

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:

C. Schäffer, A. Merca, H. Bögge, A. M. Todea, M. L. Kistler, T. Liu, R. Thouvenot, P. Gouzerh,* A. Müller*

Unprecedented and Differently Applicable Pentagonal Units in a Dynamic Library: A Keplerate of the Type $\{(W)W_5\}_{12}\{Mo_2\}_{30}$

S. W. Hong, M. Byun, Z. Lin*

Robust Self-Assembly of Highly Ordered Complex Structures by Controlled Evaporation of Confined Microfluids

L. Catala,* D. Brinzei, Y. Prado, A. Gloter, O. Stéphan, G. Rogez, T. Mallah*

Core–Multishell Magnetic Coordination Nanoparticles: Towards Multifunctionality at the Nanoscale

D. Morton, S. Leach, C. Cordier, S. Warriner, A. Nelson*

Synthesis of Natural-Product-Like Molecules with over Eighty Distinct Scaffolds

P. Hazarika, S. M. Jickells, K. Wolff, D. A. Russell*

Imaging of Latent Fingerprints Through the Detection of Drugs and Metabolites

O. Vendrell, F. Gatti, H.-D. Meyer*

Strong Isotope Effects in the Infrared Spectrum of the Zundel Cation

W. M. Czaplik, M. Mayer, A. J. v. Wangelin*

Domino Iron Catalysis: Direct Aryl–Alkyl Cross-Coupling

Z. You, A. H. Hoveyda,* M. L. Snapper*

Catalytic Enantioselective Silylation of Acyclic and Cyclic Triols and Application to Total Syntheses of Cleroindigins D, F, and C

K. Tedsree, A. T. Kong, S. C. Tsang*

Formate as a Surface Probe for Ru Nanoparticles in Liquid ^{13}C NMR Spectroscopy

A Chemist's Guide to Valence Bond Theory

Sason S. Shaik, Philippe C. Hiberty

Ernest Ludwig Eliel (1921–2008)

Books

reviewed by A. Nemirowski,

P. R. Schreiner _____ 9802

Obituary

M. T. Crimmins _____ 9803

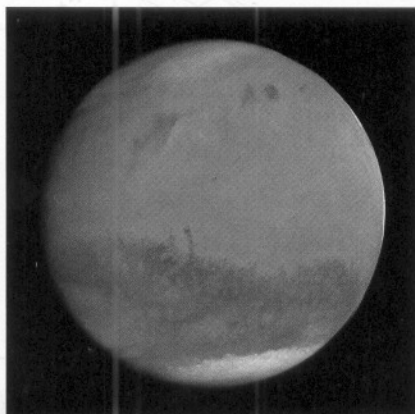
Highlights

Atmospheric Chemistry

J. Lelieveld* _____ 9804–9807

A Reverse Ozone Hole on Mars

The Martian atmosphere accumulates ozone in the winter and destroys it in the summer—exactly opposite the situation on Earth. The large fluctuation in the ozone concentration can only be adequately described if heterogeneous reactions on ice clouds are accounted for in the chemistry–climate model.

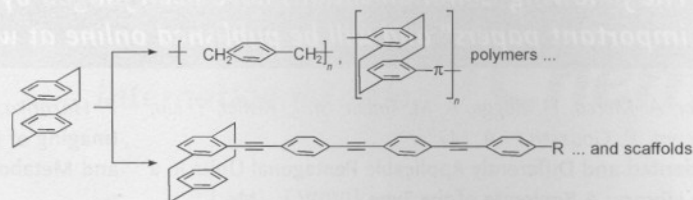


Minireviews

[2.2]Paracyclophanes

H. Hopf* ————— 9808–9812

[2.2]Paracyclophanes in Polymer Chemistry and Materials Science



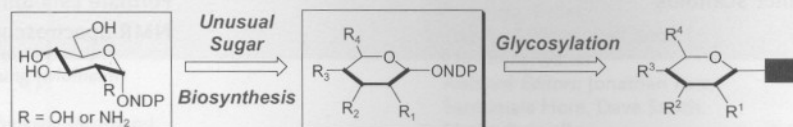
More than just pretty faces: [2.2]Paracyclophanes are becoming important monomers for the preparation of novel polymers in which the layered structure of the substrate molecules can either be destroyed or retained, allowing intra-

annular transmission of electronic effects in the polymeric products. The rigid structure of paracyclophanes has also been exploited for molecular scaffolding to create novel extended π systems.

Reviews

Sugar Biosynthesis

C. J. Thibodeaux, C. E. Melançon III,
H.-w. Liu* ————— 9814–9859



Natural-Product Sugar Biosynthesis and Enzymatic Glycodiversification

A new kind of sweet: To understand the biosynthesis of unusual sugars, the sequence of enzymatic transformations and the fundamental mechanisms of pathway enzymes must be understood.

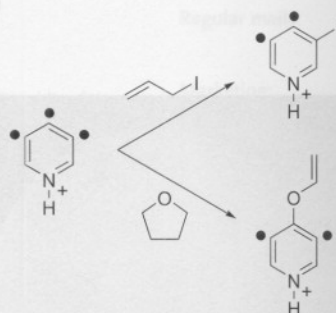
Only then can sugar biosynthetic enzymes and glycosyltransferases be manipulated to engineer the structures of glycosylated natural products to generate new glycoforms with potentially novel activities.

