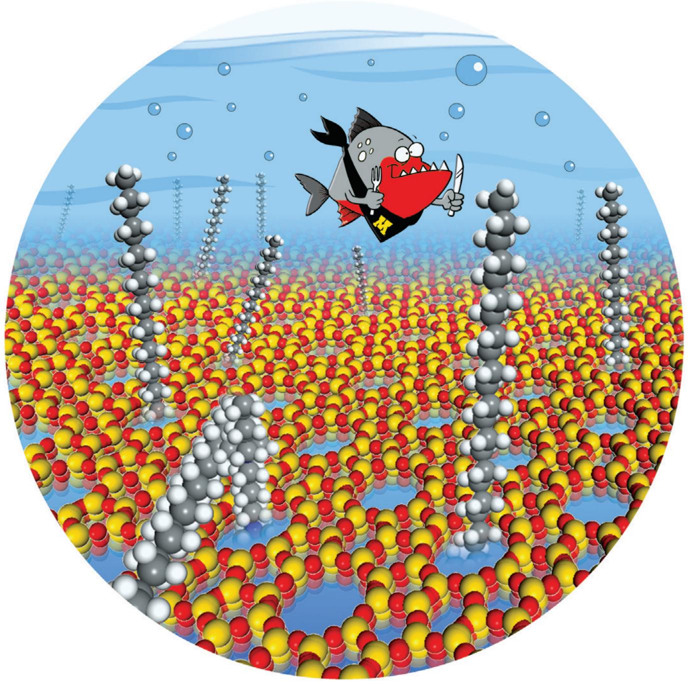
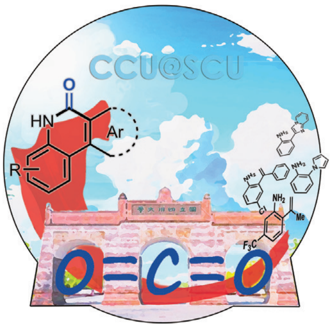
Piranha fish ...

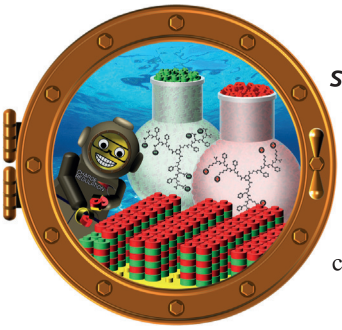


… have sharp teeth and are known for their ferocious appetite. Piranha solution, a mixture of sulfuric acid and hydrogen peroxide, is one of the strongest oxidizing agents used for the removal of organic residues, and is employed by Q. Xiao, M. Tsapatsis, and co-workers in their Communication on page 7184 ff. for the detemplation and exfoliation of MFI nanosheets, which enables the fabrication of hydrocarbon-isomer-selective membranes on polymer supports.

Sustainable Chemistry

In their Communication on page 7068 ff., D.-G. Yu and co-workers report the first direct use of CO_2 in the lactamization of alkenyl and heteroaryl C–H bonds, while avoiding the use of toxic CO or heavy metal salts.



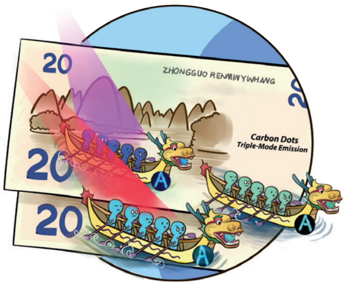


Supramolecular Polymer Brushes

Surface-confined supramolecular copolymers were obtained by P. Besenius, B. J. Ravoo, and co-workers, as reported in their Communication on page 7242 ff., by the sequential addition of aqueous solutions containing the anionic or cationic comonomer.

Anti-counterfeiting

A printable ink with three modes of optical authentication can be used to combat counterfeiting. In their Communication on page 7231 ff., H. Lin and co-workers describe a carbon dot composite fixed in a PVA matrix with three modes of simultaneous emission.



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Spotlight on Angewandte's Sister Journals 7026 – 7029

Author Profile

"My favorite author (fiction) is Ian McEwan. My favorite food is Sushi. …"
This and more about Nicholas J. Turner can be found on page 7030.

Nicholas J. Turner **7030**

News

C. Abell

E. Kumacheva

R. E. Morris

H. Yamamoto

New Fellows of the Royal Society: C. Abell, E. Kumacheva, and R. E. Morris **7031**

President of the Chemical Society of Japan: H. Yamamoto **7031**

Books

Symmetry, Spectroscopy, and Crystallography Robert Glaser *reviewed by K. Molčanov** **7032**

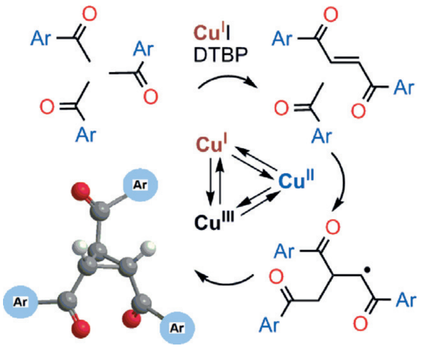
Highlights

Cyclotrimerization

J. C. Walton* ______ **7034 – 7036**

A Valuable Upgrade to the Portfolio of Cycloaddition Reactions

Knitting: Recently Antonchick and Manna described a unique annulation that knits together three acetophenones to construct cyclopropanes. The cascade is mediated by organocopper and free radical species, and amounts to the first known [1+1+1] cyclotrimerization. It works well for ketones having electron-deficient or electron-rich substituents in their aryl rings. DTBP = di-*tert*-butylperoxide.

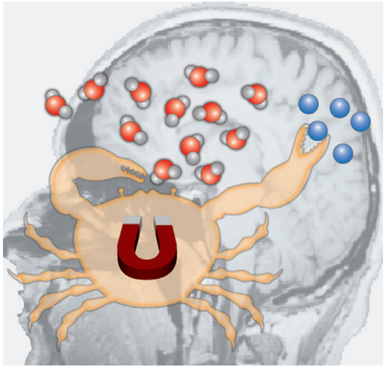


Minireviews

Contrast Agents

G. Angelovski* ______ **7038 – 7046**

What We Can Really Do with Bioresponsive MRI Contrast Agents



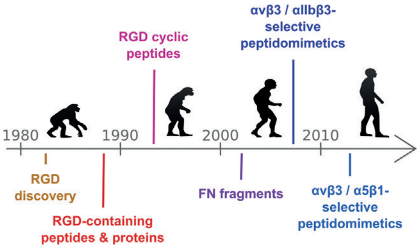
Visualization and monitoring of essential biological processes in living organisms can be achieved using bioresponsive MRI contrast agents. After their preparation, further expertise is required from the fields of natural sciences and technology. This Minireview briefly summarizes what aspects need to be considered in the development of bioresponsive agents for their successful in vivo utilization in functional MRI studies.

