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:

M. Barsukova-Stuckart, N. V. Izarova, G. B. Jameson, V. Ramachandran, Z. Wang, J. v. Tol, N. S. Dalal, R. N. Biboum, B. Keita, L. Nadjo, U. Kortz**
The Dicopper(II)-Containing 22-Palladate(II) $[Cu^{II}_2Pd^{II}_{22}P^{V}_{12}O_{60}(OH)_8]^{20-}$

J. Vogelsang, J. Brazard, T. Adachi, J. C. Bolinger, P. F. Barbara*
Watching the Annealing Process One Polymer Chain at a Time

*H. Ishikawa, M. Honma, Y. Hayashi**
One-Pot Synthesis of a DPP4 Inhibitor by a Four-Component Coupling Reaction Mediated by Diphenylprolinol Silyl Ether

A. Corma, O. de la Torre, M. Renz, N. Villandier*
Production of High-Quality Diesel from Biomass Waste Products

*A. V. Zabula, S. N. Spisak, A. S. Filatov, A. Y. Rogachev, M. A. Petrukhina**
Strain-Releasing Trap for Highly Reactive Electrophiles: Structural Characterization of Bowl-Shaped Arenium Carbocations

*A. Nagy, J. Fulara, I. Garkusha, J. P. Maier**
On the Benzylium/Tropylium-Ion Dichotomy: Electronic Absorption Spectra in Neon Matrices

*H. C. S. Chan, J. Kendrick, F. J. J. Leusen**
The Tale of Molecule VI, a Benchmark Sulfonimide for Crystal-Structure Prediction: Are Its Polymorphs Predictable?

*F. E. Zilly, J. P. Acevedo, W. Augustyniak, A. Deege, U. W. Häusig, M. T. Reetz**
Tuning a P450 Enzyme for Methane Oxidation

*R. P. Sonawane, V. Jheengut, C. Rabalakos, R. Larouche-Gauthier, H. K. Scott, V. K. Aggarwal**
Enantioselective Construction of Quaternary Stereogenic Centers from Tertiary Boronic Esters: Methodology and Applications

X. Lang, H. Ji, C. Chen, W. Ma, J. Zhao**
Selective Formation of Imines by Aerobic Photocatalytic Oxidation of Amines on TiO_2

Author Profile

"When I was eighteen I wanted to be a top chef. The three qualities that make a good scientist are hard work, curiosity, and open-mindedness …"
This and more about Raymond Ziessel can be found on page 1970.

News

R. Müller

A. Sen

K. Suzuki

H. Schwarz

N. Cramer

Books

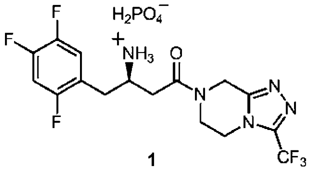
Highlights

Process Chemistry

A. A. Desai* ______ **1974 – 1976**

Sitagliptin Manufacture: A Compelling Tale of Green Chemistry, Process Intensification, and Industrial Asymmetric Catalysis

Generation gap: Three generations of process research and development towards the industrial manufacture of sitagliptin phosphate (**1**), a leading drug for type 2 diabetes, are highlighted.

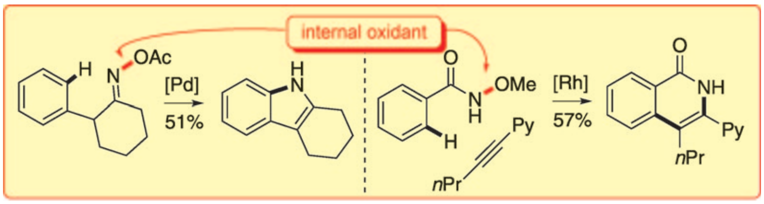


1

C–H Activation

F. W. Patureau,* F. Glorius* **1977 – 1979**

Oxidizing Directing Groups Enable Efficient and Innovative C–H Activation Reactions



Come in! The use of internal oxidants, embedded in the directing group, in C–H activation reactions can lead to higher levels of selectivity and reactivity under milder conditions (see examples). An internal oxidant can be defined as a covalent bond within one of the coupling substrates which oxidizes the metal catalyst. This should open up new avenues in the field of C–H activation.

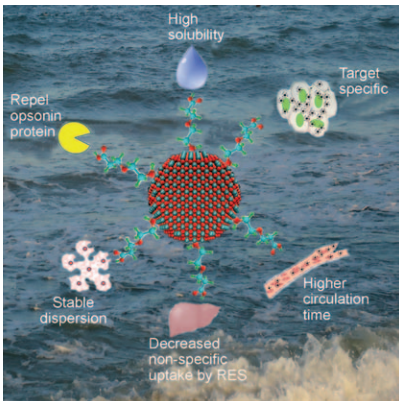
Minireviews

Inorganic Nanoparticles

A. S. Karakoti, S. Das, S. Thevuthasan, S. Seal* ______ **1980 – 1994**

PEGylated Inorganic Nanoparticles

PEGing down nanoparticles: The use of inorganic nanoparticles (NPs) in biomedical applications has been augmented by coating nanoparticles with a thin layer of polyethylene glycol (PEG). The Minireview presents the advantages of (see picture), and the strategies for, PEGylation of inorganic nanoparticles (metals, metal oxides, and quantum dots) along with the applications PEGylated NPs in drug delivery, imaging, and therapeutics.



