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:

*F. Akagi, T. Matsuo, H. Kawaguchi**
Dinitrogen Cleavage by a Diniobium Tetrahydride Complex: Formation of a Nitride and Its Conversion to Imide Species

J.-H. Jang, D. Dendukuri, T. A. Hatton, E. L. Thomas, P. S. Doyle**
A Route to Three-Dimensional Structures in a Microfluidic Device: Stop-Flow Interference Lithography

Y. Zhao, A. W. Mitra, A. H. Hoveyda, M. L. Snapper**
Kinetic Resolution of 1,2-Diols through Highly Site- and Enantioselective Catalytic Silylation

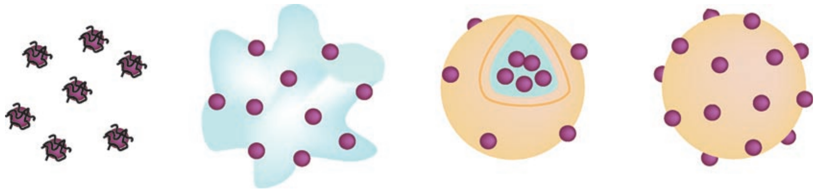
X. Wang, L. Andrews, S. Riedel, M. Kaupp**
Mercury is a Transition Metal: The First Experimental Evidence for HgF_4

*R. Srivastava, P. Mani, N. Hahn, P. Strasser**
Efficient Oxygen Reduction Fuel Cell Electrocatalysis on Voltammetrically De-alloyed Pt-Cu-Co Nanoparticles

J.-J. Cid, J.-H. Yum, S.-R. Jang, M. K. Nazeeruddin, E. Martínez-Ferrero, E. Palomares, J. Ko, M. Grätzel, T. Torres**
Molecular Co-sensitization for Efficient Panchromatic Dye-Sensitized Solar Cells

Books

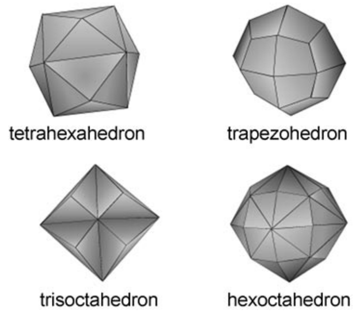
Highlights



As green as gold: Polymer-supported gold nanoparticles (see picture; Au purple spheres) are becoming popular as catalysts for the selective oxidation of alcohols using molecular oxygen under moderate conditions. Appropriate selection of the polymer substrates, functional groups, size of the gold particles, and solvents leads to higher catalytic activities than with gold catalysts supported on metal oxides or on activated carbon.

Gold Catalysts

Size and shape do matter sometimes: Nanocrystals of noble metals are attractive for use as catalysts because of their high surface-to-volume ratios and high surface energies, which result in their surface atoms being highly active. Recently reported platinum nanocrystals with a novel tetrahexahedral shape reveal an enhanced catalytic activity over their "amorphous" nanoparticle counterparts.



Nanocrystals

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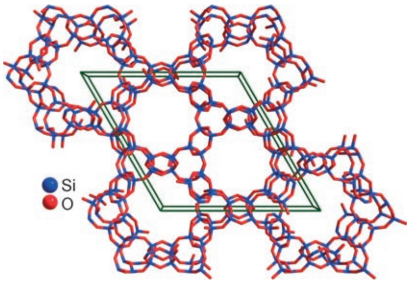
Essays

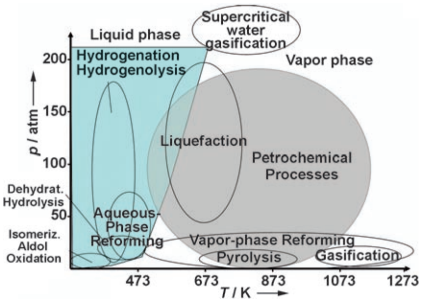
Catalyst Design



Exercises in enumeration: What becomes possible if one is equipped with a deeper knowledge of how many and what kind of open-structure (microporous) solids may exist? The Essay gives an overview of efforts to build libraries of crystal structures useful for catalysis, such as zeolites. The library can be used not only to solve structures of existing microporous solids but also to design new catalysts.

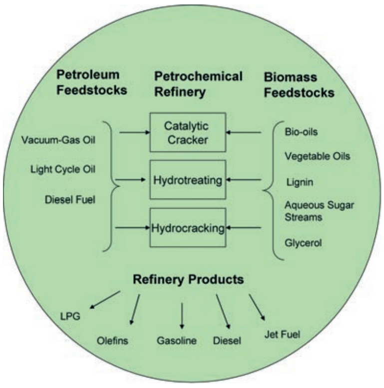
Reviews

Biorefineries



Processing plants: Being renewable, biomass is the only sustainable source of energy and organic carbon for today's industrialized society. Biomass-derived carbohydrate feeds are usually processed catalytically in the liquid phase to produce chemicals, fuels, and polymers. To develop efficient catalytic processes, an understanding of reaction mechanisms at a fundamental level is required.

