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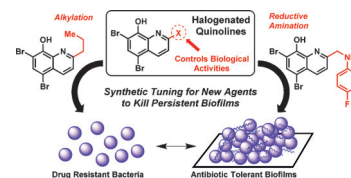


Medicinal Chemistry

A. Basak, Y. Abouelhassan, V. M. Norwood IV, F. Bai, M. T. Nguyen, S. Jin, R. W. Huigens, III*

Synthetically Tuning the 2-Position of Halogenated Quinolines: Optimizing Antibacterial and Biofilm Eradication Activities via Alkylation and Reductive Amination Pathways

Film over: The chemical synthesis of diverse analogues at the 2-position of the halogenated quinoline scaffold lead to new agents that potentially eradicate planktonic and persistent methicillin-resistant *Staphylococcus aureus* (MRSA), methicillin-resistant *Staphylococcus epidermidis* (MRSE) and vancomycin-resistant *Enterococcus faecium* (VRE) biofilms (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201600926

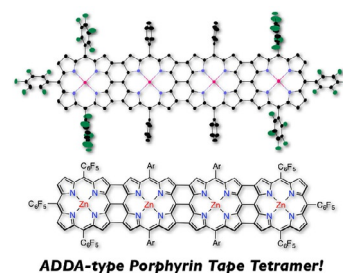


Porphyrin Tapes

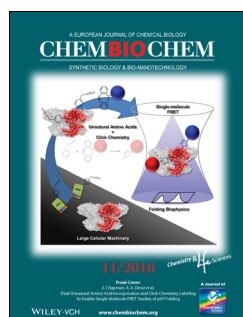
H. Mori, T. Kim, D. Kim,* A. Osuka*

Trimeric and Tetrameric Electron-Deficient Porphyrin Tapes

Tale of the porphyrin tape: Trimeric and tetrameric electron-deficient porphyrin tapes have been prepared and their optical and electrochemical properties have been compared with those of previously reported porphyrin tapes. The introduced pentafluorophenyl groups improved their solubility in organic solvents and enhanced chemical and photo-stability, allowing full characterization including single crystal X-ray diffraction analyses.



Chem. Asian J.
DOI: 10.1002/asia.201600241

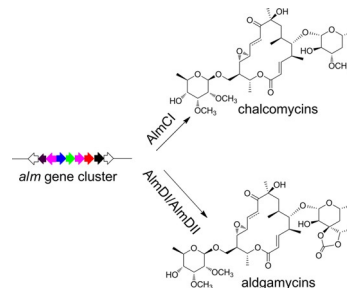


Biosynthesis

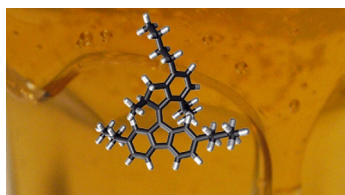
X.-L. Tang, P. Dai, H. Gao, C.-X. Wang, G.-D. Chen, K. Hong, D. Hu,* X.-S. Yao*

A Single Gene Cluster for Chalcomycins and Aldgamycins: Genetic Basis for Bifurcation of Their Biosynthesis

A single gene cluster for chalcomycins and aldgamycins: Aldgamycins and chalcomycins are derived from a single gene cluster, with bifurcation of D-chalucose and D-alldgarose biosynthesis: AlmDI/AlmDII triggers the biosynthesis of D-alldgarose, whereas AlmCI is responsible for D-chalucose production.



ChemBioChem
DOI: 10.1002/cbic.201600118



ChemPhysChem

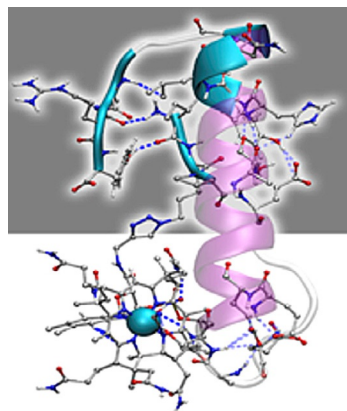
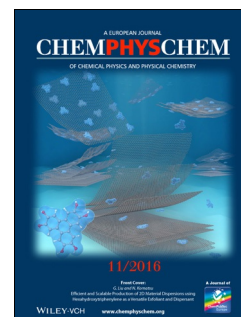
DOI: 10.1002/cphc.201501177

Rotary Motion

J. C. M. Kistemaker, A. S. Lubbe, E. A. Bloemsmas, B. L. Feringa*

On the Role of Viscosity in the Eyring Equation

The viscosity dependence of the rotary motion of a molecular motor is examined and analyzed using a modified version of the Eyring equation, combining the free-volume model and transition-state theory.



