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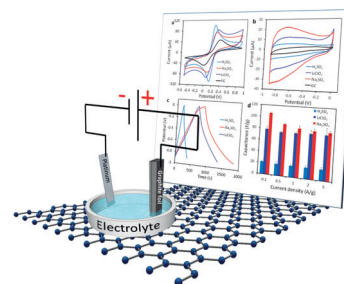


Electrochemistry

A. Ambrosi, M. Pumera*

Electrochemically Exfoliated Graphene and Graphene Oxide for Energy Storage and Electrochemistry Applications

Which electrolyte? Three different electrolytes, H_2SO_4 , Na_2SO_4 , and LiClO_4 , are tested with a common exfoliation procedure to evaluate the difference in structural and chemical properties that result for graphene and graphene oxide. Use of LiClO_4 during the electrochemical exfoliation of graphite allowed the formation of highly oxidized graphene with a C/O ratio close to 4.0 and represents a possible avenue for the mass production of graphene oxide as valid alternative to the current laborious and dangerous chemical procedures with limited scalability.



Chem. Eur. J.
DOI: 10.1002/chem.201503110

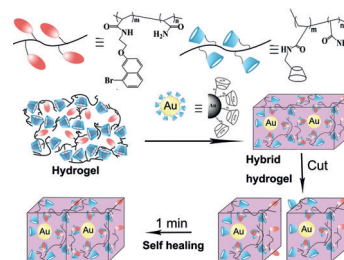


Supramolecular Polymeric Hydrogels

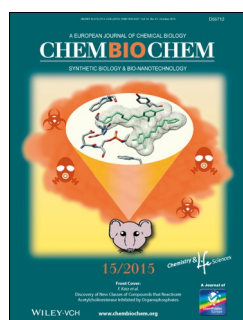
L. Chen, H. Chen, X. Yao, X. Ma,* H. Tian

A Hybrid Supramolecular Polymeric Hydrogel with Rapid Self-Healing Property

Healing is a matter of time: A hybrid supramolecular polymeric hydrogel was fabricated by host-guest interaction between poly-CD and poly-BrNp, and mixing with GPCDs. This hybrid system showed a rapid self-healing property in air and quite large rheological enhancement. This work supplies a simple approach to fabricate stable and high performance hybrid supramolecular hydrogels.



Chem. Asian J.
DOI: 10.1002/asia.201500704

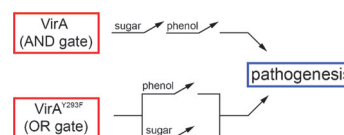


Bacterial Signaling

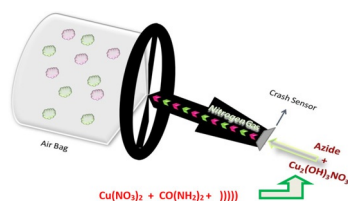
F. Fang, Y.-H. Lin, B. D. Pierce, D. G. Lynn*

A *Rhizobium radiobacter* Histidine Kinase Can Employ Both Boolean AND and OR Logic Gates to Initiate Pathogenesis

Pathogen logic gates: *Rhizobium radiobacter* perceives multiple plant host signals through a single histidine kinase, VirA, to induce pathogenesis. A single amino acid substitution in VirA altered the logical gating of signal input, and sequence comparisons with natural strains find that these logic gate strategies correlated with host range preference.



ChemBioChem
DOI: 10.1002/cbic.201500334



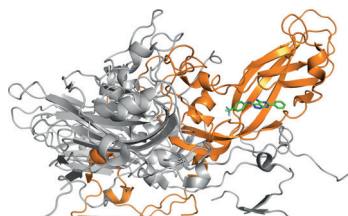
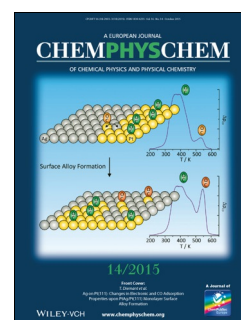
ChemPhysChem
DOI: 10.1002/cphc.201500629

Sonochemistry

S. Anandan,* J. J. Wu, M. Ashokkumar*

Sonochemical Synthesis of Layered Copper Hydroxy Nitrate Nanosheets

Sounds good! Sonochemical reduction of copper nitrate, using 20 kHz ultrasound in aqueous solutions in the presence of urea, leads to the formation of layered copper hydroxy nitrate nanosheets.