Biorefineries



Let's get cracking! Biofuels can be produced in existing oil refineries through hydrotreating and catalytic cracking of renewable and sustainable biomass-derived feedstocks. By making use of the existing infrastructure in the production of biofuels, a rapid transition to a more sustainable economy is possible without the large capital costs involved in setting up new refinery plants.

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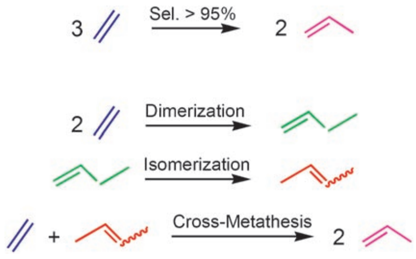
Communications

Ethylene to Propylene

M. Taoufik,* E. Le Roux, J. Thivolle-Cazat, J.-M. Basset* **7202–7205**

Direct Transformation of Ethylene into Propylene Catalyzed by a Tungsten Hydride Supported on Alumina: Trifunctional Single-Site Catalysis

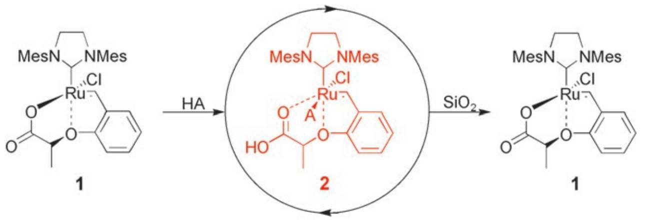
A trifunctional single-site catalyst: Ethylene is selectively transformed into propylene in a continuous-flow reactor in the presence of the supported tungsten hydride $W(H)_3/Al_2O_3$. Since the catalyst is also active for olefin metathesis, the reaction is likely to proceed at a “trifunctional catalytic site” by ethylene dimerization, butene isomerization, and cross-metathesis of ethylene with 2-butenes (see picture).



Olefin Metathesis Catalysts

R. Gawin, A. Makal, K. Woźniak, M. Mauduit,* K. Grela* **7206–7209**

A Dormant Ruthenium Catalyst Bearing a Chelating Carboxylate Ligand: In Situ Activation and Application in Metathesis Reactions

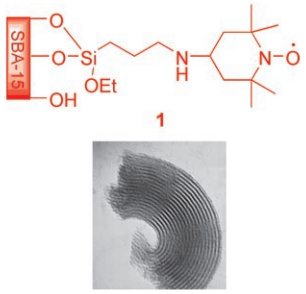


Sleeping beauty: A dormant catalyst, **1**, can be activated in situ by various acids (HA) to form complexes **2** of high activity in olefin metathesis. After the reaction and when subjected to silica gel chromatography, these catalysts are readily transformed back into **1**. This system shows a high degree of tunability and excellent applicability in model metathesis reactions.

Aerobic Oxidations

B. Karimi,* A. Biglari, J. H. Clark, V. Budarin **7210–7213**

Green, Transition-Metal-Free Aerobic Oxidation of Alcohols Using a Highly Durable Supported Organocatalyst



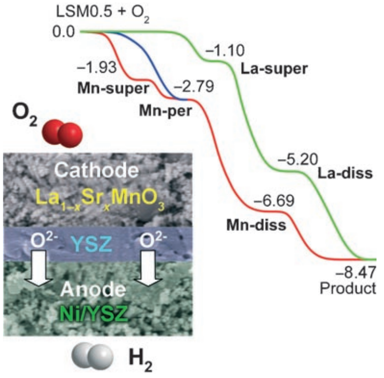
Up-tempo catalysis: The nitroxyl radical 2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO) supported on the mesoporous material SBA-15 provides a highly stable and reusable catalyst (**1**) for the aerobic oxidation of primary, secondary, and highly hindered alcohols. The catalyst can be recovered and reused in at least another 14 reaction cycles.

Fuel Cells

Y. Choi, M. C. Lin, M. Liu* **7214–7219**

Computational Study on the Catalytic Mechanism of Oxygen Reduction on $La_{0.5}Sr_{0.5}MnO_3$ in Solid Oxide Fuel Cells

Designing better cathode materials for solid oxide fuel cells can be aided by quantum-chemical calculations on oxygen reduction on Sr-doped $LaMnO_3$ surfaces ($La_{0.5}Sr_{0.5}MnO_3$ = LSM0.5), which show that the reaction (see energy profile [eV]) proceeds via superoxo- (**La-super** and **Mn-super**) and peroxo-like (**Mn-per**) intermediates, dissociation and incorporation into the bulk (**La-diss** and **Mn-diss**), and diffusion to a more stable site (Product). YSZ = yttria-stabilized zirconia.