Reviews

Peptidomimetics

C. Mas-Moruno,* R. Fraioli,
F. Rechenmacher, S. Neubauer,
T. G. Kapp, H. Kessler* ____ **7048 – 7067**

αvβ3- or α5β1-Integrin-Selective Peptidomimetics for Surface Coating



An active and evolving area: Surface coating has evolved from RGD-based peptides and proteins with relatively poor integrin-binding activity and selectivity to peptidomimetics with high affinity and receptor subtype selectivity. This Review highlights the most representative milestones in this amazing journey.

For the USA and Canada:
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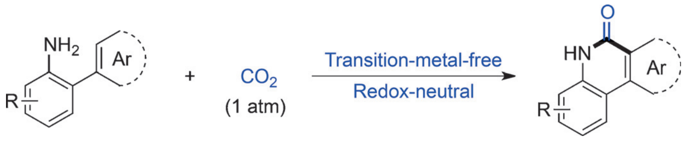
Communications



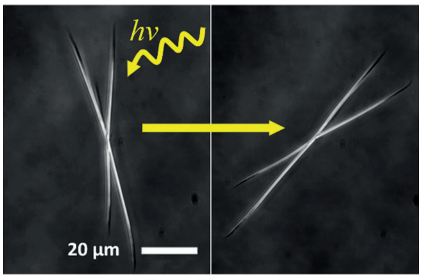
CO_2=CO + O: Carbon dioxide was used directly as the carbonyl source for the lactamization of alkenyl and heteroaryl C–H bonds, allowing for the synthesis of important 2-quinolinones and polyheterocycles. These transition-metal-free and redox-neutral reactions featured a broad substrate scope, good functional group tolerance, scalability, and facile product derivatization.

Sustainable Chemistry

Z. Zhang, L.-L. Liao, S.-S. Yan, L. Wang, Y.-Q. He, J.-H. Ye, J. Li, Y.-G. Zhi, D.-G. Yu* ______ **7068 – 7072**

Lactamization of sp^2 C–H Bonds with CO_2: Transition-Metal-Free and Redox-Neutral

Frontispiece



In a spin: Slow pH-driven reprecipitation of 4-fluoroanthracenecarboxylic acid from aqueous solution results in the growth of branched microcrystals. The twisting of the branches under illumination drives a rotation of the overall crystal, as seen by optical microscopy, and can be repeated by repeated pulses of light. In the example shown, an X-shaped molecular crystal undergoes a net clockwise rotation of 50° after 25 irradiation cycles.

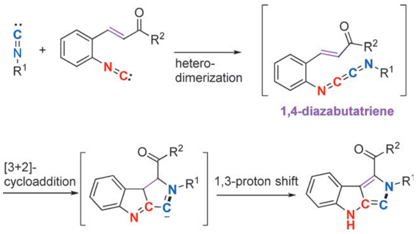
Crystal Engineering

L. Zhu, R. O. Al-Kaysi, C. J. Bardeen* ______ **7073 – 7076**

Photoinduced Ratchet-Like Rotational Motion of Branched Molecular Crystals

---

The domino effect: Involvement of a 1,3-dipole molecule, 1,4-diazabutatriene, is proposed and computationally supported in the first heterodimerization of isocyanide molecules. The unprecedented [3+2]-cycloaddition of this intermediate with an electron-deficient alkene, assembles two pyrrole rings in one operation with 100 % atom economy.



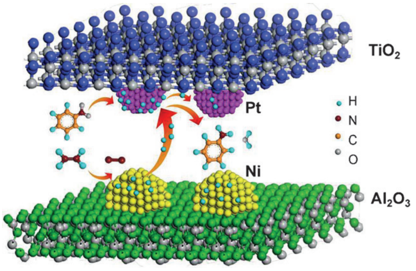
Dipolar Cycloadditions

Z. Hu, H. Yuan, Y. Men, Q. Liu,* J. Zhang,* X. Xu* ______ **7077 – 7080**

Cross-Cycloaddition of Two Different Isocyanides: Chemoselective Heterodimerization and [3+2]-Cyclization of 1,4-Diazabutatriene

---

A tandem catalyst based on Ni/Al_2O_3 and Pt/TiO_2 with multiple metal-oxide interfaces showed high efficiency in the hydrogenation of nitrobenzene using $N_2H_4 \cdot H_2O$ as hydrogen source. The synergy of the Ni/Al_2O_3 and Pt/TiO_2 interfaces in a confined nanospace led to the observed activity enhancement. The confined nanospace favored the instant transfer of intermediates between the two metal-oxide interfaces.



Nanocatalysis

VIP

H. B. Ge, B. Zhang,* X. M. Gu, H. J. Liang, H. M. Yang, Z. Gao, J. G. Wang, Y. Qin* ______ **7081 – 7085**

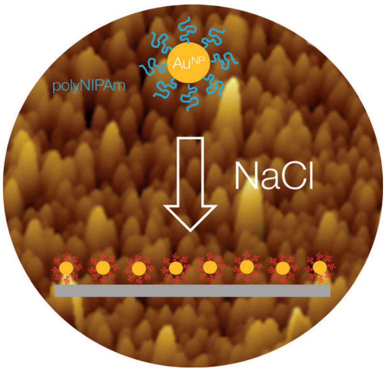
A Tandem Catalyst with Multiple Metal Oxide Interfaces Produced by Atomic Layer Deposition

Surface Chemistry

Z. Zhang, S. Maji,
A. B. da Fonseca Antunes, R. De Rycke,
R. Hoogenboom,*
B. G. De Geest* ________ **7086 – 7090**

Salt-Driven Deposition of Thermoresponsive Polymer-Coated Metal Nanoparticles on Solid Substrates

Hydrophopic association: Gold and silver nanoparticles obtained by citrate reduction followed by coating with temperature-responsive polymers (e.g. polyNIPAm) spontaneously form a monolayer-like structure on a wide variety of substrates in the presence of sodium chloride. This phenomenon did not occur in salt-free medium. This behavior is mainly attributed to hydrophobic interaction between the metal nanoparticles and the substrate.