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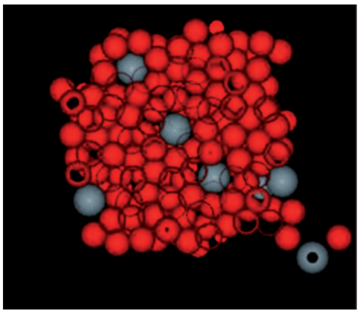
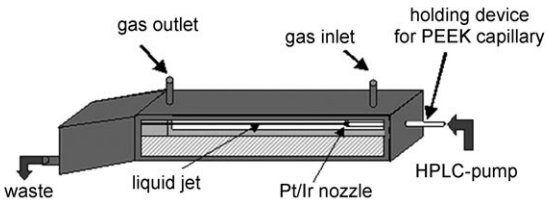
Reviews

Crystal clear? New techniques of molecular simulation pave the way to explore realistic scenarios of crystal nucleation (see picture). Prospective insights into ion association, motif formation, ripening, and additive association will support experiment and, in the long run, the rational design of new materials.



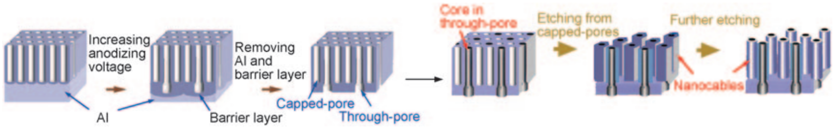
Crystal Growth



A time and a place: Without knowledge of the fundamental steps of the formation of crystalline solids, a rational synthesis of new crystalline solids is impossible. Information about the structure-forming processes may be obtained applying different, appropriate in-situ methods, for example, using a flow-jet cell (see picture) to monitor precipitation.

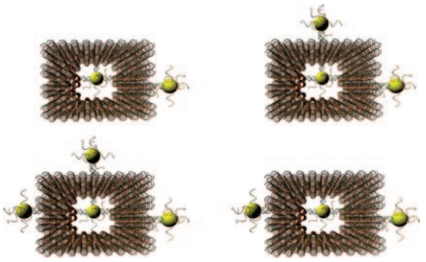
Crystallization

Communications



Filling the pores: A two-layer anodized alumina template consists of two sorts of parallel pores—through-pores and capped-pores. By selectively filling only the through-pores by various techniques, and then wet-chemically etching the walls between the capped-pores, a generic synthetic approach to alumina-sheathed nanocables with cores of different structures and materials such as nanowires (see picture) and nanotubes has been developed.

Nanostructures



Fold and label: A critical challenge in nanoparticle (NP) surface functionalization is to label the NP surface with a single copy of a functional group or to display multiple, unique molecules on the NP surface with control of the orientation and intermolecular distance. This challenge was addressed with the construction of a spatially addressable, self-assembling DNA origami nanocage that encapsulates gold nanoparticles and interrupts its surface symmetry (see scheme).

Nanotechnology

Mixed-Valent Compounds

R. H. Ismayilov, W.-Z. Wang, G.-H. Lee, C.-Y. Yeh, S.-A. Hua, Y. Song, M.-M. Rohmer, M. Bénard,* S.-M. Peng* ______ **2045 – 2048**

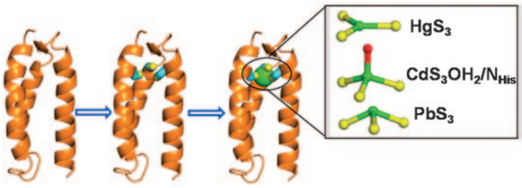
Two Linear Undecanickel Mixed-Valence Complexes: Increasing the Size and the Scope of the Electronic Properties of Nickel Metal Strings

Nickel's eleven: A metal chain consisting of four dinuclear mixed-valent Ni_2^{3+} units linked together by three square-planar Ni^{2+} units has been prepared (see picture of the real molecular model in the lobby of the chemistry building at National Taiwan University). The electronic and magnetic properties of this linear complex containing 11 nickel atoms are reported.

Protein Design

S. Chakraborty, J. Yudenfreund Kravitz, P. W. Thulstrup, L. Hemmingsen, W. F. DeGrado, V. L. Pecoraro* ______ **2049 – 2053**

Design of a Three-Helix Bundle Capable of Binding Heavy Metals in a Triscysteine Environment



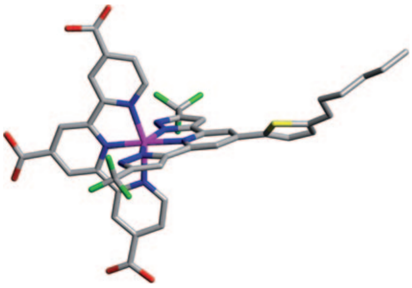
A dream becomes reality: Until now, the engineering of novel metal-binding sites into a three-helix bundle has been an unrealized dream. By using an existing three-helix bundle as a template, a 3-Cys metal-binding site was generated at the C-terminal end by rational design to yield a well-folded and stable construct that encapsulates the heavy metals Hg^{II}, Cd^{II}, and Pb^{II} with high affinity and predefined coordination geometry (see picture).

