On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

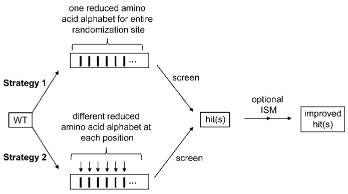
CHEMISTRY
A European Journal

Chemical Biology

Z. Sun, Y. Wikmark, J.-E. Bäckvall,* M. T. Reetz*

New Concepts for Increasing the Efficiency in Directed Evolution of Stereoselective Enzymes

Tale of two strategies: Two different approaches (see scheme) to saturation mutagenesis at sites lining the binding pocket of an enzyme are effective in solving the numbers problem in directed evolution of stereoselective mutants.



Chem. Eur. J.
DOI: **10.1002/chem.201504406**

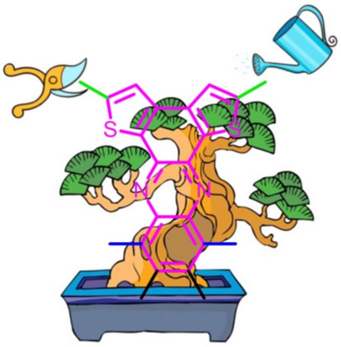
CHEMISTRY
AN ASIAN JOURNAL

Donor–Acceptor Systems

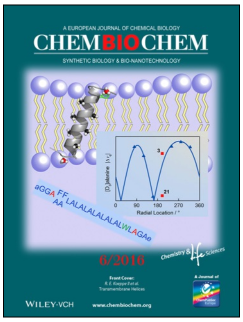
Y. Chen, X. Lu, C. Xiang, Y. Ling, G. Zhou*

Charge Transfer Through Dithieno[2,3-*a*:3′,2′-*c*]phenazine: Effect of Substitution Pattern on the Optoelectronic Properties of Regioisomeric Luminophores

Let there be light: Regioisomeric luminophores that contained dithieno[2,3-*a*:3′,2′-*c*]phenazine as an electron acceptor and *N*,*N*-dihexylaniline or *N*,*N*-dihexyl-4-vinylaniline as an electron donor have been constructed and their optoelectronic properties have been systematically investigated.



Chem. Asian J.
DOI: **10.1002/asia.201501389**



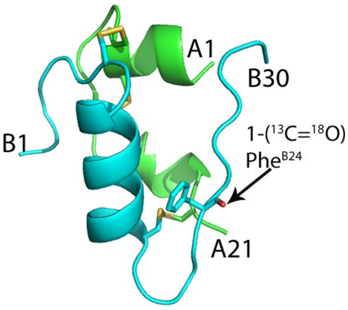
CHEMBIOCHEM

Total Protein Synthesis

B. Dhayalan, A. Fitzpatrick, K. Mandal, J. Whittaker, M. A. Weiss, A. Tokmakoff,* S. B. H. Kent*

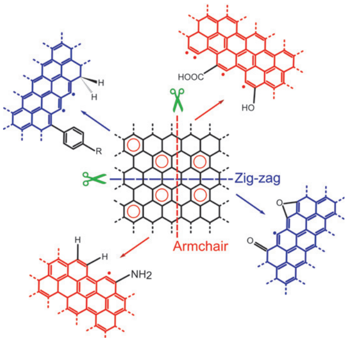
Efficient Total Chemical Synthesis of $^{13}C{=}^{18}O$ Isotopomers of Human Insulin for Isotope-Edited FTIR

Just one carbonyl, please: Human insulin was specifically labeled at the (1-$^{13}C{=}^{18}O$)Phe^{B24} backbone carbonyl by using total chemical synthesis via a key ester insulin intermediate. The synthetic protein retained full insulin-receptor binding activity. Linear and 2D IR spectra of isotope-labeled human insulin confirmed the presence of the (1-$^{13}C{=}^{18}O$)Phe^{B24} label.



