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:***

*H. Jiang, P. Elsner, K. L. Jensen, A. Falcicchio, V. Marcos, K. A. Jørgensen**
Achieving Molecular Complexity by Organocatalytic One-Pot Strategies: A Fast Entry for the De Novo Synthesis of Sphingoids, Amino Sugars, and Polyhydroxylated α-Amino Acids

*T. J. Kucharski, Z. Huang, Q.-Z. Yang, Y. Tian, N. C. Rubin, C. D. Concepcion, R. Boulatov**
Kinetics of Thiol/Disulfide Exchange Correlates Weakly with the Restoring Force in the Disulfide Moiety

*W. Xu, X. Xue, T. Li, H. Zeng, X. Liu**
Ultrasensitive and Selective Colorimetric DNA Detection by Nicking Endonuclease-Assisted Nanoparticle Amplification

H. Ueda, H. Satoh, K. Matsumoto, K. Sugimoto, T. Fukuyama, H. Tokuyama**
Total Synthesis of (+)-Haplophytine

G. A. Zelada, J. Riu, A. Düzgün, F. X. Rius**
Immediate Detection of Living Bacteria at Ultra-Low Concentrations Using a Carbon-Nanotube-Based Potentiometric Aptasensor

*K. Fuchibe, T. Kaneko, K. Mori, T. Akiyama**
Expedient Synthesis of N-Fused Indoles: A C–F Activation and C–H Insertion Approach

A. Giannis, P. Heretsch, V. Sarli, A. Stößel*
Synthesis of Cyclopamine Using a Biomimetic and Diastereoselective Approach

W. A. Chalifoux, R. McDonald, M. J. Ferguson, R. R. Tykwinski
***tert*-Butyl Endcapped Polyynes: Crystallographic Evidence of Reduced Bond-Length Alternation**

*W. Cheng, L. Ding, S. Ding, Y. Yin, H. Ju**
A Facile Electrochemical Cytosensor Array for Dynamic Analysis of Carcinoma Cell Surface Glycans

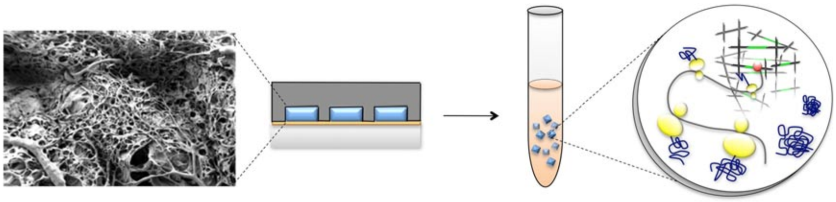
Author Profile

"My biggest motivation is when I see one of my students achieving something that I could not have done myself. My favorite subject at school was ancient greek. …"
This and more about Lukas J. Gooßen can be found on page 5992.

Books

Highlights

DNA Dendrimers



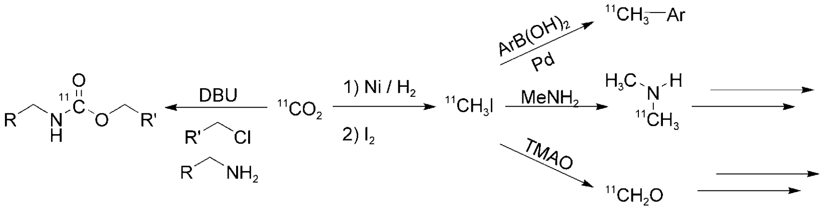
DNA branches out: Recent advances in the assembly of dendritic DNA structures enable applications in biosensing of pathogens and the generation of novel pads of DNA hydrogel biomaterials (see scheme, left). These pads are immersed in a cell extract containing RNA polymerase (red), ribosomes (yellow), and other components for in vitro protein biosynthesis, where they can be used as templates for cell-free protein production.

Contents

Radiochemistry

P. J. H. Scott* ——————— **6001 – 6004**

Methods for the Incorporation of Carbon-11 To Generate Radiopharmaceuticals for PET Imaging

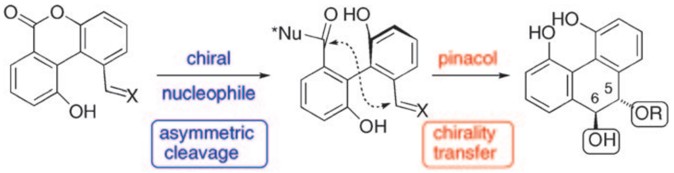


Diversification to meet demand: The growing demand for novel radiopharmaceuticals can only be met through the development of new approaches to isotopic labeling. Effective strategies for ^{11}C labeling are highlighted with emphasis on reactions with [^{11}C]carbon dioxide and [^{11}C]methyl iodide (see scheme). DBU = 1,8-diazabicyclo[5.4.0]undec-7-ene, TMAO = trimethylamine *N*-oxide.

