



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:

T. J. Greshock, A. W. Grubbs, P. Jiao, J. B. Gloer, R. M. Williams*
Isolation, Structure Elucidation, and Biomimetic Total Synthesis of Versicolamide B and the Isolation of Antipodal (–)-Stephacidin A and (+)-Notoamide B from *Aspergillus versicolor* NRRL 35600

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*
Co-Reduction Colloidal Synthesis of III-V Nanocrystals: The Case of InP

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

Observation of Direct Bonds Between Carbon and Nitrogen in Si–B–N–C Ceramic After Pyrolysis at 1400 °C

Prizes of the Chemical Society of Japan (CSJ)

Molecules that Changed the World

K. C. Nicolaou, Tamsyn Montagnon

Bitter Nemesis

John Buckingham

News

3308

Books

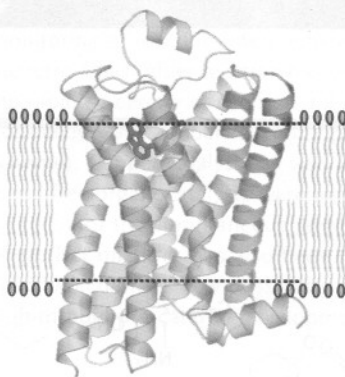
reviewed by R. E. Metternich,
P. G. Nantermet

3309

reviewed by J. I. Seeman

3310

Rational drug design is still limited for many membrane proteins. For the β_2 -adrenergic receptor, a prototype of the class A GPCR family, structures with up to 2.4-Å resolution have now been solved. The structure (see figure) shows detailed contacts of the receptor (green) with its ligand carazolol (pink), and makes possible the formulation of hypotheses for the mode of action of G-protein-coupled receptors.

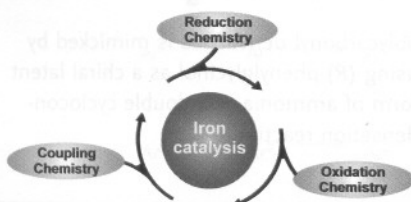


Highlights

G-Protein-Coupled Receptors

F. Hausch* 3314–3316

Betablockers at Work: The Crystal Structure of the β_2 -Adrenergic Receptor



Among the shades! With respect to its availability, low toxicity, and price, iron should be one of the most used metals in homogeneous catalysis. Surprisingly, so far the application of iron is underdeveloped in comparison with other transition metals. Some promising attempts obtained in redox reactions and coupling chemistry which nicely illustrate the potential of iron and hopefully initialize a ferric future for catalysis are highlighted.

Homogeneous Catalysis

S. Enthaler, K. Junge,
M. Beller* 3317–3321

Sustainable Metal Catalysis with Iron: From Rust to a Rising Star?

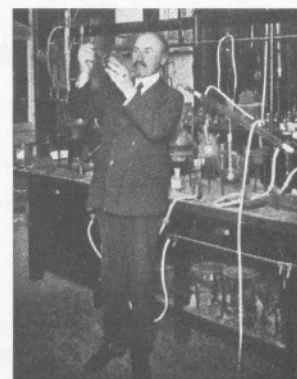
Essays

History of Science

D. Crespy,* M. Bozonnet,
M. Meier ————— 3322–3328

100 Years of Bakelite, the Material of a
1000 Uses

The beginning of the plastics age: Just over one hundred years ago, on July 13 1907, Leo H. Baekeland applied for a patent for the processing of a product that had an enormous influence on the development of our technology, and which changed our habits forever. The patent described Bakelite, the first synthetic plastic, which heralded our entrance into the plastics age.



Reviews

Pyrotechnics

G. Steinhäuser,
T. M. Klapötke* ————— 3330–3347

“Green” Pyrotechnics: A Chemists’
Challenge



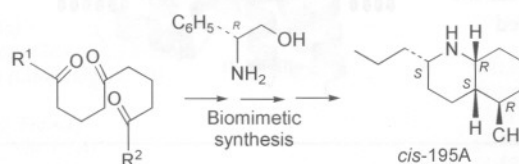
The other “dirty bombs”: Fireworks and pyrotechnic applications cause multifaceted environmental pollution. This Review gives an overview about the recent “greening” of pyrotechnics: the use of nitrogen-rich energetic materials and other strategies to avoid the production of toxic combustion products.

Communications

Biomimetic Synthesis

M. Amat,* R. Grier, R. Fabregat,
E. Molins, J. Bosch* ————— 3348–3351

A Biomimetic Enantioselective Approach
to the Decahydroquinoline Class of
Dendrobatid Alkaloids



A princely synthesis: The hypothetical key step in the biosynthesis of the decahydroquinoline dendrobatid alkaloids, such as *cis*-195A found in frogs, from 1,5-

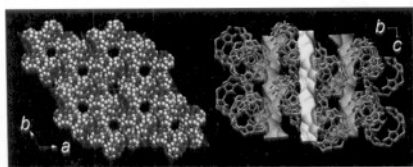
polycarbonyl derivatives is mimicked by using (*R*)-phenylglycinol as a chiral latent form of ammonia in a double cyclocondensation reaction.

For the USA and Canada:

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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.



Holey organic solid: Effective packing of the rigid macrocycle cucurbituril through C–H...O hydrogen-bonding and van der Waals interactions leads to a honeycomb-like structure with unprecedented stability and porosity. It shows extraordinary sorption properties toward gases, particularly acetylene, which are comparable or superior to those of metal–organic frameworks in terms of storage capacity.