ChemBioChem
DOI: **10.1002/cbic.201500601**

Graphene

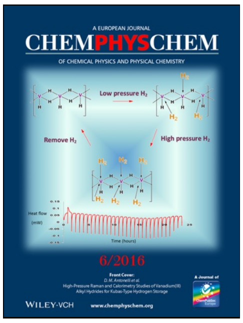


A. Bellunato, H. Arjmandi Tash, Y. Cesa, G. F. Schneider*

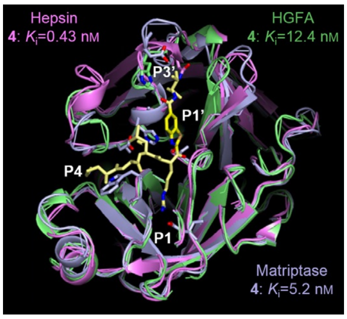
Chemistry at the Edge of Graphene

Cutting edge: Given the relevance of the chemistry at the edges in many aspects of graphene, the processes and mechanisms that drive the chemical functionalization of graphene at the edges are reviewed. The selective chemical functionalization of graphene edges from theoretical and experimental perspectives is summarized, with a particular focus on the tools available to characterize the chemistry of graphene at the edge.

ChemPhysChem
DOI: **10.1002/cphc.201500926**



Cancer Therapeutics

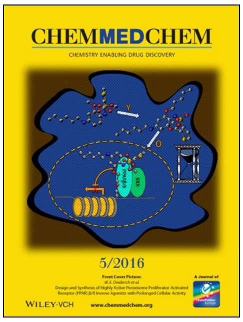


Z. Han, P. K. W. Harris, P. Karmakar, T. Kim, B. Y. Owusu, S. A. Wildman, L. Klampfer, J. W. Janetka*

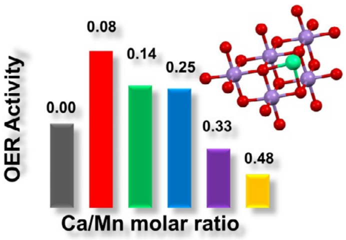
α-Ketobenzothiazole Serine Protease Inhibitors of Aberrant HGF/c-MET and MSP/RON Kinase Pathway Signaling in Cancer

We have developed mechanism-based inhibitors of HGFA, matriptase, and hepsin which contain α-ketobenzothiazole, a serine-trapping warhead at P1′. We used structure-based drug design to optimize the inhibitors by replacing our initial α-ketothiazole warhead with a substituted benzothiazole to access the diverse S3' pocket of these proteases. For example, Ac-KQLR-kbt V amide (**4**) potently inhibits HGFA and matriptase at low nanomolar and hepsin at sub-nanomolar concentrations. Selectivity was achieved by taking advantage of differences in the S3' pocket (His: HGFA, Asp: matriptase, Asn: hepsin).

ChemMedChem
DOI: **10.1002/cmdc.201500600**



Water Splitting

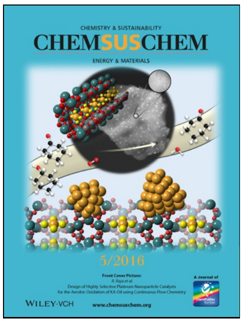


D. González-Flores, I. Zaharieva, J. Heidkamp, P. Chernev, E. Martínez-Moreno, C. Pasquini, M. R. Mohammadi, K. Klingan, U. Gernet, A. Fischer, H. Dau*

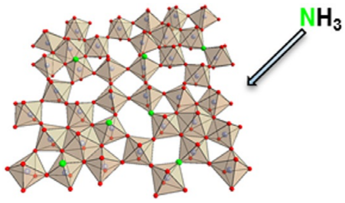
Electrosynthesis of Biomimetic Manganese–Calcium Oxides for Water Oxidation Catalysis—Atomic Structure and Functionality

Catalyst Ca-n do: Water-oxidizing calcium–manganese oxides mimic the inorganic core of the biological catalyst. The oxides are electrodeposited and modified by active-site creation through annealing at moderate temperatures. The ability to undergo redox transitions and the presence of a minority fraction of Mn^{III} ions at catalytic potentials facilitates water-oxidation catalysis.

ChemSusChem
DOI: **10.1002/cssc.201501399**



Selective Oxidation

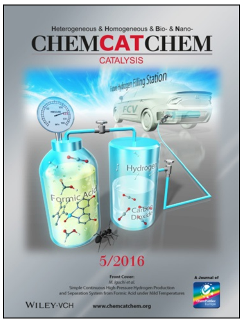


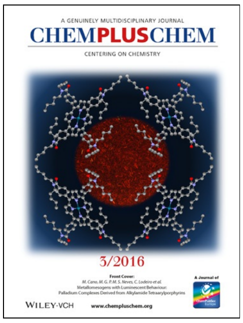
S. Kühn, D. Weber, M. Lerch, T. Ressler*

Effects of Anion Substitution in $(Mo,V)_5O_{14}$ on Catalytic Performance in Selective Propene Oxidation to Acrolein

Nitrogen welcome: The anion lattice of $(Mo,V)_5O_{14}$ is modified by substituting oxygen ions with nitrogen ions for the first time. Oxide nitrides represent suitable model systems for studying bulk contributions to selective oxidation. Correlations between conductivity, oxygen availability, and catalytic performance are elucidated.