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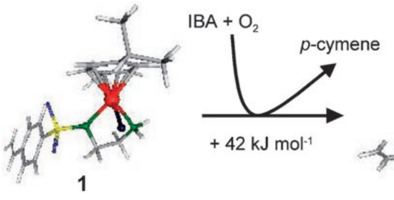
Immobilized Catalysts

M. Tada, R. Coquet, J. Yoshida,
M. Kinoshita, Y. Iwasawa* ______ 7220 – 7223

Selective Formation of a Coordinatively Unsaturated Metal Complex at a Surface: A SiO$_2$-Immobilized, Three-Coordinate Ruthenium Catalyst for Alkene Epoxidation

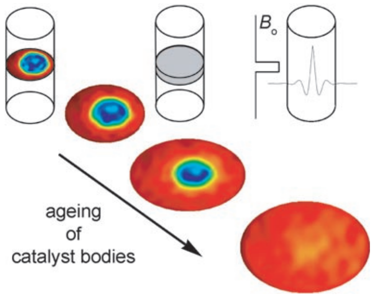


Unsaturated but air-stable: A three-coordinate Ru complex, **2**, highly active for alkene epoxidation and recyclable in air, was prepared on SiO$_2$ by exploiting the exothermic reaction between O$_2$ and isobutyraldehyde (IBA) to eliminate a *p*-cymene ligand from a coordinatively saturated precursor **1** (Ru red, Cl dark blue, N green, S yellow, O blue, C gray, H white). In contrast, direct activation with O$_2$ alone was calculated to be endothermic.

Catalyst Preparation

J. A. Bergwerff, A. A. Lysova,
L. Espinosa Alonso, I. V. Koptyug,
B. M. Weckhuysen* ______ 7224 – 7227

Probing the Transport of Paramagnetic Complexes inside Catalyst Bodies in a Quantitative Manner by Magnetic Resonance Imaging

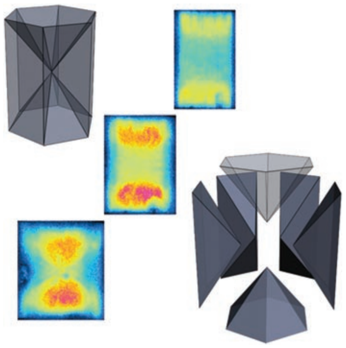


Have a look inside: A magnetic resonance imaging (MRI) procedure allows the distribution of paramagnetic metal-ion complexes inside catalyst bodies to be probed in a quantitative manner, without influencing the sample during measurements (see picture; blue: high ^{1}H NMR signal (low Co^{2+} concentration) red: low ^{1}H NMR signal (high Co^{2+} concentration)).

Zeolites

L. Karwacki, E. Stavitski, M. H. F. Kox,
J. Kornatowski,
B. M. Weckhuysen* ______ 7228 – 7231

Intergrowth Structure of Zeolite Crystals as Determined by Optical and Fluorescence Microscopy of the Template-Removal Process

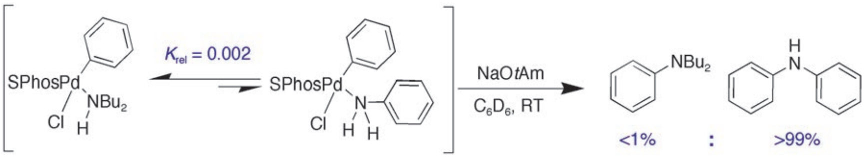


Growing together: The template-removal process in a series of zeolite crystals has been mapped by a combination of in situ optical and fluorescence microscopy. Three-dimensional spatial distribution of light-absorbing and -emitting species allowed visualization of the architecture of zeolite intergrowths.

Amination

M. R. Biscoe, T. E. Barder,
S. L. Buchwald* ______ 7232 – 7235

Electronic Effects on the Selectivity of Pd-Catalyzed C—N Bond-Forming Reactions Using Biarylphosphine Ligands: The Competitive Roles of Amine Binding and Acidity



Electronic influence: Correlation between the relative binding constants of amines to isolated [SPhosPd(Ph)Cl] (SPhos = 2-dicyclohexylphosphino-2′,6′-dimethoxy-1,1′-biphenyl) and the pK_a of the amine complexes shows that the selectivity in the catalytic arylation of amines is influenced by the electronic properties of the amine. Selectivities observed in C—N cross-coupling reactions using neutral amines can be reversed using lithium amides.

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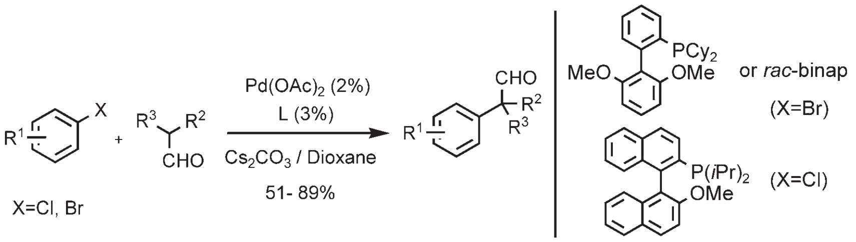
Homogeneous Catalysis

R. Martín, S. L. Buchwald* _ **7236 – 7239**

A General Method for the Direct α-Arylation of Aldehydes with Aryl Bromides and Chlorides

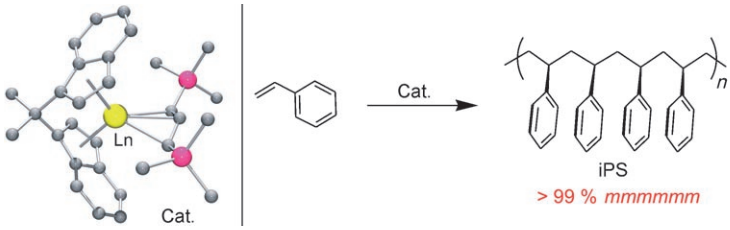


Wide scope: A catalyst system able to efficiently perform the title reaction is described (see scheme). The high level of activity achieved allows for the synthesis of highly functionalized compounds with a wide variety of substitution patterns under very mild conditions.