Organic Porous Materials

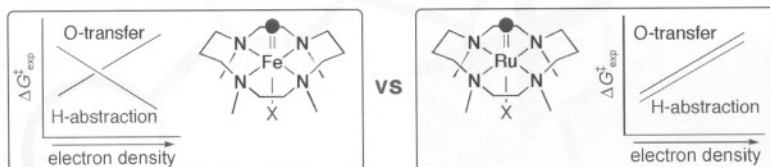
S. Lim, H. Kim, N. Selvapalam, K.-J. Kim, S. J. Cho, G. Seo,* K. Kim* **3352–3355**

Cucurbit[6]uril: Organic Molecular Porous Material with Permanent Porosity, Exceptional Stability, and Acetylene Sorption Properties

Enzyme Models

S. N. Dhuri, M. S. Seo, Y.-M. Lee, H. Hirao, Y. Wang, W. Nam,* S. Shaik* **3356–3359**

Experiment and Theory Reveal the Fundamental Difference between Two-State and Single-State Reactivity Patterns in Nonheme Fe^{IV}=O versus Ru^{IV}=O Oxidants



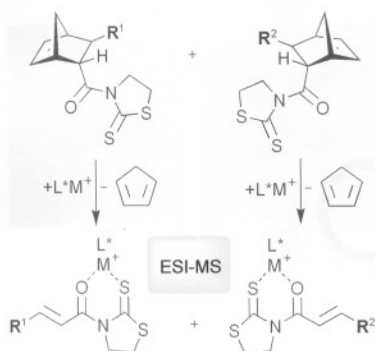
Two-state reactivity involving close triplet ground and quintet excited states is responsible for the opposite reactivity trends of Fe^{IV} oxo complexes in O-transfer and H-abstraction reactions in dependence on the electron richness of the axial

ligand X (see picture), as shown by comparison with Ru^{IV} analogues, in which both reactivities are solely governed by the electrophilicity of the complex because the quintet state is inaccessible.

Catalyst Screening (1)

A. Teichert, A. Pfaltz* **3360–3362**

Mass Spectrometric Screening of Enantioselective Diels–Alder Reactions

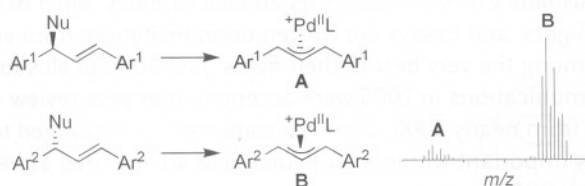


A rapid cat. scan: Mass spectrometric monitoring of reaction intermediates of the retro-Diels–Alder reaction has allowed the rapid screening of catalysts for enantioselective Diels–Alder reactions (see scheme). Copper catalysts as well as metal-free organocatalysts were tested. A protocol for the simultaneous screening of catalyst mixtures has also been developed, which offers new possibilities for high-throughput catalyst development.

Catalyst Screening (2)

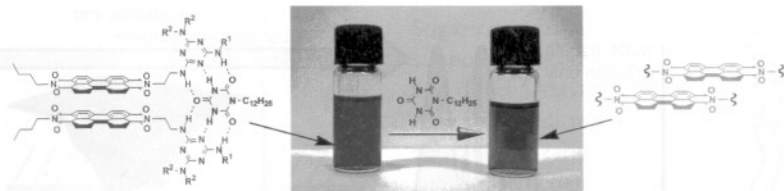
C. A. Müller, A. Pfaltz* **3363–3366**

Mass Spectrometric Screening of Chiral Catalysts by Monitoring the Back Reaction of Quasienantiomeric Products: Palladium-Catalyzed Allylic Substitution



Back to basics: The principle of microscopic reversibility is the basis of a new screening method for chiral catalysts. Monitoring the back reaction of quasi-

enantiomeric allylation products by ESI-MS reveals the intrinsic enantioselectivity of palladium catalysts in allylic substitution reactions (see scheme).



Me, myself, and dye: Core-unsubstituted perylene bisimide dyes bearing a melamine hydrogen-bonding unit link with cyanurates giving H- (red, see picture) and J-aggregates (green). In solution the

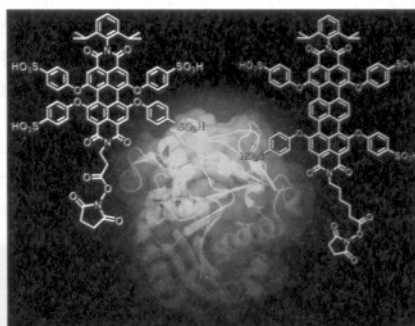
aggregates can interconvert on thermal treatment or by changing the stoichiometry. In solid films the green to red color change occurs upon scratching the surface.

Dye Assemblies

S. Yagai,* T. Seki, T. Karatsu, A. Kitamura, F. Würthner — 3367–3371

Transformation from H- to J-Aggregated Perylene Bisimide Dyes by Complexation with Cyanurates

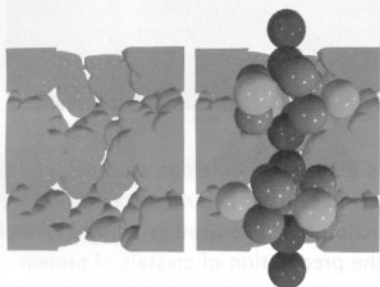
All in one: Exceptionally photostable, highly fluorescent, water-soluble, and monofunctional perylene and terrylene dyes bearing reactive groups for covalent attachment to biomolecules have been synthesized (see picture). Single-molecule enzyme tracking revealed that single enzymes could be visualized even on a substrate with fluorescent background.



