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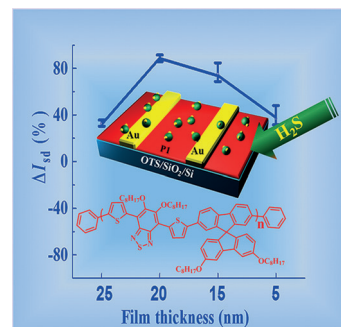


Materials Science

A. Lv, M. Wang, Y. Wang, Z. Bo, L. Chi*

Investigation into the Sensing Process of High-Performance H₂S Sensors Based on Polymer Transistors

The fixed sense: A H₂S sensor based on polymer field-effect transistor (see figure) is reported and the sensor shows high sensitivity, excellent selectivity, fast response, good reusability and can detect 1 ppb H₂S. Sensitivity increases first and then decreases with thinner films, which is due to different changing rate of absorption and desorption of H₂S molecules in the sensor.



Chem. Eur. J.

DOI: 10.1002/chem.201504196

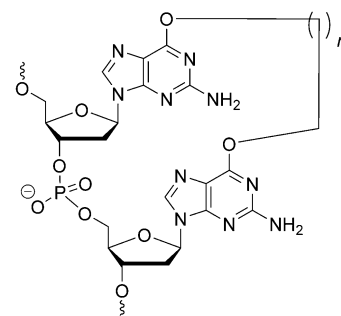


DNA Repair

D. K. O'Flaherty, C. J. Wilds*

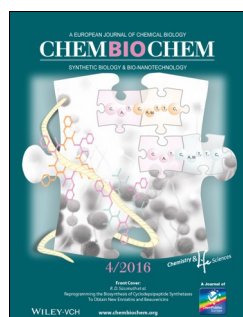
O⁶-Alkylguanine DNA Alkyltransferase Repair Activity Towards Intrastrand Cross-Linked DNA is Influenced by the Internucleotide Linkage

Under repair: Intrastrand cross-linked (IaCL) DNA between two neighbouring O⁶-2'-deoxyguanosine residues by a butylene or heptylene linkage have been synthesized and are repaired by human AGT. These are processed with much lower efficiency compared to identical IaCL DNA lacking a phosphodiester group at the cross-link site, showcasing the influence of the internucleotide bridge in AGT-mediated repair.



Chem. Asian J.

DOI: 10.1002/asia.201501253

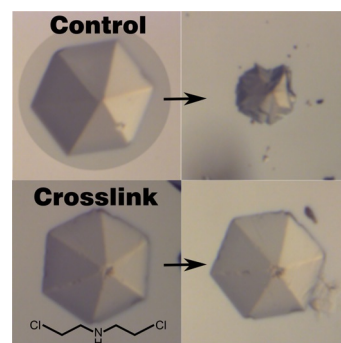


DNA Nanotechnology

D. Zhang, P. J. Paukstelis*

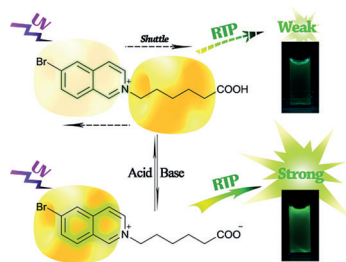
Enhancing DNA Crystal Durability through Chemical Crosslinking

Seeing the future: DNA crystals have been recognized as potentially useful tools for nanotechnology applications. However, most DNA crystals have low thermal stability and require high cation concentrations to maintain stability. Here, we describe a simple chemical cross-linking treatment that enhances the stability of DNA crystals under a variety of conditions.



ChemBioChem

DOI: 10.1002/cbic.201500610



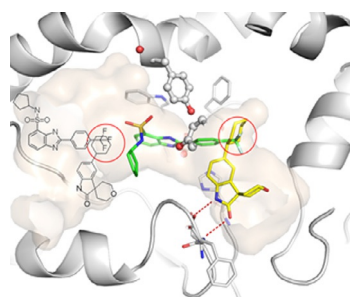
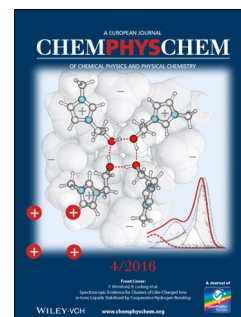
ChemPhysChem
DOI: 10.1002/cphc.201500901

Molecular Shuttles

Y. Gong, H. Chen, X. Ma,* H. Tian

A Cucurbit[7]uril Based Molecular Shuttle Encoded by Visible Room-Temperature Phosphorescence

A sensitive shuttle: A cucurbit[7]uril-based molecular shuttle with pH-sensitive room-temperature phosphorescence emission identified by the naked eye is reported.