Polymerization Catalysts

A.-S. Rodrigues, E. Kirillov, T. Roisnel, A. Razavi, B. Vuillemin, J.-F. Carpentier* ____________ **7240 – 7243**

Highly Isospecific Styrene Polymerization Catalyzed by Single-Component Bridged Bis(indenyl) Allyl Yttrium and Neodymium Complexes

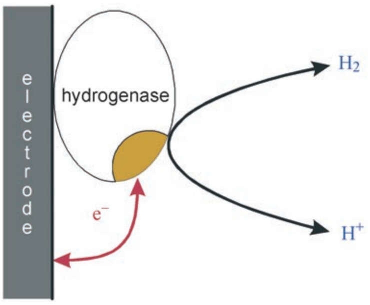


Me, myself, and styrene: Yttrium and neodymium allyl complexes bearing a bridged bis(indenyl) ligand (Cat.; Ln = Y, Nd) are active single-component catalysts for the polymerization of styrene up to 120 °C, giving highly isotactic polystyrene (iPS), with number-average molecular weights (M_n) of 12 000–102 000 and polydispersities (M_w/M_n) of 1.5–2.6.

Enzyme Electrodes

A. A. Karyakin,* S. V. Morozov, O. G. Voronin, N. A. Zorin, E. E. Karyakina, V. N. Fateyev, S. Cosnier ___ **7244 – 7246**

The Limiting Performance Characteristics in Bioelectrocatalysis of Hydrogenase Enzymes



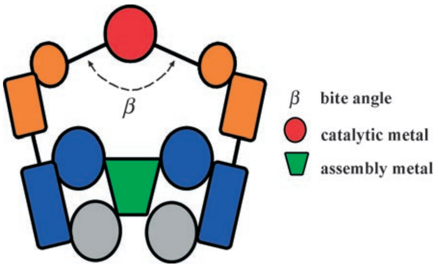
Enzymes power up: The limiting performance characteristics of hydrogenases in bioelectrocatalysis was studied. A comparison of bioelectrocatalysis with catalysis by noble metals such as Pt, as used in low-temperature H_2–O_2 fuel cells, shows that hydrogenase electrodes are similarly active in the consumption of dissolved H_2 as are Pt-based fuel electrodes.

Hydroformylation Catalysts

D. Rivillo, H. Gulyás, J. Benet-Buchholz, E. C. Escudero-Adán, Z. Freixa, P. W. N. M. van Leeuwen* _ **7247 – 7250**

Catalysis by Design: Wide-Bite-Angle Diphosphines by Assembly of Ditopic Ligands for Selective Rhodium-Catalyzed Hydroformylation

The assembly makes the bite! Ditopic ligands comprising an anionic N–O or N–N moiety (shown in blue and gray) and a phosphine moiety (orange) can be assembled with hard metals such as zinc(II) (green) to form bidentate phosphine ligands. This approach led to a rhodium catalysts for the selective hydroformylation of 1-octene with linear-to-branched ratios up to 21:1 and rates comparable to covalently bound wide-bite-angle diphosphine ligands.



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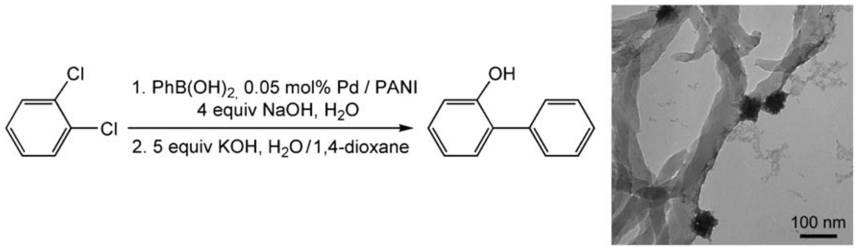
Nanoparticle Catalysts

B. J. Gallon, R. W. Kojima, R. B. Kaner, P. L. Diaconescu* ______ **7251 – 7254**

Palladium Nanoparticles Supported on Polyaniline Nanofibers as a Semi-Heterogeneous Catalyst in Water

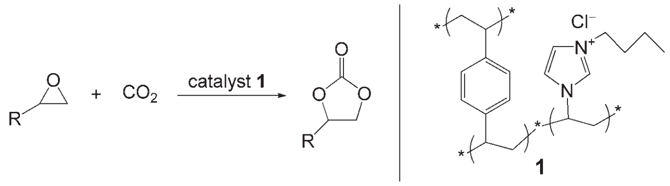


A tandem catalyst for Suzuki coupling of activated or deactivated aryl chlorides and aryl boronic acids in water and for phenol synthesis from aryl chlorides in 1:1 water/dioxane was obtained by supporting palladium nanoparticles on polyaniline nanofibers (PANI; see TEM image). Thus, 2-phenylphenol was synthesized from 1,2-dichlorobenzene (see equation).