Dye-Sensitized Solar Cells

C.-C. Chou, K.-L. Wu, Y. Chi,* W.-P. Hu, S. J. Yu, G.-H. Lee, C.-L. Lin, P.-T. Chou ______ **2054 – 2058**

Ruthenium(II) Sensitizers with Heteroleptic Tridentate Chelates for Dye-Sensitized Solar Cells

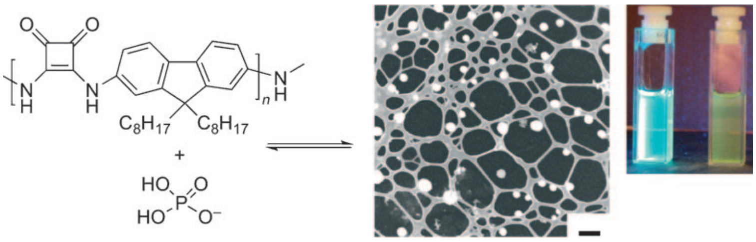
Two new for Ru: Unprecedented Ru^{II} sensitizers are coordinated by two tridentate ligands, a tricarboxyterpyridine, and a dianionic bis(pyrazolyl)pyridine derivative with an extended π-conjugated auxochrome (see picture, Ru magenta, N blue, O red, F green, S yellow, C gray). This new generation of thiocyanate-free Ru^{II} sensitizers offers solar conversion efficiency in dye-sensitized solar cells up to $\eta = 10.7\%$.



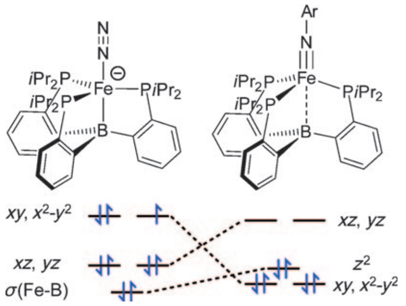
Anion Recognition

A. Rostami, C. J. Wei, G. Guérin, M. S. Taylor* ______ **2059 – 2062**

Anion Detection by a Fluorescent Poly(squaramide): Self-Assembly of Anion-Binding Sites by Polymer Aggregation



Winner by aggregate: Incorporating an anion-binding squaramide group into a polymeric architecture results in drastic alterations in the selectivity and magnitude of its anion-induced response, resulting in a sensitive and discriminating turn-on fluorescence sensor for dihydrogenphosphate ions. This unusual behavior is the result of a cooperative, anion-triggered aggregation process (see picture; scale bar: 1 μm).

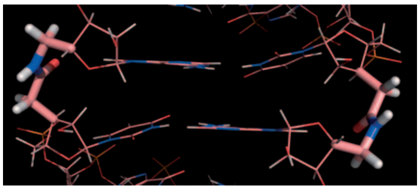


Adaptable metallaboratranes: A tris(phosphino)borane ligand stabilizes both low-valent Fe–N_2 complexes and a mid-valent imido species with a Fe≡NAr bond, thanks to its ability to shuttle between trigonal-bipyramidal and pseudotetrahedral geometries by elongation of the apical iron–boron bond (see picture).

Metallaboratranes

M.-E. Moret, J. C. Peters* ___ **2063 – 2067**

Terminal Iron Dinitrogen and Iron Imide Complexes Supported by a Tris(phosphino)borane Ligand



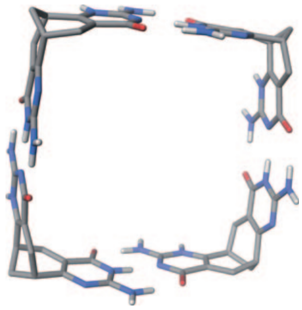
An unlikely substitute: Despite their different chemical structure and local conformation, amide linkages (highlighted in the picture) are excellent mimics of phosphodiester linkages in RNA. They have surprisingly little effect on the global A-type structure, thermal stability, and hydration of RNA and may therefore be promising modifications for the optimization of siRNAs.

Backbone-Modified RNA

C. Selvam, S. Thomas, J. Abbott, S. D. Kennedy, E. Rozners* _ **2068 – 2070**

Amides as Excellent Mimics of Phosphate Linkages in RNA

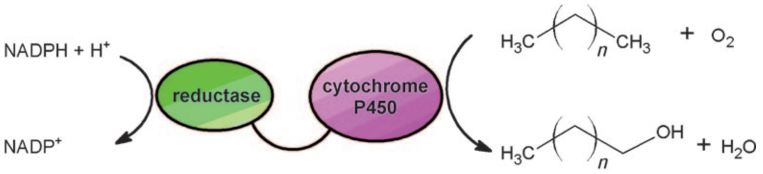
In control: An enantiomerically pure monomer selects the formation of a supramolecular belt (see structure; blue N, red O, gray C, white H) over a helix. Induced tautomerization allows for a three-hydrogen-bond motif to be employed in cyclic homoleptic aggregation.



Self-Assembly

E. Orentas, C.-J. Wallentin, K.-E. Bergquist, M. Lund, E. Butkus,* K. Wärnmark* ___ **2071 – 2074**

Topology Selection and Tautoleptic Aggregation: Formation of an Enantiomerically Pure Supramolecular Belt over a Helix



Going green: Chemical methods for the hydroxylation of alkanes involve toxic, dangerous reagents and are not very selective. In a biochemical alternative route based on an artificial self-sufficient cytochrome P450, the highly selective and efficient terminal hydroxylation of *n*-alkanes is possible under mild conditions (see scheme; NADPH is the reduced form of nicotinamide adenine dinucleotide phosphate ($NADP^+$)).

