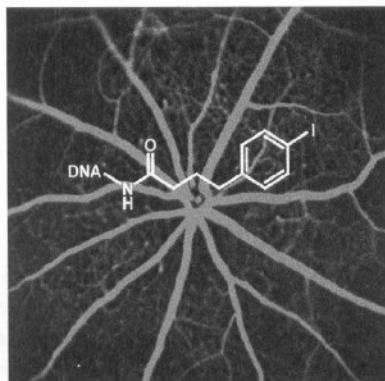


Cell-Surface Interactions

S. Petersen, J. M. Alonso, A. Specht, P. Duodu, M. Goeldner, A. del Campo* 3192–3195

Phototriggering of Cell Adhesion by Caged Cyclic RGD Peptides





Seeing eye to eye: Plasma-protein binding is effective in improving the pharmacokinetic properties of otherwise short-lived molecules. One compound in a class of small portable albumin binders can be used to improve the in vivo circulatory half-life of two widely used contrast agents. It improves the imaging performance of fluorescein in angiographic analysis of the retina of mice (see picture).

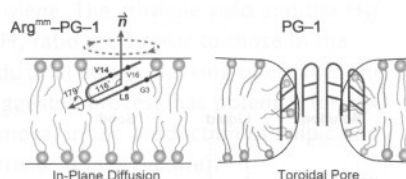
Protein Binding

C. E. Dumelin, S. Trüssel, F. Buller, E. Trachsel, F. Bootz, Y. Zhang, L. Mannocci, S. C. Beck, M. Drumea-Mirancea, M. W. Seeliger, C. Baltes, T. Müggler, F. Kranz, M. Rudin, S. Melkko, J. Scheuermann, D. Neri* **3196–3201**

A Portable Albumin Binder from a DNA-Encoded Chemical Library



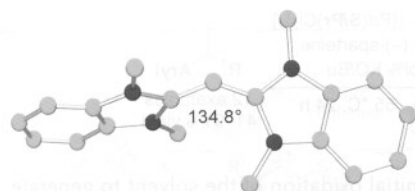
Barreling through: Guanidinium–phosphate hydrogen bonding significantly affects the structure and activity of the antimicrobial peptide PG-1. Solid-state NMR data show that a mutant of PG-1, having dimethylated Arg residues, adopts an in-plane orientation, interfacial location, and fast uniaxial motion around the membrane normal (see scheme). The less active mutant thus disrupts the membrane by in-plane diffusion, in contrast to the more active wild-type PG-1, which forms immobile transmembrane β -barrels to cause toroidal-pore membrane defects.



Transmembrane peptides

M. Tang, A. J. Waring, R. I. Lehrer, M. Hong* **3202–3205**

Effects of Guanidinium–Phosphate Hydrogen Bonding on the Membrane-Bound Structure and Activity of an Arginine-Rich Membrane Peptide from Solid-State NMR Spectroscopy



Pushed to the limit: Pushing C=C π bonds to the breaking point by using a push–push substitution pattern forces allenes to bend (see structure; C light blue, N dark blue). An acyclic allene featuring a C=C=C bond angle of 134.8° has been isolated in which the typically sp -hybridized central carbon atom approaches a configuration that has two lone pairs of electrons, and acts as a very strong η^1 -donor ligand for transition metals.

Bent Allenes

C. A. Dyker, V. Lavallo, B. Donnadieu, G. Bertrand* **3206–3209**

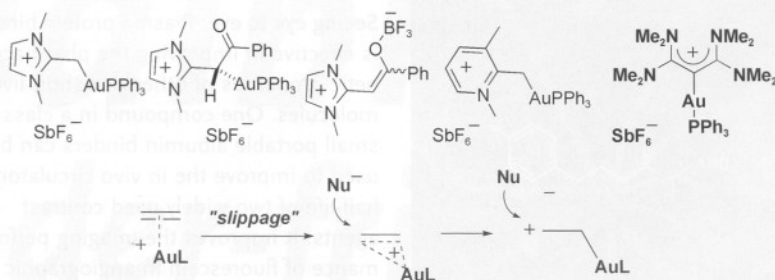
Synthesis of an Extremely Bent Acyclic Allene (A “Carbodicarbene”): A Strong Donor Ligand

Ligand Design

A. Fürstner,* M. Alcarazo, R. Goddard,
C. W. Lehmann — 3210–3214



Coordination Chemistry of
Ene-1,1-diamines and a Prototype
“Carbodicarbene”



Carbophilic Lewis acids can polarize a coordinated π -bond by a slippage mechanism. A series of stable ylid- or enolate gold complexes of ene-1,1-diamines not only emulate this property, but also reveal the exceptional donor capacity

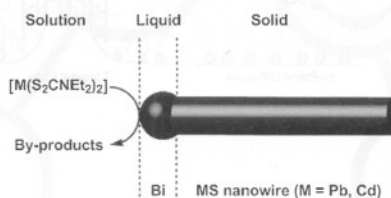
of such electron-rich olefin ligands. Moreover, the first metal complex of a tetraaminoallene is reported, which features a prototype “carbodicarbene” ligand bound to a transition-metal template.