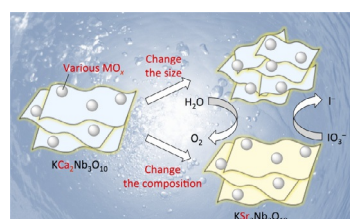
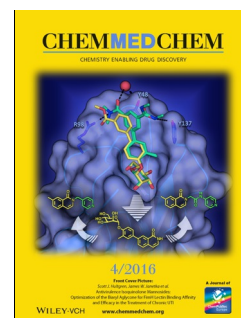
ChemMedChem
DOI: 10.1002/cmdc.201500575

Fragment-Based Drug Discovery

Y. Xue,* T. Olsson, C. A. Johansson, L. Öster, H.-G. Beisel, M. Rohman, D. Karis, S. Bäckström

Fragment Screening of Soluble Epoxide Hydrolase for Lead Generation—Structure-Based Hit Evaluation and Chemistry Exploration

The screening room: Both fragment screening and high-throughput screening are used in an integrated hit-finding and lead-generation strategy. Two distinct scaffolds are identified as tractable starting points for further chemistry work. Significant induced-fit binding is observed for the 2-phenylbenzimidazole-4-sulfonamide compounds. A new lead series may be generated if features from the two series are combined together.



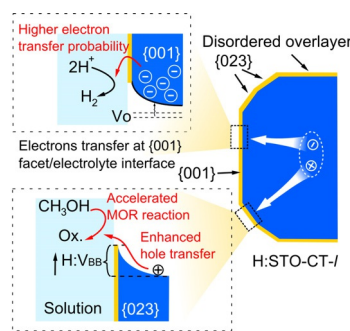
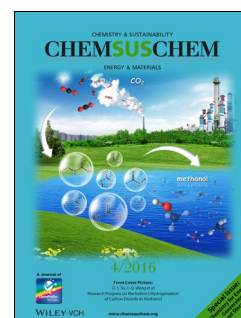
ChemSusChem
DOI: 10.1002/cssc.201501237

Water-Splitting

T. Oshima, M. Eguchi, K. Maeda*

Photocatalytic Water Oxidation over Metal Oxide Nanosheets Having a Three-Layer Perovskite Structure

Size does not matter: Water oxidation over metal oxide nanosheets is performed using IO_3^- as an electron acceptor. It is found that the nanosheet composition has an impact on activity whereas the sheet dimensions do not. Experimental results indicate that the reduction of IO_3^- is the rate-limiting step in the reaction.



Holes transfer at {023} facet/electrolyte interface

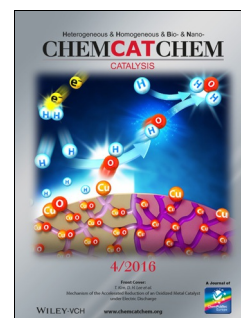
ChemCatChem
DOI: 10.1002/cctc.201501162

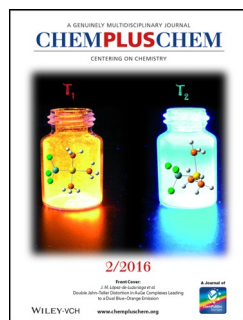
Photocatalysis

B. Wang, S. Shen,* L. Guo

Surface Reconstruction of Facet-Functionalized SrTiO_3 Nanocrystals for Photocatalytic Hydrogen Evolution

Facet-rich coating: Surface-reconstructed SrTiO_3 nanocrystals with disordered overlayers are created by a thermal hydrogenation process. The nanocrystals enclosed with {023} and {001} facets in an appropriate ratio show the highest photocatalytic activity for hydrogen evolution. MOR = methanol oxidation reaction; V = vacancy.