Total Synthesis

A. Baranczak,
G. A. Sulikowski* ———— **6005 – 6007**

Chirality Relay To Access Oxygenated Angular Aromatic Polyketides



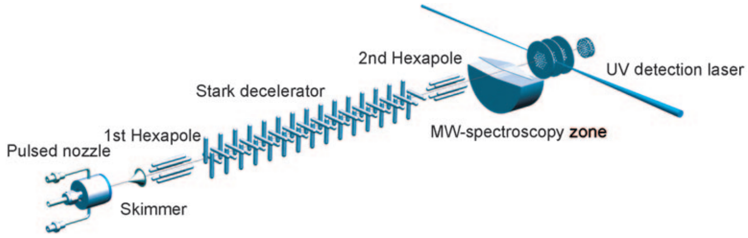
Solution to a difficult problem: The selective glycosylation of one hydroxy group of the pseudo-C$_2$-symmetric *trans* diol of benanomicin–pradimicin antibiotics presents a significant synthetic challenge. Sequential asymmetric cleavage of a biaryl lactone and pinacol cyclization (see scheme) provide access to these compounds as well as the naphthoxanthene antibiotic FD-594. The product diol emerges differentially protected from the pinacol coupling.

Reviews

Ultracold Chemistry

M. Schnell,* G. Meijer ——— **6010 – 6031**

Cold Molecules: Preparation, Applications, and Challenges



Catching them cold: Research with cold molecules has developed rapidly in recent years. A current area of emphasis is the development of new ways to bring the temperature of molecules even closer to absolute zero. Samples of cold molecules open the way not only to applications in high-resolution spectroscopy; they also promise entry into exotic realms of chemical reactivity, in which phenomena such as quantum tunneling and quantum resonances dominate.

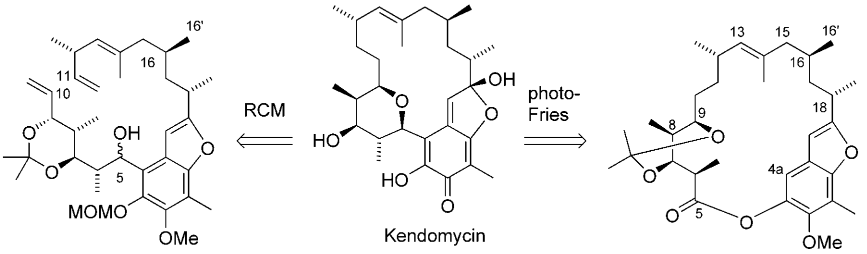
For the USA and Canada:
ANGEWANDTE CHEMIE International Edition (ISSN 1433-7851) is published weekly by Wiley-VCH, PO Box 191161, 69451 Weinheim, Germany. Air freight and mailing in the USA by Publications Expediting Inc., 200 Meacham Ave., Elmont, NY 11003. Periodicals postage paid at Jamaica, NY 11431. 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.

Communications

Natural Product Synthesis

T. Magauer, H. J. Martin, J. Mulzer* ——— 6032 – 6036

Total Synthesis of the Antibiotic Kendomycin by Macrocyclization using Photo-Fries Rearrangement and Ring-Closing Metathesis

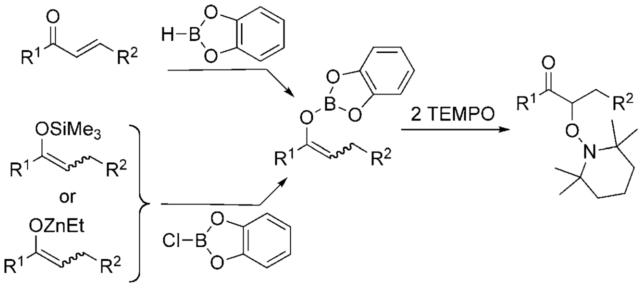


Crossing swords: Two novel approaches to the antibiotic kendomycin are described. Salient features are complex Claisen–Ireland rearrangements and macrocyclizations by ring-closing metathesis (RCM) and a photo-Fries rearrangement (see retrosynthesis scheme).

Synthetic Methods

M. Pouliot, P. Renaud,* K. Schenk, A. Studer,* T. Vogler ——— 6037 – 6040

Oxidation of Catecholboron Enolates with TEMPO

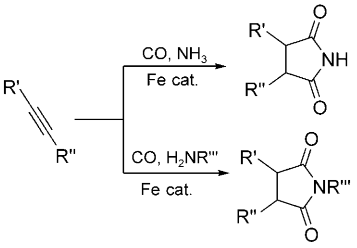


Persistent radical meets enolates: Catecholboron ketone enolates are oxidized efficiently under mild conditions by treatment with the persistent TEMPO radical. Catecholboron enolates are readily prepared by 1,4-reduction of α,β-unsaturated ketones or by transmetalation of silyl enol ethers and zinc enolates with chlorocatecholboranes. Enolate formation and oxidation can be performed as a one-pot process with high regio- and stereoselectivity.

Homogeneous Catalysis

K. M. Driller, H. Klein, R. Jackstell, M. Beller* ——— 6041 – 6044

Iron-Catalyzed Carbonylation: Selective and Efficient Synthesis of Succinimides

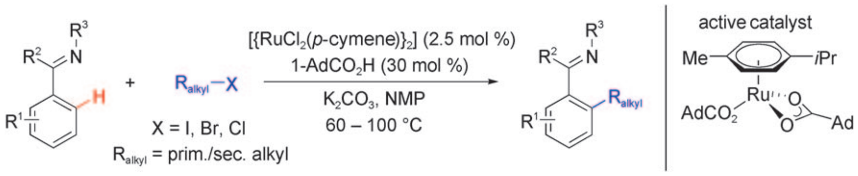


A convenient one-pot method for the synthesis of various substituted succinimides has been developed. By starting from commercially available amines (or ammonia) and alkynes, a range of interesting succinimides have been obtained selectively in the presence of either [Fe(CO)$_5$] or [Fe$_3$(CO)$_{12}$] (see scheme; R′ = H, alkyl, aryl; R″, R‴ = alkyl, aryl).

