



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](http://www.angewandte.org) soon:

T. J. Hebden, A. J. S. John, D. G. Gusev, W. Kaminsky, K. I. Goldberg, D. M. Heinekey\*

**Preparation of a Dihydrogen Complex of Cobalt**

S. Sun, G. Zhang, D. Geng, Y. Chen, R. Li, M. Cai, X. Sun\*

**A Highly Durable Platinum Nanocatalyst for PEM Fuel Cells: Multiarmed Star-like Nanowire Single Crystals**

J. S. Chen, T. Zhu, C. M. Li, X. W. Lou\*

**Building Hematite Nanostructures Using Oriented Attachment**

K. Breuker,\* S. Brüscheweiler, M. Tollinger

**Electrostatic Stabilization of Native Protein Structure in the Gas Phase**

J. Zeng, X. Xia, M. Rycenga, P. Henneghan, Q. Li, Y. Xia\*

**Successive Deposition of Silver on Silver Nanoplates: Lateral Versus Vertical Growth**

M. Mastalerz,\* M. W. Schneider, I. M. Oppel, O. Presly

**A Salicylbisimine Cage Compound with a High Surface Area and Selective CO<sub>2</sub>/CH<sub>4</sub> Adsorption**

J. Ballmann, A. Yeo, B. O. Patrick, M. D. Fryzuk\*

**Carbon–Nitrogen Bond Formation by Reaction of 1,2-Cumulenes with a Ditantalum Complex That Contains a Side-On- and End-On-Bound Dinitrogen**

W. Liu, H. Zhong, R. Wang, N. C. Seeman\*

**Crystalline Two-Dimensional DNA Origami Arrays**

S. Lee, I. Chataigner,\* S. R. Piettre\*

**Facile Dearomatization of Nitrobenzene Derivatives and Other Nitroarenes with N-Benzyl Azomethine Ylide**

F. Lockyear, M. A. Parkes, S. D. Price\*

**Fast and efficient fluorination of small molecules by SF<sub>4</sub><sup>2+</sup>**

X. Zeng, H. Beckers,\* H. Willner,\* J. F. Stanton

**Elusive Diazirine, N<sub>2</sub>CO**

J. Baek, P. M. Allen, M. G. Bawendi,\* K. F. Jensen\*

**Investigation of the Synthesis of InP Nanocrystals with a High-Temperature and High-Pressure Continuous-Flow Microreactor**



*“I am waiting for the day when someone will discover an implantable memory chip.*

*My science “heroes” are Richard Willstätter and Vladimir Prelog ...”*

This and more about Hans-Günther (Hagga) Schmalz can be found on page 10038.

## Author Profile

Hans-Günther (Hagga) Schmalz 10038

## Books

Aqueous Microwave Assisted Chemistry

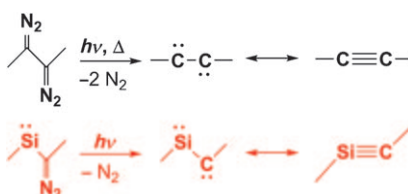
Vivek Polshettiwar, Rajender S. Varma

reviewed by E. Van der Eycken — 10039

## Highlights

**An old reaction but an exciting product:**

Nearly 100 years after Curtius' synthesis of alkynes from bisdiaz compounds, the same reaction principle was applied for the synthesis of a silyne, a compound with a Si–C triple bond.



**Main-Group Chemistry**

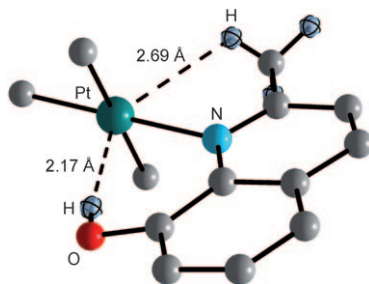
N. Lühmann, T. Müller\* — 10042–10044

A Compound with a Si–C Triple Bond

## Hydrogen Bonding to Metals

L. R. Falvello\* — 10045 – 10047

The Hydrogen Bond, Front and Center

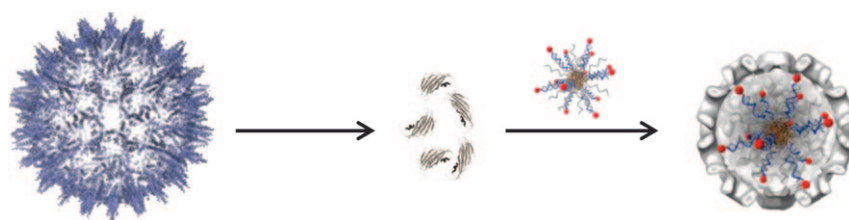


The understanding of the hydrogen bond, an interaction that appears in diverse environments and exercises widely varying functions, continues to expand with the report of a neutron diffraction analysis of a complex displaying an O–H...Pt hydrogen bond with unligated water as the donor. What is known about hydrogen bonding so far provides a broad context for this new result.

## Drug Delivery

Z. Su, Q. Wang\* — 10048 – 10050

A Hierarchical Assembly Process to Engineer a Hydrophobic Core for Virus-like Particles



**Re-engineer the core:** The genomic core of a virus (left) can be re-engineered by the coassembly of viral coat proteins and DNA amphiphiles to produce virus-like

nanocarriers to transport both hydrophobic and hydrophilic compounds. It is a general strategy for adapting virus-based vehicles for drug-delivery applications.