Ultrastable Dyes

K. Peneva, G. Mihov, F. Nolde, S. Rocha, J. Hotta, K. Braeckmans, J. Hofkens, H. Uji-i, A. Herrmann, K. Müllen* — 3372–3375

Water-Soluble Monofunctional Perylene and Terryene Dyes: Powerful Labels for Single-Enzyme Tracking

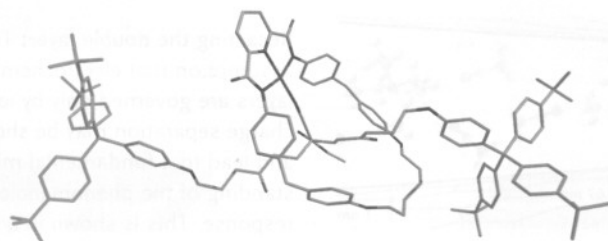


Ice one: A porous molecular crystal with guest water molecules in the channels— $[\text{La}_2\text{Cu}_3\{\text{NH}(\text{CH}_2\text{COO})_2\}_6](\text{H}_2\text{O})_n$ (see picture)—exhibits a distinct peak for the dielectric constant at 180 K ($\epsilon_r \approx 150$) with the electric field parallel to the channel direction. This crystalline compound also shows a large enhancement of ϵ_r above 250 K and a characteristic antiferroelectric hysteresis coupled with a liquid–solid transition of the guest water molecules at around 350 K.

Porous Coordination Polymers

H.-B. Cui, B. Zhou, L.-S. Long, Y. Okano, H. Kobayashi,* A. Kobayashi — 3376–3380

A Porous Coordination-Polymer Crystal Containing One-Dimensional Water Chains Exhibits Guest-Induced Lattice Distortion and a Dielectric Anomaly



Taking the Michael: Rotaxanes (see structure) and molecular shuttles are prepared in up to 99% yield by successive Pd^{II} -promoted 1,4-conjugate additions in a one-pot four-component assembly pro-

cess. This process represents the first active template reaction in which the template motif is retained in the interlocked product.

Molecular Shuttles

S. M. Goldup, D. A. Leigh,* P. J. Lusby,* R. T. McBurney, A. M. Z. Slawin — 3381–3384

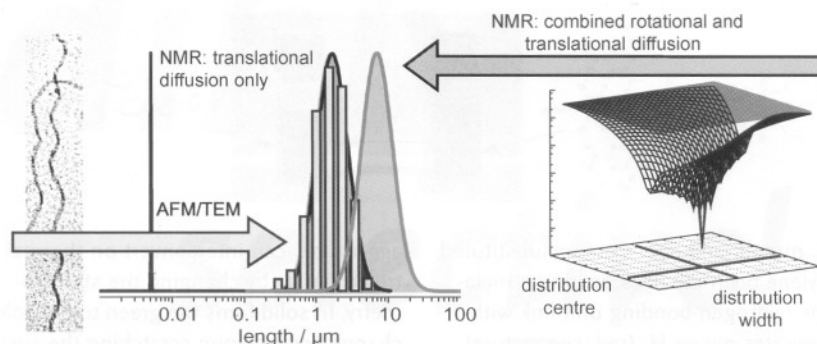
Active Template Synthesis of Rotaxanes and Molecular Shuttles with Switchable Dynamics by Four-Component Pd^{II} -Promoted Michael Additions

Amyloid Fibrils

A. J. Baldwin, S. J. Anthony-Cahill,
T. P. J. Knowles, G. Lippens,
J. Christodoulou, P. D. Barker,
C. M. Dobson* — 3385–3387



Measurement of Amyloid Fibril Length Distributions by Inclusion of Rotational Motion in Solution NMR Diffusion Measurements



Telling fibrils: Diffusion data obtained by solution NMR spectroscopy from flexible regions of amyloid fibrils for both rotational and translation diffusion combined is of similar magnitude to that measured using AFM and TEM (see picture). Fibrils

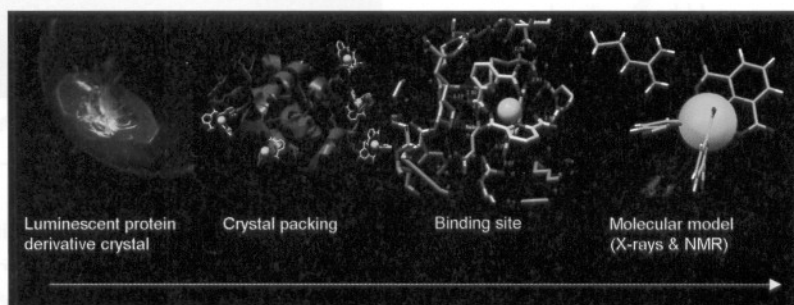
in solution are calculated to be somewhat longer on average than those deposited on surfaces for microscopy experiments, which can be partially attributed to the sensitivity of fibrils to fracture.

Protein Crystallography

G. Pompidor, A. D'Aléo, J. Vicat, L. Toupet,
N. Giraud,* R. Kahn,*
O. Maury* — 3388–3391



Protein Crystallography through Supramolecular Interactions between a Lanthanide Complex and Arginine



Crystal clear: Strong supramolecular interactions between tris(dipicolinate)-lanthanide complexes and arginine-like moieties have been evidenced by NMR chemical shift titration and X-ray diffraction analyses. Since the lanthanide atom

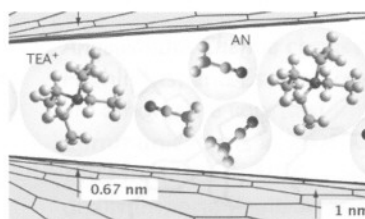
is a strong anomalous scatterer, and the complex itself is luminescent, this interaction could be used as a powerful tool in the preparation of crystals of protein derivatives with high phasing power.

Ions in Subnanometer Pores

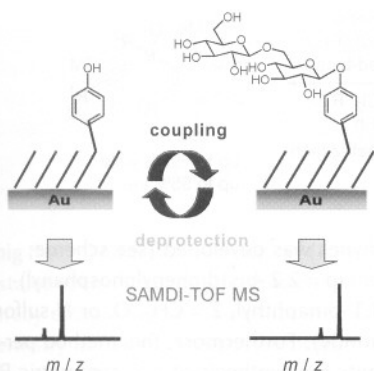
J. Chmiola, C. Largeot, P.-L. Taberna,
P. Simon, Y. Gogotsi* — 3392–3395



Desolvation of Ions in Subnanometer Pores and Its Effect on Capacitance and Double-Layer Theory



Recasting the double layer: The implicit assumption that electrochemical double layers are governed only by ion/electrode charge separation may be short-sighted and lead to a fundamental misunderstanding of the phenomenological response. This is shown in a study performed on ions confined in nanoporous carbon with pores smaller than the size of an ion surrounded by a solvation shell (see picture; TEA⁺ = tetraethylammonium, AN = acetonitrile).