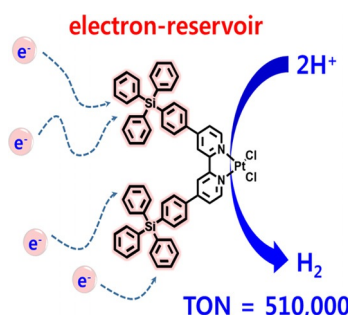
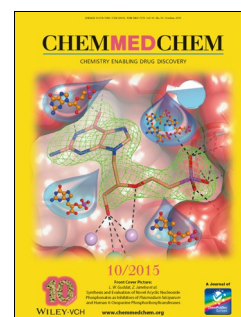
ChemMedChem
DOI: 10.1002/cmdc.201500304

Antiviral Agents

V. A. Makarov, H. Braun, M. Richter, O. B. Riabova, J. Kirchmair, E. S. Kazakova, N. Seidel, P. Wutzler, M. Schmidtke*

Pyrazolopyrimidines: Potent Inhibitors Targeting the Capsid of Rhino- and Enteroviruses

Curing the common cold! A cluster of pyrazolopyrimidines with potent broad-spectrum activity against enteroviruses was discovered. Extensive structure–property relationship analyses led to the identification of 3-(4-trifluoromethyl-phenyl)amino-6-phenylpyrazolo[3,4-d]pyrimidine-4-amine, shown to be a blocker of the viral capsid protein, as a lead compound for drug development with favorable physicochemical, pharmacokinetic, and toxicological properties.



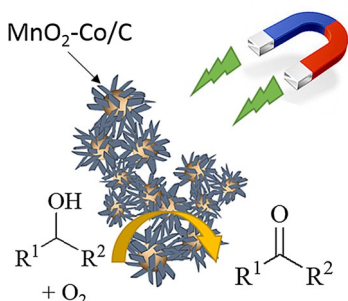
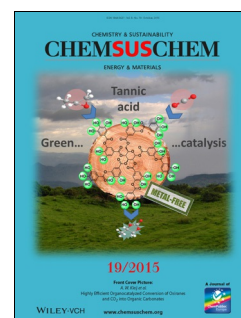
ChemSusChem
DOI: 10.1002/cssc.201500787

Water Splitting

D. R. Whang, S. Y. Park*

Rational Design of an Electron-Reservoir PtII Complex for Efficient Photocatalytic Hydrogen Production from Water

Try this on for size: Photocatalytic H_2 production from water is reported using a Pt^{II} complex with a tetraphenylsilyl-substituted bipyridine ligand as the water reduction catalyst. The catalyst exhibited significant H_2 evolution with turnover numbers (TONs) up to 510 000, which is higher than those observed for two control complexes with standard bipyridine ligands, highlighting the importance of ligand substitution and the electron-reservoir characteristics.



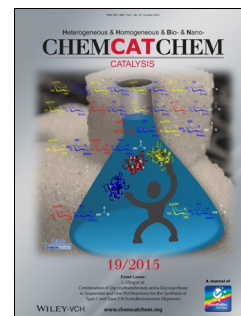
ChemCatChem
DOI: 10.1002/cctc.201500549

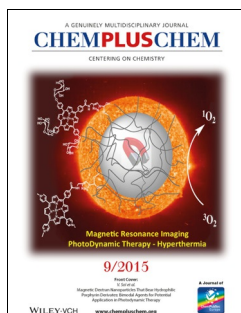
Oxidation

J. Zhi, S. Mitchell, J. Pérez-Ramírez,* O. Reiser*

Hierarchically Structured $\text{MnO}_2\text{-Co/C}$ Nanocomposites: Highly Efficient and Magnetically Recyclable Catalysts for the Aerobic Oxidation of Alcohols

A strong attraction: Porous MnO_2 microspheres distributed around carbon-coated cobalt nanoparticles are developed; their performance rivals that of Pd-based catalysts for the selective oxidation of alcohols. Excellent recyclability is conveniently achieved by magnetic decantation and is demonstrated over 10 consecutive cycles with no apparent material or performance loss.