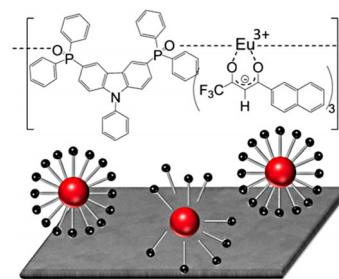


Thin Films

Y. Hasegawa,* T. Sugawara, T. Nakanishi, Y. Kitagawa, M. Takada, A. Niwa, H. Naito, K. Fushimi

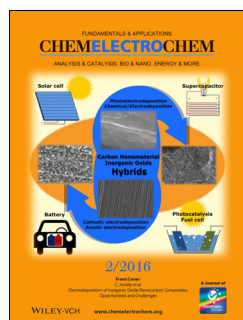
Luminescent Thin Films Composed of Nanosized Europium Coordination Polymers on Glass Electrodes

Make a film about it: Luminescent thin films composed of thermostable europium coordination polymers on indium tin oxide glass electrodes were prepared using a novel combination of micelle reactions and electrochemical deposition techniques. The emission spectra, lifetimes and quantum yields of these films were determined.



ChemPlusChem

DOI: 10.1002/cplu.201500382

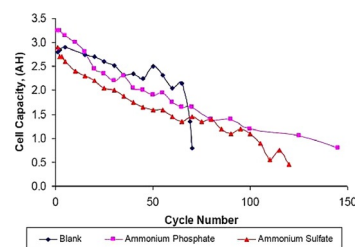


Batteries

N. Kausar, A. Mousa, M. Skyllas-Kazacos*

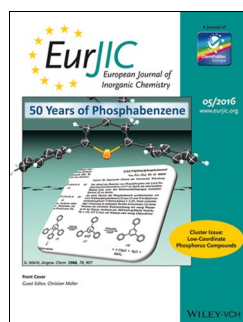
The Effect of Additives on the High-Temperature Stability of the Vanadium Redox Flow Battery Positive Electrolytes

That little bit extra: Precipitation inhibitors are evaluated in a vanadium redox flow cell at 45.0 °C. The cell capacity without additives drops dramatically after 70 cycles, while the cells with the additives continue to cycle without failure for 120 and 150 cycles for ammonium sulphate and ammonium phosphate respectively.



ChemElectroChem

DOI: 10.1002/celec.201500453

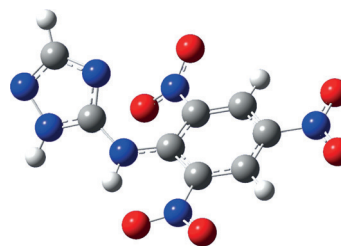


Thermally Stable Explosives

Z. L. Chioato, T. M. Klapötke,* F. Mieskes, J. Stierstorfer, M. Weyrauther

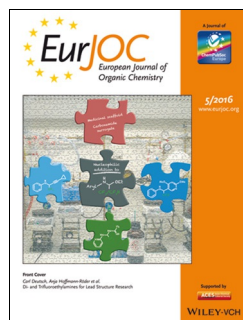
(Picrylamino)-1,2,4-triazole Derivatives – Thermally Stable Explosives

New energetic and highly thermally stable salts of 3-(picrylamino)-1,2,4-triazole (PATO) and 3-amino-5-(picrylamino)-1,2,4-triazole (APATO) are synthesized. PATO shows high thermal stability with good energetic performance as a highly thermally stable explosive. The ammonium salt of PATO also shows promising energetic performance with a slightly lower thermal stability than that of neutral PATO.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201501435

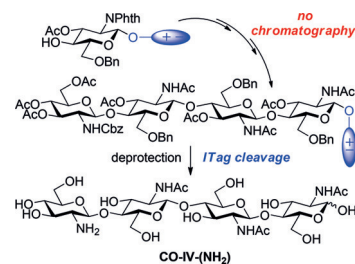


Glycochemistry

L. Gillard, A.-T. Tran, F.-D. Boyer,* J.-M. Beau*

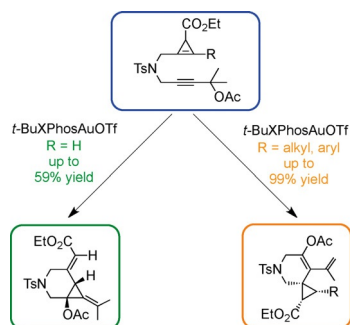
Chitooligosaccharide Synthesis Using an Ionic Tag