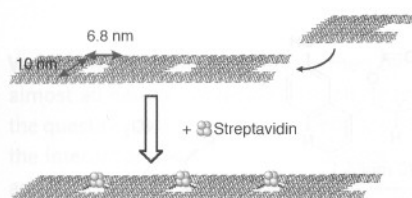


Sugar coated: A new strategy for solid-support oligosaccharide array synthesis and direct SAMDI-TOF (self-assembled monolayers for matrix-assisted laser desorption-ionization time-of-flight) mass spectrometry detection of the synthesis process is reported (see scheme). It incorporates an on-chip ligand array synthesis, a label-free detection method, and direct application to an enzymatic assay.

Microarrays

L. Ban, M. Mrksich* 3396–3399

On-Chip Synthesis and Label-Free Assays of Oligosaccharide Arrays

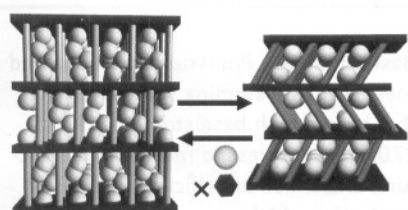


All's well: A tapelike DNA scaffold with regularly arranged nanometer-scale wells is prepared by bundling nine DNA helices into U-shaped motifs (see picture). By attaching two biotin residues at two edges of each well, just one streptavidin tetramer is size-selectively captured to form a regularly oriented streptavidin nanoarray. The "anchored" tetramers nested in the wells are stable under repetitive AFM scanning.

Protein Nanoarrays

A. Kuzuya, K. Numajiri, M. Komiyama* 3400–3402

Accommodation of a Single Protein Guest in Nanometer-Scale Wells Embedded in a "DNA Nanotape"

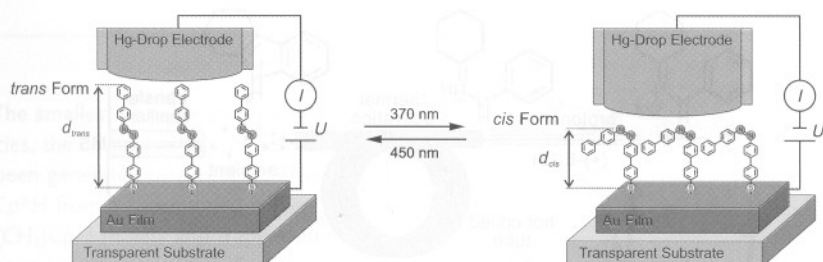


Like a sponge: Soft, three-dimensional, porous coordination frameworks $\{[Ln(tci) \cdot H_2O] \cdot 4 H_2O\}_n$ ($Ln = Ce, Gd$; $tciH_3 = \text{tris}(2\text{-carboxyethyl})\text{isocyanurate}$) were prepared from $Ln(NO_3)_3 \cdot x H_2O$ and $tciH_3$. The flexible arms and secondary functional groups of the ligand allow the framework to show spongelike dynamic behavior such as selective and stepwise adsorption, associated with single crystal to single crystal structural transformation (see scheme).

Functional Frameworks

S. K. Ghosh, S. Bureekaew, S. Kitagawa* 3403–3406

A Dynamic, Isocyanurate-Functionalized Porous Coordination Polymer



We have liftoff! Tightly packed self-assembled monolayers (SAMs) of ultra-rigid conjugated azobenzenes incorporated into a Hg-based junction undergo reversible photoisomerization (see pic-

ture). The current-voltage curves indicate that the junction operates as a current photoswitch as result of the forces expressed by the SAMs, which act as a light-powered cargo lifter.

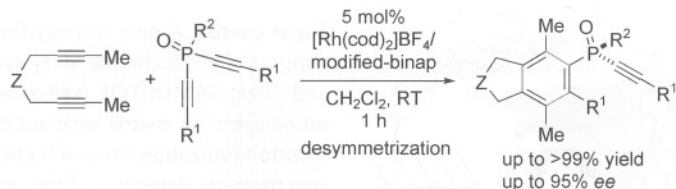
Molecular Electronics

V. Ferri, M. Elbing, G. Pace, M. D. Dickey, M. Zharnikov, P. Samorì,* M. Mayor,* M. A. Rampi* 3407–3409

Light-Powered Electrical Switch Based on Cargo-Lifting Azobenzene Monolayers

Asymmetric Catalysis

G. Nishida, K. Noguchi, M. Hirano,
K. Tanaka* — 3410–3413



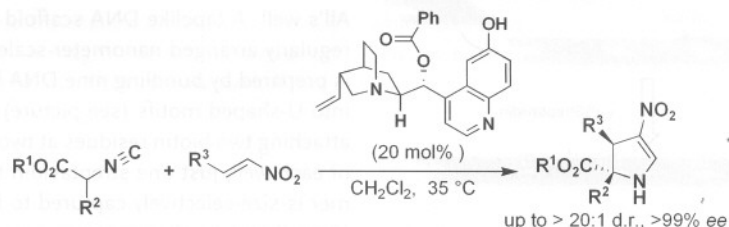
Enantioselective Synthesis of P-Stereo-
genic Alkynylphosphine Oxides by
Rh-Catalyzed [2+2+2] Cycloaddition

Two plus two plus two: An enantioselective synthesis of P-stereogenic alkynylphosphine oxides through a cationic rhodium(I)/modified-binap complex catalyzed [2+2+2] cycloaddition of symmetrical dialkynylphosphine oxides with 1,6-

diynes was developed (see scheme; binap = 2,2'-bis(diphenylphosphanyl)-1,1'-binaphthyl, Z = CH₂, O, or N-sulfonamide). Furthermore, this method permits the synthesis of a C₂-symmetric P-stereogenic bis(alkynylphosphine oxide).