Communications

Triradicals

B. J. Jankiewicz, J. N. Reece,
N. R. Vinuesa, J. J. Nash,*
H. I. Kenttämä* ————— 9860–9865

Reactivity of the 3,4,5-Tridehydropyridinium Cation—An Aromatic σ,σ,σ -Triradical



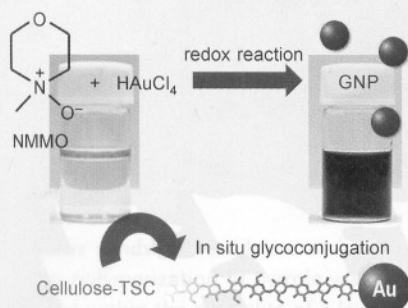
Seeing the sites: Reactivity studies on the σ,σ,σ -triradical 3,4,5-tridehydropyridinium cation by using a Fourier transform ion cyclotron resonance mass spectrometer show that bond formation first occurs at C3 for radical reactions, and at either C3 or C4 for nonradical reactions (see scheme). The isomeric 2,4,6-tridehydropyridinium cation shows different chemical properties because of the lower reactivity of its *meta*-benzyne group(s) and its greater Brønsted acidity.

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.

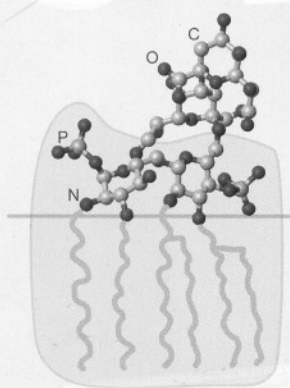


Sugaring the pill: Gold nanoparticles (GNPs) were successfully synthesized from tetrachloroauric acid through a novel redox reaction in an aqueous *N*-methylmorpholine-*N*-oxide (NMMO) solution, which is a well-known solvent for structural carbohydrates such as cellulose (see picture, TSC = thiosemicarbazone). This unique approach allowed facile, simultaneous GNP synthesis and in situ glyco-surface modification in one pot.

Nanoparticle Synthesis

S. Yokota, T. Kitaoka,* M. Opietnik, T. Rosenau, H. Wariishi — 9866–9869

Synthesis of Gold Nanoparticles for In Situ Conjugation with Structural Carbohydrates

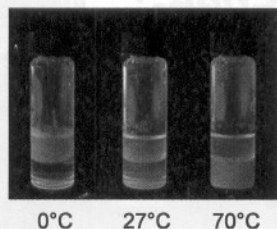


The natural look of endotoxin: A new approach has been developed to determine the chemical structure, dynamics, and conformation of lipopolysaccharide (endotoxin, see structure) by solution NMR spectroscopy. Using isotope labeling and solubilization by dihexanoylphosphatidylcholine as a mimetic of the bacterial membrane, a general approach makes complex endotoxin molecules amenable to analysis by heteronuclear NMR methods.

Structure Elucidation

W. Wang, H. J. Sass, U. Zähringer,* S. Grzesiek* — 9870–9874

Structure and Dynamics of ^{13}C , ^{15}N -Labeled Lipopolysaccharides in a Membrane Mimetic



The reversible phase transfer of 2-(diethylamino)ethanethiol (DEAET)-stabilized CdTe nanoparticles (NPs) in a mixture of water and toluene is driven solely by temperature (see picture). Theoretical studies reveal that the net hydrophobic force of these NPs decreases at high temperature, thus favoring the transfer of NPs into the aqueous phase.

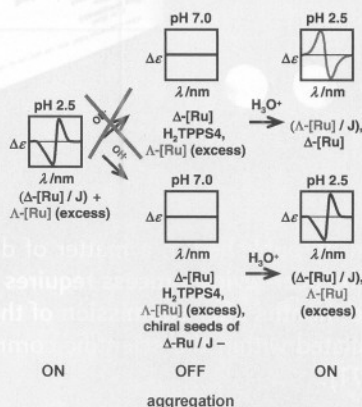
Nanoparticle Phase Transfer

B. Qin, Z. Zhao, R. Song,* S. Shanbhag,* Z. Tang* — 9875–9878

A Temperature-Driven Reversible Phase Transfer of 2-(Diethylamino)ethanethiol-Stabilized CdTe Nanoparticles



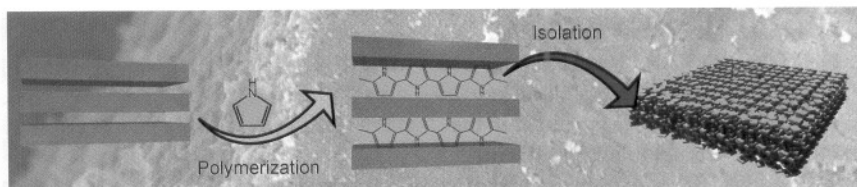
Happy memories: J aggregates (J) of the tetraanionic meso-tetrakis(4-sulfonato-phenyl)porphine ($\text{H}_2\text{TTPS4}$) gain chirality by interaction with Δ - or Λ -[Ru] (see picture, $[\text{Ru}] = [\text{Ru}(\text{1,10-phenanthroline})_3]^{2+}$). After destroying and reforming the aggregates by changing the pH of the solution, the final species “remember” the initially imprinted chirality, even in the presence of an excess of the ruthenium complex with the opposite chirality to that memorized.