C–H Bond Functionalization

L. Ackermann,* P. Novák, R. Vicente, N. Hofmann ——— 6045 – 6048

Ruthenium-Catalyzed Regioselective Direct Alkylation of Arenes with Unactivated Alkyl Halides through C–H Bond Cleavage



Cut to the chase: A ruthenium complex derived from 1-adamantyl carboxylate (1-AdCO$_2^-$) enabled highly regioselective intermolecular direct alkylation of arenes with unactivated primary and secondary alkyl halides bearing β-hydrogen atoms (see scheme; NMP = N-methylpyrrolidinone).


A Journal of the Gesellschaft Deutscher Chemiker
Angewandte
International Edition
GDCh
Chemie
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2008–47/16
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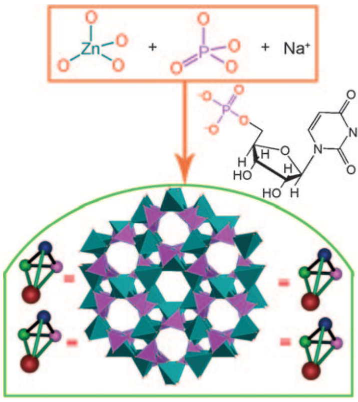
Asymmetric Crystallization

J. Zhang, S. Chen, X. Bu* ____ 6049 – 6051

Nucleotide-Catalyzed Conversion of Racemic Zeolite-Type Zincophosphate into Enantioenriched Crystals

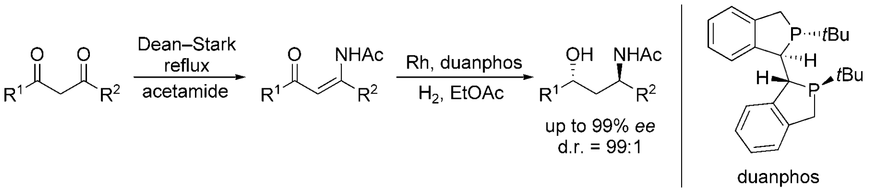
A perfect match: The asymmetric crystallization of an inorganic zeolite-type material has been achieved by using a nucleotide as the chirality-induction agent, and is based on a strategy that matches the functional groups of this agent with the bonding features in the chiral crystals (see picture). The mechanism involves the binding of the phosphate unit to the crystal nuclei and absolute chirality control from the sugar unit.



Asymmetric Catalysis

H. Geng, W. Zhang, J. Chen, G. Hou, L. Zhou, Y. Zou, W. Wu,* X. Zhang* ____ 6052 – 6054

Rhodium-Catalyzed Enantioselective and Diastereoselective Hydrogenation of β-Ketoenamides: Efficient Access to *anti* 1,3-Amino Alcohols

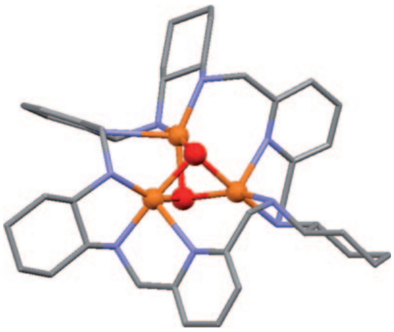


Valuable chiral building blocks were synthesized with excellent enantioselectivity and diastereoselectivity through tandem hydrogenation of (*Z*)-β-ketoenamides, which were in turn prepared by the direct condensation of 1,3-diketones with acetamide (see scheme). The chiral amino alcohol products can be converted into useful γ-aryl isobutylamines through hydrogenolysis with Pd/C. R^1 = aryl, heteroaryl, methyl; R^2 = alkyl.

Encapsulated Cluster

A. González-Alvarez, I. Alfonso,* J. Cano, P. Díaz, V. Gotor, V. Gotor-Fernández, E. García-España,* S. García-Granda, H. R. Jiménez, F. Lloret* ____ 6055 – 6058

A Ferromagnetic $[Cu_3(OH)_2]^{4+}$ Cluster Formed inside a Tritopic Nonaazapyridinophane: Crystal Structure and Solution Studies

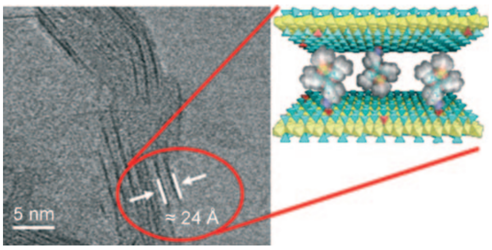


An encapsulated $Cu_3(OH)_2$ ensemble is formed within a macrocyclic ligand consisting of three (*R*,*R*)-1,2-cyclohexanediamine residues linked through 2,6-dimethylpyridine spacers (see picture; Cu orange, O red, N blue). Its crystal structure, magnetic behavior, and characterization in solution by potentiometric measurements and paramagnetic ^1H NMR spectroscopy are reported.