Nanowire Growth

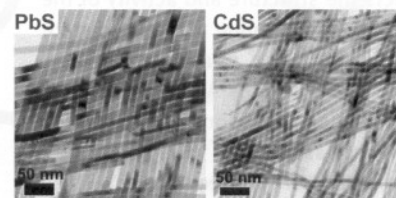
J. Sun, W. E. Buhro* — 3215–3218



The Use of Single-Source Precursors for the Solution–Liquid–Solid Growth of Metal Sulfide Semiconductor Nanowires



All wired up! High-quality colloidal PbS and CdS nanowires were grown from Bi nanoparticles by the solution–liquid–solid (SLS) mechanism. The single-source-pre-



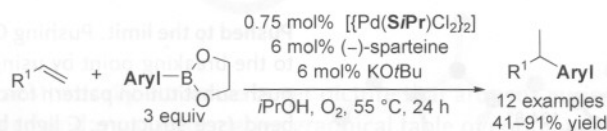
cursor strategy could provide a general approach for the synthesis of colloidal semiconductor nanowires.

Palladium Catalysis

Y. Iwai, K. M. Gligorich,
M. S. Sigman* — 3219–3222

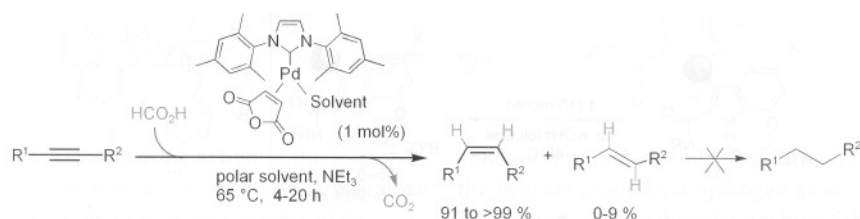


Aerobic Alcohol Oxidation Coupled to Palladium-Catalyzed Alkene Hydroarylation with Boronic Esters



An oxidation exercise: An aerobic alcohol oxidation coupled with a regioselective palladium-catalyzed reductive functionalization of styrenes and arylboronic esters has been developed (see scheme). The mechanism is thought to proceed by

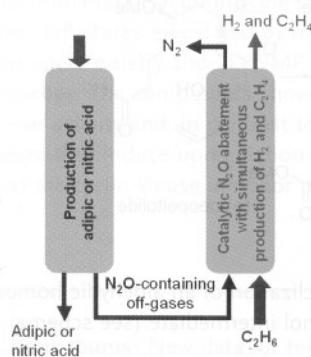
initial oxidation of the solvent to generate a Pd^{II} -hydride species, which subsequently reacts with the alkene and arylboronic ester to ultimately generate a new C–C bond.



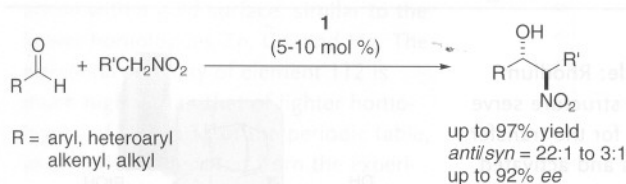
Beyond Lindlar and without hydrogen:

Transfer hydrogenation of internal alkynes catalyzed by a palladium(0) catalyst containing an N-heterocyclic carbene ligand gives Z alkenes without over-reduction to alkanes (see scheme). Contrary to most

transfer hydrogenations, ketones are not reduced. As such, this is the first catalyst that shows excellent stereo- and chemoselectivity for the semihydrogenation of alkynes without the need for hydrogen gas.

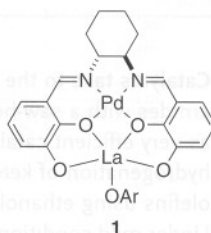


Chemicals come clean: Calcium oxide doped with small amounts of sodium oxide is used as catalyst in the abatement of N₂O by ethane to produce H₂ and ethylene. The ethylene yield and the H₂/C₂H₄ ratio are similar to those in the industrial steam cracking of ethane. The suggested process has potential for N₂O removal in the production of adipic and nitric acid (see picture).