Cycloaddition

C. Guo, M.-X. Xue, M.-K. Zhu,
L.-Z. Gong* — 3414–3417



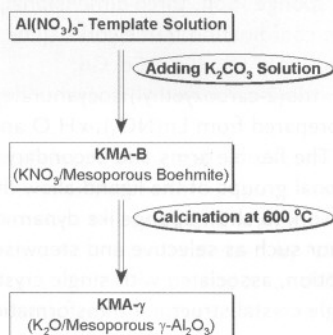
Organocatalytic Asymmetric Formal [3+2]
Cycloaddition Reaction of Isocyanoesters
to Nitroolefins Leading to Highly Optically
Active Dihydropyrroles

Closing the circle: The asymmetric [3+2] formal cycloaddition reaction of α -substituted isocyanoesters with nitroolefins is catalyzed by cinchona alkaloid derivatives

to yield 2,3-dihydropyrroles with high diastereo- and enantioselectivities (see scheme).

Mesoporous Basic Catalysts

L. B. Sun, J. Yang, J. H. Kou, F. N. Gu,
Y. Chun, Y. Wang, J. H. Zhu,*
Z. G. Zou — 3418–3421



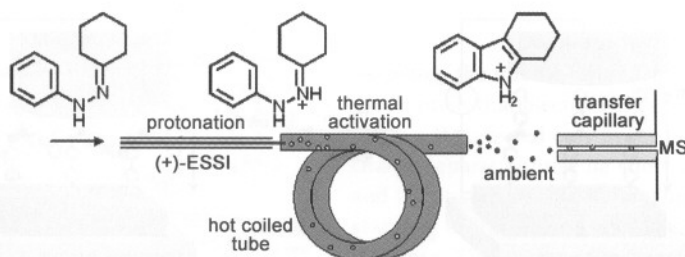
One-Pot Synthesis of Potassium-
Functionalized Mesoporous γ -Alumina:
A Solid Superbase

Basically super: Potassium-functionalized mesoporous γ -alumina solid superbases that have a high base strength (H_-) of 27.0, a well-expressed mesoporous structure, and which are efficient in the isomerization of 1-hexene are synthesized by a one-pot method. The success of this method can be ascribed to the flexible application of K₂CO₃ as a pH adjuster and close control of the calcination process (see picture).

Gas-Phase Chemistry

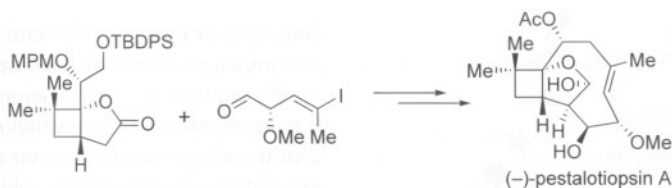
H. Chen, L. S. Eberlin, M. Nefliu,
R. Augusti, R. G. Cooks* — 3422–3425

Organic Reactions of Ionic Intermediates
Promoted by Atmospheric-Pressure
Thermal Activation



A mild-mannered process: Novel methodology, in which electrosonic spray ionization (ESSI, see schematic diagram) is used as the proton source, has been used to generate ionic reaction intermediates whose conversion into products can be

promoted by atmospheric-pressure thermal activation. Reactions performed under these mild conditions include Borsche–Drechsel cyclization, Fischer indole synthesis, and pinacol rearrangement.



A big “+”: The total synthesis of (–)-pestalotiopsin A has been achieved, thereby establishing the absolute stereochemistry of natural (+)-pestalotiopsin A (see scheme). The synthesis features a

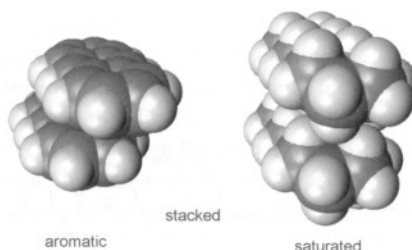
[2+2] cycloaddition, an aldol reaction, and an intramolecular Nozaki–Hiyama–Kishi reaction to construct the (*E*)-cyclononene ring.

Natural Products

K. Takao, N. Hayakawa, R. Yamada,
T. Yamaguchi, U. Morita, S. Kawasaki,
K. Tadano* 3426–3429

Total Synthesis of (–)-Pestalotiopsin A

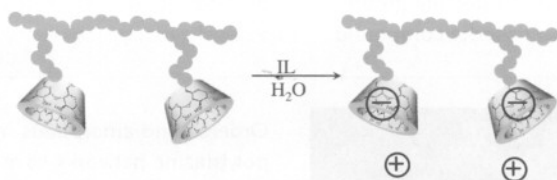
Van der Waals complexes are formed by almost all neutral molecules, which begs the question as to what is so special about the interaction between parallel stacks of arenes. The term π – π stacking interactions should primarily be used as a structural descriptor for unsaturated systems. Genuine π – π interactions are caused by specific electron correlations that are only at work for short intermolecular distances.



Stacking Interactions

S. Grimme* 3430–3434

Do Special Noncovalent π – π Stacking Interactions Really Exist?