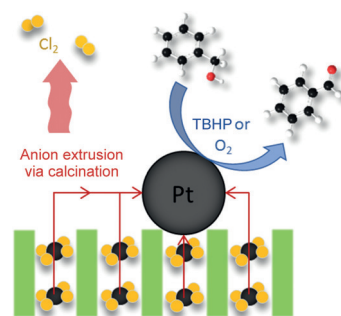


Oxidation

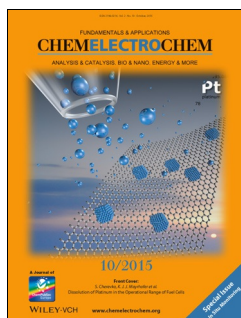
C. S. Hinde, A. M. Gill, P. P. Wells, T. S. A. Hor, R. Raja*

Utilizing Benign Oxidants for Selective Aerobic Oxidations Using Heterogenized Platinum Nanoparticle Catalysts

Tuned cats.: Well-defined platinum nanoparticles are generated in situ by anion extrusion within porous framework architectures (see figure). In these catalysts the local structural environment of the active site is controlled by the calcination conditions, and thus industrially significant, sustainable catalytic oxidation reactions are possible with *tert*-butyl hydroperoxide (TBHP) or oxygen.



ChemPlusChem
DOI: 10.1002/cplu.201500195

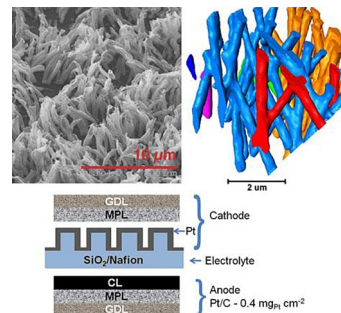


Electrode Materials

S. K. Babu, R. W. Atkinson, III, A. B. Papandrew, S. Litster*

Vertically Oriented Polymer Electrolyte Nanofiber Catalyst Support for Thin Film Proton-Exchange Membrane Fuel Cell Electrodes

Straight up improvements: High-surface-roughness polymer electrolyte nanofibers are synthesized by using solution-based template casting. The nanofibers are used as a catalyst support in an extended-surface proton exchange membrane fuel cell electrode. Morphological and electrochemical characterization of these electrodes is presented. These electrodes show promising results of increased electrochemically active surface area and performance.



ChemElectroChem
DOI: 10.1002/celc.201500232

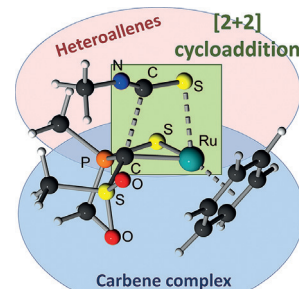


Cycloaddition to an Ru=C Bond

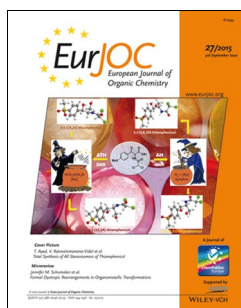
J. Weismann, V. H. Gessner*

Selective [2 + 2] Cycloaddition Reactions of Isocyanates and Thioisocyanates across the M=C Bond in a Ruthenium Carbene Complex

Selective [2 + 2] cycloaddition reactions of heteroallenes across the M=C bond in a ruthenium carbene complex were achieved. The reactions occurred selectively according to the HSAB principle with the soft ruthenium center preferring the softer donor atom of the heteroallene.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201500719

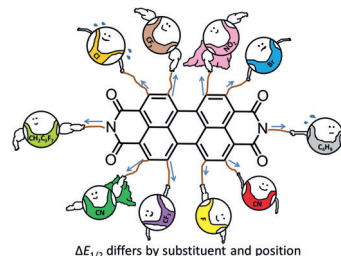


Fluorinated Perylene Diimides

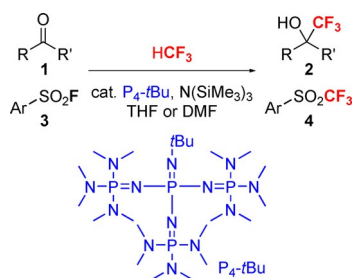
T. T. Clikeman, E. V. Bukovsky, X.-B. Wang, Y.-S. Chen, G. Rumbles, S. H. Strauss,* O. V. Boltalina*