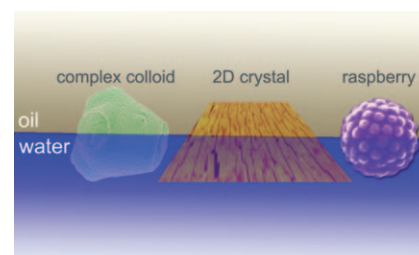
## Reviews

### Particles at Interfaces

Z. Niu, J. He, T. P. Russell,\*  
Q. Wang\* — 10052 – 10066

Synthesis of Nano/Microstructures at Fluid Interfaces

An ideal starting point for the formation of multifunctional materials are air–liquid interfaces and interfaces between two liquids at which nanoparticles or colloidal particles can accumulate. At such liquid interfaces, various organizational processes and reactions have been carried out to form hierarchical structures, such as two-dimensional crystalline films, colloidosomes, raspberry-like core–shell structures, or Janus particles.

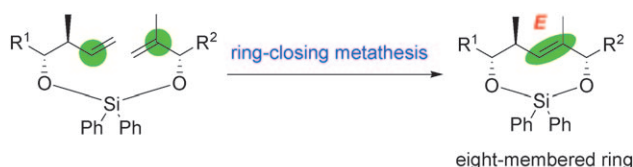


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individuals who are personal members of a national chemical society prices are available on request. Postage and handling charges included. All prices are subject to local VAT/sales tax.

## Communications



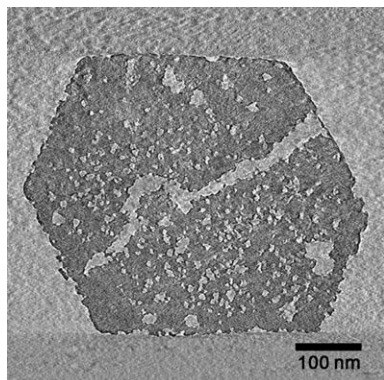
**Tied back:** The title reaction was observed when a silicon-tethered diene was treated with the Hoveyda–Grubbs second-generation catalyst. The structural requirements for the *E*-olefin-forming ring-clos-

ing metathesis, and the transition state leading to *E* olefin are discussed. This methodology will be useful in the synthesis of polyketides containing a pent-2-ene-1,5-diol unit.

### Synthetic Methods

R. Matsui, K. Seto, K. Fujita,  
T. Suzuki, A. Nakazaki,  
S. Kobayashi\* — 10068–10073

Unusual *E*-Selective Ring-Closing  
Metathesis To Form Eight-Membered  
Rings

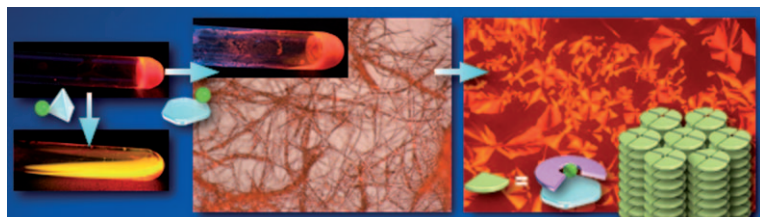


**Working at the Y:** Zeolite Y crystals with micropores (ca. 1 nm), small mesopores (ca. 3 nm), and large mesopores (ca. 30 nm) were obtained by base leaching of previously steamed and acid-leached material. The zeolite Y crystals with trimodal porosity (see electron-tomographic picture) displayed close to ideal hydrocracking selectivity and enhanced yields of kerosene and diesel.

### Zeolites

K. P. de Jong,\* J. Zečević, H. Friedrich,  
P. E. de Jongh, M. Bulut, S. van Donk,\*  
R. Kenmogne, A. Finiels, V. Hulea,  
F. Fajula\* — 10074–10078

Zeolite Y Crystals with Trimodal Porosity  
as Ideal Hydrocracking Catalysts



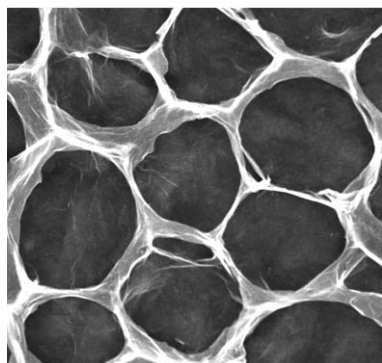
**Pillars of salts:** By combining planar cations and planar anionic structures based on  $\pi$ -conjugated acyclic dipyrroles containing an anion, charge-by-charge assemblies could be formed (see

picture). Not only crystals but also soft materials, such as supramolecular gels and thermotropic liquid crystals, could be made by this method.

### Supramolecular Chemistry

Y. Haketa, S. Sasaki, N. Ohta,  
H. Masunaga, H. Ogawa, N. Mizuno,  
F. Araoka, H. Takezoe,  
H. Maeda\* — 10079–10083

Oriented Salts: Dimension-Controlled  
Charge-by-Charge Assemblies from Planar  
Receptor–Anion Complexes



**Hey ho, let's GO:** Graphene oxide platelets can be self-assembled into highly ordered, mechanically flexible carbon films with tunable porous morphologies. Further nitrogen doping enhanced the electrical properties and supercapacitor performances of the carbon-based assemblies, and provided chemical functionalization.

### Graphene Assembly

S. H. Lee, H. W. Kim, J. O. Hwang,  
W. J. Lee, J. Kwon, C. W. Bielawski,  
R. S. Ruoff, S. O. Kim\* — 10084–10088

Three-Dimensional Self-Assembly of  
Graphene Oxide Platelets into  
Mechanically Flexible Macroporous  
Carbon Films

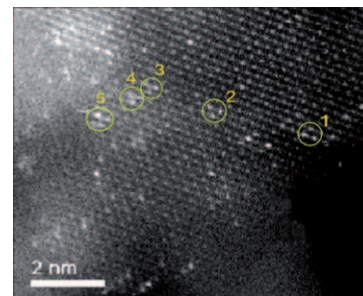
## Metal–Support Interfaces

A. Kulkarni, M. Chi, V. Ortalan,  
N. D. Browning,\*  
B. C. Gates\* ————— **10089 – 10092**



Atomic Resolution of the Structure of a Metal–Support Interface: Triosmium Clusters on MgO(110)

**Metal atoms piggyback:** Aberration-corrected STEM images of MgO-supported triosmium clusters show that the osmium atoms reside atop magnesium atoms (see picture). On the basis of the results, structural models of the clusters that include the metal–support interaction are derived.