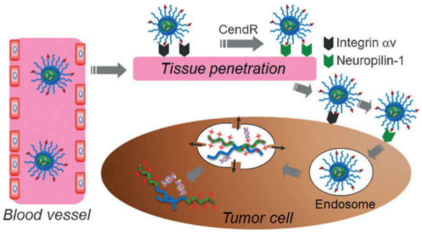


Nucleic Acid Delivery

X. Xu, J. Wu, Y. Liu, M. Yu, L. Zhao, X. Zhu,
S. Bhasin, Q. Li, E. Ha, J. Shi,*
O. C. Farokhzad* ________ **7091 – 7094**

Ultra-pH-Responsive and Tumor-Penetrating Nanoplatform for Targeted siRNA Delivery with Robust Anti-Cancer Efficacy

A tumor-penetrating and pH-responsive nanoplatform was developed for targeted siRNA delivery. This platform could efficiently use tumor-penetrating and pH-responsive abilities to deliver therapeutic siRNA to the cytoplasm, leading to a significant inhibition of tumor growth. This platform shows great promise as a siRNA delivery vehicle for cancer therapy.

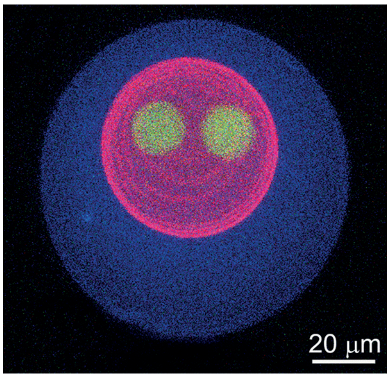


Protein–Polymer Nanoconjugates

X. M. Liu, P. Zhou, Y. D. Huang, M. Li,
X. Huang,* S. Mann* ________ **7095 – 7100**

Hierarchical Proteinosomes for Programmed Release of Multiple Components

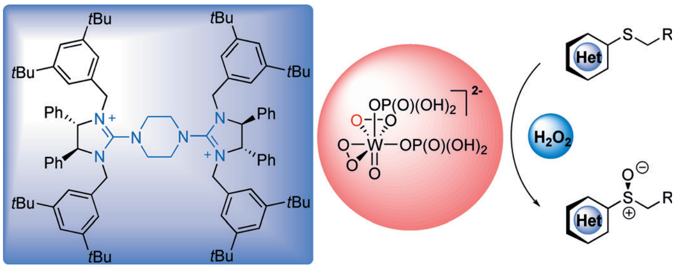
A hierarchical proteinosome architecture comprising three nested layers and different types of encapsulated components was fabricated (see picture). Engineering the cross-links in the host and guest proteinosome membranes gave rise to three different types of programmed release behavior.



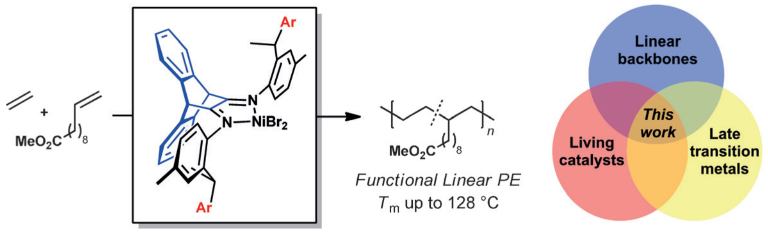
Asymmetric Sulfoxidation

X. Ye, A. M. P. Moeljadi, K. F. Chin,
H. Hirao, L. Zong,
C.-H. Tan* ________ **7101 – 7105**

Enantioselective Sulfoxidation Catalyzed by a Bisguanidinium Diphosphatobisperoxotungstate Ion Pair



High enantioselectivities were achieved for the first time in a tungstate-catalyzed oxidation reaction for a variety of drug-like heterocyclic sulfides with H_2O_2. Synthetic utility was demonstrated by the preparation of (*S*)-Lansoprazole, a commercial proton-pump inhibitor. The active catalyst was bisguanidinium diphosphatobisperoxotungstate, as shown by Raman spectroscopy and computational studies.



Polarity and crystallinity: A dibenzobarrelene-derived nickel diamine catalyst copolymerizes ethylene and a renewable ester to afford semi-crystalline linear polyethylene with pendant functional groups. The catalyst polymerizes ethylene in a living fashion with high activity and exhibits an important combination of functional group tolerance and decreased chain walking.

Polymerization

B. K. Long, J. M. Eagan, M. Mulzer, G. W. Coates* ________ 7106 – 7110

Semi-Crystalline Polar Polyethylene: Ester-Functionalized Linear Polyolefins Enabled by a Functional-Group-Tolerant, Cationic Nickel Catalyst

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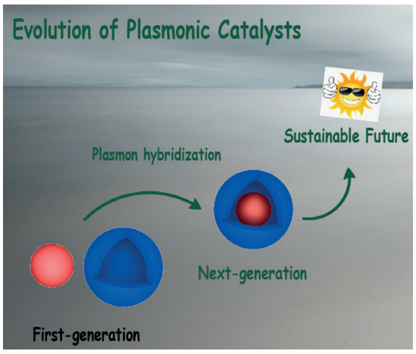

Nanorattles: By taking advantage of the plasmon hybridization concept in Au@AgAu nanorattles, improved performances towards the surface plasmon resonance-mediated oxidation of amines were achieved. As the nanorattle morphology makes possible the formation of electromagnetic hot spots, these materials are attractive next-generation plasmonic catalysts for applications in liquid-phase transformations under mild conditions.

Photocatalysis

A. G. M. da Silva, T. S. Rodrigues, V. G. Correia, T. V. Alves, R. S. Alves, R. A. Ando, F. R. Ornellas, J. Wang, L. H. Andrade, P. H. C. Camargo* ________ 7111 – 7115

Plasmonic Nanorattles as Next-Generation Catalysts for Surface Plasmon Resonance-Mediated Oxidations Promoted by Activated Oxygen

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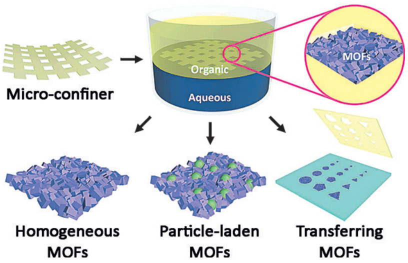

Same mold MOFs: Micro-confined interfacial synthesis allows control of the morphologies and dimensions of MOF 2D patterns by growing the MOF films in molds. The free standing 2D MOFs can also be functionalization, by loading them with magnetic nanoparticles, or using luminescent lanthanide ions. Contact transfer allows the selective positioning the MOF arrays on various substrates including glass and skin.