Two metals in a pod: The combination of Pd and La with a dinucleating Schiff base was developed for *anti* selectivity in the catalytic asymmetric nitroaldol reaction

(see scheme). Short syntheses of β -adrenoceptor agonists by using the heterobimetallic catalyst are presented.



Transfer Hydrogenation

P. Hauwert, G. Maestri, J. W. Sprengers, M. Catellani, C. J. Elsevier* - 3223–3226

Transfer Semihydrogenation of Alkynes Catalyzed by a Zero-Valent Palladium N-Heterocyclic Carbene Complex

Environmental Chemistry

E. V. Kondratenko,*
O. Ovsitser - 3227–3229

Catalytic Abatement of Nitrous Oxide Coupled with Selective Production of Hydrogen and Ethylene

Nitroaldol Reaction

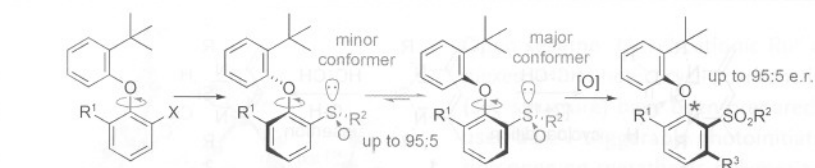
S. Handa, K. Nagawa, Y. Sohtome, S. Matsunaga,*
M. Shibasaki* - 3230–3233

A Heterobimetallic Pd/La/Schiff Base Complex for *anti*-Selective Catalytic Asymmetric Nitroaldol Reactions and Applications to Short Syntheses of β -Adrenoceptor Agonists

Atropisomeric Ethers

J. Clayden,* C. P. Worrall, W. J. Moran, M. Helliwell - 3234–3237

Enantioselective Synthesis of an Atropisomeric Diaryl Ether



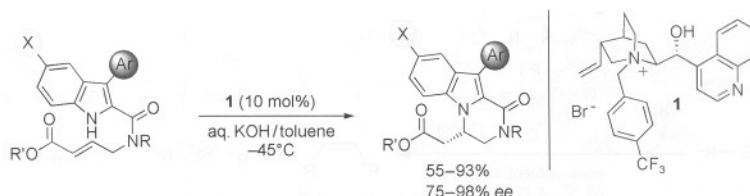
Twisted ethers: Introduction of a bulky alkylsulfinyl substituent *ortho* to the C–O axis of a diaryl ether imposes a powerful conformational preference (see scheme). The preference persists upon oxidation of the sulfoxide to a sulfone, leading to

dynamic thermodynamic resolution of the atropisomeric ether. This is the first enantioselective synthesis of an atropisomeric diaryl ether not forming part of a macrocyclic ring.

Asymmetric Catalysis

M. Bandini,* A. Eichholzer, M. Tragni,
A. Umani-Ronchi* **3238–3241**

-  Enantioselective Phase-Transfer-Catalyzed Intramolecular Aza-Michael Reaction: Effective Route to Pyrazino-Indole Compounds



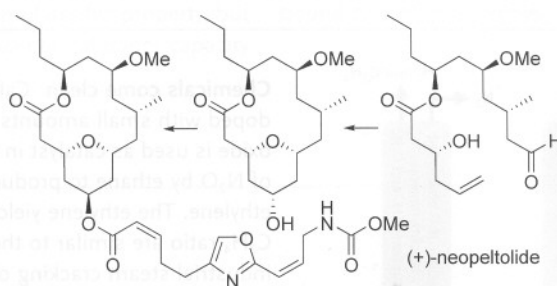
Producing polycycles: A mild and direct stereocontrolled route to pharmacologically active pyrazino-indol-1-ones has been developed. The optimal phase-transfer conditions provide variously

functionalized ring-closed compounds in high chemical and optical yields (see scheme; X = H, F, Cl, Me, OMe; Ar = Ph, β -naphthyl; R' = *t*Bu, Et, Me; R = benzyl, *para*-methoxyphenyl).