Heterogeneous Catalysis

Y. Xie, Z. Zhang, T. Jiang, J. He, B. Han,* T. Wu, K. Ding ______ **7255 – 7258**

CO$_2$ Cycloaddition Reactions Catalyzed by an Ionic Liquid Grafted onto a Highly Cross-Linked Polymer Matrix

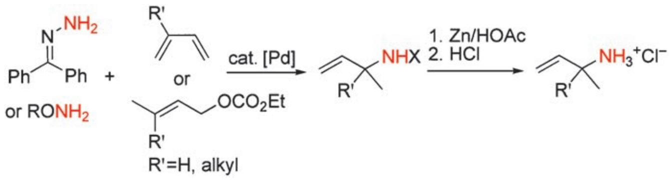


A support group for ionic liquids: 3-Butyl-1-vinylimidazolium chloride supported covalently on a polymer cross-linked with divinylbenzene gives rise to a very active, stable, and selective heterogeneous catalyst **1** for the addition of CO$_2$ to epoxides (see scheme). Moreover, the catalyst can be easily separated from the products and reused.

Regioselective Allylation

A. M. Johns, Z. Liu, J. F. Hartwig* ______ **7259 – 7261**

Primary *tert*- and *sec*-Allylamines via Palladium-Catalyzed Hydroamination and Allylic Substitution with Hydrazine and Hydroxylamine Derivatives

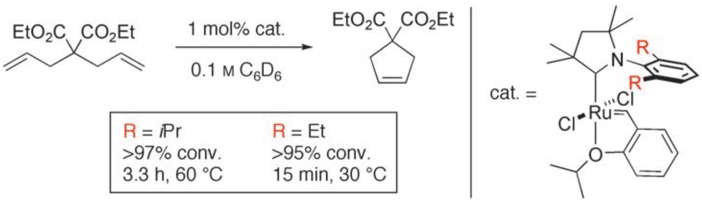


Amines of control: Palladium-catalyzed reactions of hydrazine and hydroxylamine derivatives with dienes and allylic esters form products from C–N bond formation at the more substituted position of the allyl intermediate with a broad range of ligands on palladium (see scheme; X = NCPh$_2$ or OR; Ac = acetyl). These reactions provide a route to highly substituted primary amines by facile cleavage of the N–O and N–N bonds.

Olefin Metathesis Catalysts

D. R. Anderson, V. Lavallo, D. J. O'Leary, G. Bertrand, R. H. Grubbs* **7262 – 7265**

Synthesis and Reactivity of Olefin Metathesis Catalysts Bearing Cyclic (Alkyl)(Amino)Carbenes



All it's CAACed up to be! Cyclic (alkyl)(amino)carbenes (CAACs) can be used as ligands for olefin metathesis catalysis. A dramatic steric effect of the N-aryl group of the CAAC on catalyst activity was observed and utilized to develop a new catalyst with activity comparable to standard commercially available catalysts.

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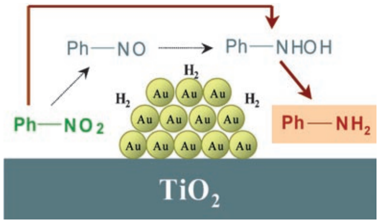
Catalytic Hydrogenation

A. Corma,* P. Concepción,
P. Serna ________________ 7266 – 7269

A Different Reaction Pathway for the Reduction of Aromatic Nitro Compounds on Gold Catalysts

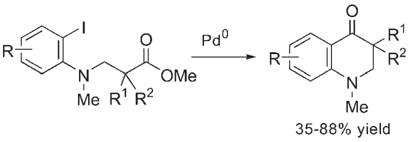
Golden distinction: With an Au/TiO_2 catalyst, the formation of condensation products during the hydrogenation of aromatic nitro compounds is avoided. Macrokinetic experiments and in situ IR measurements, which showed that nitrosobenzene is generated in only small amounts and that hydroxylamine and nitrosobenzene interact strongly with the catalyst surface, led to the proposal of a novel reaction sequence (see figure).



Transition-Metal Catalysis

D. Solé,* O. Serrano ______ 7270 – 7272

Palladium-Catalyzed Intramolecular Nucleophilic Substitution at the Alkoxycarbonyl Group



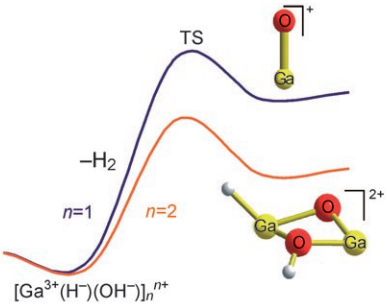
Coaxed into action: Although ester groups are usually inert towards organopalladium reagents, β-(2-haloanilino)esters undergo intramolecular palladium-catalyzed acylation to give dihydroquinolin-4-ones (see scheme). A four-membered azapalladacycle intermediate is postulated to facilitate the nucleophilic addition. R = Me, OMe, CO_2Me, Cl; R^1,R^2 = H, Me, Ph.