Chiral Aggregates

R. Randazzo, A. Mammana, A. D'Urso, R. Lauceri, R. Purrello* — 9879–9882

Reversible “Chiral Memory” in Ruthenium Tris(phenanthroline)-Anionic Porphyrin Complexes



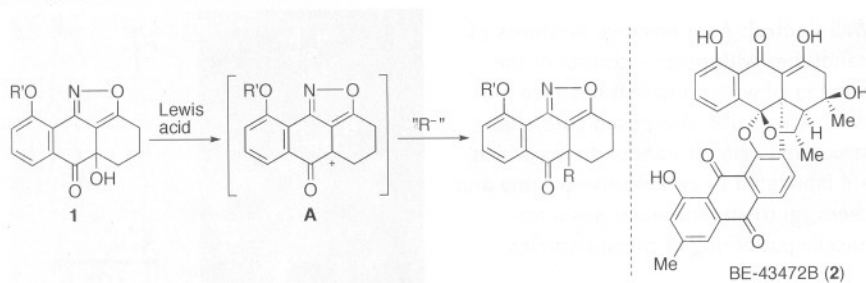
A redox sandwich: Oxidative and intercalative polymerization of pyrrole was conducted within the nanoslits of a layered open coordination framework containing redox-active sites. The resulting polypyrrole, which can be isolated from the host

framework, exists as stacked sheet polymer objects, the orientation and morphology of which are directly related to those of the original coordination-polymer template.

Intercalative Polymerization

N. Yanai, T. Uemura, M. Ohba, Y. Kadowaki, M. Maesato, M. Takenaka, S. Nishitsuji, H. Hasegawa, S. Kitagawa* 9883–9886

Fabrication of Two-Dimensional Polymer Arrays: Template Synthesis of Polypyrrole between Redox-Active Coordination Nanoslits



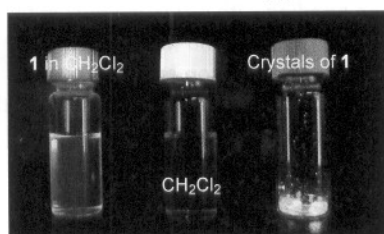
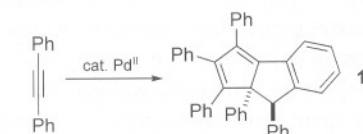
The facile introduction of an angular substituent has become viable for the synthesis of natural products such as **2**. Ketol **1** serves to achieve this through the

direct substitution of its hydroxy group by a Lewis acid (see scheme). The isoxazole unit facilitates the generation of a cation at the α -position (**A**).

Substitution Reactions

H. Takikawa, K. Hikita, K. Suzuki* 9887–9890

Isoxazole-Assisted Direct Substitution of the Hydroxy Group in α -Ketols: Introduction of Angular Substituents in a Polycyclic System



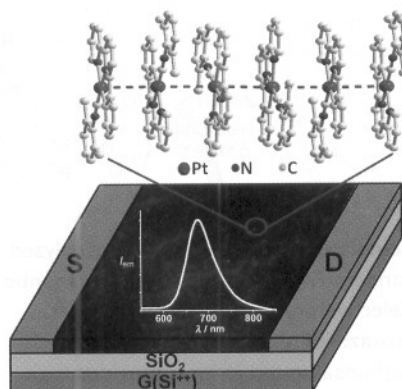
A triple round: A palladium-catalyzed cyclotrimerization of 1,2-diarylacetylenes has been developed to synthesize highly substituted 8,8a-dihydrocyclopenta[a]indenes. One such cycloadduct (**1**) displays unusual aggregation-induced emission with a strong blue fluorescence (see picture). The structures of the products have been confirmed by X-ray crystal analysis.

Polycycles

Y.-T. Wu,* M.-Y. Kuo, Y.-T. Chang, C.-C. Shin, T.-C. Wu, C.-C. Tai, T.-H. Cheng, W.-S. Liu 9891–9894

Synthesis, Structure, and Photophysical Properties of Highly Substituted 8,8a-Dihydrocyclopenta[a]indenes

Organometallic nanowires with luminescent and current-modulating properties were self-assembled from cyclometalated/terpyridyl platinum(II) complexes with auxiliary arylisocyanide/arylacetylide ligands and incorporated into a compact organic light-emitting field-effect transistor (see picture) by solution-processable protocols. The nanowires exhibit both electron and hole mobilities of $0.1 \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$.