Natural Products

S. K. Woo, M. S. Kwon,
E. Lee* **3242–3244**

-  Total Synthesis of (+)-Neopeltolide by a Prins Macrocyclization



Rings within rings: The total synthesis of (+)-neopeltolide was accomplished by employing an intramolecular Prins mac-

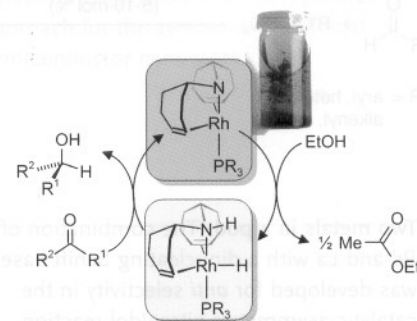
rocyclization of an aldehydic homoallylic alcohol intermediate (see scheme).

Homogeneous Catalysis

T. Zweifel, J.-V. Naubron, T. Büttner, T. Ott,
H. Grützmacher* **3245–3249**

-  Ethanol as Hydrogen Donor: Highly Efficient Transfer Hydrogenations with Rhodium(I) Amides

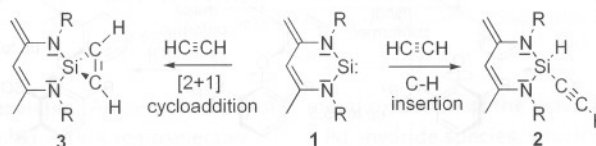
Catalysts take to the bottle: Rhodium amides with a saw-horse structure serve as very efficient catalysts for the transfer hydrogenation of ketones and activated olefins using ethanol as hydrogen donor. Under mild conditions, the corresponding alcohols and ethyl acetate are formed with high efficiency, with a turnover frequency above 500 000 h⁻¹.



N-Heterocyclic Silylenes

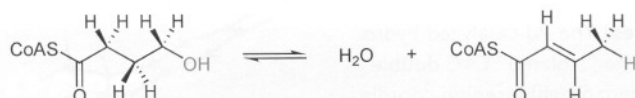
S. Yao, C. van Wüllen, X.-Y. Sun,
M. Driess* **3250–3253**

-  Dichotomic Reactivity of a Stable Silylene toward Terminal Alkynes: Facile C–H Bond Insertion versus Autocatalytic Formation of Silacycloprop-3-ene



Jekyll and Hyde: Stable silylene **1** reacts readily with acetylene at room temperature to give 1,1-adduct **2**, whereas at -78°C only silacycloprop-3-ene **3** is formed. Once **3** is present in the reaction mixture, it autocatalyzes its own genera-

tion even at room temperature. Both the facile silylene C–H bond insertion for terminal alkynes and the autocatalytic formation of silacycloprop-3-enes are unprecedented. R = 2,6-*i*Pr₂C₆H₃.



The stereospecific action of the microbial enzyme 4-hydroxybutyryl-CoA dehydratase on the three prochiral centers of its substrate 4-hydroxybutyryl-CoA can now be described as *anti* elimination of the 2*Re* and 3*Si* hydrogen atoms with retention of

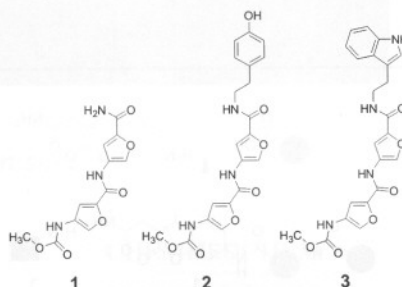
configuration during the substitution of the hydroxy group by a hydrogen atom. The results confirm the relationship of the dehydratase to acyl-CoA dehydrogenases and the view that the Fe_4S_4 cluster acts as a Lewis acid.

Enzyme Mechanisms

P. Friedrich, D. J. Darley, B. T. Golding, W. Buckel* 3254–3257

The Complete Stereochemistry of the Enzymatic Dehydration of 4-Hydroxybutyryl Coenzyme A to Crotonyl Coenzyme A

Drugs from the sea: Three new netropsin-type antibiotics (**1–3**) with a hitherto unknown furan core structure have been isolated from marine actinomycete strains and their structures elucidated by means of mass spectrometry and 2D NMR spectroscopy. The compounds show antitumor activity and, in contrast to netropsin, they induce upregulation of p53 and the cyclin kinase inhibitor p21.