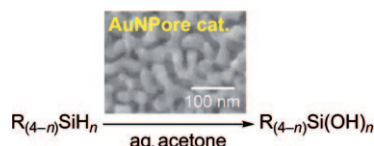


## Heterogeneous Catalysis

N. Asao,\* Y. Ishikawa, N. Hatakeyama,  
Menggenbateer, Y. Yamamoto,\* M. Chen,  
W. Zhang, A. Inoue ——— **10093 – 10095**



Nanostructured Materials as Catalysts: Nanoporous-Gold-Catalyzed Oxidation of Organosilanes with Water



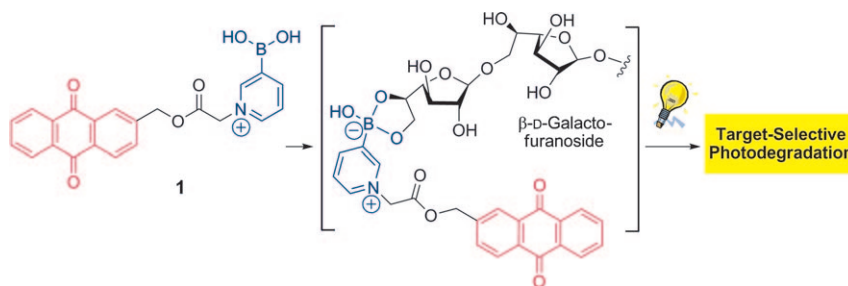
**Pores to the fore:** Nanoporous gold shows a remarkable catalytic activity for the oxidation of organosilane compounds with water. The catalyst is easily recoverable and can be reused several times without leaching and loss of activity.

## Oligosaccharides

D. Takahashi, S. Hirono, C. Hayashi,  
M. Igarashi, Y. Nishimura,  
K. Toshima\* ————— **10096 – 10100**



Photodegradation of Target Oligosaccharides by Light-Activated Small Molecules



**Shine on, shine on:** The designed anthraquinone/boronic acid hybrid **1** selectively caused the degradation of oligosaccharides that have a  $\beta$ -D-galactofuranoside residue, which is a unique component in

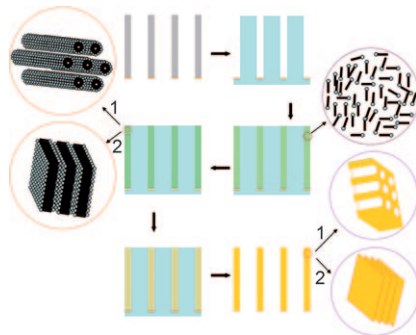
mycobacterial cell walls. Degradation was achieved using long-wavelength UV radiation in the absence of any additives and under neutral conditions.

## Hierarchical Membranes

X. Y. Zhang,\* W. Lu, J. Y. Dai, L. Bourgeois,  
N. Hao, H. T. Wang, D. Y. Zhao,  
P. A. Webley\* ————— **10101 – 10105**

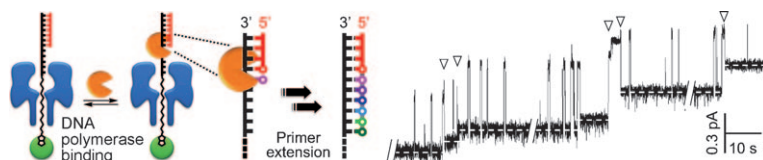


Ordered Hierarchical Porous Platinum Membranes with Tailored Mesostructures



**Swiss cheese or slices?** A two-step method has been developed for the preparation of the title membranes from lyotropic liquid crystals templated with poly(methyl methacrylate). The membranes have ordered mesopores and tunable macropore channels. The mesostructure of the membranes can be tailored by adjusting the concentration of the surfactant solution (see picture: 1 = low, 2 = high concentration).





## DNA Sequencing

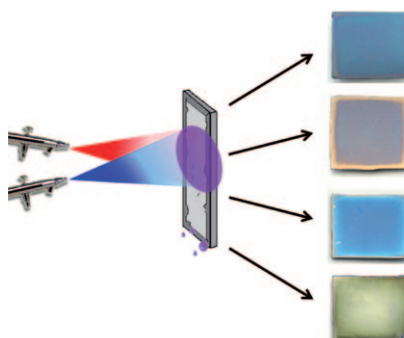
J. Chu, M. González-López,  
S. L. Cockcroft, M. Amorin,  
M. R. Ghadiri\* ——— 10106–10109

Real-Time Monitoring of DNA Polymerase Function and Stepwise Single-Nucleotide DNA Strand Translocation through a Protein Nanopore

**Stepping it forward:** A major challenge in realizing single-molecule nanopore DNA sequencing is to devise a way to ratchet DNA strands through a nanopore at appropriate speed that is commensurate with real-time sequential nucleobase

identification. A promising approach is presented that exploits the intrinsic motor function of DNA polymerases to effect DNA strand translocation through an  $\alpha$ -hemolysin nanopore (see picture).

**Technicolor dreamcoat:** Spray-on nano-scale coatings are formed by simultaneous spraying of complementary species (e.g., polyanion/polycation, polyelectrolyte/small oligomeric ion, two inorganic salt solutions) against a receiving surface (see picture). The process leads to the formation of ultrathin films, the thicknesses of which are controlled by the spraying time. This general one-step coating method results in optically homogeneous films from a broad choice of functional compounds.