A fine host: Copolymers from methacrylated β -cyclodextrin and *N*-isopropylacrylamide form inclusion complexes with anions of ionic liquids (IL; see picture). Complex formation alters the solubility properties of the copolymer, leading to

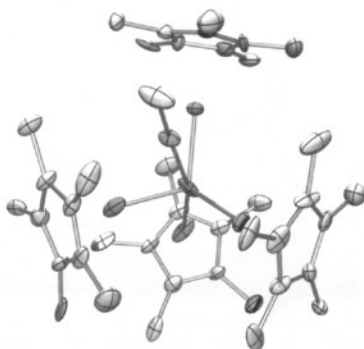
pseudopolyelectrolytes. Turbidity and dynamic light scattering measurements show that, depending on the anion, expansion or contraction of the polymer chain takes place owing to electrostatic effects.

Cyclodextrin Complexes

S. Amajjahe, S. Choi, M. Munteanu,
H. Ritter* 3435–3437

Pseudopolyanions Based on Poly(NIPAAM-*co*- β -Cyclodextrin Methacrylate) and Ionic Liquids

The smallest possible gallium alkyl species, the otherwise elusive GaCH_3 , has been generated by protolytic cleavage of Cp^*H from a coordinated a $\{\text{Ga}(\text{CH}_3)\text{Cp}^*\}$ moiety and trapped in the title complex (see structure; C white, Ga blue, Rh brown). The counterintuitive shortening of the $\text{Rh}–\text{GaCH}_3$ bond upon adduct formation with pyridine illustrates that bond lengths alone are insufficient for the assignment of bond order.



Gallium Ligands

T. Cadenbach, C. Gemel, D. Zacher,
R. A. Fischer* 3438–3441

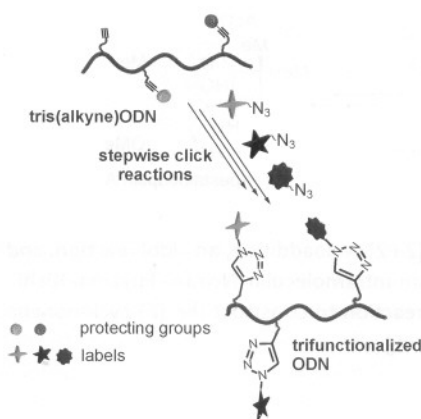
Methylgallium as a Terminal Ligand in $[(\text{Cp}^*\text{Ga})_4\text{Rh}(\text{GaCH}_3)]^+$

DNA Labeling

P. M. E. Gramlich, S. Warncke, J. Gierlich,
T. Carell* 3442–3444



Click–Click–Click: Single to Triple
Modification of DNA

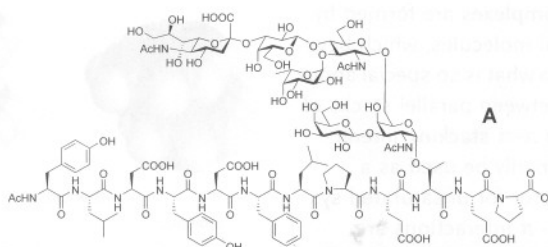


One, two, or three: An efficient, modular, and robust protocol has been developed for the multiple functionalization of DNA. It is based on the click reaction of azides with the alkyne substituents on an oligodeoxyribonucleotide (ODN), which was prepared by the standard phosphoramidite method (see scheme). ODNs can thus be labeled with two sensitive molecules, and even triple modification is possible.

Total Synthesis

K. Baumann, D. Kowalczyk,
H. Kunz* 3445–3449

Total Synthesis of the Glycopeptide
Recognition Domain of the P-Selectin
Glycoprotein Ligand 1



Block glycosylation of a T antigen–threonine conjugate with a sialyl Lewis^x trichloroacetimidate was used to synthesize a sialyl Lewis^x–T antigen–threonine building block. Selective protecting-group manipulations furnished a compound

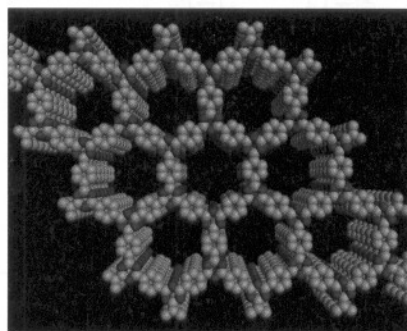
with exclusively acetyl-protected functions in the carbohydrate portion; this intermediate is sufficiently acid-stable that it is applicable to the solid-phase synthesis of binding site **A** of the P-selectin ligand PSGL-1.

Microporous Polymers

P. Kuhn,* M. Antonietti,
A. Thomas* 3450–3453



Porous, Covalent Triazine-Based
Frameworks Prepared by Ionothermal
Synthesis



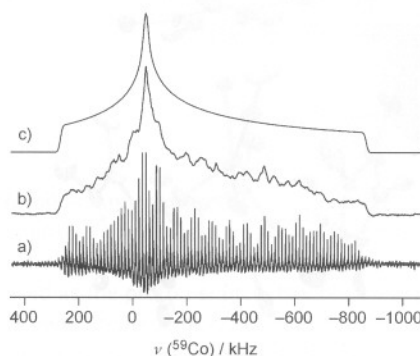
Ordered and amorphous microporous polytriazine networks have been obtained from the trimerization of nitriles in a ZnCl₂ melt at 400 °C (see structure of the polymer formed from 1,4-dicyanobenzene; C gray, N blue). The materials are high-performance polymers with very large surface areas and could find applications in gas storage, as sensors, or catalyst supports.