Core Perylene Diimide Designs via Direct Bay- and *ortho*-(Poly)tri-fluoromethylation: Synthesis, Isolation, X-ray Structures, Optical and Electronic Properties

Perylene dianhydrides and diimides with several CF₃ groups were directly synthesized from solid PTCDA without halogenated precursors. Different compositions and isomers exhibit unique crystallographic packing arrangements. Gas-phase electron affinity and solution electrochemistry were compared with 143 electron-deficient perylene diimides.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201501024



ChemistryOpen

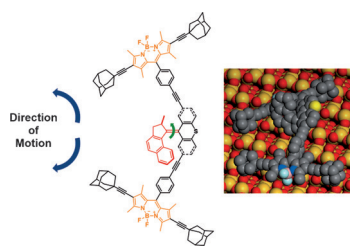
DOI: 10.1002/open.201500160

Organocatalysis

S. Okusu, K. Hirano, E. Tokunaga, N. Shibata*

Organocatalyzed Trifluoromethylation of Ketones and Sulfonyl Fluorides by Fluoroform under a Superbase System

Fluoroform and superbase! The organic-superbase-catalyzed trifluoromethylation of ketones and arylsulfonyl fluorides by HCF_3 is described. Reactions were performed with a newly developed superbase organocatalyst system consisting of $\text{P}_4\text{-tBu}$ and $\text{N}(\text{SiMe}_3)_3$ to convert a series of ketones and arylsulfonyl fluorides into the corresponding α -trifluoromethyl carbinols and aryl triflates in THF or DMF. Protonated $\text{P}_4\text{-tBu}$ ($[\text{H}[\text{P}_4\text{-tBu}]^+]$) is suggested to be crucial for the catalytic process.



Asian J. Org. Chem.

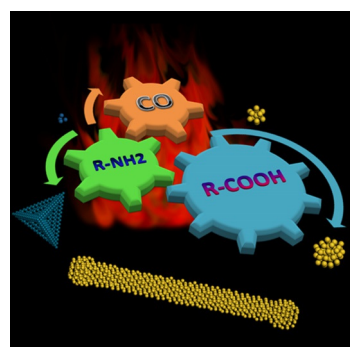
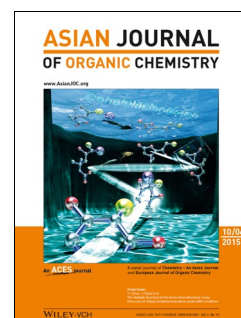
DOI: 10.1002/ajoc.201500325

Nanocars

V. García-López, P.-L. E. Chu, P.-T. Chiang, J. Sun, A. A. Martí,* J. M. Tour*

Synthesis of a Light-Driven Motorized Nanocar

Nano moto: The design and synthesis of a unique, fluorescent, light-driven, motorized nanocar have been described. The photoisomerization of the motor was investigated and it is expected that the full rotation of the motor will propel the nanocar in a circling motion on glass surfaces. The good fluorescence properties of this motorized nanocar make it suitable for future diffusion studies using single-molecule fluorescence microscopy.



ChemNanoMat

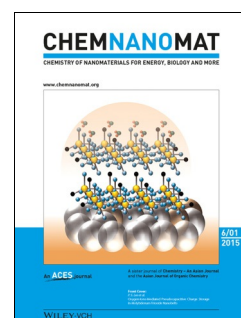
DOI: 10.1002/cnma.201500123

Nanocrystals

X. Yin, J. Wu, P. Li, M. Shi, H. Yang*

Self-Heating Approach to the Fast Production of Uniform Metal Nanostructures

Letting off some heat: Heat released from the exothermic reaction between long-carbon chain amine and carboxylic acid was used for the preparation of a variety of nanocrystals of Au and other metals.



ChemViews magazine

DOI: 10.1002/chemv.201500500

Chemical Societies

F. Gomollón-Bel, C. Oger, C. Todasca

EYCN: Ten Years Connecting Young Chemists

Founded in 2006, the European Young Chemists' Network (EYCN) represents roughly 35 000 young chemists in 26 chemical societies from 22 different countries. The community works hard to connect young chemists, to communicate chemistry, and to help students to find their way in both industry and academia.