ChemMedChem

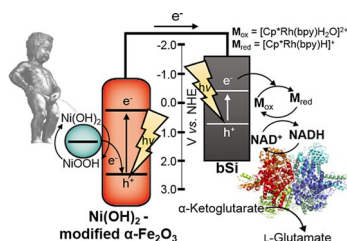
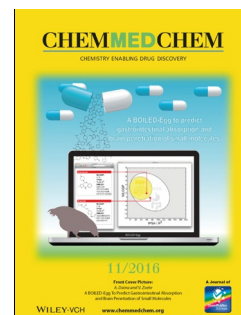
DOI: 10.1002/cmdc.201600073

Drug Structure Studies

K. E. Henry, D. J. Kerwood, D. G. Allis, J. L. Worker, R. L. Bonaccorso, G. G. Holz, C. L. Roth, J. Zubieta, R. P. Doyle*

Solution Structure and Constrained Molecular Dynamics Study of Vitamin B₁₂ Conjugates of the Anorectic Peptide PYY(3–36)

Solution structures of vitamin B₁₂ (B₁₂)–peptide conjugates and constrained molecular dynamics associated with such structures are reported, focusing on the appetite-suppressing peptide hormone PYY(3–36). Developing an understanding and model of the effects of B₁₂ conjugation on a peptide's secondary structure may allow, a priori, rational design of such conjugates in the future.



ChemSusChem

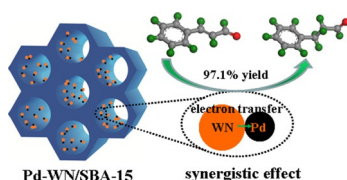
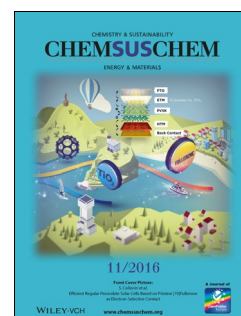
DOI: 10.1002/cssc.201600330

Fuel Cells

W. S. Choi, S. H. Lee, J. W. Ko, C. B. Park*

Human Urine-Fueled Light-Driven NADH Regeneration for Redox Biocatalysis

From waste to valuables: Human urine is studied as a potential source of energy for light-driven biocatalytic redox reactions. The urea-rich human urine functions as an efficient chemical fuel in a photoelectrochemical cell regenerating nicotinamide cofactor (NADH), which is essential in redox biocatalysis. The reactions at both photoanode and photocathode are significantly enhanced by light energy, lowering the overpotential required for both urea oxidation and NADH regeneration.



ChemCatChem

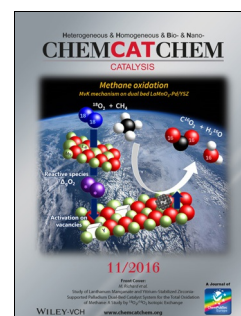
DOI: 10.1002/cctc.201600184

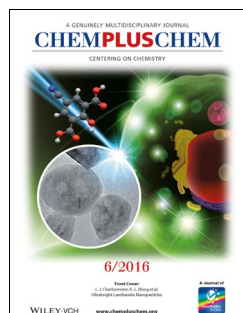
Hydrogenation

D. Wang, Y. Zhu,* C. Tian, L. Wang, W. Zhou, Y. Dong, H. Yan, H. Fu*

Synergistic Effect of Tungsten Nitride and Palladium for the Selective Hydrogenation of Cinnamaldehyde at the C=C bond

Supportive interaction: The synergistic effect between tungsten nitride and palladium enhances the activity and selectivity of palladium on Pd–WN/SBA-15 for the selective hydrogenation of cinnamaldehyde at the C=C bond.