Hybrid Materials

F. Carniato, C. Bisio, G. Gatti, E. Boccaleri, L. Bertinetti, S. Coluccia, O. Monticelli, L. Marchese* ____ 6059 – 6061

Titanosilsesquioxanes Embedded in Synthetic Clay as a Hybrid Material for Polymer Science

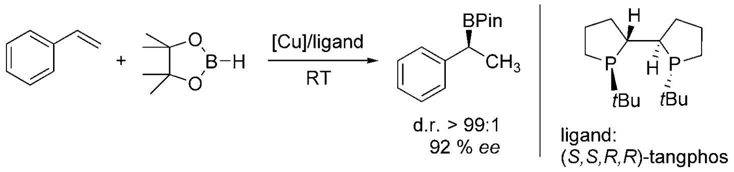


Between the sheets: A novel hybrid material (see graphical representation) was prepared by the intercalation of a bifunctional titanosilsesquioxane in synthetic sodium saponite. The hybrid was used as a filler of polystyrene to create a polymer nanocomposite with enhanced thermooxidative properties.

Asymmetric Hydroboration

D. Noh, H. Chea, J. Ju,
J. Yun* ______ 6062–6064

Highly Regio- and Enantioselective Copper-Catalyzed Hydroboration of Styrenes

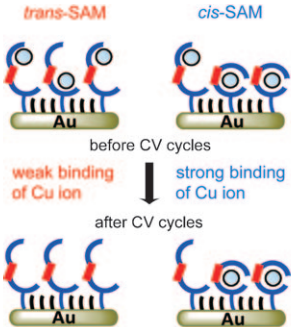


An existing challenge is the development of efficient regioselective catalytic systems that are compatible with stable hydroboration reagents and can be rendered enantioselective by the use of nonracemic ligands. Copper(I) complexes with chelating phosphines catalyzed the regio- and enantioselective hydroboration of styrenes with pinacolborane (PinBH) at room temperature to afford the corresponding branched boronate esters (see example).

Electrochemistry

I. Takahashi, Y. Honda,
S. Hirota* ______ 6065–6068

Regulating Copper-Binding Affinity with Photoisomerizable Azobenzene Ligand by Construction of a Self-Assembled Monolayer

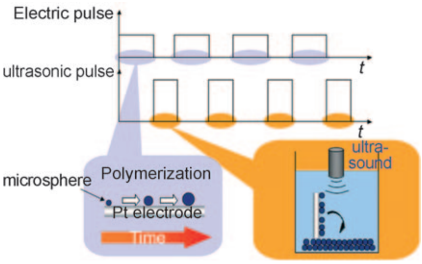


Catch and release! Self-assembled monolayers (SAMs) of both *trans-* and *cis-*azobenzene ligands can bind $\mathrm{Cu^{II}}$ ions. Ions bound to the *trans* ligand are released by cyclic voltammetry (CV) redox scans whereas those bound to the *cis* ligand are not (see picture). Irradiation of the *cis-*SAM with visible light leads to removal of the bound Cu ions by *cis*-to-*trans* photoisomerization.

Conducting Polymers

M. Atobe,* K. Ishikawa, R. Asami,
T. Fuchigami ______ 6069–6072

Size-Controlled Synthesis of Conducting-Polymer Microspheres by Pulsed Sonoelectrochemical Polymerization

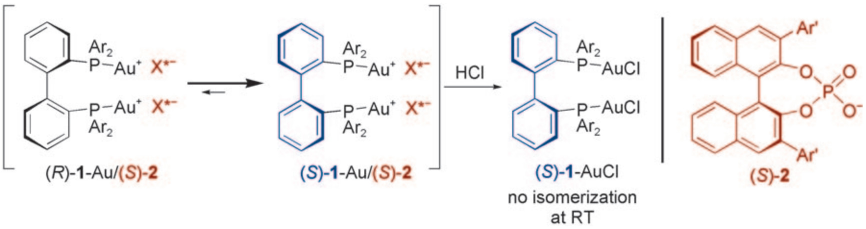


Pulse rate: The size of conducting-polymer microspheres is controlled by adjusting the width of the electric pulses in a pulsed sonoelectrochemical polymerization process (see picture). A solution-cast film of the microspheres on an electrode shows a sharp redox response versus potential.

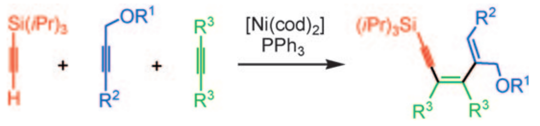
Atropisomerism

K. Aikawa, M. Kojima,
K. Mikami* ______ 6073–6077

Axial Chirality Control of Gold(biphep) Complexes by Chiral Anions: Application to Asymmetric Catalysis



The axial chirality of tropos gold–biphep (biphep = bis(phosphanyl)biphenyl) complexes, which is controlled by a chiral anion such as (*S*)-**2** ($=X^{*-}$), is imprinted and memorized even after the dissociation of chiral anion. An enantiopure complex thus obtained efficiently function as an atropos asymmetric catalyst in an intramolecular hydroamination.



Cross-yned: The first highly chemoselective three-component cross-trimerization between a triisopropylsilylacetylene, an ether-functionalized unsymmetrical internal alkyne, and a symmetrical internal alkyne leading to a 1,3-dien-5-yne was achieved using a $[Ni(cod)_2]/PPh_3$ catalyst. This reaction is applicable for various internal alkynes with high regio- and stereoselectivities.