MOF Films

J.-O. Kim, K.-I. Min, H. Noh, D.-H. Kim, S.-Y. Park, D.-P. Kim* ________ 7116 – 7120

Direct Fabrication of Free-Standing MOF Superstructures with Desired Shapes by Micro-Confined Interfacial Synthesis

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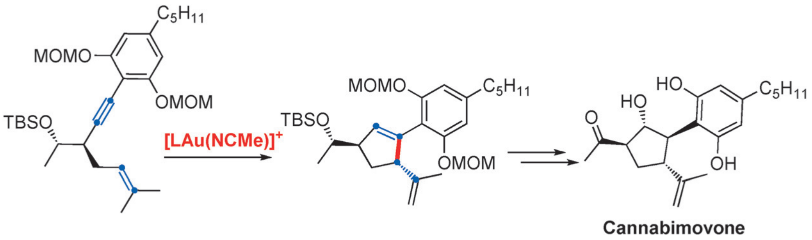


Out of the weeds: The first total synthesis of (−)-cannabimovone from *Cannabis sativa* and (+)-anhydrocannabimovone was achieved by means of a highly stereoselective gold(I)-catalyzed cycloisomerization. On this basis, the structure of anhydrocannabimovone was reassigned.

Total Synthesis

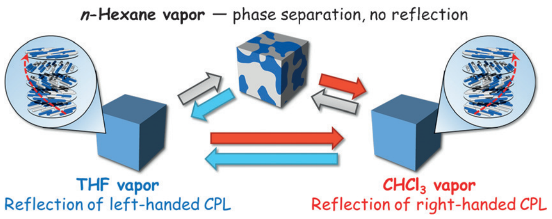
J. Carreras, M. S. Kirillova, A. M. Echavarren* ________ 7121 – 7125

Synthesis of (−)-Cannabimovone and Structural Reassignment of Anhydrocannabimovone through Gold(I)-Catalyzed Cycloisomerization

Cholesteric Materials

Y. Nagata,* M. Uno,
M. Suginome* ——— **7126 – 7130**

Three-Way-Switchable (Right/Left/OFF) Selective Reflection of Circularly Polarized Light on Solid Thin Films of Helical Polymer Blends



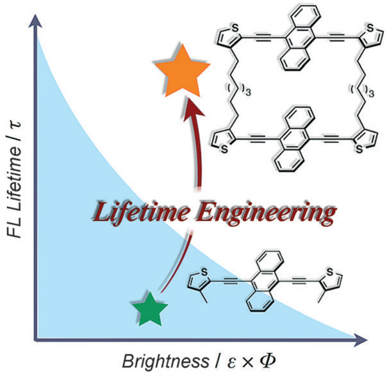
Reflections left, right, and center: A polymer-blend film of two poly(quinoxaline-2,3-diyl)s with 8-chlorooctyl side chains selectively reflected right-handed circularly polarized light (CPL) in the visible region after annealing in CHCl$_3$. The handedness of reflected CPL could be inverted by annealing in THF vapor, and the selective reflection could be turned off by annealing in *n*-hexane vapor, which led to phase separation (see picture).

Lifetime Engineering

H. Osaki, C.-M. Chou, M. Taki,* K. Welke, D. Yokogawa, S. Irle,* Y. Sato, T. Higashiyama, S. Saito, A. Fukazawa, S. Yamaguchi* ——— **7131 – 7135**

A Macrocyclic Fluorophore Dimer with Flexible Linkers: Bright Excimer Emission with a Long Fluorescence Lifetime

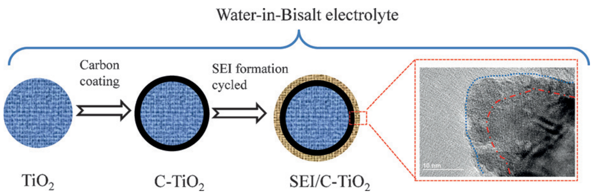
Brighter and slower: A macrocyclic fluorophore dimer with flexible alkylene linkers exhibited strong absorption, a high fluorescence quantum yield (Φ_F), and a slow fluorescence decay (τ) attributable to efficient intramolecular excimer formation. In vitro time-gated imaging experiments were used to demonstrate the superior fluorescence performance of the dimer compared to a commercial fluorescent dye.



Lithium-Ion Batteries

L. Suo, O. Borodin, W. Sun, X. Fan, C. Yang, F. Wang, T. Gao, Z. Ma, M. Schroeder, A. von Cresce, S. M. Russell, M. Armand, A. Angell, K. Xu,* C. Wang* ——— **7136 – 7141**

Advanced High-Voltage Aqueous Lithium-Ion Battery Enabled by “Water-in-Bisalt” Electrolyte



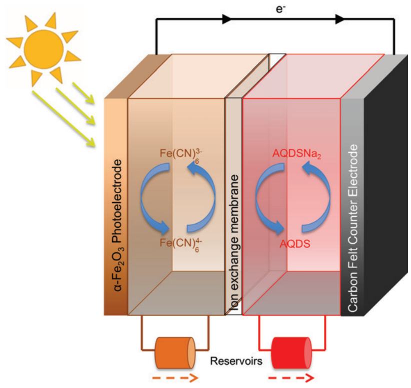
Ready salted: A new class of electrolyte a “water-in-bisalt” electrolyte, that is, an electrolyte made from two salts, has a wider electrochemical stability window for aqueous lithium-ion batteries. The unprecedented high ionic density in the solution effectively suppresses hydrogen evolution and promotes the formation of a more protective solid electrolyte interphase (SEI).

Solar Energy Conversion

K. Wedege, J. Azevedo, A. Khataee, A. Bentien,* A. Mendes* ——— **7142 – 7147**

Direct Solar Charging of an Organic–Inorganic, Stable, and Aqueous Alkaline Redox Flow Battery with a Hematite Photoanode

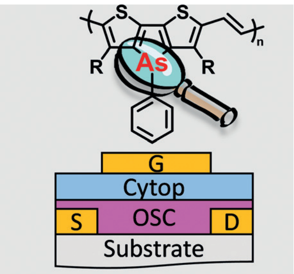
Go with the flow: An aqueous, alkaline, low-cost quinone–ferrocyanide redox flow battery can be directly charged by solar energy using a hematite photoanode. A strategy to improve the photovoltage in a hole scavenger electrolyte is presented for the first time.