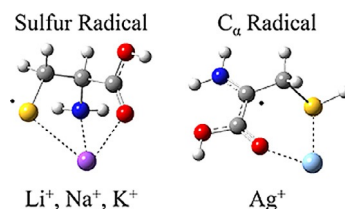


Gas-Phase Reactions

M. Lesslie, J. K.-C. Lau, J. T. Lawler, K. W. M. Siu, V. Steinmetz, P. Maître, A. C. Hopkinson,* V. Ryzhov*

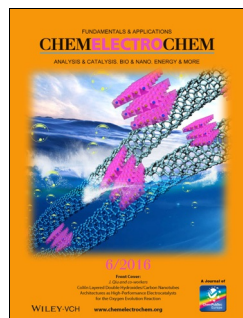
Cysteine Radical/Metal Ion Adducts: A Gas-Phase Structural Elucidation and Reactivity Study

Totally radical: Gas-phase complexes of the cysteine thiyl radical with alkali metal ions remain tridentate (S,O,N) sulfur-based radical species (see figure). Meanwhile, silver ions facilitate rearrangement of the thiyl radical into other isomers.



ChemPlusChem

DOI: 10.1002/cplu.201500558

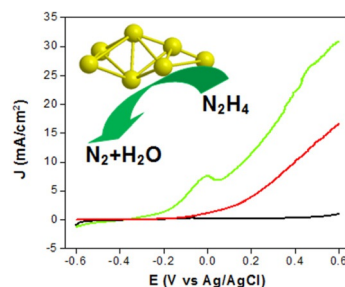


Nanoclusters

X. Gao, C. Du, C. Zhang, W. Chen*

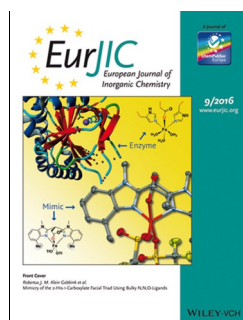
Copper Nanoclusters on Carbon Supports for the Electrochemical Oxidation and Detection of Hydrazine

Serve and protect: Cu₇(SR)₃ nanoclusters are successfully synthesized and used as electrocatalysts towards the oxidation and detection of hydrazine.



ChemElectroChem

DOI: 10.1002/celec.201600036

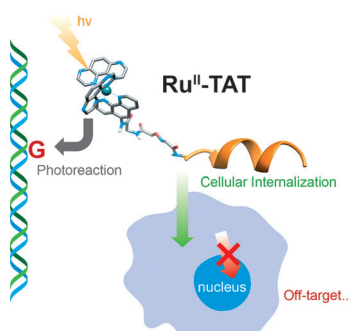


Photoreactive Ru Complexes

L. Marcélis, S. Kajouj, J. Ghesquière, G. Fettweis, I. Coupienne, R. Lartia, M. Surin, E. Defrancq, J. Piette, C. Moucheron, A. Kirsch-De Mesmaeker*

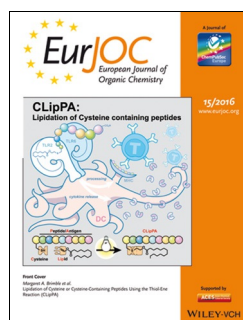
Highly DNA-Photoreactive Ruthenium 1,4,5,8-Tetraazaphenanthrene Complex Conjugated to the TAT Peptide: Efficient Vectorization inside HeLa Cells without Phototoxicity – The Importance of Cellular Distribution

Photoreactive [Ru(TAP)₂(phen)]²⁺ (TAP = 1,4,5,8-tetraazaphenanthrene; phen = 1,10-phenanthroline) is tethered to the cell-penetrating peptide TAT. Despite its ability to form stable photoadducts with DNA and efficient transportation into the cells, no photocytotoxicity was observed. A possible origin of the inactivity of the TAT-conjugated [Ru(TAP)₂(phen)]²⁺ under illumination is proposed.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201600278

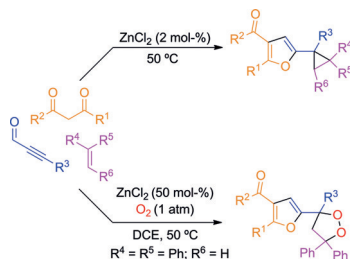


Multicomponent Reactions

S. Mata, J. González, R. Vicente,* L. A. López*

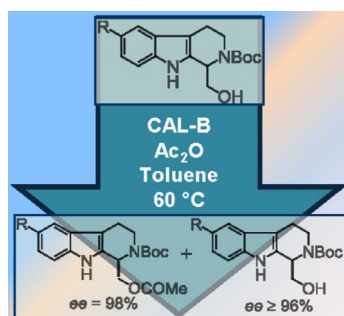
Zinc-Catalyzed Multicomponent Reactions: Easy Access to Furyl-Substituted Cyclopropane and 1,2-Dioxolane Derivatives