Organometallic Nanowires

M.-Y. Yuen, V. A. L. Roy, W. Lu, S. C. F. Kui, G. S. M. Tong, M.-H. So, S. S.-Y. Chui, M. Muccini, J. Q. Ning, S. J. Xu, C.-M. Che* 9895–9899

Semiconducting and Electroluminescent Nanowires Self-Assembled from Organoplatinum(II) Complexes

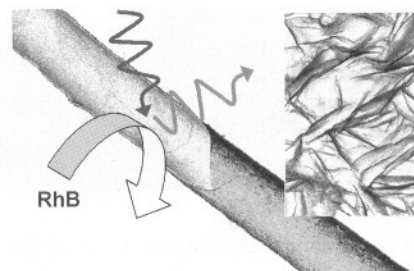
Silica–ZnO Nanotubes

J. J. Pagano, T. Bánsági Jr.,
O. Steinbock* ————— 9900–9903



Bubble-Templated and Flow-Controlled
Synthesis of Macroscopic Silica Tubes
Supporting Zinc Oxide Nanostructures

Macro tubes with nanostructures are formed at rates of cm s^{-1} when aqueous zinc sulfate is injected into a silicate solution and a gas bubble is pinned to the reaction zone. Straight, long ($> 10 \text{ cm}$), and hollow structures with diameters of $500 \mu\text{m}$ can be grown, which upon heating are luminescent, and can photodegrade rhodamine B (RhB). The presence of ZnO on the interior surface is confirmed by electron and X-ray diffraction.



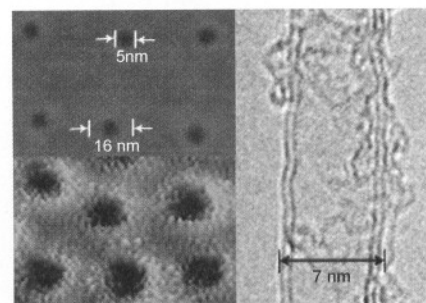
Nanotube Synthesis

K. M. Choi, S. Augustine, J. H. Choi,
J. H. Lee, W. H. Shin, S. H. Yang, J. Y. Lee,
J. K. Kang* ————— 9904–9907



A Facile Way to Control the Number of
Walls in Carbon Nanotubes through the
Synthesis of Exposed-Core/Shell Catalyst
Nanoparticles

Wall Control: An innovative synthesis of nanotubes with precise control of the number of walls in nanotubes (see picture) makes use of exposed-core/shell structured catalyst nanoparticles, which are fabricated by consecutive plasma and chemical treatment processes after micelle patterning of metal particles.

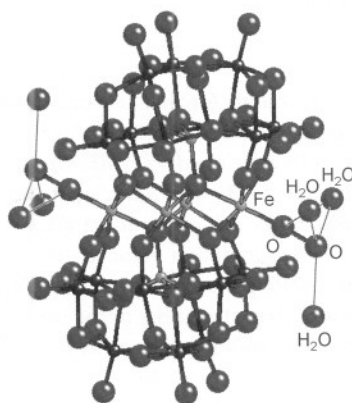


Polyoxometalates

D. Barats, G. Leitus, R. Popovitz-Biro,
L. J. W. Shimon,
R. Neumann* ————— 9908–9912



A Stable “End-On” Iron(III)–Hydroperoxo
Complex in Water Derived from a Multi-
Iron(II)-Substituted Polyoxometalate and
Molecular Oxygen



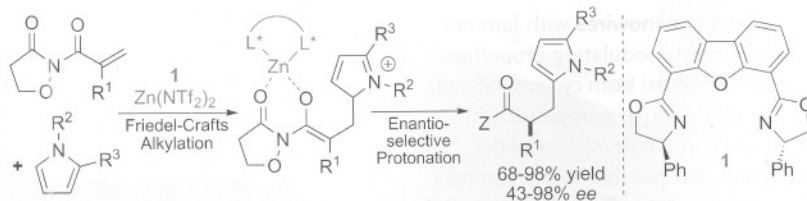
Head over EELS: Reaction of O_2 with a hexa-iron(II)-substituted polyoxometalate in water yields a polyoxometalate with “end-on” hydroperoxo groups, $\{\text{Fe}^{\text{III}}-\text{O}_2\text{H}\}$, at the terminal positions. The hydroperoxo moiety, stabilized by hydrogen bonding with water, is unusual for its long O–O bond and nearly linear Fe–O–O bond angle. Electron energy-loss spectroscopy (EELS) is used to determine the oxidation state of iron.

Asymmetric Catalysis

M. P. Sibi,* J. Coulomb,
L. M. Stanley ————— 9913–9915



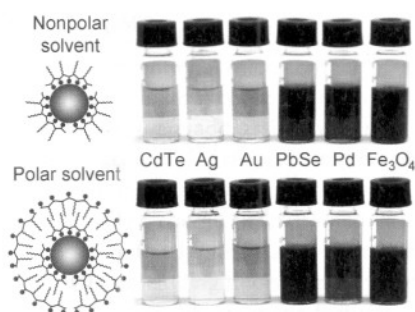
Enantioselective Enolate Protonations:
Friedel–Crafts Reactions with
 α -Substituted Acrylates



Templates rule: A $\text{Zn}(\text{NTf}_2)_2/1$ catalyzed tandem Friedel–Crafts alkylation/enantioselective protonation of pyrroles with isoxazolidinone-derived α -substituted α,β -unsaturated imides, provides high

levels of rotamer control and enantioselectivity in the tandem sequence, and affords pyrrole derivatives in good-to-excellent yields (68–98%) and enantioselectivities (43–98% ee).