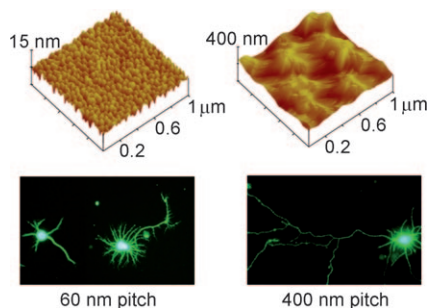


## Thin Films

M. Lefort, G. Popa, E. Seyrek, R. Szamocki,  
O. Felix, J. Hemmerlé, L. Vidal,  
J.-C. Voegel, F. Boulmedais, G. Decher,\*  
P. Schaaf\* ——— 10110–10113

Spray-On Organic/Inorganic Films:  
A General Method for the Formation of  
Functional Nano- to Microscale Coatings

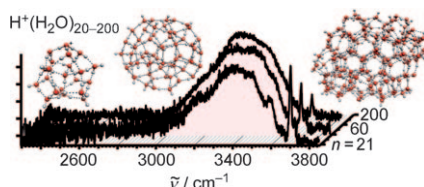
**Pitching in to help:** When nanostructured anodized aluminum oxide substrates of four different types were used as nanotopographical environments for in vitro neuronal culture, the average neurite outgrowth was much faster on surfaces with a 400 nm pitch than on surfaces with a 60 nm pitch (see AFM images of two substrates and fluorescence micrographs of hippocampal neurons after culture for 2 days on these substrates).



## Neuron Growth on Surfaces

W. K. Cho, K. Kang, G. Kang, M. J. Jang,  
Y. Nam,\* I. S. Choi\* ——— 10114–10118

Pitch-Dependent Acceleration of Neurite Outgrowth on Nanostructured Anodized Aluminum Oxide Substrates



**Precisely size-selected** protonated water clusters  $\text{H}^+(\text{H}_2\text{O})_n$  ( $n=20\text{--}200$ ) were studied by IR spectroscopy to provide insights into the structures of large-scale H-bonded water networks. The spectral features reveal that cluster structures gradually approach that of the bulk-water network and involve a greater number of four-coordinate water molecules with increasing cluster size (see picture).

## Water Clusters

K. Mizuse, N. Mikami,  
A. Fujii\* ——— 10119–10122

Infrared Spectra and Hydrogen-Bonded Network Structures of Large Protonated Water Clusters  $\text{H}^+(\text{H}_2\text{O})_n$  ( $n=20\text{--}200$ )

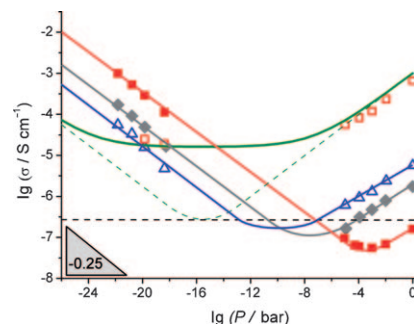
## Solid-State Conduction

P. Lupetin, G. Gregori,\*  
J. Maier ————— 10123 – 10126



Mesoscopic Charge Carriers Chemistry  
in Nanocrystalline SrTiO<sub>3</sub>

**Impressive size effect:** The conductivity of nanocrystalline SrTiO<sub>3</sub> as a function of oxygen partial pressure is compared with the properties of the coarsened, microcrystalline material. Electron-, hole-, and oxygen vacancy-type conduction differ by several orders of magnitude (see plot), critically depending on the grain size of the sample.

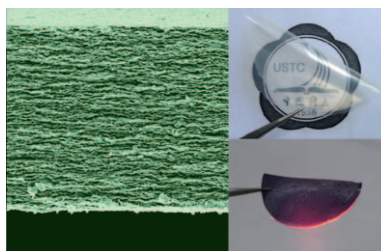


## Bionanocomposites

H. B. Yao, Z. H. Tan, H. Y. Fang,  
S. H. Yu\* ————— 10127 – 10131



Artificial Nacre-like Bionanocomposite  
Films from the Self-Assembly of  
Chitosan–Montmorillonite Hybrid  
Building Blocks



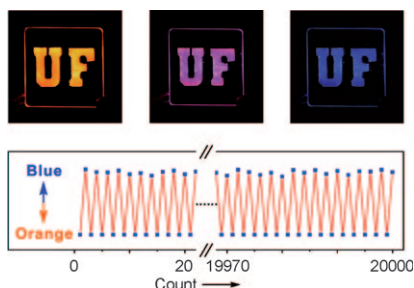
**Brick-and-mortar** microstructures of artificial nacre-like chitosan–montmorillonite (MTM) bionanocomposite films can be readily fabricated by using chitosan–MTM hybrid nanosheets as building blocks (see picture). The fire-retardant nacre-like films have a higher mechanical performance (Young's modulus: 10 GPa, tensile strength: 100 MPa) than a film made by conventional methods.

## Nanomaterials

O. Chen, D. E. Shelby, Y. Yang, J. Zhuang,  
T. Wang, C. Niu, N. Omenetto,  
Y. C. Cao\* ————— 10132 – 10135



Excitation-Intensity-Dependent Color-Tunable Dual Emissions from Manganese-Doped CdS/ZnS Core/Shell Nanocrystals



**Here comes your Mn:** Semiconductor nanocrystals doped with manganese exhibit dual emissions that are dependent on the excitation intensity. Under single-wavelength excitation, the emission color of these doped nanocrystals can be tuned from orange to blue at different excitation fluences. This color-tunable property is reversible and originates from the excitation of multiple Mn dopants inside a nanocrystal.