Alkane Activation

E. J. M. Hensen,* E. A. Pidko, N. Rane,
R. A. van Santen __________ 7273 – 7276

Water-Promoted Hydrocarbon Activation Catalyzed by Binuclear Gallium Sites in ZSM-5 Zeolite

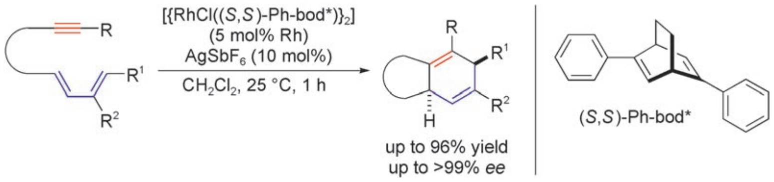
Steamy alkane activation: Propane dehydrogenation over Ga/ZSM-5 is substantially improved upon addition of steam to the hydrocarbon feed, which is due to an increase of the steady-state concentration of hydroxylated reaction intermediates. Quantum-chemical computations indicate that H_2 recombination, required to initiate the catalytic cycle, is more favorable over binuclear oxygen-bridged Ga^{3+} complexes than over mononuclear GaO^+ ions (see picture).



Catalytic Cycloaddition

R. Shintani,* Y. Sannohe, T. Tsuji,
T. Hayashi* ______________ 7277 – 7280

A Cationic Rhodium–Chiral Diene Complex as a High-Performance Catalyst for the Intramolecular Asymmetric [4+2] Cycloaddition of Alkyne-1,3-Dienes

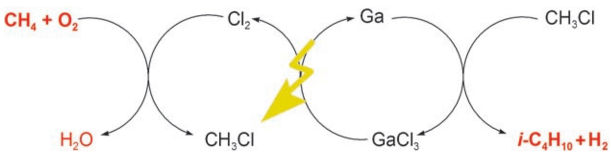


Two rings in one step: A rhodium–diene catalyst is more active than its rhodium–bisphosphine counterpart for the intramolecular [4+2] cycloaddition of alkyne-tethered 1,3-dienes (see scheme). A related complex with a C_2-symmetric chiral diene ligand catalyzes an enantioselective asymmetric variant of this process. The intermolecular cycloaddition of 1,3-dienes and alkynes is also highly efficient.

C–H Activation

P. Wasserscheid,* T. Weiß, F. Agel,
C. Werth, A. Jess, R. Forster 7281–7285

Highly Efficient and Selective C–H Activation in Gallium-Containing Molten-Salt Systems

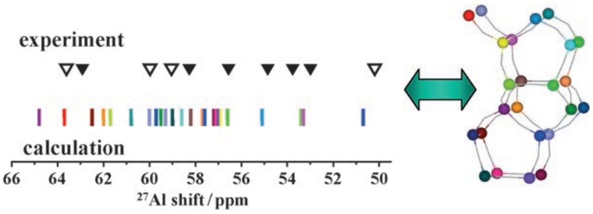


Starting from methane: Isobutane is formed with very high selectivities when chloromethane reacts with Ga^0 suspended in a molten-salt medium. During the reaction, hydrogen and Ga^I and Ga^{III} chlorogallate species are formed. The latter can be electrochemically reduced back to Ga^0 in a subsequent step. The chlorine liberated in this Ga^0 regeneration can be used for the synthesis of the chloromethane feedstock from methane.

Zeolites

S. Sklenak,* J. Dědeček, C. Li,
B. Wichterlová, V. Gábová, M. Sierka,
J. Sauer* 7286–7289

Aluminum Siting in Silicon-Rich Zeolite Frameworks: A Combined High-Resolution ^{27}Al NMR Spectroscopy and Quantum Mechanics / Molecular Mechanics Study of ZSM-5

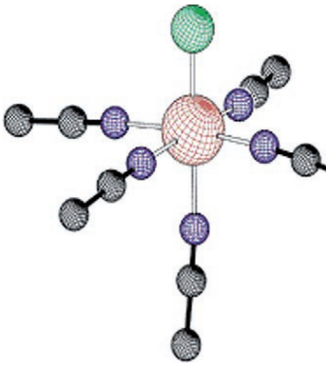


Finding Al: The distribution of catalytically active sites over crystallographic positions in zeolites is not random but controlled by synthesis. For differently synthesized ZSM-5 samples, distinct ^{27}Al resonances have been identified by NMR spectroscopy. Shift calculations by DFT show that the observed resonances belong to Al in different crystallographic sites (see picture).