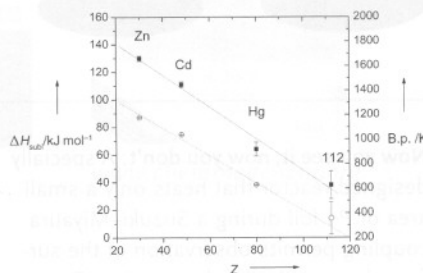


Marine Natural Products

K. Schneider, S. Keller, F. E. Wolter, L. Röglin, W. Beil, O. Seitz, G. Nicholson, C. Bruntner, J. Riedlinger, H.-P. Fiedler*, R. D. Süssmuth* 3258–3261

Proximicins A, B, and C—Antitumor Furan Analogues of Netropsin from the Marine Actinomycete *Verrucosisspora* Induce Upregulation of p53 and the Cyclin Kinase Inhibitor p21

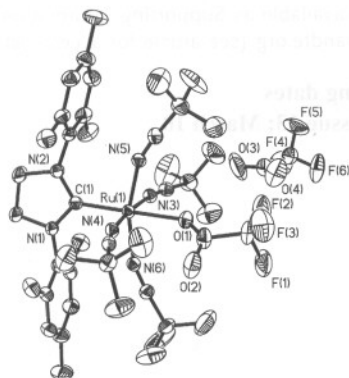
Every atom counts: New data for the adsorption chromatographic behavior of single atoms of element 112 confirm a metallic character involved in their interaction with a gold surface, similar to the lighter homologues Zn, Cd, and Hg. The elemental volatility of element 112 is much higher than that of lighter homologues of Group 12 of the periodic table, as empirically deduced from the experimental results.



Transactinides

R. Eichler*, N. V. Aksenov, A. V. Belozero, G. A. Bozhikov, V. I. Chepigin, S. N. Dmitriev, R. Dressler, H. W. Gäggeler, A. V. Gorshkov, M. G. Itkis, F. Haenssler, A. Laube, V. Y. Lebedev, O. N. Malyshev, Y. T. Oganessian, O. V. Petrushkin, D. Piguet, A. G. Popeko, P. Rasmussen, S. V. Shishkin, A. A. Serov, A. V. Shutov, A. I. Svirikhin, E. E. Tereshatov, G. K. Vostokin, M. Wegrzecki, A. V. Yereinim 3262–3266

Thermochemical and Physical Properties of Element 112



Open sesame: Novel cationic Ru^{II} complexes with N-heterocyclic carbene ligands (see structure) have been prepared and used as UV-triggerable photoinitiators for ring-opening metathesis polymerization. They may be used for the high-yield synthesis of bulk polymers as well as for surface functionalization. Laser pulse radiolysis and NMR spectroscopy experiments supported by quantum chemical calculations give insight into the initiation mechanism.

Photochemical ROMP

D. Wang, K. Wurst, W. Knolle, U. Decker, L. Prager, S. Naumov, M. R. Buchmeiser* 3267–3270

Cationic Ru^{II} Complexes with N-Heterocyclic Carbene Ligands for UV-Induced Ring-Opening Metathesis Polymerization

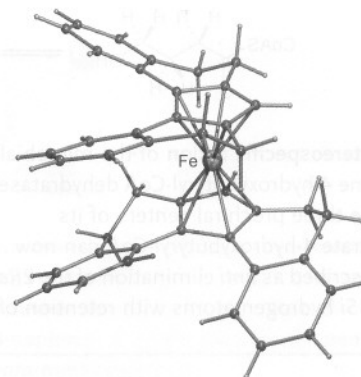
Metalloenes

F. Pammer, Y. Sun, M. Pagels,
D. Weismann, H. Sitzmann,
W. R. Thiel* ————— **3271–3274**



Dibenzo[*c,g*]fluorenyliron: An
Organometallic Relative of Pentahelicene

Close relatives! The Pd-catalyzed hydrogenation of the “isolated” C=C double bonds of dibenzo[*c,g*]fluorene coordinated to an Fe^{II} center confirms that the electronic structure of this ligand in organometallic compounds is related to that of cyclopentadienide. The resulting 3,4,3',4'-tetrahydrodibenzo[*c,g*]fluorene is a new chiral cyclopentadienide ligand (see picture for the molecular structure of the Fe complex).