Enzymatic C–H Activation

M. Bordeaux, A. Galarneau, F. Fajula, J. Drone* ___ **2075 – 2079**

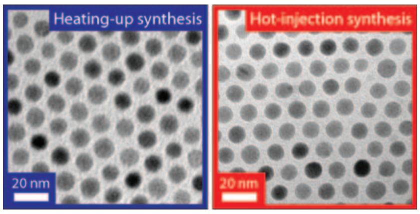
A Regioselective Biocatalyst for Alkane Activation under Mild Conditions

Contents

Magnetic Nanoparticles

J. V. I. Timonen,* E. T. Seppälä, O. Ikkala, R. H. A. Ras* ——— **2080 – 2084**

From Hot-Injection Synthesis to Heating-Up Synthesis of Cobalt Nanoparticles: Observation of Kinetically Controllable Nucleation

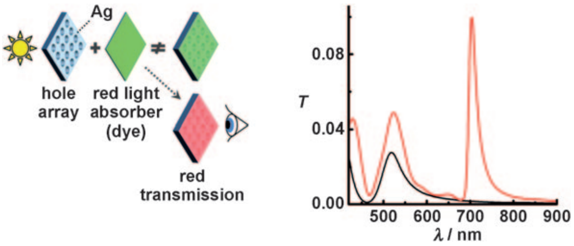


Almost equal: Particle nucleation in the widely studied hot-injection synthesis of magnetic cobalt nanoparticles (see TEM image) was found to take place well after the injection and to be temperature-controlled. This insight into particle nucleation led to a technologically relevant heating-up synthesis of nearly monodisperse cobalt nanoparticles on a multigram scale. The particle size could be tuned simply by adjusting the heating rate.

Transparent Metal

J. A. Hutchison,* D. M. O'Carroll, T. Schwartz, C. Genet, T. W. Ebbesen* ——— **2085 – 2089**

Absorption-Induced Transparency

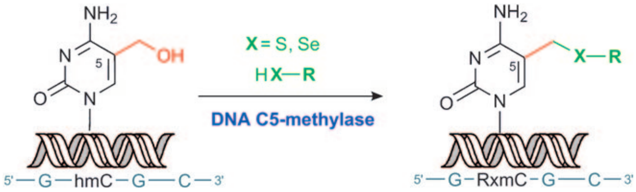


Transparent windows are opened in optically thick metallic films perforated with subwavelength holes by adsorbing a thin layer of molecules at the surface. Counterintuitively, transmission occurs at wavelengths at which the molecular layer absorbs strongly (in this case at 700 nm), as revealed by transmission spectra of the hole array without (black curve) and with adsorbed molecules (red).

DNA Labeling

Z. Liutkevičiūtė, E. Kriukienė, I. Grigaitytė, V. Masevičius, S. Klimašauskas* ——— **2090 – 2093**

Methyltransferase-Directed Derivatization of 5-Hydroxymethylcytosine in DNA



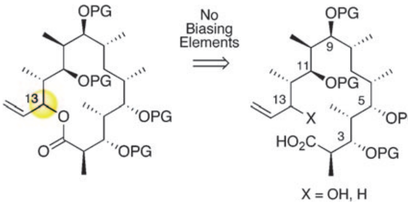
Sequence-specific derivatization: Enzymatic methylation of cytosine in DNA is part of an epigenetic regulatory network in vertebrates. In the absence of the methylation cofactor *S*-adenosyl-L-methionine, bacterial cytosine-5 methyltransferases can catalyze the condensation of aliphatic thiols and selenols with 5-hydroxymethylcytosine, a recently discovered nucleobase in mammalian DNA, to yield 5-chalcogenomethyl derivatives (see scheme).

Natural Product Synthesis

E. M. Stang, M. C. White* — **2094 – 2097**

On the Macrocyclization of the Erythromycin Core: Preorganization is Not Required

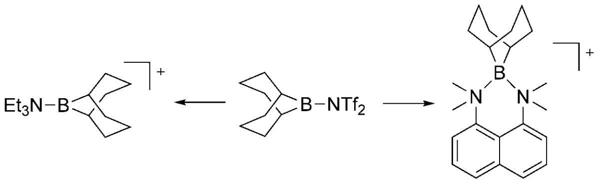
Free of bias: Preorganization is not a requirement for the efficient cyclization of the erythromycin core, as has always been assumed. This finding has enabled C—H oxidative cyclization or Yamaguchi macrocyclization to form stereochemically modified erythromycin structures that were previously inaccessible by using the traditional biasing element approach (see scheme; PG = protecting group).



Borylation

A. Prokofjevs, J. W. Kampf, E. Vedejs* ________ 2098 – 2101

A Boronium Ion with Exceptional Electrophilicity



Barely bidentate: The adduct of dimethylamino naphthalene (proton sponge) and 9-BBN-NTf$_2$ is activated by steric hinderance for intermolecular borylation (see scheme). A contrasting addition/elimination pathway is favored when using monodentate triethylamine which gives the first observable borenium salt (9-BBN-NEt$_3^+$Tf$_2$N$^-$) lacking any n- or π-donor substitutents.