Ultrahigh-field NMR Spectroscopy

P. Crewdson, D. L. Bryce,* F. Rominger,
P. Hofmann* 3454–3457

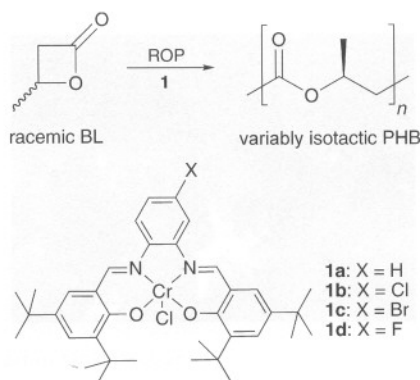


Application of Ultrahigh-Field ⁵⁹Co Solid-State NMR Spectroscopy in the Investigation of the 1,2-Polybutadiene Catalyst [Co(C₈H₁₃)(C₄H₆)]



Highly suitable: The 1,2-polybutadiene catalyst [Co(η³-C₈H₁₃)(η⁴-C₄H₆)] (**1**) was isolated and structurally characterized by ultrahigh-field ⁵⁹Co solid-state NMR spectroscopy, demonstrating the utility of this technique. It can be applied to study the formation mechanism of syndiotactic 1,2-polybutadiene. The picture shows a QCPMG (a) and a quadrupole echo ⁵⁹Co NMR spectrum (b) as well as a simulated spectrum of **1** (c).

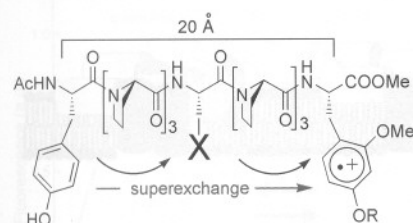
ROP artists: The ROP of racemic β -butyrolactone (BL) catalyzed by highly active chromium(III) salophen complexes **1** gives poly(hydroxybutyrate) (PHB) with high molecular weight and with isotacticities of 60–70%. The product is a biodegradable polymer material with mechanical properties that can be varied from crystalline to thermoplastic. DFT calculations indicate that the induction of stereochemical information occurs through the formation of dimeric cagelike structures.



Polyesters

M. Zintl, F. Molnar, T. Urban, V. Bernhart,
P. Preishuber-Pflügl,*
B. Rieger* 3458–3460

Variably Isotactic Poly(hydroxybutyrate)
from Racemic β -Butyrolactone:
Microstructure Control by Achiral
Chromium(III) Salophen Complexes



It works both ways: The mechanism of electron transfer through peptides depends upon the side chain X located between the electron donor and the electron acceptor. Electron transfer occurs either by a slow single-step superexchange or by a two-step hopping process that is 20–30-times faster (see scheme). All intermediates in the hopping process could be observed simultaneously.

Electron Transfer

M. Cordes, A. Köttgen, C. Jasper,
O. Jacques, H. Boudebous,
B. Giese* 3461–3463

Influence of Amino Acid Side Chains on
Long-Distance Electron Transfer in
Peptides: Electron Hopping via “Stepping
Stones”

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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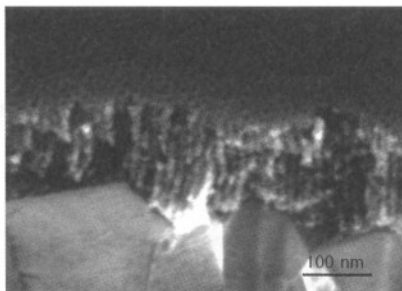
Mesoporous Materials

C.-W. Koh, U.-H. Lee, J.-K. Song,
H.-R. Lee, M.-H. Kim, M. Suh,
Y.-U. Kwon*

Mesoporous Titania Thin Film with
Highly Ordered and Fully Accessible
Vertical Pores and Crystalline Walls

Chem. Asian J.

DOI: 10.1002/asia.200700331



Available vacancies: Novel mesoporous titania thin films can be prepared with highly ordered vertical channels. Most of the pores are accessible from the film surface, and these channels can be filled with gold to produce gold nanowires.

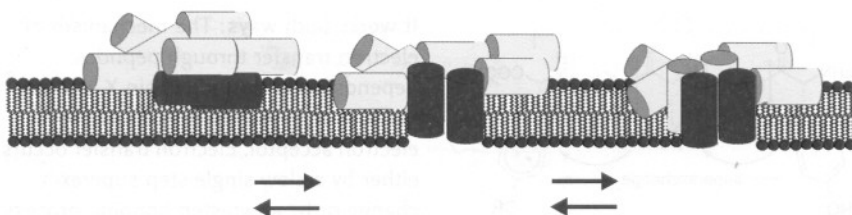
Membrane Proteins

C. Aisenbrey, M. Cusan, S. Lambotte,
P. Jasperse, J. Georgescu, U. Harzer,
B. Bechinger*

Specific Isotope Labeling of Colicin E1
and B Channel Domains For Membrane
Topological Analysis by Oriented
Solid-State NMR Spectroscopy

ChemBioChem

DOI: 10.1002/cbic.200700507



Umbrella or pen-knife? A method is presented to selectively label the colicin E1 and B channel domains with ^{15}N . When the colicin E1 channel that carries a single ^{15}N methionine within its hydrophobic helix 9 region was reconstituted

into oriented membranes and investigated by solid-state NMR spectroscopy, a variety of alignments were observed. This suggests that the protein can adopt a variety of conformations.

Solar Cells

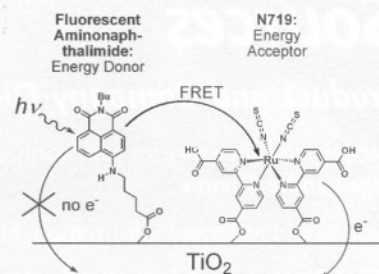
C. Siegers,* U. Würfel, M. Zistler,
H. Gores, J. Hohl-Ebinger, A. Hinsch,
R. Haag

Overcoming Kinetic Limitations of
Electron Injection in the Dye Solar Cell
via Coadsorption and FRET

ChemPhysChem

DOI: 10.1002/cphc.200700864

Two are better than one: Coadsorbing a fluorescent dye with N719 onto the TiO_2 electrode of a transparent dye solar cell leads to photocurrent generation from the additional dye although it is not a good sensitizer for TiO_2 alone. This behavior is attributed to resonant energy transfer to N719 (see figure). The latter thus acts as a catalyst for sensitization of a second dye.