Polymerization Catalysts

A. K. Hijazi, N. Radhakrishnan, K. R. Jain,
E. Herdtweck, O. Nuyken, H.-M. Walter,
P. Hanefeld, B. Voit,*
F. E. Kühn* 7290–7292

Molybdenum(III) Compounds as Catalysts for 2-Methylpropene Polymerization

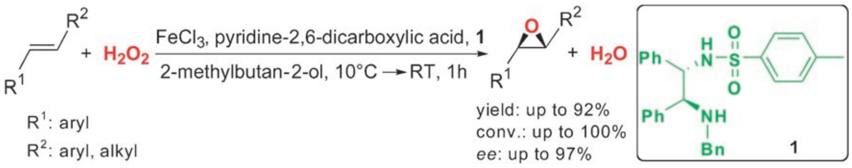


Environmentally benign polymerization: Highly reactive polyisobutenes can be synthesized with Mo^{III} catalysts (see picture; Mo red, N blue, Cl green, C black) at room temperature in nonchlorinated solvents. This is a major improvement in comparison to the industrial process, which is carried out below 0 °C in solvents like CH_2Cl_2. Other recently found catalysts could not be applied in chlorine-free solvents and were considerably less efficient.

Epoxidation

F. G. Gelalcha, B. Bitterlich, G. Anilkumar,
M. K. Tse, M. Beller* 7293–7296

Iron-Catalyzed Asymmetric Epoxidation of Aromatic Alkenes Using Hydrogen Peroxide



Ironing out the wrinkles: Highly enantioselective catalytic asymmetric epoxidation of aromatic alkenes with hydrogen peroxide proceeds smoothly in the presence of a catalyst system consisting of ferric hexahydrate, pyridine-2,6-dicarboxylic acid, and the novel chiral ligand **1** in 2-methylbutane-2-ol solvent at room temperature within 1 h (see scheme; Bn = benzyl).

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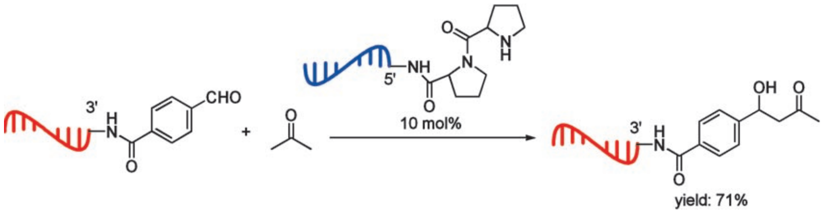
DNA Catalysis

Z. Tang, A. Marx* ______ **7297 – 7300**

Proline-Modified DNA as Catalyst of the Aldol Reaction



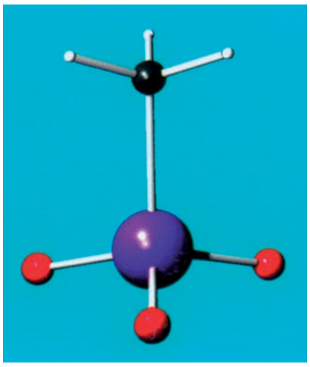
Unbound reactant: Proline-modified DNA acts as catalyst of the intramolecular aldol reaction between a complementary aldehyde and free non-tethered ketones (see scheme). The results of these studies extend the methodological repertoire of DNA-templated reactions.

Catalysts

W. A. Herrmann,* A. M. J. Rost,
J. K. M. Mitterpleininger, N. Szesni,
S. Sturm, R. W. Fischer,
F. E. Kühn* ______ **7301 – 7303**

A Cheap, Efficient, and Environmentally Benign Synthesis of the Versatile Catalyst Methyltrioxorhenium (MTO)

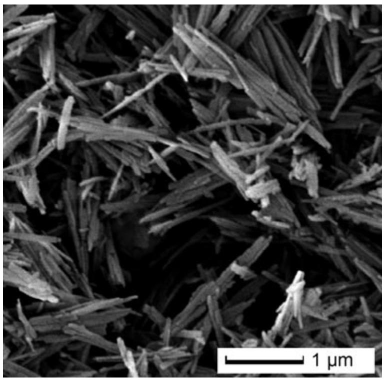
Avoiding toxic starting materials such as $(CH_3)_4Sn$, a cheap, environmentally benign high-yield synthesis has been developed for the multitalented catalyst methyltrioxorhenium(VII) (MTO; see picture: black C, white H, blue Re, red O). This novel approach is applicable on a large scale and for several derivatives of MTO, such as ethyltrioxorhenium(VII).



Zeolite Catalysts

S. Tontisirin, S. Ernst* ______ **7304 – 7306**

Zeolite SSZ-53: An Extra-Large-Pore Zeolite with Interesting Catalytic Properties

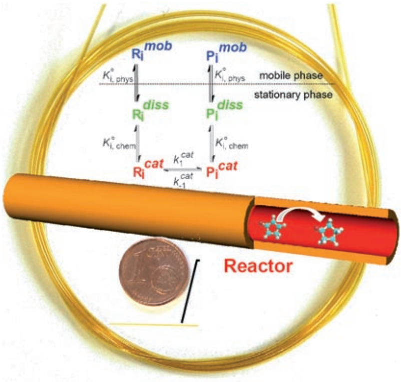


Wide pores for wide applications: The catalytic properties of SSZ-53, an extra-large-pore high-silica zeolite, were explored by using ethylbenzene disproportionation and the isomerization and hydrocracking of *n*-decane as test reactions. High activity together with a very open channel system render this zeolite an attractive candidate as catalyst for applications in petroleum refining.