Borylation

A. Del Grosso, P. J. Singleton, C. A. Muryn, M. J. Ingleson* ________ 2102 – 2106

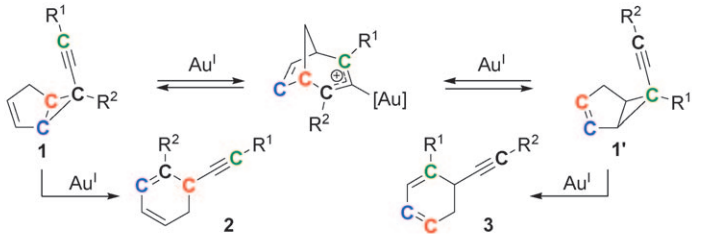
Pinacol Boronates by Direct Arene Borylation with Borenium Cations

Borenium does it direct: A boron analogue of the Friedel–Crafts reaction uses inexpensive catecholatoborenium cations that are sufficiently electrophilic to borylate arenes by electrophilic aromatic substitution. The direct arene borylation proceeds with high regioselectivity for a range of anilines, N-heterocycles, and thiophenes. Subsequent one-pot transesterification provides the synthetically useful pinacol boronate esters (see scheme).

Gold Catalysis

J. Barluenga,* E. Tudela, R. Vicente, A. Ballesteros, M. Tomás ___ 2107 – 2110

Gold-Catalyzed Rearrangements: Reaction Pathways Using 1-Alkenyl-2-alkynylcyclopropane Substrates

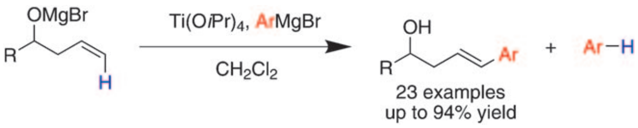


New reactivity patterns: Gold(I) catalyzes the conversion of cyclopentenes (**1**/**1**′) into cyclohexadienes (**2**/**3**). This profound skeleton rearrangement comprises ring expansion and a [1,2]-alkynyl shift, and is thought to be initiated by the cleavage of the bridging C−C bond. The proposed allyl–gold cation intermediate is trapped with alcohols to provide bicyclo[3.2.1]octadiene and tricyclo[3.2.1.0^{2,7}]octane derivatives.

Oxidative Arylation

K. S. Lee, J. M. Ready* ___ 2111 – 2114

Titanium-Mediated Oxidative Arylation of Homoallylic Alcohols

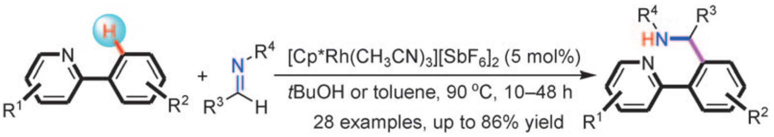


***E*-Substituted styrene derivatives** are synthesized from terminal olefins and aryl Grignard reagents through Ti^{IV}-mediated oxidative coupling (see scheme). Substrates include homoallylic alcohols containing a range of functional groups and substituted aryl Grignard reagents. The reaction may proceed through aryltitanation followed by β-hydride elimination; reductive elimination of arene occurs from a Ti^{IV}H(aryl) intermediate.

C–H Activation

Y. Li, B.-J. Li, W.-H. Wang, W.-P. Huang, X.-S. Zhang, K. Chen, Z.-J. Shi* ______ **2115 – 2119**

Rhodium-Catalyzed Direct Addition of Aryl C–H Bonds to *N*-Sulfonyl Aldimines

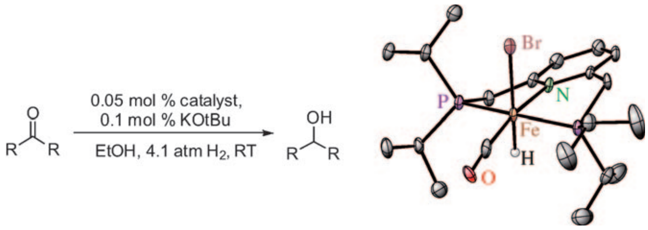


A mild mannered reaction: An ideal addition of "inert" aryl C–H bonds to C=N groups has been achieved in the absence of any additives and without any undesirable by-products (see scheme). The reaction can be carried out under mild conditions without the requirement of special techniques. Cp* = pentamethylcyclopentadienyl.

Catalytic Hydrogenation

R. Langer, G. Leitus, Y. Ben-David, D. Milstein* ______ **2120 – 2124**

Efficient Hydrogenation of Ketones Catalyzed by an Iron Pincer Complex



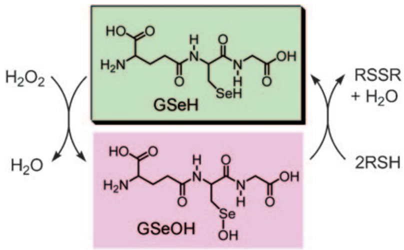
Reductions made easy: A highly efficient iron catalyst effects the homogeneous hydrogenation of ketones under very mild conditions (see scheme). A mechanism including the insertion of the ketone into the Fe–H bond, followed by addition of hydrogen to a dearomatized intermediate is proposed.