Synthetic Methods

K. Ogata,* J. Sugasawa, S.-i. Fukuzawa* ______ 6078 – 6080

Highly Chemoselective Nickel-Catalyzed Three-Component Cross-Trimerization of Three Distinct Alkynes Leading to 1,3-Dien-5-ynes

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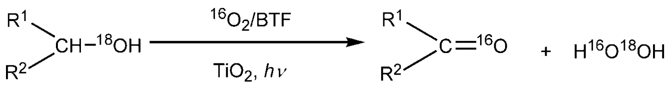

An uninvited guest: In the photocatalytic oxidation of alcohols to their corresponding aldehydes or ketones using TiO_2 in organic solvents, such as benzotrifluoride (BTF), an oxygen atom transfer from the dioxygen to the α-carbon atom of the alcohol dominates the reaction process.

Surface Chemistry

M. Zhang, Q. Wang, C. Chen, L. Zang, W. Ma,* J. Zhao* ______ 6081 – 6084

Oxygen Atom Transfer in the Photocatalytic Oxidation of Alcohols by TiO_2: Oxygen Isotope Studies

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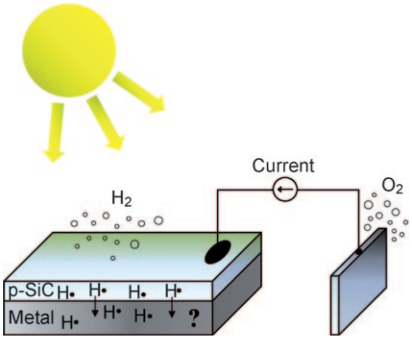


A SiC way to split water: Illuminated p-type 4H-SiC, as a photocathode short-circuited to Pt, was found to split water (see picture). The hydrogen generated is stored to a considerable extent in the solid.

Water Splitting

D. H. van Dorp,* N. Hijnen, M. Di Vece, J. J. Kelly ______ 6085 – 6088

SiC: A Photocathode for Water Splitting and Hydrogen Storage

High five! A novel, facile, and highly stereoselective synthesis of the title compounds has been developed with the control of five stereogenic centers through an organocatalytic asymmetric one-pot tandem process involving a diastereoselective intramolecular nitrone [3+2] cycloaddition (see scheme).

Heterocycles

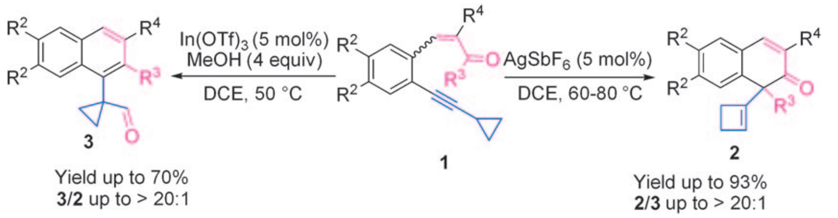
D. Zhu, M. Lu, L. Dai, G. Zhong* ______ 6089 – 6092

Highly Stereoselective One-Pot Synthesis of Bicyclic Isoxazolidines with Five Stereogenic Centers by an Organocatalytic Process

Domino Reactions

L. Liu, J. Zhang* ____________ **6093 – 6096**

Selectivity Control in Lewis Acid Catalyzed Regiodivergent Tandem Cationic Cyclization/Ring Expansion Terminated by Pinacol Rearrangement

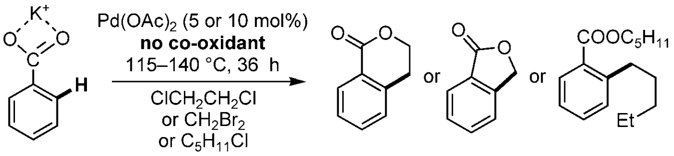


Catalyst is key: The title reaction sequence has been carried out on **1** in the presence of $AgSbF_6$ (5 mol %) in DCE or $In(OTf)_3$ (5 mol %) with MeOH (4 equiv) to afford **2** or **3**, respectively, in up to >20:1 ratio (see scheme; DCE = 1,2-dichloroethane, Tf = trifluoromethanesulfonyl).

C–H Activation

Y.-H. Zhang, B.-F. Shi,
J.-Q. Yu* ____________ **6097 – 6100**

Palladium(II)-Catalyzed *ortho* Alkylation of Benzoic Acids with Alkyl Halides

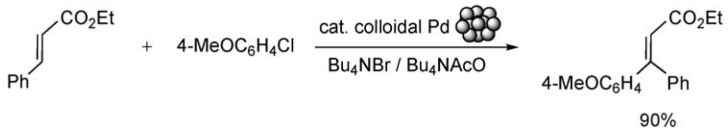


Outsmarting the competition: In the Pd^{II}-catalyzed reaction of benzoates with alkyl halides, an aryl C–H bond is activated before the competitive alkylation of the carboxylate anion can takes place. The alkylation reaction was followed by an intramolecular lactonization to give broadly useful γ- and δ-benzolactones (see scheme).

C–Cl Activation

V. Calò, A. Nacci,* A. Monopoli,
P. Cotugno ____________ **6101 – 6103**

Heck Reactions with Palladium Nanoparticles in Ionic Liquids: Coupling of Aryl Chlorides with Deactivated Olefins

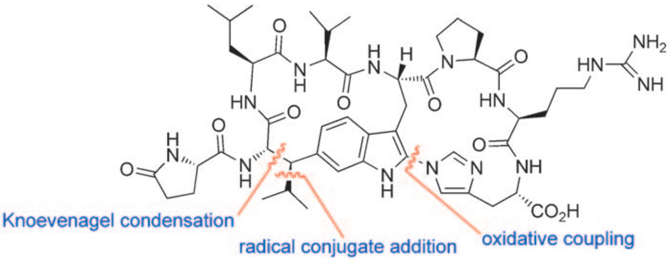


Smooth operators: Heck reactions of aryl chlorides were catalyzed by ligand-free palladium acetate in a molten mixture of tetraalkylammonium ionic liquids under aerobic and relatively mild conditions (see example). Deactivated electron-rich aryl chlorides reacted with a wide array of substituted alkenes under these conditions, which thus enabled the coupling of combinations of substrates that are commonly unreactive with traditional catalysts.