Universal solubility: A variety of mono-disperse nanocrystals have been synthesized in an “amphibious” reaction bath consisting of an amphiphilic multidentate ligand and low-molecular-weight polyethylene glycols (PEGs). These particles are instantly soluble in nearly all solvents and retain their characteristic optical properties after dispersion (see picture).

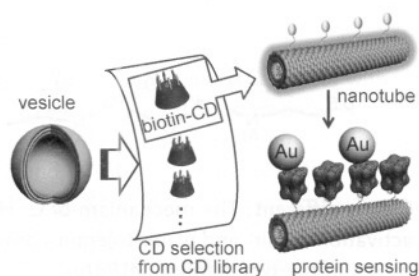


Amphibious Nanocrystals

A. M. Smith, S. Nie* — 9916–9921

Nanocrystal Synthesis in an Amphibious Bath: Spontaneous Generation of Hydrophilic and Hydrophobic Surface Coatings

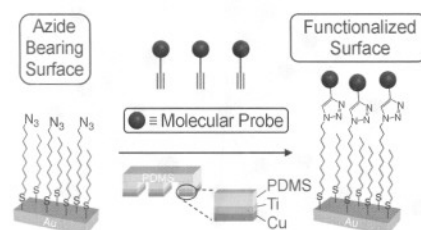
Take the tube: A systematic approach was used to construct a series of functional nanotubes by cooperative self-assembly of dendrons and cyclodextrins and their nanotube–nanoparticle hybrids (see picture). The nanotubes are also capable of sensing proteins by inducing specific binding of proteins on the tube surface. The “nanotube toolkit” has a great potential for the construction of functional nanomaterials.



Self-Assembly

C. Park, M. S. Im, S. Lee, J. Lim, C. Kim* — 9922–9926

Tunable Fluorescent Dendron-Cyclodextrin Nanotubes for Hybridization with Metal Nanoparticles and Their Biosensory Function



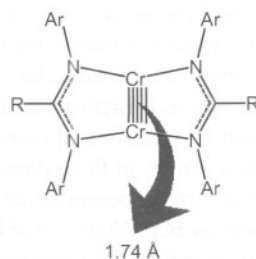
Minting a Stamp: The preparation of copper metal-coated elastomeric stamps and their use in catalyzing the Cu-catalyzed azide–alkyne cycloaddition reaction heterogeneously through microcontact printing is described (see scheme). This StampCat process is compared to other conventional surface-functionalization techniques, including traditional microcontact printing and solution–surface-based reactions.

Surface Functionalization

J. M. Spruell, B. A. Sheriff, D. I. Rozkiewicz, W. R. Dichtel, R. D. Rohde, D. N. Reinhoudt,* J. F. Stoddart,* J. R. Heath* — 9927–9932

Heterogeneous Catalysis through Microcontact Printing

Closer than most: A series of four dichromium bis(amidinate) complexes of the type $[\text{Cr}_2\{\mu\text{-}\eta^2\text{-ArNC(R)NAr}\}_2]$ display an extremely short metal–metal bond of 1.74 Å, independent of the steric hindrance of the ligands. DFT calculations of Cr–Cr bond lengths agree well with the experimental values and computational analysis of their electronic structures indicates quintuple bonding between the two Cr centers.



Quintuple Bonds

C.-W. Hsu, J.-S. K. Yu, C.-H. Yen, G.-H. Lee, Y. Wang, Y.-C. Tsai* — 9933–9936

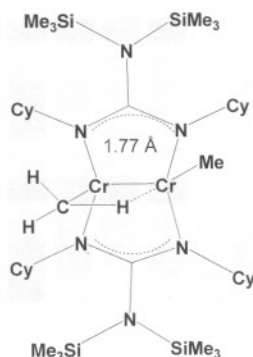
Quintuply-Bonded Dichromium(I) Complexes Featuring Metal–Metal Bond Lengths of 1.74 Å

Metal–Metal Interactions

S. Horvath, S. I. Gorelsky, S. Gambarotta,*
I. Korobkov 9937–9940



Breaking the 1.80 Å Barrier of the Cr–Cr Multiple Bond Between Cr^{II} Atoms



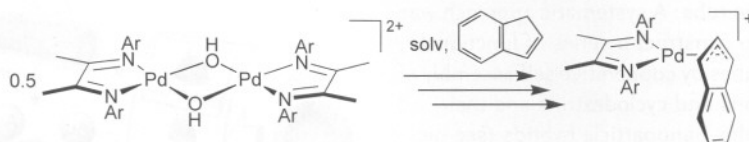
Short and sweet: By replacing one of the two guanidinate ligands in the monomeric complex $[(\text{Me}_3\text{Si})_2\text{NC}(\text{NCy})_2\text{Cr}]$ with a methyl group, the dimeric complex $[(\text{Me}_3\text{Si})_2\text{NC}(\text{NCy})_2\text{CrMe}]_2$ (see picture) is generated. This species contains the shortest reported Cr–Cr quadruple bond. The bonding of the methyl group indicates a Cr–H–CH₂Cr bridging agostic interaction which likely contributes to the short Cr–Cr contact.