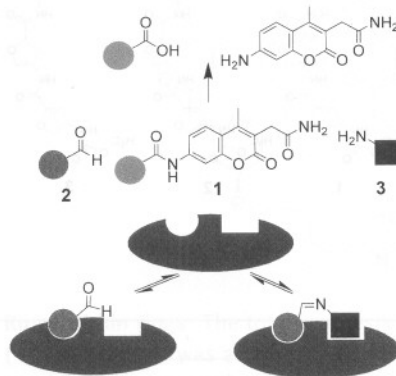


Medicinal Chemistry

M. F. Schmidt, A. Isidro-Llobet,
M. Lisurek, A. El-Dahshan, J. Tan,
R. Hilgenfeld,
J. Rademann* ————— **3275–3278**



Sensitized Detection of Inhibitory
Fragments and Iterative Development of
Non-Peptidic Protease Inhibitors by
Dynamic Ligation Screening



A potential anti-SARS drug has been developed by dynamic ligation screening (DLS), by which nucleophilic fragments are directed to the protein's active site by reversible reaction with an aldehyde inhibitor. Their inhibitory effect is detected by competition with a fluorogenic enzyme substrate. With this concept, low-affinity fragments binding specifically to the active site are quickly identified in a functional enzyme assay.

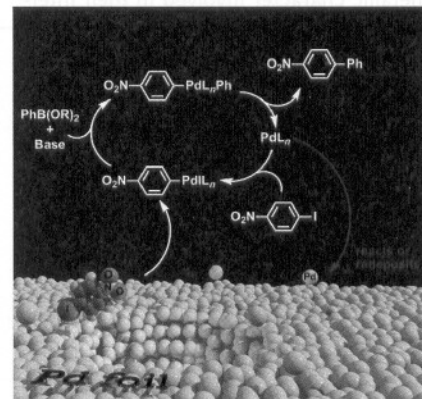
Palladium Catalysis

S. MacQuarrie, J. H. Horton, J. Barnes,
K. McEleney, H.-P. Looock,
C. M. Crudden* ————— **3279–3282**



Visual Observation of Redistribution and
Dissolution of Palladium during the
Suzuki–Miyaura Reaction

Now you see it, now you don't: A specially designed reactor that heats only a small area of Pd foil during a Suzuki–Miyaura coupling permits observation of the surface changes during the reaction. Dissolution of Pd occurs only in the heated zone, and only in the presence of aryl iodide, whereas deposition of Pd occurs preferentially on the unheated zones adjacent to the reactive zone. SEM and XPS are employed to probe the surface before and after reaction.



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).

The issues for March 2008 appeared online on the following dates

Issue 10: February 15. • Issue 11: February 22. • Issue 12: March 3. • Issue 13: March 10

Sources

Product and Company Directory

You can start the entry for your company in "Sources" in any issue of *Angewandte Chemie*.

If you would like more information, please do not hesitate to contact us.

Wiley-VCH Verlag – Advertising Department

Tel.: 0 62 01 - 60 65 65

Fax: 0 62 01 - 60 65 50

E-Mail: MSchulz@wiley-vch.de

Service

Spotlights Angewandte's

Sister Journals 3082–3083

Keywords 3284

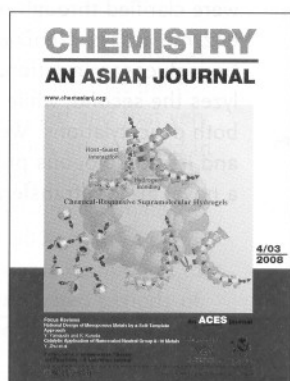
Authors 3285

Vacancies 3085

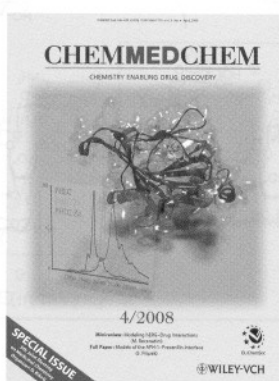
Sources A31

Preview 3287

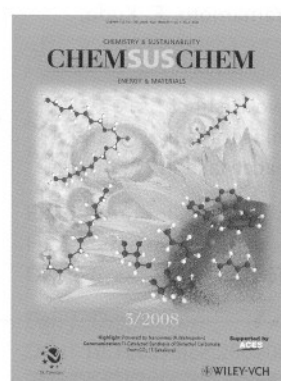
For more Information see:



www.chemasianj.org



www.chemmedchem.org



www.chemsuschem.org

Corrigendum

The last sentence in the left column on page 8802 of this Communication should read: "These two β -lactam-resistant bacterial cells contained different kinds of β -lactamases (TEM-1 in plasmid encoded *E. coli* B121 and ESBL; SHV-18 in *K. pneumoniae*)."

In the Supporting Information on page 1, the enzyme activity was not indicated correctly. The third sentence should read: " β -lactamases were obtained from Biologics Process Development, Inc, CA, USA and Sigma-Aldrich (6–18 units/mg corresponds to the amount of enzyme which hydrolyzes 1 μ mol of benzylpenicillin per minute at pH 7.0 and 25 °C or 50–150 units/mg protein by using cephaloridine)."