Natural Product Synthesis

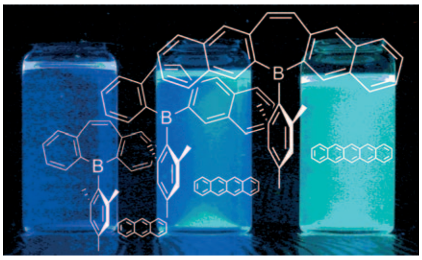
B. Ma, D. N. Litvinov, L. He, B. Banerjee,
S. L. Castle* ____________ **6104 – 6107**

Total Synthesis of Celogentin C



Crazy cross-links: The first total synthesis of a member of the celogentin/moroidin family of antimitotic bicyclic peptides features a Knoevenagel condensation–radical conjugate addition sequence to install the Leu–Trp cross-link and an indole–imidazole oxidative coupling to fashion the Trp–His cross-link (see structure).

Feelin' Blue: Extended aromatic systems with a borepin core (see picture) can be synthesized by tin–boron exchange. The properties of these air- and moisture-tolerant materials include strong blue fluorescence.



Boron Heterocycles

L. G. Mercier, W. E. Piers,*
M. Parvez ______ **6108 – 6111**

Benzo- and Naphthoborepins: Blue-Emitting Boron Analogues of Higher Acenes

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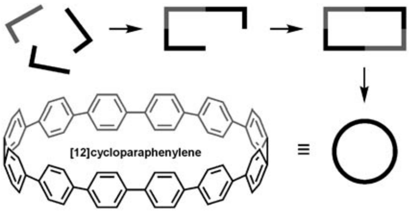
Tighten your belt: [12]Cycloparaphenylene, the sidewall segment of a carbon nanotube (see picture), has been synthesized in a selective manner through stepwise palladium-catalyzed coupling reactions. The synthesis capitalizes on the ability of the *cis*-1,4-dihydroxycyclohexane-1,4-diyl unit to attenuate the build-up of strain energy during macrocyclization.

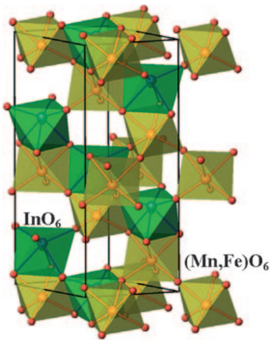


Aromatic Rings

H. Takaba, H. Omachi, Y. Yamamoto,
J. Bouffard, K. Itami* ______ **6112 – 6116**

Selective Synthesis of [12]Cycloparaphenylene

The temperature's rising: New multiferroic perovskites $In_{1-x}M_xMO_3$ with $x = 0.112–0.176$ and $M = Fe_{0.5}Mn_{0.5}$ (see picture) were prepared using high-pressure techniques. They have the same structure as $BiFeO_3$ and high Curie temperatures; in addition, they are canted antiferromagnets with Néel temperatures close to room temperature.



Perovskites

A. A. Belik,* T. Furubayashi, Y. Matsushita,
M. Tanaka, S. Hishita,
E. Takayama-Muromachi ______ **6117 – 6120**

Indium-Based Perovskites: A New Class of Near-Room-Temperature Multiferroics

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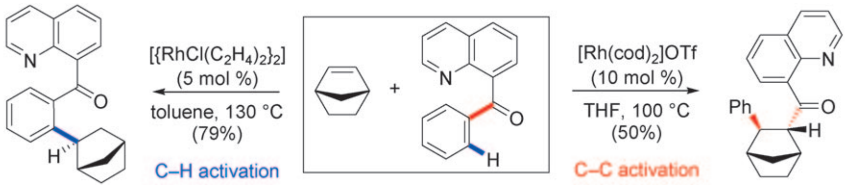


It's all under control: The selection between C–C and C–H activation pathways in 8-acylquinolines can be influenced by the choice of catalyst and solvent (see scheme; cod = cycloocta-1,5-diene). In this approach, an unstrained C–C σ bond is activated and subsequent intermolecular carboacylation of an olefin results in the formation of two new C–C σ bonds.

Homogeneous Catalysis

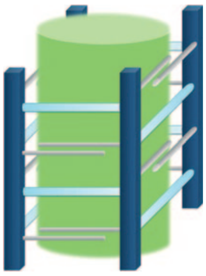
M. T. Wentzel, V. J. Reddy, T. K. Hyster,
C. J. Douglas* ______ **6121 – 6123**

Chemoselectivity in Catalytic C–C and C–H Bond Activation: Controlling Intermolecular Carboacylation and Hydroarylation of Alkenes

Nanoporous Materials

S. H. Huang, C.-H. Lin, W. C. Wu,
S. L. Wang* ______ **6124 – 6127**

Network Topology of a Hybrid Organic Zinc Phosphate with Bimodal Porosity and Hydrogen Adsorption

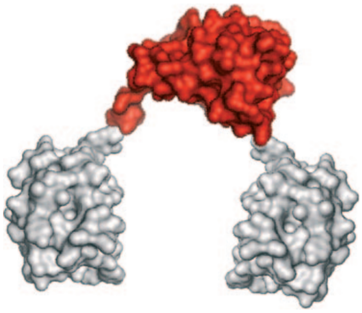


Fill 'er up! A nanoporous hybrid organic zinc phosphate (see picture; $_\infty[Zn_2PO_4]$ columns dark blue) with amine (gray) and aryl carboxylate ligands (cyan) incorporated into the structure has an unusual bimodal porosity and hydrogen gas storage ability.