Polymers

J. P. Green, Y. Han, R. Kilmurray,
M. A. McLachlan, T. D. Anthopoulos,
M. Heeney* ______ 7148 – 7151

An Air-Stable Semiconducting Polymer Containing Dithieno[3,2-*b*:2′,3′-*d*]arsole

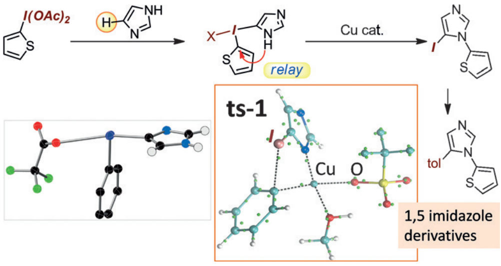


Arsenic-containing conjugated polymers were obtained by copolymerization of the first dithieno[3,2-*b*;2′,3′-*d*]arsole derivative. These polymers are stable under ambient conditions in their +3 oxidation state and display p-type semiconductivity with promising hole mobility in field-effect transistors.

Arylation Reagents

Y. Wu, S. Izquierdo, P. Vidossich,
A. Lledós,* A. Shafir* ______ 7152 – 7156

NH-Heterocyclic Aryliodonium Salts and their Selective Conversion into *N*1-Aryl-5-iodoimidazoles

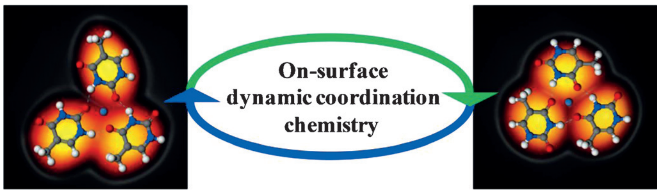


Stepping stones: Novel imidazolyl aryliodonium salts serve as intermediates on the way to *N*1-aryl-5-iodoimidazoles. An iodine substituent acts as a "universal" placeholder, poised for replacement by other substituents. These new λ^3-iodanes are produced by treating the *NH*-imidazole with ArI(OAc)$_2$, and are converted into *N*1-aryl-5-iodoimidazoles by a selective copper-catalyzed aryl migration.

Surface Chemistry

H. H. Kong, C. Zhang, L. Xie, L. Wang,
W. Xu* ______ 7157 – 7160

Constitutional Dynamics of Metal–Organic Motifs on a Au(111) Surface

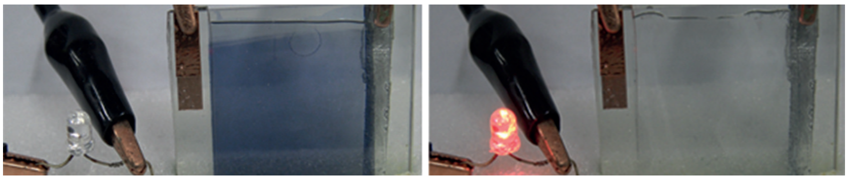


Metal–organic motifs were formed selectively on a Au(111) surface under ultrahigh vacuum conditions and studied by scanning tunneling microscopy and DFT calculations. The co-deposition of nickel atoms and thymine molecules resulted in the formation of two kinds of metal–organic trimers which transformed reversibly from one surface structure type into another.

Electrochromic Batteries

J. X. Zhao, Y. Y. Tian, Z. Wang, S. Cong,
D. Zhou, Q. Z. Zhang, M. Yang,
W. K. Zhang, F. X. Geng,
Z. G. Zhao* ______ 7161 – 7165

Trace H_2O_2-Assisted High-Capacity Tungsten Oxide Electrochromic Batteries with Ultrafast Charging in Seconds



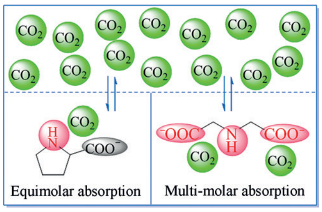
A high-performance electrochromic battery with unprecedented charging time down to eight seconds and specific capacity up to 429 mAh g^{-1} was designed, in which the level of energy stored can be constantly and visually conveyed by recognizing variations in color. The high capacity may come from an intricate combination of structure and valence state changes of the tungsten oxide electrode.

CO_2 Capture

F. F. Chen, K. Huang, Y. Zhou, Z. Q. Tian, X. Zhu, D. J. Tao,* D. Jiang, S. Dai* ________ 7166 – 7170

Multi-Molar Absorption of CO_2 by the Activation of Carboxylate Groups in Amino Acid Ionic Liquids

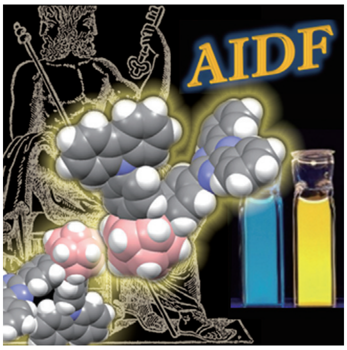
My mate, carboxylate: multi-molar absorption of CO_2 (up to 1.69 mol mol^{-1}) is possible using aminopolycarboxylate-based ionic liquids (APC-ILs) by introducing an electron-withdrawing site to reduce the negative inductive effect of the amino group while simultaneously activating the carboxylate group. The multiple-site interactions between the anion of APC-ILs and CO_2 resulted in superior CO_2 capacities.



Organic Light-Emitting Diodes

R. Furue, T. Nishimoto, I. S. Park, J. Lee, T. Yasuda* ________ 7171 – 7175

Aggregation-Induced Delayed Fluorescence Based on Donor/Acceptor-Tethered Janus Carborane Triads: Unique Photophysical Properties of Nondoped OLEDs

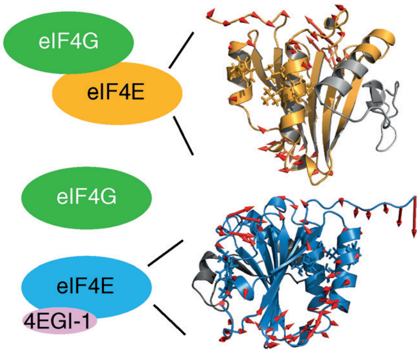


Two sides of the same coin: Organic–inorganic hybrid molecules consisting of an *o*-carborane tethered with electron donor and acceptor π-conjugated units exhibit efficient photoluminescence and electroluminescence based on aggregation-induced delayed fluorescence (AIDF).

