

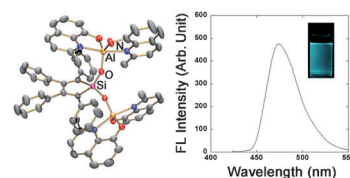


Light-Emitting Diodes

E. Pusztai, S. Jang, I. S. Touloukhanova, I. A. Guzei, R. West,* R. Hu, B. Z. Tang

Synthesis of Highly Fluorescent Diquinaldinatoaluminum Silole Derivatives

Two-in-one fluorescent compounds: Blending the strong emitter, diquinaldinato aluminum, and the good electron transporter, tetraphenyl silole, resulted in highly fluorescent compounds that are promising candidates for light-emitting devices without the need of dopants (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201300728

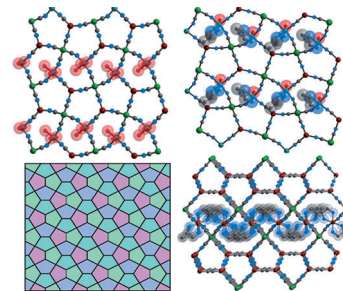


Heterometallic Complexes

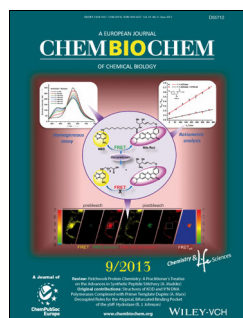
Y.-L. Qin, R.-X. Yao, G.-X. Wu, M.-M. Liu, X.-M. Zhang*

Heterometallic Mixed-Valence Copper(I,II) Cyanides that were Tuned by Using the Chelate Effect: Discovery of Famous Cairo Pentagonal Tiling and Unprecedented (3,4)-Connected $\{8^3\}_2\{8^6\}$ Topological 3D Net

Back of the net: Three heterometallic cyano-bridged mixed-valence $\text{Cu}^{\text{I}}/\text{Cu}^{\text{II}}$ coordination networks show Macmahon-type $(5, \frac{3}{4})$ 2D Cairo tiling sheets or a two-fold-interpenetrated (3,4)-connected $\{8^3\}_2\{8^6\}$ 3D topological framework. Their structural difference is due to water molecules on the octahedrally coordinated Cu^{II} atom, which are gradually replaced by 1,2-propane diamine chelate groups.



Chem. Asian J.
DOI: 10.1002/asia.201300143

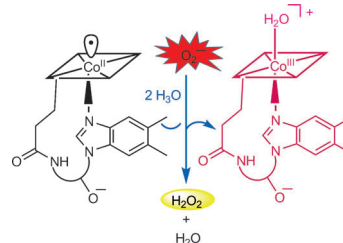


Vitamins

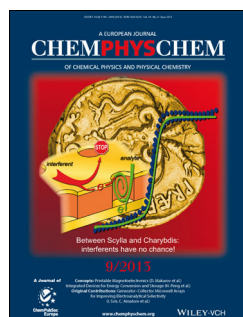
R. S. Dassanayake, D. E. Cabelli,* N. E. Brasch*

Pulse Radiolysis Studies on the Reaction of the Reduced Vitamin B_{12} Complex Cob(II)alamin with Superoxide

$\text{O}_2^{\cdot -}$ scavenger: The rate constant for the rapid reaction of the ROS superoxide with the reduced vitamin B_{12} radical complex cob(II)alamin was directly determined to be $3.8 \times 10^8 \text{ M}^{-1} \text{ s}^{-1}$. This rate was independent of pH over the range 5.5–8.7. These results have implications for studying the use of B_{12} supplements to combat diseases associated with oxidative stress.



ChemBioChem
DOI: 10.1002/cbic.201300229

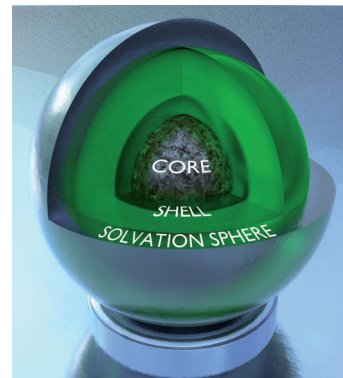


Nanomaterials

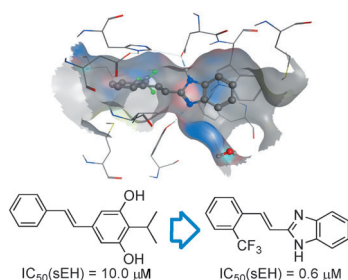
A. F. Oliveri, E. W. Elliott, III, M. E. Carnes, J. E. Hutchison,* D. W. Johnson*

Elucidating Inorganic Nanoscale Species in Solution: Complementary and Corroborative Approaches

SAXS sells: Defining the dimensions of a nanoscale material in solution is non-trivial. Complementary size measurements may describe a number of different material dimensions such as that of the core, shell, or solvation sphere. The determination of the full range of material properties requires multiple techniques in order to corroborate solution and solid-state structures.