Protein Labeling

A. E. L. Busche, A. S. Aranko,
M. Talebzadeh-Farooji, F. Bernhard,
V. Dötsch, H. Iwaï* ______ **6128 – 6131**

Segmental Isotopic Labeling of a Central Domain in a Multidomain Protein by Protein *Trans*-Splicing Using Only One Robust DnaE Intein

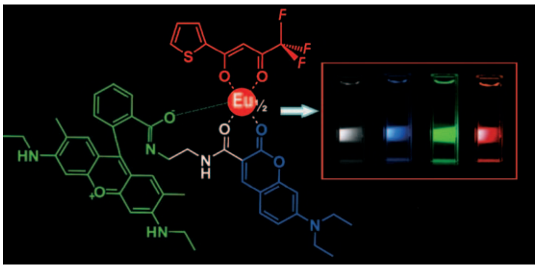


A split intein saves nine: A naturally split intein is used to create an efficient three-way ligation method that does not require any refolding steps. This method enables the selective labeling of a central domain within a three-domain protein, with NMR active isotopes (see picture) allowing domain–domain interactions in multidomain proteins to be investigated.

Fluorophores

G. He, D. Guo, C. He, X. Zhang, X. Zhao,
C. Duan* ______ **6132 – 6135**

A Color-Tunable Europium Complex Emitting Three Primary Colors and White Light

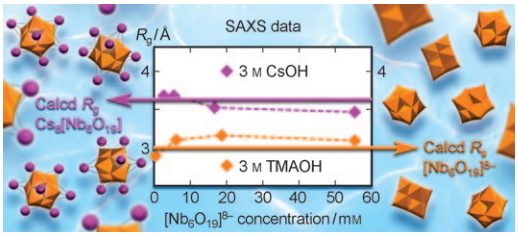


Tunable emission colors are shown by a single-component emitter incorporating an Eu^{III} moiety as the origin of red light and an organic ligand comprising coumarin (blue emission) and Rhodamine 6G (green emission) fluorophores. This dye can emit three individual primary colors (blue, green, and red) as well as nearly pure white light (see picture).

Polyoxometalates

M. R. Antonio,* M. Nyman,*
T. M. Anderson ______ **6136 – 6140**

Direct Observation of Contact Ion-Pair Formation in Aqueous Solution

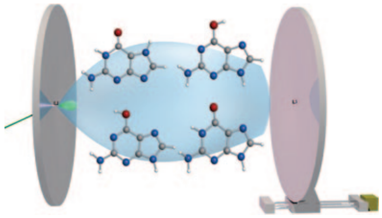


Nude or neutralized? Small-angle X-ray Scattering (SAXS) measurements provide direct observation of contact ion pairing between the $[Nb_6O_{19}]^{8-}$ polyoxometalate and its eight charge-balancing cesium cations in aqueous solution. The radius of gyration (R_g) for $Cs_8[Nb_6O_{19}]$ and $[Nb_6O_{19}]^{8-}$ is shown.

Tautomerism

J. L. Alonso,* I. Peña, J. C. López,
V. Vaquero ———— **6141 – 6143**

Rotational Spectral Signatures of Four Tautomers of Guanine

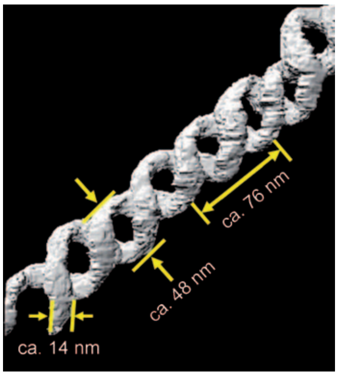


By supersonic jet: The rotational spectrum of guanine was investigated by laser ablation molecular beam Fourier transform microwave (LA MB FTMW) spectroscopy. The N7H keto, N9H keto, N9H enol *trans*, and N9H enol *cis* forms (see structures) were identified conclusively in the supersonic expansion from the experimental values of the rotational constants.

Helical Structures

J. Dupont, G. Liu,* K.-i. Niihara,
R. Kimoto, H. Jinnai ———— **6144 – 6147**

Self-Assembled ABC Triblock Copolymer Double and Triple Helices

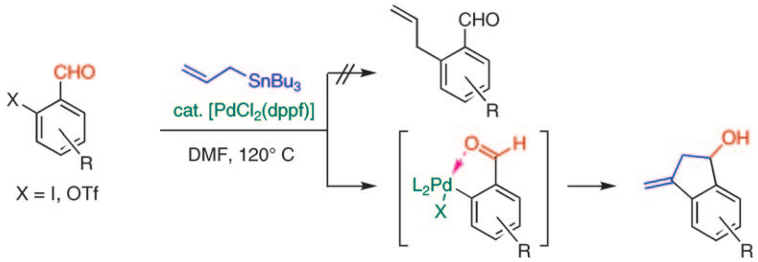


A new twist on the block: The self-assembly of an achiral linear ABC triblock copolymer in solvents that were poor for the middle B block, good for the C block, and marginal for the A block yielded biomimetic double helices (see image), together with some triple helices. This result was reproduced in three different solvent pairs, thus suggesting that the multiple helices are thermodynamic products.