C–H Activation

J. E. Bercaw,* N. Hazari, J. A. Labinger,*
P. F. Oblad 9941–9943



C–H Bond Activation by $[(\text{Diimine})\text{Pd}(\mu\text{-OH})_2]^{2+}$ Dimers: Mechanism-Guided Catalytic Improvement



Clearly different: The mechanism of C–H activation by air- and water-tolerant complexes of the type $[(\text{diimine})\text{Pd}(\mu\text{-OH})_2]^{2+}$ (see scheme; Ar = *t*Bu₂C₆H₃, solv = MeOH or trifluoroethanol) and $[(\text{diimine})\text{Pd}(\text{OH})_2]^{2+}$ has been investi-

gated. Surprisingly, there are significant mechanistic differences in activation by the dimeric Pd complex and the analogous Pt species, with the Pd species found to be considerably more reactive.

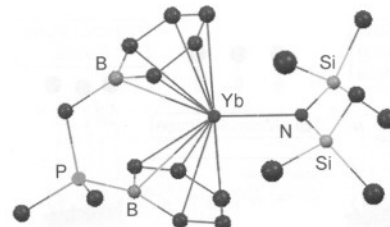
Organometallic Chemistry

P. Cui, Y. Chen,* G. Li,
W. Xia 9944–9947



An ansa-Heteroborabenzene Divalent Lanthanide Amide through C–H Bond Cleavage

Bridging is the ansa: Both neutral borabenzene and anionic boratabenzene coordinate to a lanthanide ion in an ansa-borabenzene divalent lanthanide amide (see picture). The complex, which was synthesized through an unexpected C–H bond cleavage, displays notable structural features, and is potentially reactive, as demonstrated by the insertion reaction of a carbodiimide into the metal–nitrogen bond.



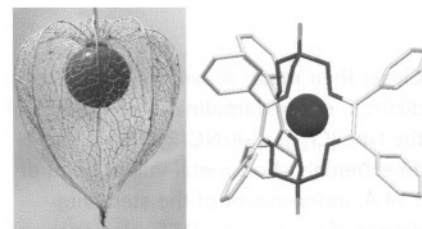
Hydrogen Formation

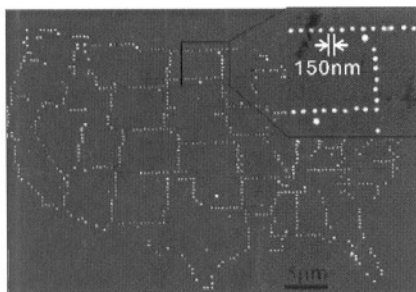
O. Pantani, S. Naskar, R. Guillot, P. Millet,
E. Anxolabéhère-Mallart,*
A. Aukauloo* 9948–9950



Cobalt Clathrochelate Complexes as Hydrogen-Producing Catalysts

Wrapper's delight: Clathrochelate complexes, in which the metal center is wrapped in a close-knit macrobicyclic ligand, are often considered to be deprived of chemical reactivity. Boron-capped cobalt tris(glyoximate) complexes show catalytic activity in the reduction of acids in acetonitrile at potentials as small as –0.5 V versus SCE. Alteration of ligand substituents allows for the tuning of their electrochemical reactivity (see structure: red ball Co, grey C, purple B, blue N, red O, green X).



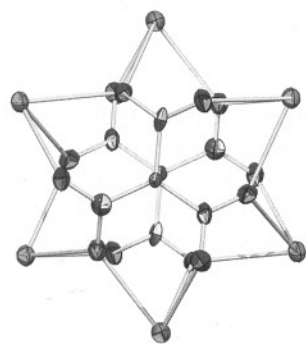


DPN benefits μ CP: The intrinsic drawbacks in conventional microcontact printing, that is, roof collapse and lateral ink diffusion, were addressed by using topographically flat, chemically patterned PDMS stamps made by dip-pen nanolithography. The chemically patterned flat stamps were used for contact printing of various inks including thiols, proteins and hydrophilic dyes. The as-made features can reach sub-100 nm resolution and a very low filling factor (see AFM picture).

