

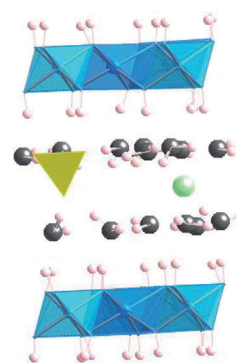


Water Oxidation

S. J. Harley,* H. E. Mason, J. G. McAlpin, R. D. Britt, W. H. Casey

A ^{31}P NMR Investigation of the CoPi Water-Oxidation Catalyst

Beneath the sheets: ^{31}P NMR data suggests that phosphates librate freely in the interlayer of a cobalt-hydroxide water-oxidation catalyst. The cobalt-hydroxide sheets (see figure) are separated by an interlayer region with water, counterions and phosphate, which help to shuttle protons as the layer develops charge.



Chem. Eur. J.
DOI: 10.1002/chem.201201292

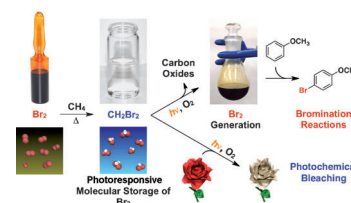


Photochemistry

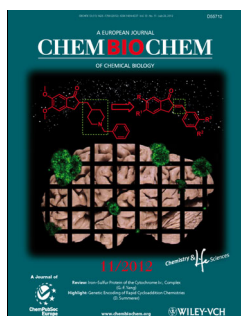
K. Kawakami, A. Tsuda*

Brominated Methanes as Photoresponsive Molecular Storage of Elemental Br_2

The generation of Br_2 from brominated methanes occurred upon photoirradiation under O_2 . The solutions that contained elemental Br_2 were useful for the synthesis of organobromine compounds and the macroscopic photochemical bleaching of colored plants.



Chem. Asian J.
DOI: 10.1002/asia.201200322

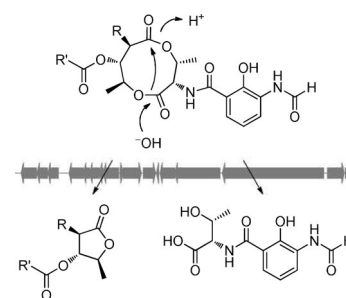


Biosynthesis

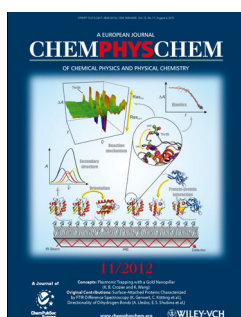
R. Riclea, B. Aigle, P. Leblond, I. Schoenian, D. Spiteller,* J. S. Dickschat*

Volatile Lactones from Streptomyces Arise via the Antimycin Biosynthetic Pathway

Knock it out! Several volatile lactones have been found in streptomycetes. Their structures have been suggested based on GC-MS data and verified by comparison with synthetic standards. The origin of all lactones was shown in knockout experiments to depend on the antimycin biosynthetic gene cluster.



ChemBioChem
DOI: 10.1002/cbic.201200260

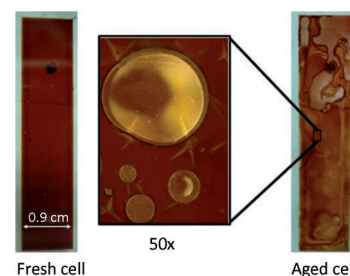


Solar Cells

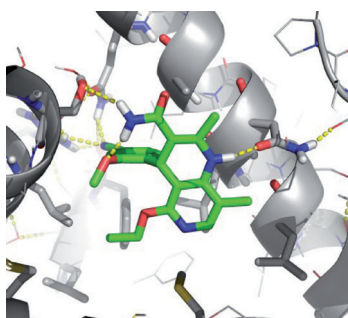
S. Mastroianni, A. Lembo, T. M. Brown,* A. Reale, A. Di Carlo

Electrochemistry in Reverse Biased Dye Solar Cells and Dye/Electrolyte Degradation Mechanisms

Hydrogen evolution in reverse biased cell: Subjecting a dye solar cell to prolonged reverse bias causes degradation of its charge transfer mechanisms, ascribed to partial irreversible oxidations of the dye molecules, and significant decrease of the diffusion limited current. As a result, the potential across the reverse biased cell increases in time, causing gas, identified as hydrogen, to evolve at the counter electrode, leading to cell failure.