Selenopeptides

S. Yoshida, F. Kumakura, I. Komatsu, K. Arai, Y. Onuma, H. Hojo,* B. G. Singh, K. I. Priyadarsini, M. Iwaoka* ______ **2125 – 2128**

Antioxidative Glutathione Peroxidase Activity of Selenoglutathione

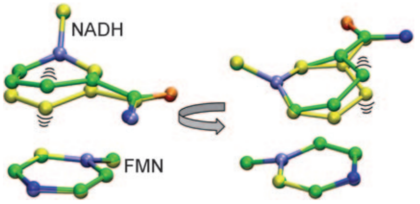
Pep talk: Selenoglutathione (GSeH) and other peptides containing selenocysteine with an amino acid sequence of the glutathione peroxidase (GPx) active site are obtained in the oxidized form by solid-phase peptide synthesis. Their GPx activity against hydrogen peroxide (see picture) reveals that GSeH has effective antioxidant activity in addition to the biological function of a glutathione analogue.



Enzymatic Hydrogen Transfer

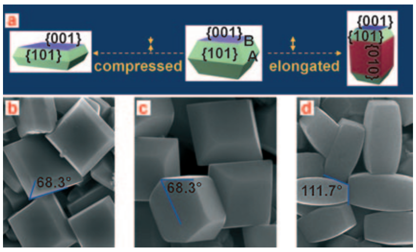
L. O. Johannissen,* N. S. Scrutton, M. J. Sutcliffe* ______ **2129 – 2132**

How Does Pressure Affect Barrier Compression and Isotope Effects in an Enzymatic Hydrogen Tunneling Reaction?



Promoting vibrations—sub-ps donor–acceptor compressive modes in H-transfer reactions—cannot be directly observed experimentally. By using molecular dynamics simulations, an enzymic promoting vibration was identified that becomes stiffer with increasing pressure. This result explains previously observed changes in the rate and kinetic isotope effect for this enzyme-catalyzed H-transfer (see picture; NADH = nicotinamide adenine dinucleotide, FMN = flavin mononucleotide).

Contrary to conventional understanding, clean anatase {001} facets exhibit lower photoreactivity than {101} facets. Furthermore, the {010} facets showed the highest photocatalytic reactivity in generating OH radicals and hydrogen evolution. This behavior was revealed by studies on crystals grown hydrothermally to have a predominance of {001}, {101}, or {010} facets (left to right in picture (a) and (b)–(d), respectively).



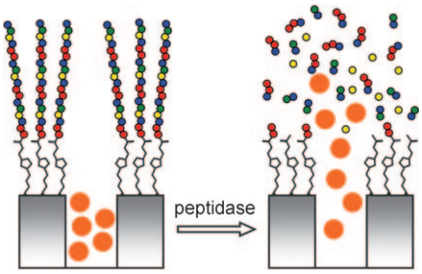
Photoreactivity

J. Pan, G. Liu,* G. Q. Lu,
H.-M. Cheng* ———— 2133–2137

On the True Photoreactivity Order of {001}, {010}, and {101} Facets of Anatase TiO_2 Crystals

---

Gated community: Peptides anchored to the surface of silica mesoporous supports by a valid procedure act as gatekeepers. In this way, "zero release" supports that selectively deliver the cargo in the presence of a suitable peptidase are obtained (see picture, red spheres: cargo, colored chains: peptides).



Triggered Release

C. Coll, L. Mondragón,
R. Martínez-Máñez,* F. Sancenón,
M. D. Marcos, J. Soto, P. Amorós,
E. Pérez-Payá* ———— 2138–2140

Enzyme-Mediated Controlled Release Systems by Anchoring Peptide Sequences on Mesoporous Silica Supports

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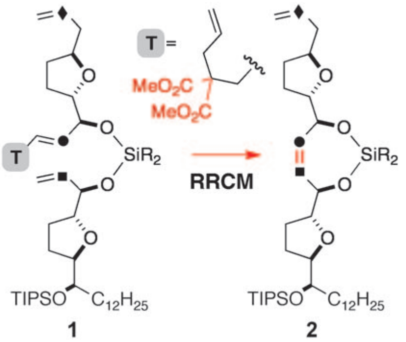

Passing the baton: The relay ring-closing metathesis (RRCM) reaction of complex polyenes **1** has been studied. Several relay subunits (**T**) were examined and many did not sufficiently activate the RRCM. An allylmalonate-containing relay subunit solved this problem, and efficiently lead to the diene **2**. TIPS = triisopropylsilyl.

Metathesis

T. R. Hoye,* J. Jeon,
M. A. Tennakoon ———— 2141–2143

Allylmalonate as an Activator Subunit for the Initiation of Relay Ring-Closing Metathesis Reactions

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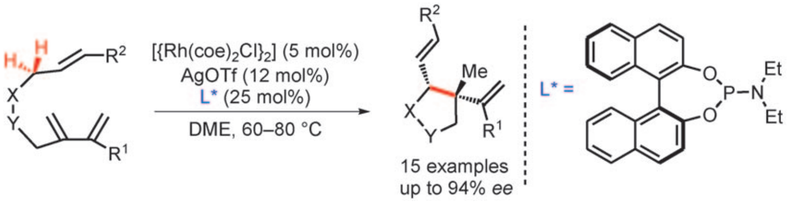


Easy and efficient: By applying the title transformation, two adjacent sp^3 stereogenic centers, one of which is a quaternary carbon center, can be easily formed. This asymmetric reaction provides easy and efficient access to multifunctionalized tetrahydropyrrole, tetrahydrofuran, and cyclopentane compounds (see scheme; coe = cyclooctene, DME = 1,2-dimethoxyethane, Tf = trifluoromethanesulfonyl).