ChemCatChem
DOI: **10.1002/cctc.201501076**



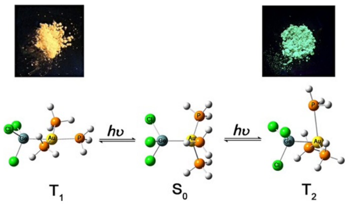


Gold Complexes

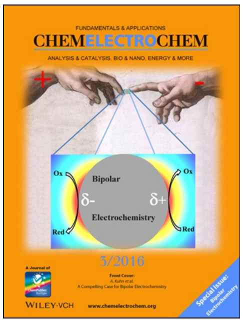
R. V. Bojan, J. M. López-de-Luzuriaga,* M. Monge, M. E. Olmos, R. Echeverría, O. Lehtonen, D. Sundholm

Double Jahn–Teller Distortion in AuGe Complexes Leading to a Dual Blue–Orange Emission

Team colors: The inorganometallic Au^I complexes $[Au(GeCl_3)L_3]$ ($L = PMe_3$ (**1**), PMe_2Ph (**2**), $PMePh_2$ (**3**), PPh_3 (**4**)) have been synthesized. Complexes **3** and **4** display dual phosphorescence in the solid state. Ab initio calculations show that the existence of two different triplet excited states, T_1 and T_2, is related to this phosphorescent behavior. A double Jahn–Teller effect for each triplet-state structure is described.



ChemPlusChem
DOI: **10.1002/cplu.201500337**

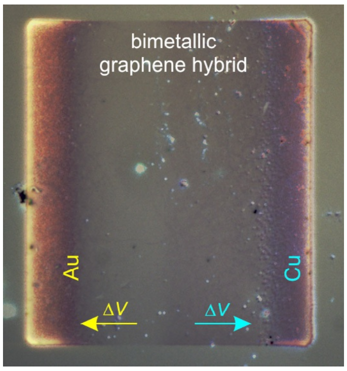


Biopolar Electrochemistry

L. Zuccaro, A. Kuhn, M. Konuma, H. K. Yu, K. Kern, K. Balasubramanian*

Selective Functionalization of Graphene Peripheries by using Bipolar Electrochemistry

Peripheral vision: A contactless lithography-free strategy using bipolar electrochemistry is presented for the local modification of peripheral regions of monolayer graphene. This enables the realization of hybrid monolayer graphene modified, for example, with two different metals on the opposing peripheries.



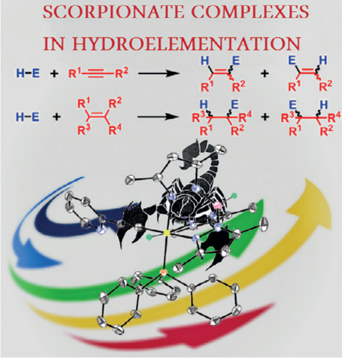
ChemElectroChem
DOI: **10.1002/celc.201500461**

Hydroelementation

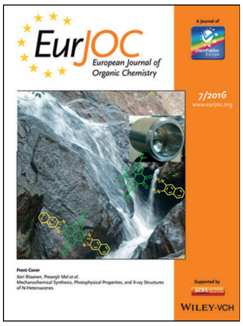
M. Wathier, J. A. Love*

Hydroelementation of Unsaturated C–C Bonds Catalyzed by Metal Scorpionate Complexes

A review of recent advances in hydroelementation (E = S, N, O, P) of alkenes and alkynes catalyzed by metal complexes bearing scorpionate-type ligands.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201501272**