ChemPhysChem
DOI: 10.1002/cphc.201200229

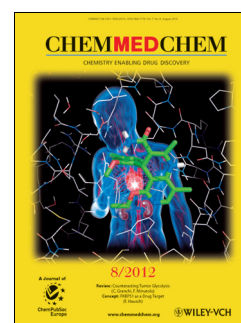


Structure–Activity Relationships

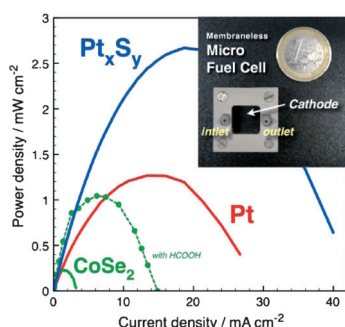
L. Bärfacker,* A. Kuhl, A. Hillisch, R. Grosser, S. Figueroa-Pérez, H. Heckroth, A. Nitsche, J.-K. Ergüden, H. Gielen-Haertwig, K.-H. Schlemmer, J. Mittendorf, H. Paulsen, J. Platzek, P. Kolkhof

Discovery of BAY 94-8862: A Nonsteroidal Antagonist of the Mineralocorticoid Receptor for the Treatment of Cardiorenal Diseases

MR activation kept at BAY: Inappropriate activation of the mineralocorticoid receptor by aldosterone or cortisol contributes to the development of cardiovascular diseases. BAY 94-8862, antagonizing these effects, was identified in a lead optimization program and is currently being investigated in a phase II clinical trial for the treatment of chronic heart failure patients with renal impairment.



ChemMedChem
DOI: 10.1002/cmdc.201200081

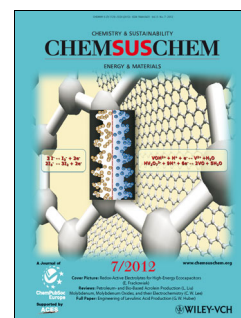


Fuel Cells

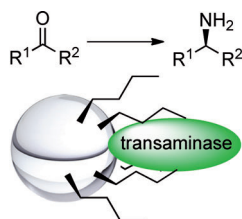
A. S. Gago, Y. Gochi-Ponce, Y.-J. Feng, J. P. Esquivel, N. Sabaté, J. Santander, N. Alonso-Vante*

Tolerant Chalcogenide Cathodes of Membraneless Micro Fuel Cells

Crossover to more power: Two novel tolerant cathodes, Pt_xS_y and CoSe₂, are developed and tested in a membraneless micro fuel cell. Working under total methanol fuel crossover, the maximum power density achieved with Pt_xS_y is 2.1 times higher than that of Pt (see picture).



ChemSusChem
DOI: 10.1002/cssc.201200009

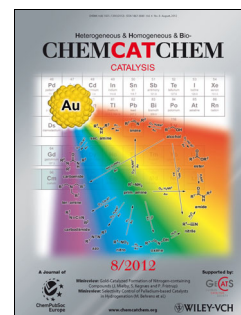


Immobilized Enzyme

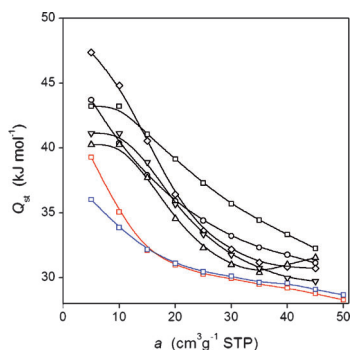
M. D. Truppo,* H. Strotman, G. Hughes

Development of an Immobilized Transaminase Capable of Operating in Organic Solvent

I'm stuck on you: The development of a highly active and stable immobilized transaminase capable of operating in organic solvent has been applied to the synthesis of various amines including Januvia (sitagliptin).