Protein Dynamics

N. Salvi,* E. Papadopoulos, M. Blackledge, G. Wagner* 7176 – 7179

The Role of Dynamics and Allostery in the Inhibition of the eIF4E/eIF4G Translation Initiation Factor Complex

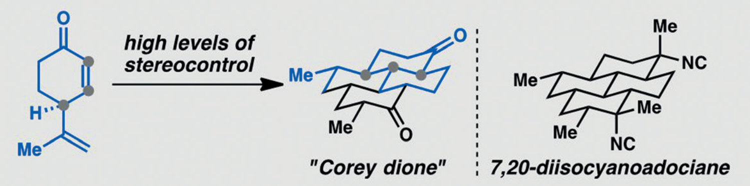


Lost in translation: The interaction between the eIF4E/eIF4G subunits of the translation initiation factor complex eIF4F is a promising target for cancer treatment. A powerful inhibitor of this interaction, 4EGI-1, was shown to act by altering the conformational equilibrium in eIF4E to favor conformations characterized by increased flexibility in the eIF4G binding site.

Isocyanoterpenes

P. C. Roosen, C. D. Vanderwal* ________ 7180 – 7183

A Formal Enantiospecific Synthesis of 7,20-Diisocyanoadociane



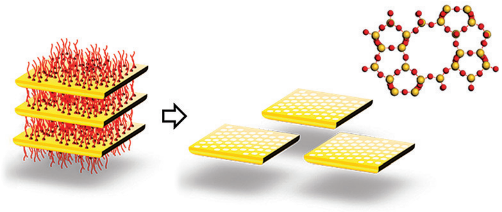
A highly stereocontrolled synthesis of the “Corey dione”, a late-stage intermediate from which 7,20-diisocyanoadociane (DICA) has been made previously, was developed. The adoption of chiral-pool starting material (−)-perillaldehyde permits an enantiospecific synthesis, and the overall approach should be broadly applicable to other isocyanoterpenes.

Zeolites

H. Zhang, Q. Xiao,* X. H. Guo, N. J. Li, P. Kumar, N. Rangnekar, M. Y. Jeon, S. Al-Thabaiti, K. Narasimharao, S. N. Basahel, B. Topuz, F. J. Onorato, C. W. Macosko, K. A. Mkhoyan, M. Tsapatsis* ______ 7184 – 7187

Open-Pore Two-Dimensional MFI Zeolite Nanosheets for the Fabrication of Hydrocarbon-Isomer-Selective Membranes on Porous Polymer Supports

Front Cover



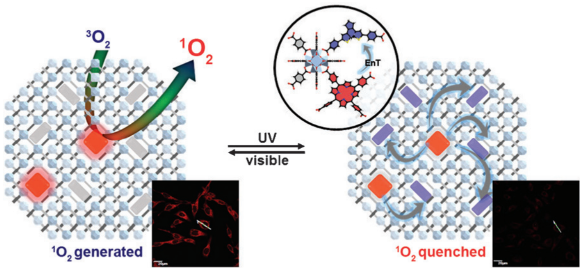
The detemplation and exfoliation of multilamellar MFI nanosheets was achieved by treatment with piranha solution (H_2SO_4/H_2O_2). A film obtained by directly coating a polymer support with the nanosheets exhibited an *n*-butane/isobutane selectivity of approximately 5.4.

Metal–Organic Frameworks

J. Park, Q. Jiang, D. Feng, H.-C. Zhou* ______ 7188 – 7193

Controlled Generation of Singlet Oxygen in Living Cells with Tunable Ratios of the Photochromic Switch in Metal–Organic Frameworks

Inside Cover

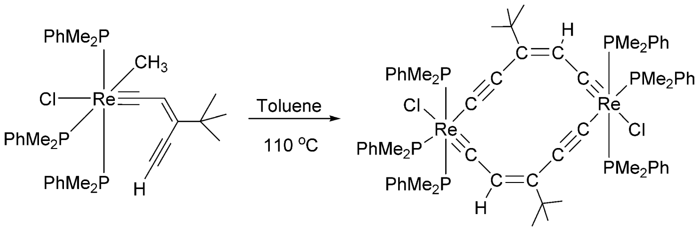


A switch inside: In situ incorporation of a photosensitizing system into MOF nanoparticles to control $^1O_2$ generation is possible using a tunable ratio of a photochromic switch. The MOF formulation allows enhanced in vitro photodynamic therapy (PDT) efficacy with a superior control of $^1O_2$ production compared to a simple mixture of the dyad.

Metallacycles

J. Chen, K.-H. Lee, H. H. Y. Sung, I. D. Williams,* Z. Lin,* G. Jia* ______ 7194 – 7198

Synthesis and Characterization of Dirhenadehydro[12]annulenes

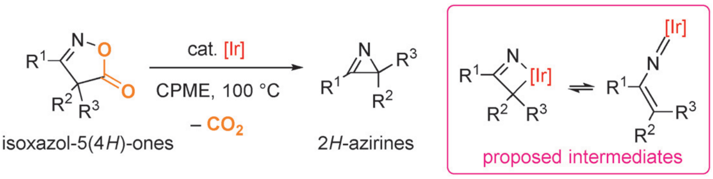


Rings show their metals: Metallaannulenes and dehydro analogues usually have six or less ring atoms. The synthesis and characterization of the first dimetalladehydro[12]annulenes, shows that unlike their organic counterparts, they are not antiaromatic.

Heterocycles

K. Okamoto,* T. Shimbayashi, M. Yoshida, A. Nanya, K. Ohe* ________ **7199 – 7202**

Synthesis of 2*H*-Azirines by Iridium-Catalyzed Decarboxylative Ring Contraction of Isoxazol-5(4*H*)-ones

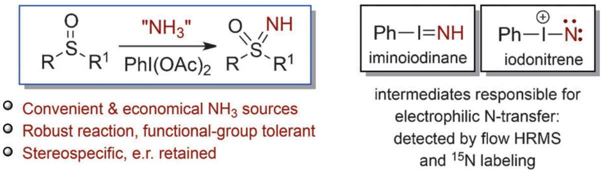


Highly strained 2*H*-azirines are synthesized by decarboxylative ring contraction of isoxazol-5(4*H*)-ones in the presence of an iridium catalyst. The reaction proceeded under the simple reaction conditions (without any additive) to give various 2*H*-azirines (with carbon dioxide as a sole by-product).