Catalyst Screening

O. Trapp,* S. K. Weber, S. Bauch,
W. Hofstadt ______ **7307 – 7310**

High-Throughput Screening of Catalysts by Combining Reaction and Analysis



Drudgery minimized, efficiency maximized: By combining catalysis and separation in microcapillaries greater than 2 cm in length, it is possible to efficiently determine the reaction kinetics for entire libraries of substrates. This was demonstrated for hydrogenations over highly active Pd nanoparticles and ring-closing metatheses over the Grubbs 2nd generation catalyst. R: reagents, P: products.

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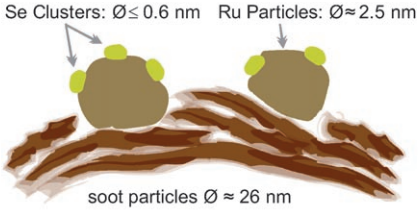
Particles on particles on particles: $RuSe_xO_y$ electrocatalysts with a cluster-like distribution of selenium on the surface of carbon-black-supported ruthenium nanoparticles are suitable replacements for platinum at the cathode side of methanol fuel cells. Carbon-supported $RuSe_xO_y$ nanoparticles are not completely covered by Se after reductive annealing at 800 °C; rather, Se clusters form on the Ru nanoparticles, while the rest of the surface is covered by oxygen.



Cathode Materials

G. Zehl, G. Schmithals, A. Hoell, S. Haas, C. Hartnig, I. Dorbandt, P. Bogdanoff, S. Fiechter* **7311–7314**

On the Structure of Carbon-Supported Selenium-Modified Ruthenium Nanoparticles as Electrocatalysts for Oxygen Reduction in Fuel Cells

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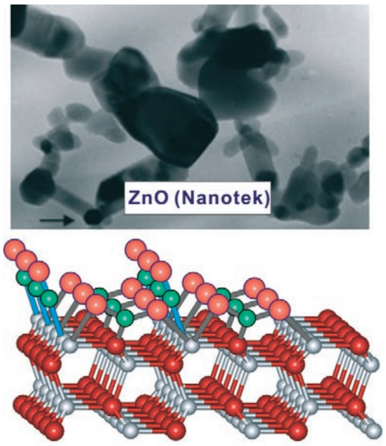
Bridging the materials and pressure gaps: The adsorption of CO on ZnO surfaces becomes much stronger in the presence of preadsorbed CO_2 (see picture; O red, Zn gray, C green). The increased strength of the interaction between CO and polycrystalline ZnO powder originates from the formation of tridentate carbonate species on the mixed-terminated (10$\bar{1}$0) surfaces, which increase the Lewis acidity of neighboring Zn^{2+} cations.



Heterogeneous Catalysis

Y. Wang, X. Xia, A. Urban, H. Qiu, J. Strunk, B. Meyer, M. Muhler,* C. Wöll* **7315–7318**

Tuning the Reactivity of Oxide Surfaces by Charge-Accepting Adsorbates

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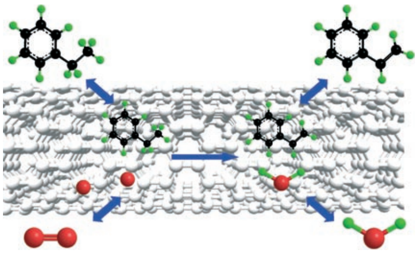

Kicking the coke habit: In nanocarbon-catalyzed oxidative dehydrogenation of ethylbenzene, oxygen is dissociatively adsorbed, and breaking of C—H bonds in ethylbenzene is kinetically relevant. In contrast to metal-based catalysts, the subsurface structure plays no role in the activity of the nanocarbon catalyst. Unlike activated carbon, the nanocarbon catalysts show no loss of activity from coking or combustion.

Metal-Free Catalysis

J. Zhang, D. S. Su,* A.H. Zhang, D. Wang, R. Schlögl, C. Hébert **7319–7323**

Nanocarbon as Robust Catalyst: Mechanistic Insight into Carbon-Mediated Catalysis

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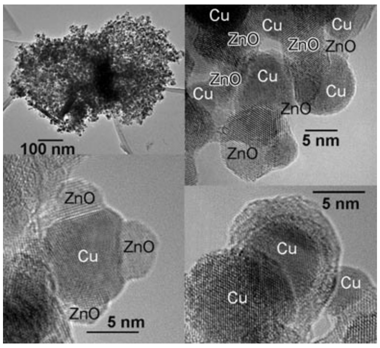

On the nature of copper in real methanol synthesis catalysts: $Cu/Zn/Al_2O_3$ catalysts with industrially relevant high copper content have been investigated. With the aid of combined TEM (see picture) and XRD analysis, imperfections in the Cu lattice arising from twinning, fault defects, and strain are found to be related to increased activity of the catalysts in methanol synthesis.

Methanol Synthesis Catalysts

I. Kasatkin, P. Kurr, B. Kniep, A. Trunschke,* R. Schlögl **7324–7327**

Role of Lattice Strain and Defects in Copper Particles on the Activity of $Cu/ZnO/Al_2O_3$ Catalysts for Methanol Synthesis

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Supporting information is available on the WWW (see article for access details).

A video clip is available as Supporting Information on the WWW (see article for access details).

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