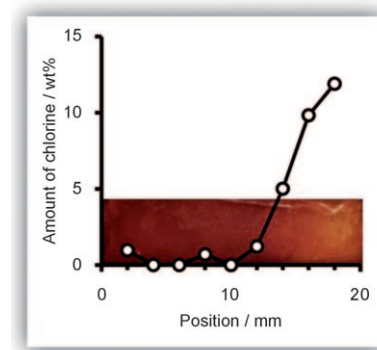
## Conducting Polymers

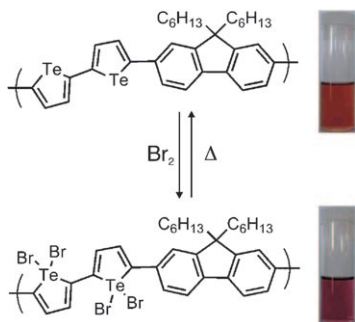
S. Inagi,\* Y. Ishiguro, M. Atobe,  
T. Fuchigami\* ————— 10136 – 10139



Bipolar Patterning of Conducting  
Polymers by Electrochemical Doping  
and Reaction

**On the double:** When a poly(3-methylthiophene) (PT) film is doped on a bipolar electrode with Bu<sub>4</sub>NPF<sub>6</sub> as supporting electrolyte, the film includes PF<sub>6</sub><sup>−</sup> anions with a composition gradient along the potential gradient on the electrode. The use of Et<sub>4</sub>NCl results in partial chlorination of the PT film that reflects the potential gradient of the bipolar electrode (see picture; inset: photograph of the film).





**Coordinated control:** Owing to their numerous synthetic challenges, polytellurophenes are a virtually unexplored class of conjugated polymers. A new dihalogenated bitellurophene monomer has been synthesized and its polymerization under palladium-catalyzed conditions was optimized. The resulting polytellurophenes are stable compounds with distinct optoelectronic properties that can be controlled by coordination with bromine (see picture).

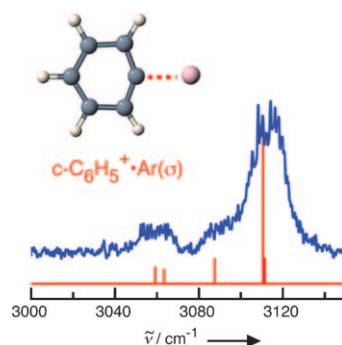
### Tellurophene Polymers

A. A. Jahnke, G. W. Howe,  
D. S. Seferos\* 10140–10144

Polytellurophenes with Properties  
Controlled by Tellurium-Coordination



**No way to hide:** The IR spectrum of the phenyl cation,  $c\text{-C}_6\text{H}_5^+$ , has been derived by resonant IR photodissociation of weakly bound  $\text{C}_6\text{H}_5^+\cdot\text{Ar}$  clusters (see picture). The analysis provides the first spectroscopic characterization of this fundamental carbocation in the gas phase. The Ar ligand is used to probe the electrophilicity of the vacant nonbonding  $\sigma$  orbital of  $c\text{-C}_6\text{H}_5^+$ .



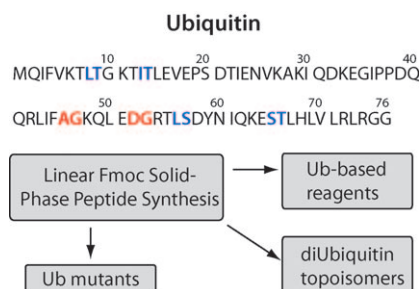
### Carbocations

A. Patzer, S. Chakraborty, N. Solcà,  
O. Dopfer\* 10145–10148

IR Spectrum and Structure of the Phenyl  
Cation



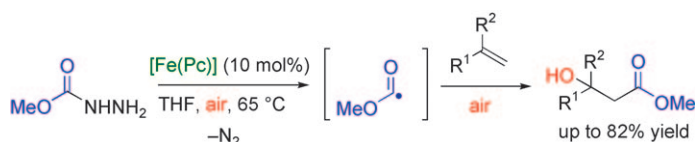
**Changing the subject:** An efficient linear solid-phase peptide synthesis of ubiquitin (Ub) has been developed. This approach allows the incorporation of desired tags and mutations (see picture; blue denotes a pseudoproline dipeptide, red a dimethoxybenzyl dipeptide) as well as specific C-terminal modification and the construction of all diubiquitin conjugates in high yields and purities in a straightforward manner.



### Protein Modification

F. El Oualid, R. Merckx, R. Ekkebus,  
D. S. Hameed, J. J. Smit, A. de Jong,  
H. Hilkmann, T. K. Sixma,  
H. Ovaa\* 10149–10153

Chemical Synthesis of Ubiquitin,  
Ubiquitin-Based Probes, and Diubiquitin



**Clean and simple:** Alkoxy carbonyl radicals generated from carbazates by iron catalysis in air underwent addition to a variety of alkenes to give the corresponding  $\beta$ -hydroxyesters (see scheme). The simple

experimental procedure for this transformation has the added advantage that the reagents are environmentally friendly.  $\text{R}^1, \text{R}^2 = \text{alkyl, alkynyl, aryl, CO}_2\text{Et}$ ;  $[\text{Fe}(\text{Pc})] = \text{iron phthalocyanine}$ .