A Simple and Specific Assay for Real-Time Colorimetric Visualization of β -Lactamase Activity by Using Gold Nanoparticles

R. Liu, R. Liew, J. Zhou,
B. Xing* 8799–8803

Angew. Chem. Int. Ed. 2007, 46

DOI 10.1002/anie.200702773

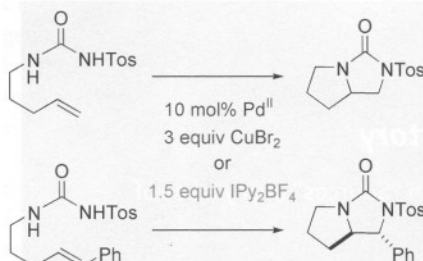
Amination

K. Muñoz,* C. H. Hövelmann,
E. Campos-Gómez, J. Barluenga,*
J. M. González, J. Streuff, M. Nieger

Intramolecular Diamination of Alkenes
with Palladium(II)/Copper(II) Bromide
and IPy_2BF_4 : The Role of Halogenated
Intermediates

Chem. Asian J.

DOI: 10.1002/asia.200700373



Complementary procedures for the diamination of terminal and internal alkenes with tethered ureas and related groups as the nitrogen source provide access to cyclic urea, sulfamide, and guanidine derivatives. Opposite stereochemical pathways were identified for the diamination of terminal alkenes with IPy_2BF_4 and under palladium catalysis with the reoxidant CuBr_2 , but identical ones were found for internal alkenes.

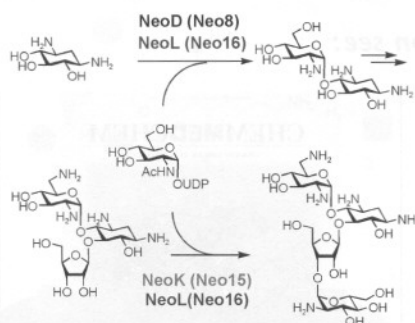
Biosynthesis

K. Yokoyama, Y. Yamamoto, F. Kudo,
T. Eguchi*

Involvement of Two Distinct
N-Acetylglucosaminyltransferases and a
Dual-Function Deacetylase in Neomycin
Biosynthesis

ChemBioChem

DOI: 10.1002/cbic.200700717



A new enzyme family: The glycosylation steps in the biosynthesis of neomycin were clarified through recombinant enzyme assays. NeoD catalyzes the first transglucosamylation, and NeoK catalyzes the second, while NeoL catalyzes both deacetylations. We found that NeoK and its homologous proteins constitute a novel glycosyltransferase family.

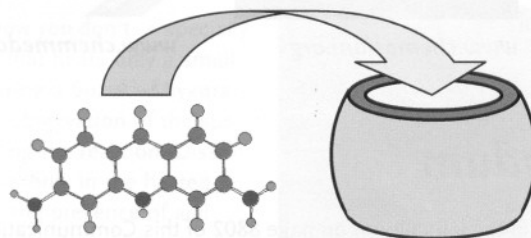
Host–Guest Complexes

P. Montes-Navajas, A. Corma,
H. Garcia*

Complexation and Fluorescence of
Tricyclic Basic Dyes Encapsulated in
Cucurbiturils

ChemPhysChem

DOI: 10.1002/cphc.200700735



Encapsulating cucurbiturils: Tricyclic dyes can be inserted into cucurbiturils to form host–guest complexes (see figure). These complexes vary in stoichiometry,

depending on the cucurbituril involved. The stoichiometry of the complex plays a major role in the photophysical behaviour of the dyes.

Receptor Antagonist

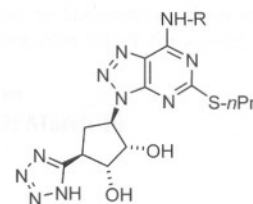
H. Ye, C. Chen, H.-C. Zhang,*
B. Haertlein, T. J. Parry, B. P. Damiano,
B. E. Maryanoff*

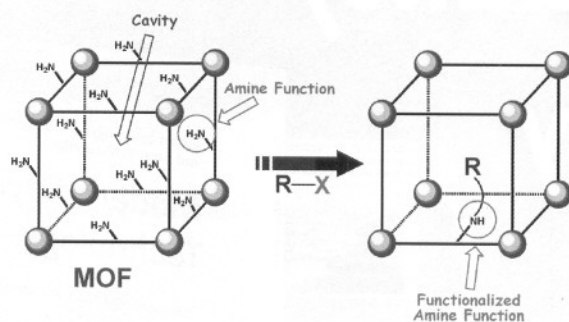
Carba-nucleosides as Potent Antagonists
of the Adenosine 5'-Diphosphate (ADP)
Purinergic Receptor (P2Y_{12}) on Human
Platelets