ChemCatChem
DOI: 10.1002/cctc.201200228

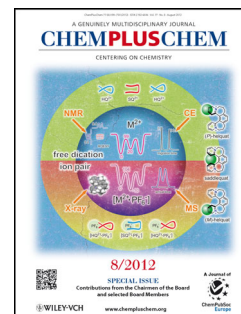


CO₂ Adsorption on Zeolites

A. Zukal, S. I. Zones, M. Kubů, T. M. Davis, J. Čejka*

Adsorption of Carbon Dioxide on Sodium and Potassium Forms of STI Zeolite

The heat is on! To obtain detailed information on the effect of alkali metal cations on CO₂ adsorption on high-silica STI zeolite, the temperature dependence of CO₂ isotherms was investigated in the temperature range 273–333 K. Based on these data, isosteric heats of adsorption of CO₂ were determined, discussed, and compared in detail with those of FER, MFI, MEL, TUN, and IMF structural types (see figure of isosteric heat of CO₂ adsorption on zeolites).



ChemPlusChem
DOI: 10.1002/cplu.201200089

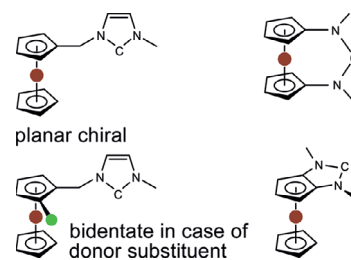


Ferrocene-Based Carbenes

U. Siemeling*

Singlet Carbenes Derived from Ferrocene and Closely Related Sandwich Complexes

New persistent carbenes and chiral ligands, unprecedented redox-switchable catalysis and small-molecule activation: The exciting progress made during the past ten years in and around the area of ferrocene-based N-heterocyclic carbenes is reviewed.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201200443

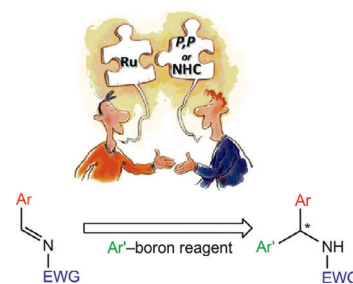


Arylation Reactions

C. S. Marques, A. J. Burke*

Chiral Diphosphane- and NHC-Containing Ruthenium Catalysts for the Catalytic Asymmetric Arylation of Aldimines with Organoboron Reagents

A new method is presented for the synthesis of chiral substituted amines by employing Ru catalysts along with known chiral phosphane ligands and a new NHC-type chiral ligand. Organoboron reagents were applied as the aryl transfer agents. High enantioselectivities were achieved with this new method, and some mechanistic insights are provided.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201200556



Promoting Chemistry

Sophie Lin

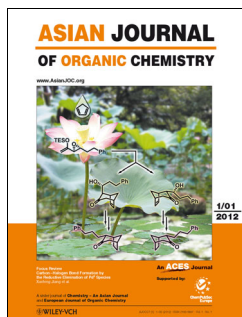
Wonderlab Comic – Lab Visit

When it comes to attracting new students, there can be fierce competition between the different university departments. *Wonderlab* is no exception as they play host to an eager young school student with an unexpected result...

Wonderlab
– Lab Visit



ChemViews magazine
DOI: 10.1002/chemv.201200070

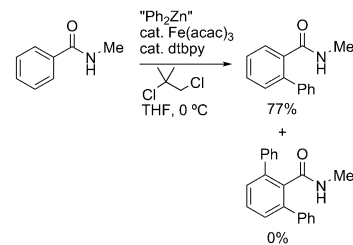


C–H Activation

L. Ilies, E. Konno, Q. Chen, E. Nakamura*

Iron-Catalyzed *ortho* Monoarylation of Benzamide Derivatives

Exclusive! The iron-catalyzed reaction between a secondary benzamide derivative and a diarylzinc reagent regioselectively substitutes the *ortho*-hydrogen atom of the benzamide with an aryl group. This method exclusively produces an *ortho*-monoarylated product, and none of the diarylated product. "Ph₂Zn" = 2PhMgBr + ZnCl₂/tetramethylethylenediamine; dtbpy = 4,4'-di-*tert*-butyl-2,2'-bipyridyl.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201200042