A simple protocol for the synthesis of furyl-substituted cyclopropane derivatives from readily available substrates (1,3-dicarbonyl compounds, alkynals and alkenes) is reported. ZnCl₂ serves as an efficient catalyst for this multicomponent process. For some reagents, dioxolane derivatives can be synthesized by a four-component process involving the incorporation of oxygen.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201600393



ChemistryOpen

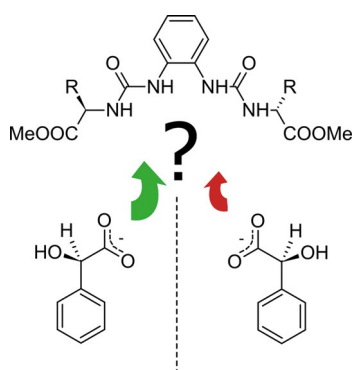
DOI: 10.1002/open.201500203

Enzyme Catalysis

R. Megyesi, E. Forró,* F. Fülöp*

Enzymatic Strategy for the Resolution of New 1-Hydroxymethyl Tetrahydro- β -carboline Derivatives in Batch and Continuous-Flow Systems

Effective, enzymatic, enantioselective! Many alkaloids containing a tetrahydro- β -carboline skeleton have well-known therapeutic effects, leading to increased interest in the synthesis of these natural products. An effective enzymatic method was developed for the enantioselective O-acylation of tetrahydro- β -carbolines and excellent *E* values (> 200) were observed when *Candida antarctica* lipase B (CAL-B) and acetic anhydride were used in toluene at 60 °C.



Asian J. Org. Chem.

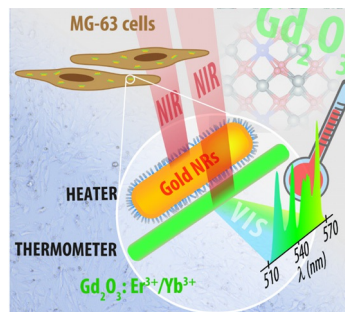
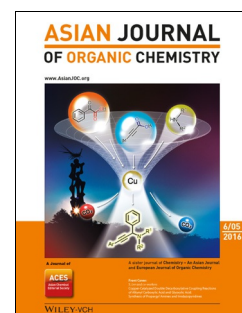
DOI: 10.1002/ajoc.201600093

Molecular Recognition

F. Ulatowski,* J. Jurczak

Chiral Recognition of Carboxylates—Receptors, Analytical Tools, and More

Which side of the mirror? This Focus Review highlights recent achievements in chiral recognition of carboxylates. Analytical methods are critically revised and various approaches to receptors structures are presented. Several examples of highly selective sensors or sensor arrays are shown to indicate possible future progress in the field.



ChemNanoMat

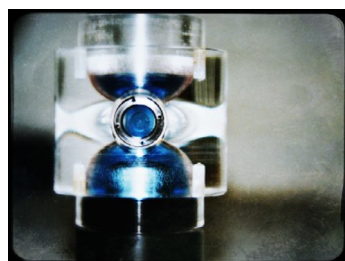
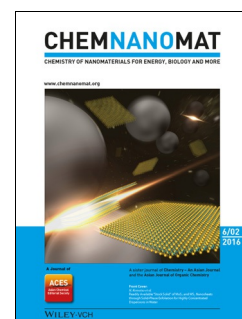
DOI: 10.1002/cnma.201600061

Nanothermometers

M. L. Debasu, C. D. S. Brites, S. Balabhadra, H. Oliveira, J. Rocha, L. D. Carlos*

Nanoplatforms for Plasmon-Induced Heating and Thermometry

Gold nanorod heaters and (Gd,Yb,Er)₂O₃ nanorod thermometers join together to form nanoplatforms for efficient plasmon-induced optical heating and accurate upconversion temperature sensing, upon 980 nm laser excitation, at low power densities. These nanoplatforms are imaged within osteoblast-like cells by hyperspectral microscopy, and they are biocompatible, with potential applications in hyperthermia.



ChemViews magazine

DOI: 10.1002/chemv.201600043

Competition

ChemViews

Favorite Science Moments - Photo & Video Competition

Use your creativity and share some of the beauty and fascination that can be found in a chemistry lab! ChemistryViews.org invites you to submit a photo or video showing your favorite science moment. The best three entries will win an iPad or book prizes.