Microcontact Printing

Z. Zheng, J.-W. Jang, G. Zheng,
C. A. Mirkin* 9951–9954

Topographically Flat, Chemically
Patterned PDMS Stamps Made by
Dip-Pen Nanolithography

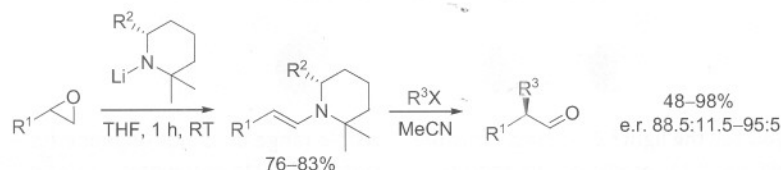


Under mild conditions CO_2 reacts with $[\text{Sr}\{\text{N}(\text{PPh}_2)_2\}_2](\text{THF})_3$ to oxidatively cleave PPh_2 groups, resulting in the new ligand $[\text{N}(\text{CO}_2)_3]^{3-}$ in $[\text{Sr}_6\{\text{O}_2\text{CN}(\text{PPh}_2)_2\}_6\{\text{N}(\text{CO}_2)_3\}_2]$ (see core structure; Sr green, O red, N blue, C black). The Sr_6 framework chemically fixates twelve equivalents of CO_2 , half by the formation of two $[\text{N}(\text{CO}_2)_3]^{3-}$ ligands and the other half by CO_2 insertion to form the unprecedented phosphanyl-substituted carbonate ligand $\text{O}_2\text{CN}(\text{PPh}_2)_2$.

Carbon Dioxide Fixation

D. A. Dickie, M. V. Parkes,
R. A. Kemp* 9955–9957

Insertion of Carbon Dioxide into Main-
Group Complexes: Formation of the
 $[\text{N}(\text{CO}_2)_3]^{3-}$ Ligand



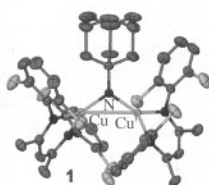
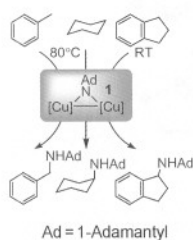
Effective discrimination: Efficient lithium amide-induced terminal epoxide–enamine transformation provides the first enamines capable of generating α -alkyl-

ated aldehydes with high asymmetric induction by intermolecular nucleophilic substitution (see scheme).

Synthetic Methods

D. M. Hodgson,*
N. S. Kaka 9958–9960

Asymmetric Synthesis of α -Alkylated
Aldehydes using Terminal Epoxide-
Derived Chiral Enamines



Hydrocarbons activate! Isolable β -diketiminato dicopper–nitrene complexes such as **1** derived from the reaction of $[(\text{Cl}_2\text{NN})\text{Cu}]_2(\mu\text{-benzene})$ and 1-adamantylazide are potent towards nitrene insertion into unactivated sp^3 -hybridized C–H bonds. **1** allows stoichiometric and catalytic intermolecular C–H amination of hydrocarbons to give secondary amines (see scheme). Catalyst loadings as low as 0.05 mol% may be used.

Synthetic Methods

Y. M. Badiei, A. Dinescu, X. Dai,
R. M. Palomino, F. W. Heinemann,
T. R. Cundari,*
T. H. Warren* 9961–9964

Copper–Nitrene Complexes in Catalytic
C–H Amination



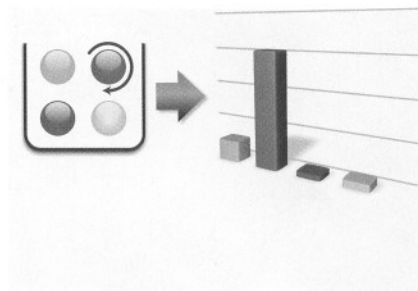
Systems Chemistry

J. W. Sadownik, D. Philp* — 9965–9970



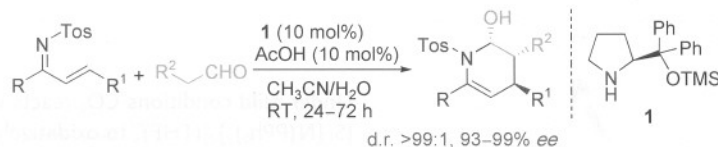
A Simple Synthetic Replicator Amplifies Itself from a Dynamic Reagent Pool

The fate of a dynamic combinatorial library is determined by coupling the exchange processes to a synthetic replicator. The replicating template is capable of exploiting and dominating the exchanging pool of reagents in order to amplify its own formation at the expense of other species (see picture) through the non-linear kinetics inherent in minimal replication.



Asymmetric Catalysis

B. Han, J.-L. Li, C. Ma, S.-J. Zhang, Y.-C. Chen* — 9971–9974



Organocatalytic Asymmetric Inverse-Electron-Demand Aza-Diels–Alder Reaction of *N*-Sulfonyl-1-aza-1,3-butadienes and Aldehydes

Water is crucial for high transformation efficiency in the title reaction catalyzed by the α,α -diphenylprolinol derivative **1**. Excellent stereoselectivities were observed for a broad spectrum of sub-

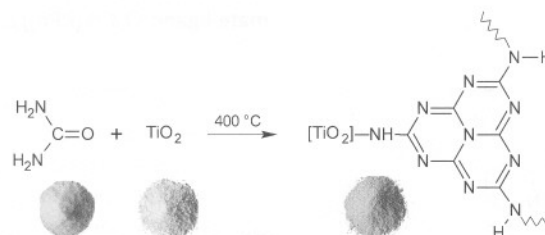
strates (see scheme; TMS = trimethylsilyl, Tos = *p*-toluenesulfonyl). A diverse range of chiral piperidine derivatives and other valuable compounds can be prepared from the hemiaminal products.