C–H Activation

Q. Li, Z.-X. Yu* ———— 2144–2147

Enantioselective Rhodium-Catalyzed Allylic C–H Activation for the Addition to Conjugated Dienes

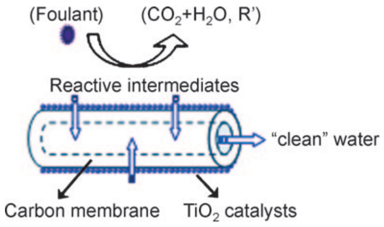
Contents

Water Purification

Y. Yang, J. Li,* H. Wang, X. Song, T. Wang,* B. He, X. Liang, H. H. Ngo **2148 – 2150**

An Electrocatalytic Membrane Reactor with Self-Cleaning Function for Industrial Wastewater Treatment

Controlling membrane fouling: An electrocatalytic reactor with a TiO_2/C membrane that functions both as filter and anode was designed for industrial wastewater treatment. During wastewater treatment, the TiO_2/C membrane generates microflows that alleviate concentration polarization and reactive intermediates that decompose organic foulants on the membrane surface or in pores into CO_2 and H_2O or small biodegradable products (see picture).

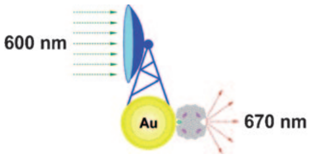


Bioanalytical Methods

R. Wilson,* D. V. Nicolau **2151 – 2154**

Separation-Free Detection of Biological Molecules Based On Plasmon-Enhanced Fluorescence

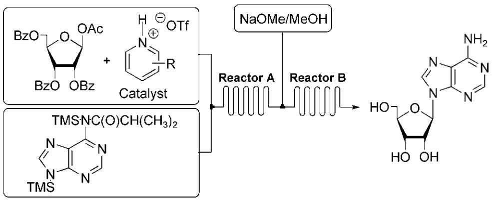
Optical antenna: The fluorescence of analyte molecules in proximity to noble-metal nanostructures is enhanced by plasmon-induced electric fields (see schematic). This phenomenon allows the progress of molecular binding events of biological molecules to be monitored in real-time.



Continuous Flow

A. Sniady, M. W. Bedore, T. F. Jamison* **2155 – 2158**

One-Flow, Multistep Synthesis of Nucleosides by Brønsted Acid-Catalyzed Glycosylation

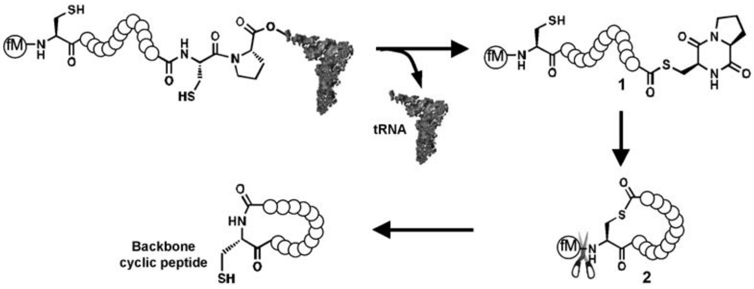


Nucleosides in flow: A general, scalable method of Brønsted acid-catalyzed nucleoside formation is described. Because of the high reaction temperatures readily available to the flow reaction format, mild Brønsted acids, particularly pyridinium triflates, can be used. A one-flow multistep synthesis of unprotected nucleosides is also reported (see scheme).

Peptide Cyclization

T. J. Kang,* Y. Hayashi, H. Suga* **2159 – 2161**

Synthesis of the Backbone Cyclic Peptide Sunflower Trypsin Inhibitor-1 Promoted by the Induced Peptidyl-tRNA Drop-off

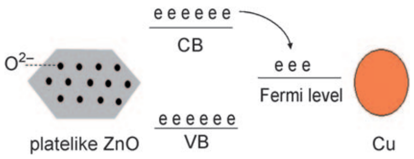


Shifting around: A rapid one-pot preparation of a backbone cyclic peptide from peptidyl-tRNA, which has been ejected from the ribosome is described. A series of intramolecular rearrangements release tRNA and afford **1**. A cyclization gives **2** and on enzymatic removal of the formylated methionine (fM) the backbone cyclic peptide is generated.

Heterogeneous Catalysis

F. Liao, Y. Huang, J. Ge, W. Zheng, K. Tedsree, P. Collier, X. Hong,* S. C. Tsang* ____ 2162–2165

Morphology-Dependent Interactions of ZnO with Cu Nanoparticles at the Materials' Interface in Selective Hydrogenation of CO_2 to CH_3OH

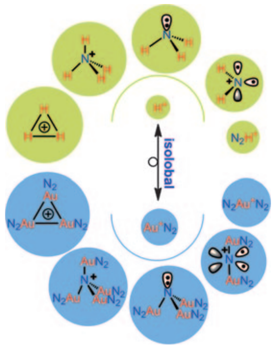


A good face: The (002) polar facet of platelike ZnO nanoparticles gives a much stronger electronic interaction with Cu nanoparticles than other facets (see picture; CB = conductance band; VB = valence band) and shows higher selectivity in the catalytic hydrogenation of CO_2 to methanol. This finding provides the basis for the rational design of new nanocatalysts for CO_2 hydrogenation.