Hypervalent Compounds

M. Zenzola, R. Doran, L. Degennaro, R. Luisi,* J. A. Bull* ________ **7203 – 7207**

Transfer of Electrophilic NH Using Convenient Sources of Ammonia: Direct Synthesis of NH Sulfoximines from Sulfoxides

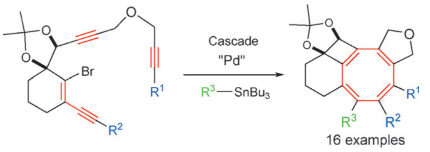


Making a transfer: Convenient reagents for NH transfer allow the direct preparation of NH sulfoximines from sulfoxides. A wide range of diversely functionalized sulfoximines are prepared in high yields using simple ammonium salts with a hypervalent iodine reagent. Evidence is provided for a short-lived reactive species (see scheme).

Alkenes

S. Blouin, V. Gandon,* G. Blond,* J. Suffert* ________ **7208 – 7211**

Synthesis of Cyclooctatetraenes through a Palladium-Catalyzed Cascade Reaction



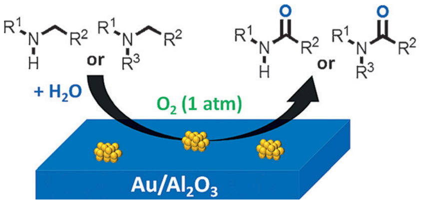
All fours: A cascade reaction leads to fully substituted cyclooctatetraenes. The transformation proceeds through an unprecedented mechanistic pathway involving an 8π electrocyclization reaction of an ene triyne. A DFT study was performed to understand this remarkable cascade reaction.

Heterogeneous Gold Catalysis

X. Jin, K. Kataoka, T. Yatabe, K. Yamaguchi, N. Mizuno* ________ **7212 – 7217**

Supported Gold Nanoparticles for Efficient α-Oxygenation of Secondary and Tertiary Amines into Amides

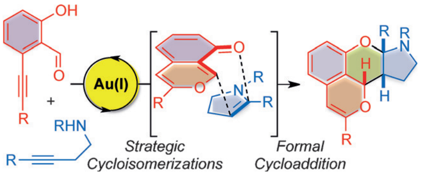
Fields of gold: In the presence of gold nanoparticles supported on alumina (Au/Al_2O_3), α-oxygenation of a wide range of secondary and tertiary amines efficiently proceeded to give the corresponding amides in moderate to high yields using O_2 as the terminal oxidant. Catalysis was intrinsically heterogeneous, and the catalyst could be reused.



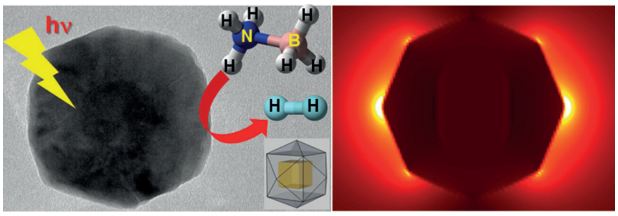
Gold Catalysis

T. Arto, F. J. Fañanás,* F. Rodríguez* ________ **7218 – 7221**

Gold(I)-Catalyzed Generation of the Two Components of a Formal [4+2] Cycloaddition Reaction for the Synthesis of Tetracyclic Pyrano[2,3,4-*de*]chromenes



Good as gold: A gold-catalyst was used to transform an alkynylsalicylaldehyde and an alkynamine into a heterodiene and dienophile that further react through a formal cycloaddition reaction. This reaction produces complex tetracyclic pyrano[2,3,4-*de*]chromenes from two very simple starting materials with complete atom economy and with selective formation of bonds, cycles, and stereocenters.



Facets of HER personality: Au–Pd core–shell tetrahexahedral nanocrystals exposing the {730} facet act as efficient plasmonic photocatalyst with the highest turnover frequency value for the hydrogen-evolution reaction (HER) from ammonia borane under light irradiation.

Hydrogen Evolution

S. Rej, C.-F. Hsia, T.-Y. Chen, F.-C. Lin, J.-S. Huang, M. H. Huang* **7222 – 7226**

Facet-Dependent and Light-Assisted Efficient Hydrogen Evolution from Ammonia Borane Using Gold–Palladium Core–Shell Nanocatalysts

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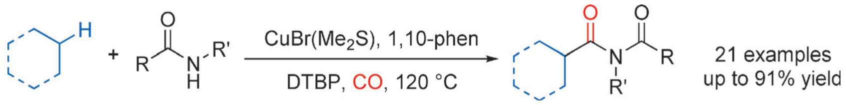

A copper-catalyzed carbonylative synthesis of imides starting from cycloalkanes and amides has been developed. The imides were prepared in good yields by carbonylation of a C(sp^3)−H bond of the cycloalkane with the amides acting as weak nucleophiles (DTBP = di-*tert*-butylperoxide, 1,10-phen = 1,2-phenanthroline hydrate).

Carbonylation

Y. Li, K. Dong, F. Zhu, Z. Wang, X.-F. Wu* **7227 – 7230**

Copper-Catalyzed Carbonylative Coupling of Cycloalkanes and Amides

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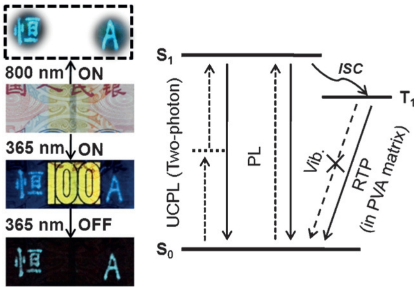
Show me the money! A composite comprising carbon dots exhibits three kinds of emission simultaneously: photoluminescence (PL), up-conversion PL (UCPL), and room temperature phosphorescence (RTP). This unique feature could be applied to combat counterfeiting in the form of a printable ink with three modes of optical authentication.