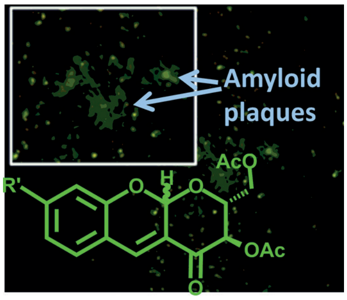


Fluorescent Amyloid Deposit Ligands

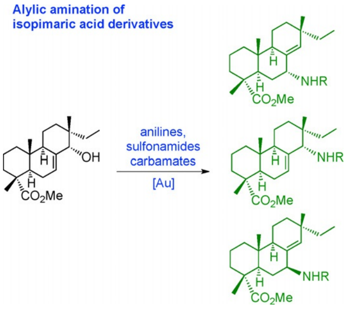
G. D'Orazio, L. Colombo, M. Salmona, B. La Ferla*

Synthesis and Preliminary Biological Evaluation of Fluorescent Glycofused Tricyclic Derivatives of Amyloid β-Peptide Ligands

We synthesize new fluorescent glycofused tricyclic compounds able to bind to synthetic amyloid β 1–42 peptide aggregates and to label amyloid plaques in brain-tissue samples from transgenic mice affected with Alzheimer's disease.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201501593**



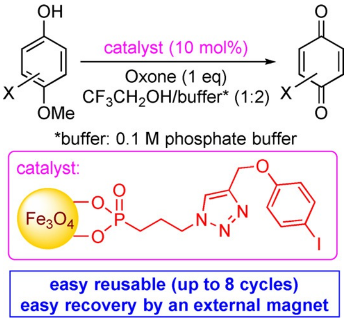
Gold Catalysis

M. A. Timoshenko, Y. V. Kharitonov, M. M. Shakirov,
I. Y. Bagryanskaya, E. E. Shults*

Synthetic Studies on Tricyclic Diterpenoids: Direct Allylic Amination Reaction of Isopimaric Acid Derivatives

We have demonstrated that the gold-catalyzed amination of isopimaric acid derivatives with substituted anilines, benzenesulfonamide, or *tert*-butyl carbamate produces good to excellent yields of nitrogen-containing tricyclic diterpenoids, which are extremely useful synthetic intermediates in the construction of biologically important compounds. The stereochemical result of the reaction is dependent on the nature of the nucleophile.

ChemistryOpen
DOI: **10.1002/open.201500187**



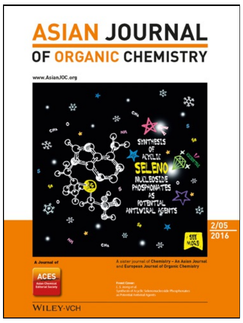
Nanoparticle-Supported Catalysts

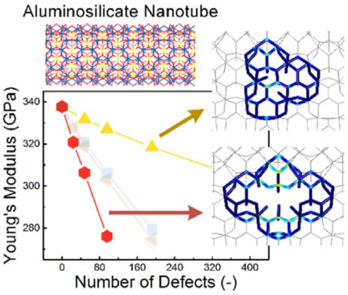
H. Nambu, I. Shimokawa, T. Fujiwara, T. Yakura*

Recyclable Magnetic Nanoparticle-Supported Iodoarene Catalysts for Oxidation of 4-Alkoxyphenols to Quinones

Drawn to it like a magnet: The reactivity of iodoarene catalysts immobilized on magnetite (Fe_3O_4) were similar to that of 4-iodophenoxyacetic acid for the oxidation of 4-alkoxyphenols in the presence of Oxone® as a co-oxidant to give the corresponding *p*-quinones in high yields. These catalysts were readily recovered by the use of an external magnet and were recycled up to eight times.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201600036**





Nanotube Defects

K.-H. Liou, D.-Y. Kang*

Defective Single-Walled Aluminosilicate Nanotubes: Structural Stability and Mechanical Properties

Gimme a break: Defective aluminosilicate nanotubes were modeled to elucidate the relationships among defect structures, structural stability, and mechanical properties. The impact of the defect sites on the mechanical properties of aluminosilicate nanotubes was investigated.

ChemNanoMat
DOI: **10.1002/cnma.201500185**

Chemistry and Art

T. Bach, B. Eiglsperger, B. König

Art + Science Project

Thinking outside the box: Chemists in Germany cooperated with artists, visited each other at their workplaces, discussed their work, and learned from each other. The result is a unique, well-received exhibition which stimulates interest in chemistry and art.

ChemViews magazine
DOI: **10.1002/chemv.201600014**