### Radical Reactions

T. Taniguchi,\* Y. Sugiura, H. Zaimoku,  
H. Ishibashi 10154–10157

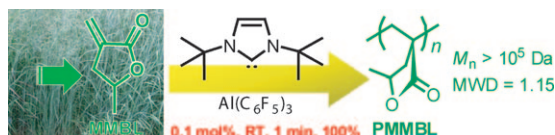
Iron-Catalyzed Oxidative Addition of  
Alkoxy Carbonyl Radicals to Alkenes with  
Carbazates and Air





## Polymer Synthesis

Y. Zhang, G. M. Miyake,  
E. Y.-X. Chen\* — 10158–10162



Alane-Based Classical and Frustrated Lewis Pairs in Polymer Synthesis: Rapid Polymerization of MMA and Naturally Renewable Methylene Butyrolactones into High-Molecular-Weight Polymers

**Frustrated growth:**  $\text{Al}(\text{C}_6\text{F}_5)_3$ -based classical and frustrated Lewis pairs with select phosphines or N-heterocyclic carbenes exhibit exceptional activity in polymerization of methyl methacrylate (MMA) and

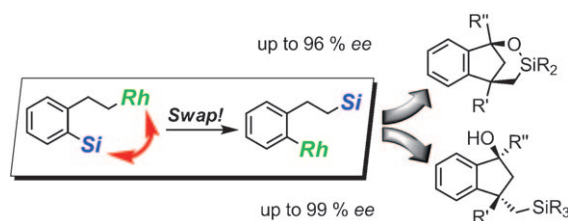
naturally renewable methylene butyrolactones (M)MBL at ambient temperature, thereby affording high-molecular-weight PMMA and environmentally sustainable P(M)MBL (see scheme).

## Asymmetric Catalysis

T. Seiser, N. Cramer\* — 10163–10167



Rhodium(I)-Catalyzed 1,4-Silicon Shift of Unactivated Silanes from Aryl to Alkyl: Enantioselective Synthesis of Indanol Derivatives



**Let's swap!** Highly reactive alkyl rhodium species undergo facile C–Si bond activation resulting in an overall 1,4-Si/Rh positional switch. This reactivity is utilized

to access densely functionalized indanol derivatives in a highly enantioselective manner (see scheme).

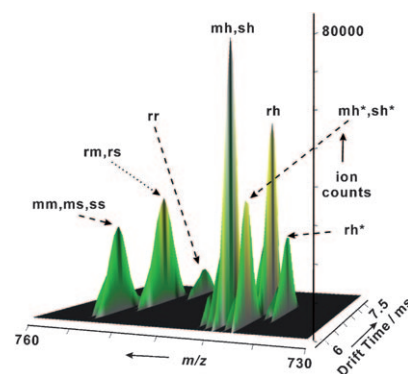
## Polymer Mass Spectrometry

J. Song, C. H. Grün, R. M. A. Heeren,  
H.-G. Janssen,  
O. F. van den Brink\* — 10168–10171



High-Resolution Ion Mobility Spectrometry–Mass Spectrometry on Poly(methyl methacrylate)

**Further dimensions:** The title mass spectrometric technique offers an extra dimension of separation based on size and conformation of the molecules in addition to  $m/z$  separation without the need of time-consuming liquid chromatography separation. Detailed mapping of the mass and drift time separated ions allowed identification of end groups originating from various initiation and termination reactions.

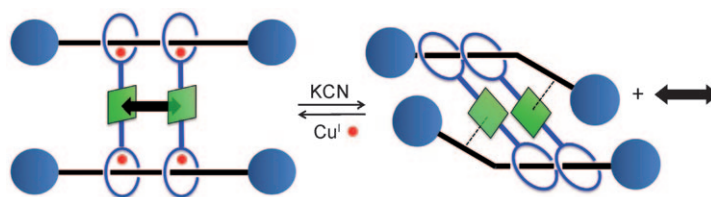


## Host–Guest Systems

J.-P. Collin,\* F. Durola, V. Heitz,\*  
F. Reviriego, J.-P. Sauvage,\*  
Y. Trolez — 10172–10175



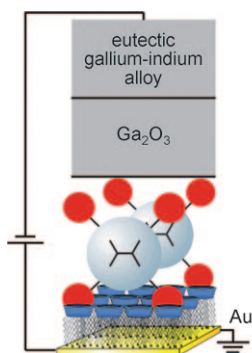
A Cyclic [4]rotaxane that Behaves as a Switchable Molecular Receptor: Formation of a Rigid Scaffold from a Collapsed Structure by Complexation with Copper(I) Ions



**Total collapse:** A porphyrinic [4]rotaxane collapses completely after demetalation. The metal-free compound does not act as a receptor whereas the copper(I)-complexed compound is a selective receptor for diamine and dipyridyl substrates (see

picture). The recognition process can thus be switched on and off by complexing the free ligand to four  $\text{Cu}^{\text{I}}$  ions or demetalating the metal-complexed species, respectively.



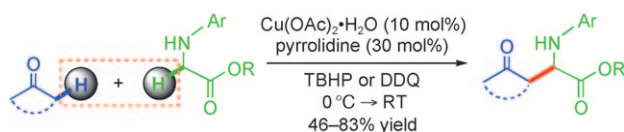


**In complete control:** The magnitude of current rectification in well-defined supramolecular tunneling junctions can be controlled by changing the terminal functionality (red spheres) of dendrimers (gray spheres) immobilized on a supramolecular platform (see picture). Junctions containing biferrocene and ferrocene end groups showed larger rectification ratios than junctions containing adamantyl end groups.

## Molecular Electronics

K. S. Wimbush, W. F. Reus,  
W. G. van der Wiel, D. N. Reinhoudt,  
G. M. Whitesides, C. A. Nijhuis,\*  
A. H. Velders\* ——— 10176–10180

Control over Rectification in  
Supramolecular Tunneling Junctions



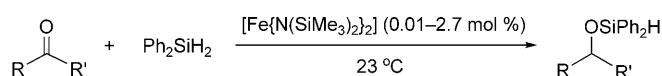
**The direct approach:** The title coupling reactions of *N*-aryl glycine esters with unmodified ketones occurred smoothly in the presence of *tert*-butyl hydroperoxide (TBHP) or 2,3-dichloro-5,6-dicyano-1,4-

benzoquinone (DDQ) under mild conditions (see scheme). The oxidant used for C–H activation determined the selectivity of the reactions for a particular type of ketone substrate.