Domino Reactions

J. Cvengroš, J. Schütte, N. Schlörer,
J. Neudörfl, H.-G. Schmalz* **6148 – 6151**

Electrophilic Activation of Benzaldehydes through *ortho* Palladation: One-Pot Synthesis of 3-Methylene-indan-1-ols through a Domino Allylstannylation/Heck Reaction under Neutral Conditions

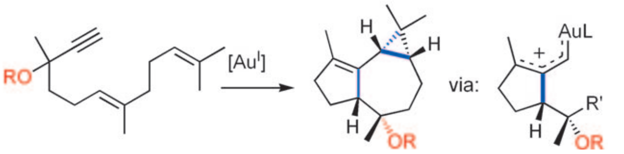


Active neighbors: The Pd-catalyzed reaction of *ortho*-iodo- and *ortho*-trifluoromethanesulfonyloxy(OTf)benzaldehydes with allyltributylstannane gives 3-alkylidene-1-indanols (see scheme). The allylation/Heck reaction involves a new catalytic activation mode: the electrophilic activation of an aldehyde group by a Lewis acidic Pd^{II} center generated at the *ortho* position by oxidative addition. Alkoxystannanes serve as a base equivalent, allowing Heck-type transformations under neutral conditions.

Gold Catalysis

E. Jiménez-Núñez, M. Raducan,
T. Lauterbach, K. Molawi, C. R. Solorio,
A. M. Echavarren* ———— **6152 – 6155**

Evolution of Propargyl Ethers into Allylgold Cations in the Cyclization of Enynes



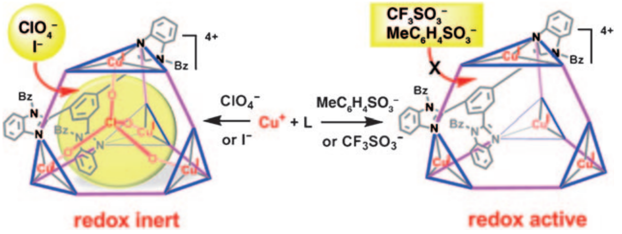
Shifty moves: 1,n-Enynes with propargyl alcohol, ether, or silyl ether units undergo gold(I)-catalyzed intramolecular 1,($n-1$)-migration via allylgold cations (see scheme). These intermediates have been trapped by olefins, indole, and by a formal intramolecular C–H insertion. In the case of aryl-substituted 1,7-enynes, a cascade process involving a Nazarov-type cyclization leads to 6,7-dihydro-5*H*-benzo[*c*]fluorenes.

Contents

Host–Guest Systems

Q.-T. He, X.-P. Li, Y. Liu, Z.-Q. Yu,
W. Wang, C.-Y. Su* ———— **6156 – 6159**

Copper(I) Cuboctahedral Coordination Cages: Host–Guest Dependent Redox Activity



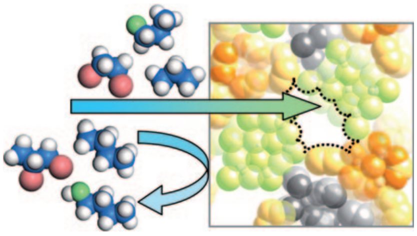
Redox-active cage: Cu^+ coordination cages were assembled from a triangular benzimidazole-based ligand. The cages have cuboctahedral shaped cavities and their redox activity can be tuned by the guest anions.

Organic–Inorganic Hybrids

H. Tagami, S. Uchida,
N. Mizuno* ———— **6160 – 6164**

Size-Selective Sorption of Small Organic Molecules in One-Dimensional Channels of an Ionic Crystalline Organic–Inorganic Hybrid Compound Stabilized by π–π Interactions

Very selective: The cross-sectional area of the narrowest channel opening in an organic–inorganic porous ionic crystal that possesses one-dimensional channels is around 30 $Å^2$. The compound sorbs molecules such as propane, 1-propanol, and 1,2-dichloroethane, which have cross-sectional areas smaller than the channel opening, while *n*-butane, 1-butanol, and 1,2-dichloropropane are excluded (see picture).

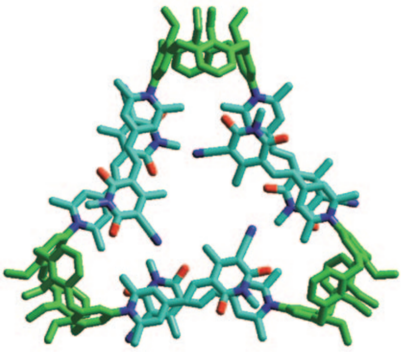


Self-Assembly

A. Lohr, S. Uemura,
F. Würthner* ———— **6165 – 6168**

Trimeric Cyclic Assemblies of Calix[4]arene-Tethered Bismerocyanines

One ring to bind them: A cyclic complex containing three calixarene–bismerocyanine conjugates self-assembles by the pairing of chromophores (see picture). A simple mathematical model is introduced for the trimolecular association, and the potential of dipolar aggregation of merocyanine dyes as a directional and specific supramolecular binding motif is demonstrated. (Calixarenes: green; merocyanines: C pale blue, N dark blue, O red).



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

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