ChemMedChem

DOI: 10.1002/cmdc.200700310

Antagonizing a key platelet purinergic receptor. The wide clinical use of clopidogrel has highlighted the importance of platelet ADP receptor (P2Y_{12}) antagonists for preventing adverse cardiovascular events. We synthesized a series of novel carba-nucleosides and examined their usefulness as P2Y_{12} antagonists. Some tetrazole derivatives were high-affinity receptor antagonists and potent inhibitors of human platelet aggregation.





A new metal–organic framework with amino groups oriented inside the pores has been synthesized. The post-synthetic modification of the cavities in this MOF with two different functionalities is for

the first time clearly evidenced by X-ray crystallography. The cavities of the MOF can be transformed without modifying the original 3D structure of the MOF.

Post-Synthetically Modified MOFs

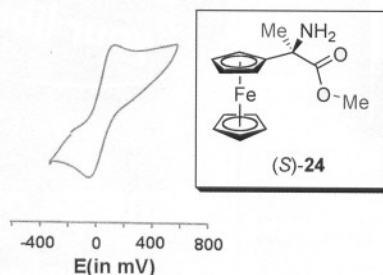
J. S. Costa, P. Gamez,* C. A. Black, O. Roubeau, S. J. Teat, J. Reedijk

Chemical Modification of a Bridging Ligand Inside a Metal–Organic Framework while Maintaining the 3D Structure

Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200800002

Are α -ferrocenyl- α -amino esters stable? The answer is yes provided that the α -carbon is tetrasubstituted and that very mild reaction conditions are involved in their generation. Thus, the (*S*) enantiomer of methyl α -ferrocenylalaninate **24**, prepared in around 90% *ee* from 2-ferrocenylpropene, is a stable compound that can be stored for prolonged periods of time without appreciable decomposition.



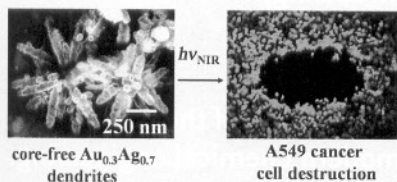
Ferrocenyl Amino Acids

R. M. Moreno, M. Catasús, C. López, A. Moyano*

Enantiocontrolled Preparation of the First Stable α -Ferrocenylalanine Derivatives

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200800029



Gold–silver therapy: Core-free $\text{Au}_x\text{Ag}_{1-x}$ nanostructured dendrites have been developed that show absorption in the NIR region, exhibiting potential as photothermal therapeutic agents. An effective photothermal capability was found in hollow $\text{Au}_{0.3}\text{Ag}_{0.7}$ nanostructured dendrites treated with A549 lung cancer cells.

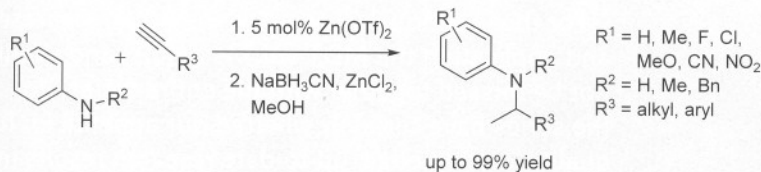
Gold–Silver Nanostructures

K.-W. Hu, C.-C. Huang, J.-R. Hwu, W.-C. Su, D.-B. Shieh, C.-S. Yeh*

A New Photothermal Therapeutic Agent: Core-Free Nanostructured $\text{Au}_x\text{Ag}_{1-x}$ Dendrites

Chem. Eur. J.

DOI: 10.1002/chem.200800114



Zinc green: Easily available zinc salts are active and practical catalysts for the intermolecular hydroamination of terminal alkynes with anilines. The reactions proceed in the presence of $\text{Zn}(\text{OTf})_2$ with

excellent regioselectivity (> 99%) and with high yields. Moreover, difficult functional groups such as nitro and cyano substituents are tolerated by the catalyst.

Homogeneous Catalysis

K. Alex, A. Tillack, N. Schwarz, M. Beller*

General Zinc-Catalyzed Intermolecular Hydroamination of Terminal Alkynes

ChemSusChem

DOI: 10.1002/cssc.200700160