Cluster Compounds

X. H. Liang, X. Wu, T. Dong, Z. B. Qin, K. Tan, X. Lu,* Z. C. Tang* __ 2166–2170

The Dinitrogen-Ligated Triaurum Cation, Aurodiazenylium, Auronitrenium, Auroammonia, and Auroammonium

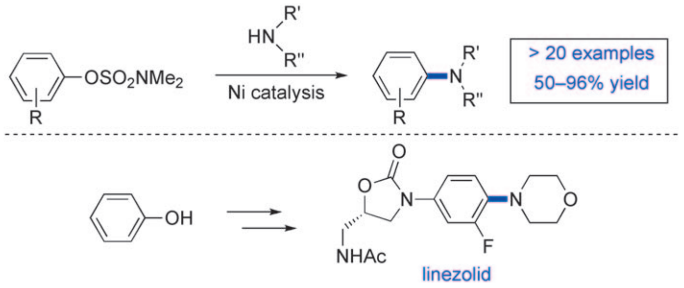


Go for the gold! Laser-vaporized abundant Au/N binary cations, such as the title species, and the triaurum cation are structurally and electronically analogous to the N/H species and trihydrogen cation $[H_3]^+$, respectively, showing the isolobal analogy between $[AuN_2]^+$ and H^+ (see picture).

Amination Reactions

S. D. Ramgren, A. L. Silberstein, Y. Yang, N. K. Garg* ____ 2171–2173

Nickel-Catalyzed Amination of Aryl Sulfamates

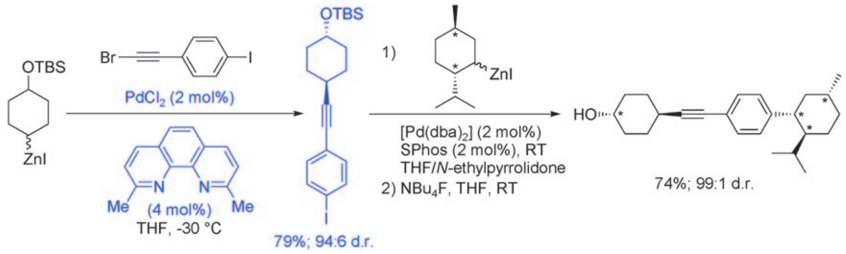


Broad in scope: The first amination of aryl sulfamates, which are attractive cross-coupling partners, particularly for multistep syntheses, was achieved by using a nickel catalyst. The method provides a versatile means to use simple derivatives of phenol as precursors to polysubstituted aryl amines, as exemplified by a concise synthesis of the antibacterial drug linezolid (see scheme).

Stereoselective Cross-Coupling

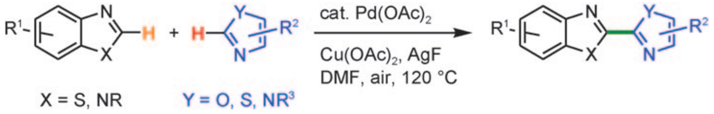
T. Thaler, L.-N. Guo, P. Mayer, P. Knochel* ____ 2174–2177

Highly Diastereoselective C(sp^3)–C(sp) Cross-Coupling Reactions between 1,3- and 1,4-Substituted Cyclohexylzinc Reagents and Bromoalkynes through Remote Stereocontrol



Under the influence: The use of the readily available and inexpensive orthophenanthroline derivative neocuproine as a ligand in the generally applicable and highly stereoselective palladium-catalyzed title reaction results in diastereomeric ratios of up to 98:2. The method can be used for the synthesis of building blocks which may be relevant for the synthesis of liquid crystalline mesogens and their chiral dopants (see scheme, dba = *trans,trans*-dibenzylideneacetone).

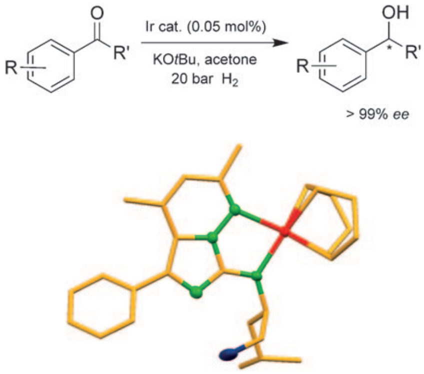
C–H Functionalization



Different enough: Palladium-catalyzed cross-couplings of benzazoles with imidazoles, oxazoles, and thiazoles furnish unsymmetrical 2,2′-bisheteroaryls in high yield (see scheme). These oxidative C–C bond formations use the selective cleavage of the C–H bond at C2 in the two coupling partners and are robust enough to be conducted under normal air atmosphere.

Asymmetric Catalysis

New family of cats: Tailormade amido iridium catalysts with simple structures and no P ligands show excellent enantioselectivities and activities in the asymmetric hydrogenation of simple ketones (see scheme; C yellow, N green, O blue, Ir red). These catalysts may thus be the key to ecologically and economically optimized value creation



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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