Photocatalysis

D. Mitoraj, H. Kisch* — 9975–9978



The Nature of Nitrogen-Modified Titanium Dioxide Photocatalysts Active in Visible Light



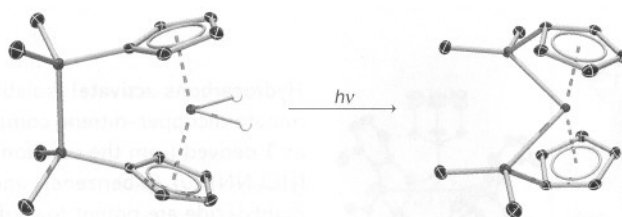
Can you see the light? Calcining a mixture of urea and TiO_2 produces amino-tris-triazine derivatives covalently attached to TiO_2 (see scheme). Therefore, the photocatalytic activity of this material in the

visible range does not originate from surface defects or the presence of nitridic, amidic, or oxide species. This dye-sensitized titania efficiently photocatalyzes the oxidation of HCOOH to CO_2 and H_2O .

Ansa Complexes

H. Braunschweig,* M. Gross, K. Radacki, C. Rothgaengel — 9979–9981

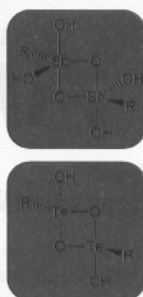
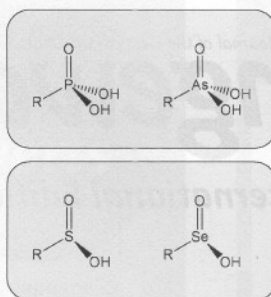
Intramolecular Activation of a Disila[2]molybdenocenophanedihydride: Synthesis and Structure of a [1],[1]Metalloarenophane



Breaking bridges: Disila[2]molybdenocenophanedihydride was synthesized by dilithiation of 1,2-bis(cyclopentadienyl)tetramethyldisilane and subsequent reaction with MoCl_5 in the presence of NaBH_4 .

The photochemical conversion of the ansa complex leads to a highly unusual, twofold bridged [1],[1]molybdenocenophane (see scheme; C black, H white, Si pink, Mo violet).

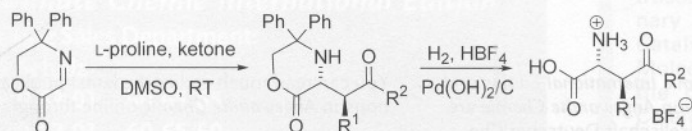
Upon going from the 4th to the 5th period a qualitative change in the molecular structures of pnictogenic and chalcogenic acids takes place. Unlike the lighter monomeric Group 15 and 16 congeners, the depicted stibonic and tellurinic acids adopt μ_2 -oxo-bridged dinuclear structures featuring Sb and Te atoms with trigonal-bipyramidal coordination. DFT calculations on the model compounds give dissociation energies of the dimers.



Main-Group Chemistry

J. Beckmann,* P. Finke, M. Hesse,
B. Wettig _____ 9982–9984

Well-Defined Stibonic and Tellurinic Acids



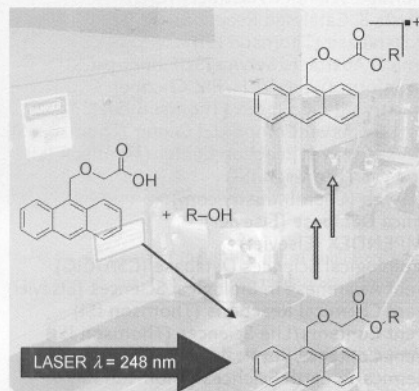
Universal L-proline: The title reaction complements well-known *syn*-selective Mannich reactions. The Mannich products can be converted readily into the

free amino acids by hydrogenolytic deprotection under mild conditions (see scheme). DMSO = dimethyl sulfoxide; R^1 = alkyl, OH; R^2 = alkyl.

Asymmetric Catalysis

B. T. Hahn, R. Fröhlich, K. Harms,
F. Glorius* _____ 9985–9988

Proline-Catalyzed Highly Enantioselective and *anti*-Selective Mannich Reaction of Unactivated Ketones: Synthesis of Chiral α -Amino Acids



APLI application: Small molecules and polymers can be analyzed quantitatively by using atmospheric-pressure laser ionization (APLI) coupled to time-of-flight mass spectrometry. This is realized by a derivatization strategy that facilitates selective ionization of polar and non-polar compounds in complex matrices without hyphenated techniques or stable-isotope-labeled standards.

Ionization Techniques

R. Schiewek, R. Mönnikes, V. Wulf, S. Gäb,
K. J. Brockmann, T. Benter,
O. J. Schmitz* _____ 9989–9992

A Universal Ionization Label for the APLI-(TOF)MS Analysis of Small Molecules and Polymers



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 November 2008 appeared online on the following dates

Issue 44: October 15. • Issue 45: October 21. • Issue 46: October 29. • Issue 47: November 5

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