## Cooperative Catalysis

J. Xie, Z.-Z. Huang\* ——— 10181–10185

Cross-Dehydrogenative Coupling  
Reactions by Transition-Metal and  
Aminocatalysis for the Synthesis of Amino  
Acid Derivatives



**Keep it simple:** A variety of ketones and two aldehydes underwent efficient hydro-silylation under mild conditions in the presence of the title complex (see scheme; R, R' = H, alkyl, aryl). In some cases, a catalyst loading of just 0.01–

0.03 mol % was sufficient. This catalyst may provide a simple, cost-effective, and environmentally benign alternative to currently employed methods for the hydro-silylation of ketones.

## Iron Catalysis

J. Yang, T. D. Tilley\* ——— 10186–10188

Efficient Hydrosilylation of Carbonyl  
Compounds with the Simple Amide  
Catalyst [Fe{N(SiMe3)2}2]



**How to fuse heterocycles:** The direct enamine–imine isomerization of indoles and subsequent intramolecular imino-ene has been observed under Lewis acid catalysis. This unique reaction occurred

for indoles that contain a tethered olefin functionality, and led to fused indoline heterocycles with excellent diastereocontrol (see scheme).

## Indole Chemistry

B. Han, Y.-C. Xiao, Y. Yao,  
Y.-C. Chen\* ——— 10189–10191

Lewis Acid Catalyzed Intramolecular  
Direct Ene Reaction of Indoles

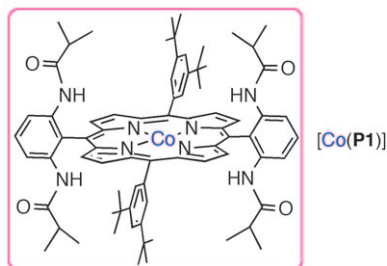
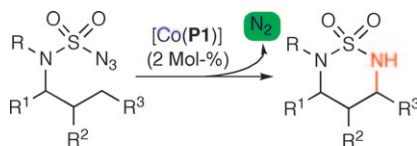


## Synthetic Methods

H. Lu, H. Jiang, L. Wojtas,  
X. P. Zhang\* 10192–10196



Selective Intramolecular C–H Amination through the Metalloradical Activation of Azides: Synthesis of 1,3-Diamines under Neutral and Nonoxidative Conditions



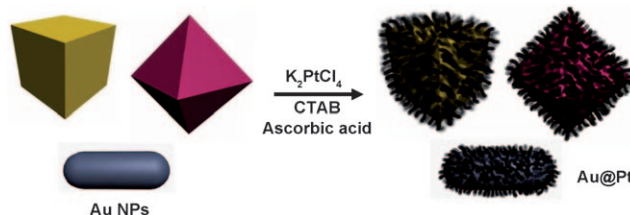
**N<sub>2</sub> is the only by-product** in a stereospecific and highly diastereoselective intramolecular C–H amination of sulfamoyl azides with a cobalt(II)-based metalloradical catalyst (see scheme). The catalytic system has an unusual capacity for the efficient amination of strong primary C–H bonds, as well as secondary and tertiary C–H bonds, and functional-group tolerance is excellent owing to the neutral and nonoxidative conditions.

## Core–Shell Structures

Y. Kim, J. W. Hong, Y. W. Lee,  
M. Kim, D. Kim, W. S. Yun,  
S. W. Han\* 10197–10201



Synthesis of AuPt Heteronanostructures with Enhanced Electrocatalytic Activity toward Oxygen Reduction



**The core of the matter:** The catalytic activities of Au@Pt heteronanostructures (see scheme; CTAB: cetyltrimethylammonium bromide, NPs: nanoparticles) toward oxygen reduction are highly de-

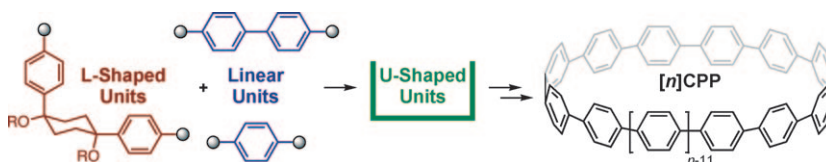
pendent on the shape of the cores, thus revealing the importance of the core structure for enhancing the activity of core–shell-type nanocatalysts.

## Carbon Nanorings

H. Omachi, S. Matsuura, Y. Segawa,  
K. Itami\* 10202–10205



A Modular and Size-Selective Synthesis of [n]Cycloparaphenylenes: A Step toward the Selective Synthesis of [n,n] Single-Walled Carbon Nanotubes



**A modular strategy** served in the size-selective syntheses of [14]-, [15]-, and [16]cycloparaphenylenes (CPPs). A Suzuki–Miyaura coupling was used to assemble a terphenyl-equivalent, L-shaped *cis*-1,4-diphenylcyclohexane unit

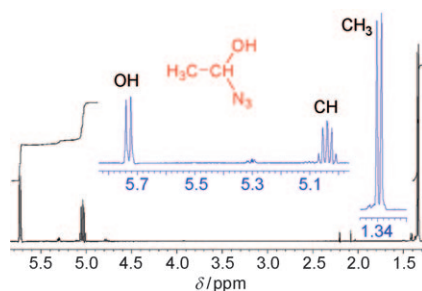
and a linear benzene/biphenyl unit in a 3+1+3 or 3+2+3 mode to give U-shaped septi- and octiphenyl units. The cyclizative dimerization of these U-shaped units and subsequent aromatization yielded the CPPs.