An environmentally improved synthesis of a key chitooligomer for the construction of biologically active chitooligosaccharides is reported based on an ionic-liquid-supported approach.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201501476



ChemistryOpen

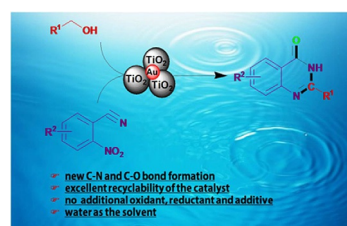
DOI: 10.1002/open.201500181

Gold Catalysis

P.-L. Zhu, X.-Y. Tang,* M. Shi*

Gold-Catalyzed Intramolecular Cyclizations of Cyclopropenes with Propargylic Esters

Going for gold! Homogeneous gold catalysts are interesting as they can act as potent carbophilic Lewis acids to activate the π bonds of alkynes, allenes, and alkenes. We have developed gold-catalyzed novel intramolecular cycloisomerizations of nitrogen or oxygen-tethered cyclopropenes with propargylic esters. Different substitutions on the cyclopropenes make the reaction proceed in different pathways, giving six-membered nitrogen-containing heterocycles in good yields.



Asian J. Org. Chem.

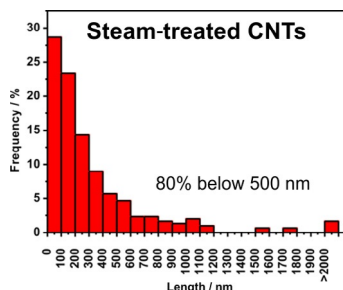
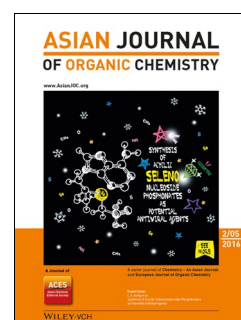
DOI: 10.1002/ajoc.201500512

Synthesis of Quinazolinones

L. Tang,* X. Zhao, G. Zou, Y. Zhou, X. Yang

Heterogeneous Gold-Catalyzed Cascade Hydrogen-Transfer Strategy for Selective Synthesis of Quinazolinones in Water

Tiny flecks of gold: Au/TiO₂-catalyzed one-pot synthesis of quinazolinones from 2-nitrobenzonitriles and benzylic alcohols is reported. This protocol presents broad substrate scope, good tolerance to air and water, excellent recycling of the catalyst and does not require any additive, oxidant or reductant, which enables an avenue for practical C–N and C–O bond formation.



ChemNanoMat

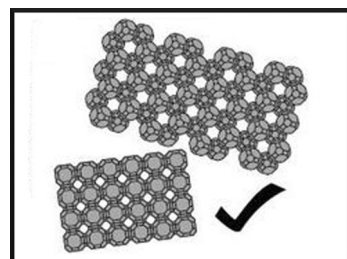
DOI: 10.1002/cnma.201500207

Carbon Nanomaterials

M. Kierkowicz, E. Pach, A. Santidrián, E. Tobías-Rossell, M. Kalbáč,* B. Ballesteros,* G. Tobias*

Effect of Steam-Treatment Time on the Length and Structure of Single-Walled and Double-Walled Carbon Nanotubes

Steamed up: New insights on the role that steam plays in both the length distribution and electronic properties of carbon nanotubes are discussed. Short CNTs can be achieved after 10 h steam treatment with a median length of 200 nm. Raman analysis reveals that wider and outer nanotubes undergo more significant changes than the narrower and inner ones, especially after a prolonged steam treatment.



ChemViews magazine

DOI: 10.1002/chemv.201500112

Science Communication

V. Koester, C. van Overbeek

An Intriguing Poster – Some Assembly Required

Creating a poster that excites people is no easy task. A creative example is Dutch Ph.D. student Carlo van Overbeek's simple and fun poster explaining his research on nanoperiodic semiconductors as step-by-step IKEA-like instructions.