Computer Chemistry

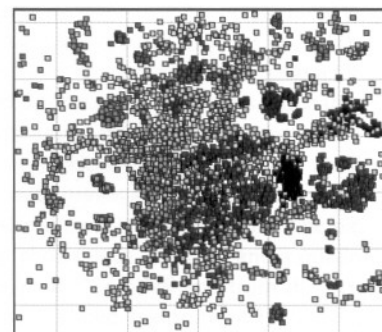
L. Ridder,* M. Wagener*

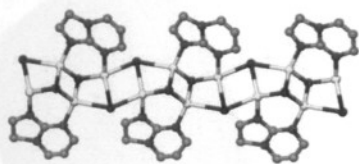
SyGMA: Combining Expert Knowledge
and Empirical Scoring in the Prediction
of Metabolites

ChemMedChem

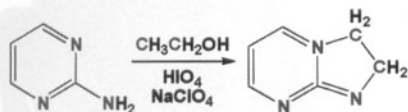
DOI: 10.1002/cmdc.200700312

A dataset of 6187 metabolic reactions reported to occur in man has been used to develop a rule-based method that systematically predicts and ranks potential metabolites of a given parent compound. The graphic shows a projection of the training set with various types of correctly predicted metabolic reactions represented by different colors.





Two luminescent copper halide coordination polymers, $(\text{CuCl})_3\text{C}_6\text{H}_7\text{N}_3$ and $(\text{CuI})_2\text{C}_6\text{H}_7\text{N}_3$ ($\text{C}_6\text{H}_7\text{N}_3 = 2,3$ -dihydroimidazo[1,2- α]pyrimidine), were assembled under solvothermal conditions starting with $\text{CuCl}_2 \cdot 2\text{H}_2\text{O}$, $\text{HIO}_4 \cdot 2\text{H}_2\text{O}$, $\text{NaClO}_4 \cdot \text{H}_2\text{O}$, NaHCO_3 , 2-aminopyrimidine, and ethanol. The nitro- heterocyclic 2,3-dihydroimidazo[1,2- α]pyrimidine ligand was synthesized by an in situ reaction.

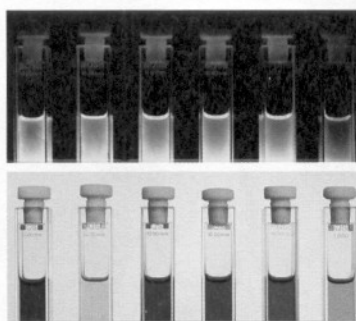
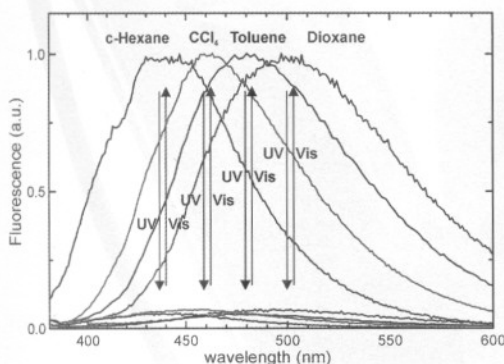


Luminescent Cu Coordination Polymers

M. Bi, G. Li, J. Hua, Y. Lin, J. Cao, Z. Shi,* S. Feng

Synthesis of Copper Halide Coordination Polymers with Ligands Formed by In Situ Cyclization of 2-Aminopyrimidine and Ethanol

Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200701126



Switchable Fluorescent Probes

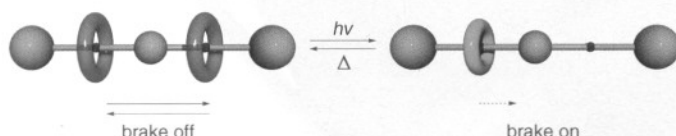
S. F. Yan, V. N. Belov, M. L. Bossi,* S. W. Hell

Switchable Fluorescent and Solvatochromic Molecular Probes Based on 4-Amino-N-methylphthalimide and a Photochromic Diarylethene

Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200800125

New fluorescent probes, whose emission can be switched "on" and "off" photochemically, are also able to sense the polarity of the (micro)environment. The

nature of the solvent produces a solvatochromic effect in the emission spectra, and affects the speed of the switching reaction.



Switching Device: A report into the design, synthesis, and demonstration of

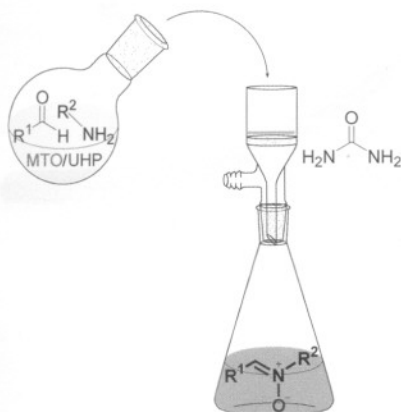
a prototype shuttling molecular machine that has a reversible brake function.

Molecular Shuttle

K. Hirose,* Y. Shiba, K. Ishibashi, Y. Doi, Y. Tobe

A Shuttling Molecular Machine with Reversible Brake Function

Chem. Eur. J.
DOI: 10.1002/chem.200702001



Simple, selective, sustainable: Nitrones can be synthesized from primary amines and aldehydes by a one-pot condensation/oxidation process with urea-hydrogen peroxide (UHP) in the presence of methyltrioxorhenium (MTO). At the end of the reaction, the solid urea is simply filtered off. The reaction is simple and high yielding (68–89%), and it allows the regioselective synthesis of nitrones from easily available starting materials.

Sustainable Chemistry

F. Cardona, M. Bonanni, G. Soldaini, A. Goti*

One-Pot Synthesis of Nitrones from Primary Amines and Aldehydes Catalyzed by Methyltrioxorhenium

ChemSusChem
DOI: 10.1002/cssc.200700156