## Azido Alcohols

K. Banert,\* C. Berndt, S. Firdous,  
M. Hagedorn, Y.-H. Joo, T. Rüffer,  
H. Lang 10206–10209

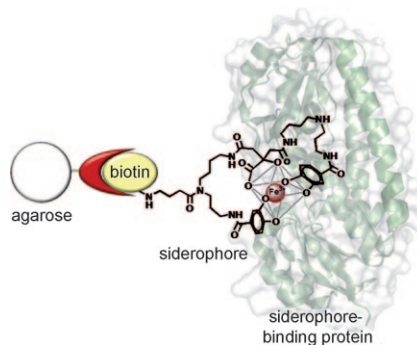


Extremely Simple but Long Overlooked: Generation of  $\alpha$ -Azido Alcohols by Hydroazidation of Aldehydes



**Discovered by accident:** Just because an example of a simple substructure cannot be found in literature does not mean that corresponding compounds are not readily accessible.  $\alpha$ -Azido alcohols like 1-azidoethanol have now been prepared and isolated.

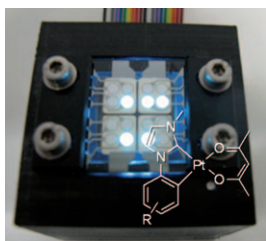
**Nice catch!** The immobilization of a synthetic petrobactin derivative on agarose was crucial for the isolation and identification of a bacterial siderophore import protein for the first time from crude cell extracts. The biochemical and genetic characterization of the identified protein confirmed that FpiA (YclQ) is the principal petrobactin importer in *Bacillus subtilis*.



### Siderophore Import

N. Bugdahn, F. Peuckert, A. G. Albrecht,  
M. Miethke, M. A. Marahiel,\*  
M. Oberthür\* 10210–10213

Direct Identification of a Siderophore  
Import Protein Using Synthetic  
Petrobactin Ligands

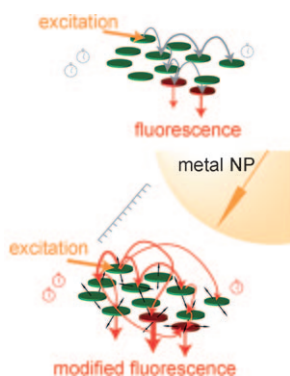


**White on target:** Platinum(II) complexes with cyclometalated 1-phenylimidazole ligands (see picture:  $R = 2,3\text{-OC}_6\text{H}_4$ ) show photophysical properties in the blue region of the visible spectrum, thus giving them the potential to be used as the blue component of white-light-emitting diodes.

### Light-Emitting Diodes

Y. Unger, D. Meyer, O. Molt,  
C. Schildknecht, I. Münster,  
G. Wagenblast,  
T. Strassner\* 10214–10216

Green–Blue Emitters: NHC-Based  
Cyclometalated  $[\text{Pt}(\text{C}^{\wedge}\text{C}^*)(\text{acac})]$   
Complexes



**Influencing proteins:** A protein multi-chromophore system (photosystem I) is exposed to gold nanoparticles (NPs) and silver island films. In the presence of these nanostructures an altered fluorescence response of the chromophores is observed (see scheme), indicating a change in the protein function. A model to understand these plasmonic effects is generally applicable to other multichromophore systems.

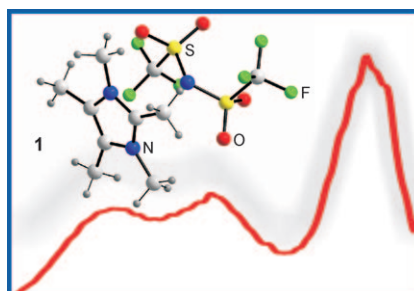
### Surface Plasmons

J. B. Nieder, R. Bittl,  
M. Brecht\* 10217–10220

Fluorescence Studies into the Effect of  
Plasmonic Interactions on Protein  
Function



**The low-frequency motions** in ionic liquids can be studied by transmission and attenuated total reflection spectroscopy in the THz region (see spectrum for **1**). These motions involve flexing of individual ions and intermolecular interactions by hydrogen bonding. Combined measurements show that the degree of hydrogen bonding is crucial for the solid structures of this material.



### Ionic Liquids

C. Roth, T. Peppel, K. Fumino,  
M. Köckerling,\*  
R. Ludwig\* 10221–10224

The Importance of Hydrogen Bonds for  
the Structure of Ionic Liquids: Single-  
Crystal X-ray Diffraction and Transmission  
and Attenuated Total Reflection  
Spectroscopy in the Terahertz Region



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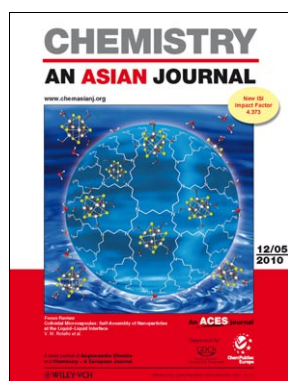
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Preview \_\_\_\_\_ 10229

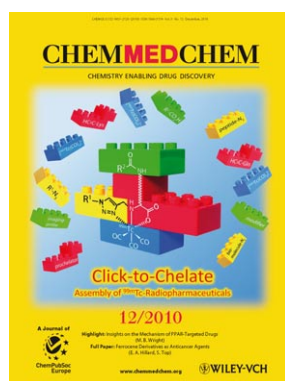


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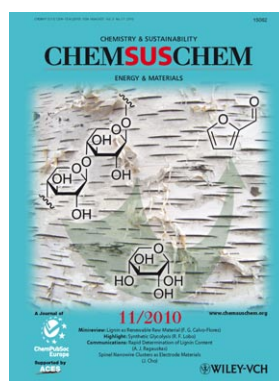
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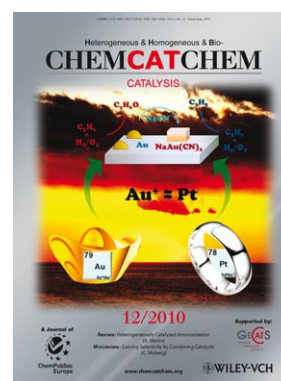
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