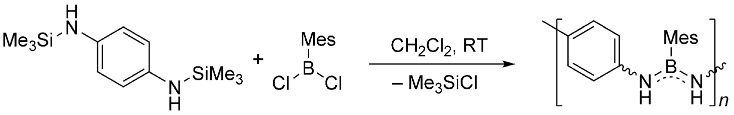


Luminescent Dyes

K. Jiang, L. Zhang, J. Lu, C. Xu, C. Cai, H. Lin* **7231 – 7235**

Triple-Mode Emission of Carbon Dots: Applications for Advanced Anti-Counterfeiting

Back Cover



Polymerization through B−N bond formation provides facile access to the first derivatives of a new class of organic–inorganic hybrid polymers, which show some π-conjugation across the NBN units. Cross-linking with Zr^{IV} demonstrates the applicability of these materials as macromolecular polyligand systems. Mes = 2,4,6-trimethylphenyl.

Inorganic Polymers

T. Lorenz, A. Lik, F. A. Plamper, H. Helten* **7236 – 7241**

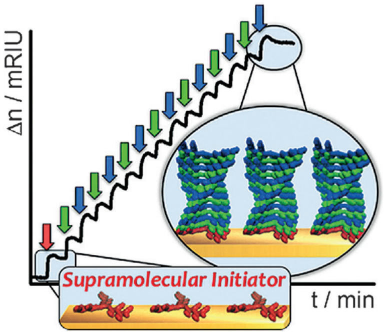
Dehydrocoupling and Silazane Cleavage Routes to Organic–Inorganic Hybrid Polymers with NBN Units in the Main Chain

Supramolecular Polymer Brushes

H. Frisch, E.-C. Fritz, F. Stricker,
L. Schmüser, D. Spitzer, T. Weidner,
B. J. Ravoo,* P. Besenius* ___ 7242 – 7246

Kinetically Controlled Sequential Growth of Surface-Grafted Chiral Supramolecular Copolymers

Inside Back Cover



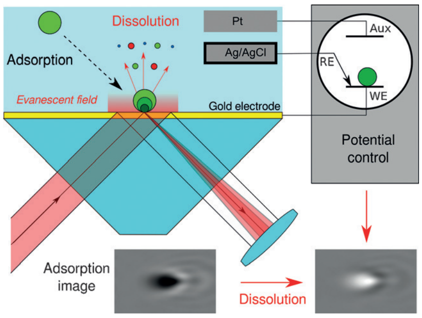
A modular strategy for the kinetically controlled supramolecular polymerization of oppositely charged comonomers on gold surfaces enables architectural control at three levels: The β-sheet sequences direct the polymerization away from the surface, the height of the non-covalent polymer brushes is controlled by the stepwise nature of the alternating copolymer growth, and 2D spatial resolution is achieved by using micropatterned initiating monomers.

Analytical Methods

S. Nizamov, O. Kasian,
V. M. Mirsky* ___ 7247 – 7251

Individual Detection and Electrochemically Assisted Identification of Adsorbed Nanoparticles by Using Surface Plasmon Microscopy

All-seeing: The detection of each adsorbed nanoparticle (NP) and visualization of their electrochemical conversions is possible with surface plasmon microscopy. Whereas the adsorption rate gives the concentration of NPs, the potential at which the adsorbed NPs disappear during an anodic potential sweep characterizes their chemical composition. Each adsorbed NP is identified individually.

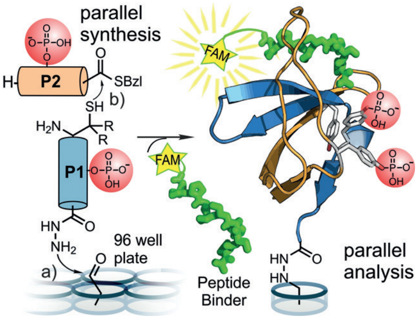


Protein Synthesis

R. Zitterbart, O. Seitz* ___ 7252 – 7256

Parallel Chemical Protein Synthesis on a Surface Enables the Rapid Analysis of the Phosphoregulation of SH3 Domains

A fast track to analyze the phosphoregulation of proteins has been realized by immobilization of peptide hydrazides through hydrazone ligation with self-purified peptide thioesters, a radical-induced desulfurization, and a surface-based binding assay. The method shows that tyrosine phosphorylation can induce both a loss and a gain in the ligand affinity of the SH3 domains of Abl kinases.

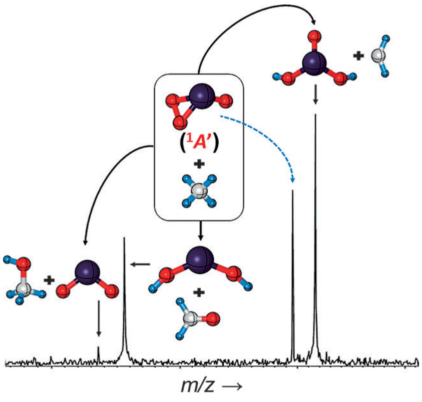


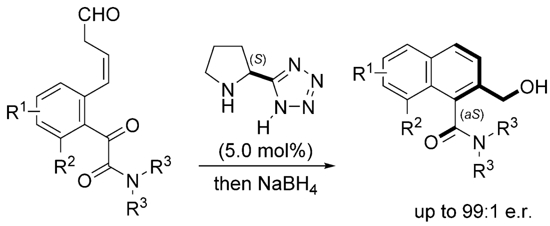
Methane Activation

S. Zhou, J. Li, M. Schlangen,
H. Schwarz* ___ 7257 – 7260

Spin-Selective Thermal Activation of Methane by Closed-Shell $[TaO_3]^+$

Driven to abstraction: Thermal reactions of closed-shell metal-oxide cluster $[TaO_3]^+$ with methane were investigated by mass spectrometry and quantum chemistry. As expected, methanol and formaldehyde were formed, but $[TaO_3]^+$ was also able to abstract two H atoms from methane with the elimination of CH_2. The generation of CH_2O and CH_3OH occurs on the singlet ground-state surface, while the liberation of $^3CH_2$ occurs through two-state reactivity.





Aldol Reactions

V. C. Fäseke, C. Sparr* ______ **7261 – 7264**

Stereoselective Arene-Forming Aldol Condensation: Synthesis of Axially Chiral Aromatic Amides

Amine amid amides: A chiral amine-catalyzed arene-forming aldol condensation provides axially chiral aromatic amides. The reaction proceeds with excellent atroposelectivity at ambient temperature within minutes. The substrate scope was expanded by employing an in situ reduction, thus furnishing atropisomers characterized by their distinct spatial arrangement and remarkable configurational stability.

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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