ChemPhysChem
DOI: 10.1002/cphc.201300188



ChemMedChem

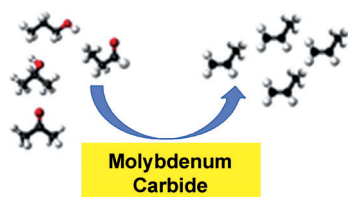
DOI: 10.1002/cmdc.201300057

Drug Design

E. Buscató, D. Büttner, A. Brüggerhoff, F.-M. Klingler, J. Weber, B. Scholz, A. Živković, R. Marschalek, H. Stark, D. Steinhilber, H. B. Bode, E. Proschak*

From a Multipotent Stilbene to Soluble Epoxide Hydrolase Inhibitors with Antiproliferative Properties

Inspired by nature: Natural product isopropylstilbene was identified as an inhibitor of soluble epoxide hydrolase exhibiting antiproliferative properties. Following the natural product inspired design approach, a library of (*E*)-styryl-1*H*-benzo[*d*]imidazoles was synthesized and evaluated with recombinant enzyme and on several cancer cell lines.



ChemSusChem

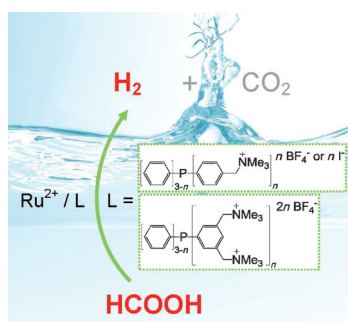
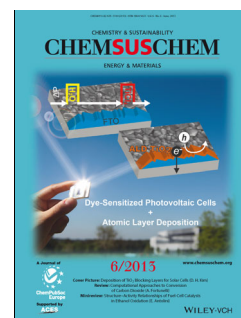
DOI: 10.1002/cssc.201200991

Renewables

H. Ren, W. Yu, M. Saliccioli, Y. Chen, Y. Huang, K. Xiong, D. G. Vlachos,* J. G. Chen*

Selective Hydrodeoxygenation of Biomass-Derived Oxygenates to Unsaturated Hydrocarbons using Molybdenum Carbide Catalysts

Which cleavage do you prefer? With a combination of density functional theory (DFT) calculations, surface science studies, and reactor evaluations, Mo₂C is identified as a highly selective HDO catalyst to selectively convert biomass-derived oxygenates to unsaturated hydrocarbons through selective C–O bond scissions without C–C bond cleavage. This provides high-value HDO products for utilization as feedstocks for chemicals and fuels; this also reduces the overall consumption of H₂.



ChemCatChem

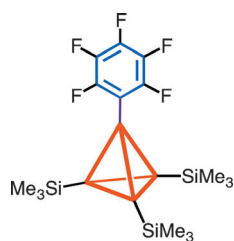
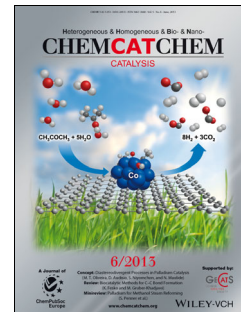
DOI: 10.1002/cctc.201200782

Gold Catalysis

W. Gan, D. J. M. Snelders, P. J. Dyson, G. Laurenczy*

Ruthenium(II)-Catalyzed Hydrogen Generation from Formic Acid using Cationic, Ammoniomethyl-Substituted Triarylphosphine Ligands

Proceed with cation: New Ru^{II} catalysts for aqueous-phase HCOOH decomposition into H₂ and CO₂ that use a series of oligocationic, ammoniomethyl-substituted triarylphosphine ligands are developed. Excellent activities are achieved, that is, TOFs of 1950 h^{−1} and TONs of over 10000.



ChemPlusChem

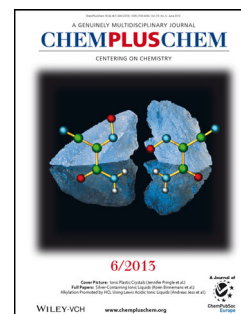
DOI: 10.1002/cplu.201300044

UV-Photoelectron Spectroscopy

A. Chrostowska,* A. Dargelos, P. Baylère, A. Graciaa, Y. Inagaki, M. Nakamoto, Ya. Lee,* A. Sekiguchi*

UV-Photoelectron Spectroscopy of a Tetrakis(trimethylsilyl)-tetrahedrane and Its Pentafluorophenyl Derivative

Strained cages: UV-photoelectron spectroscopy studies of tetrakis(trimethylsilyl)tetrahedrane and its pentafluorophenyl derivative (see figure) demonstrate the effectiveness of the neutral hyperconjugation in the latter, which was initially proposed on the basis of electronic spectra and computational data.



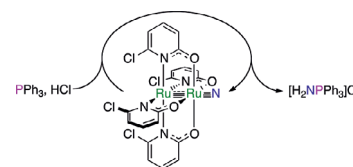


Nitrogen Transfer

A. R. Corcos, A. K. M. Long, I. A. Guzei, J. F. Berry*

A Synthetic Cycle for Nitrogen Atom Transfer Featuring a Diruthenium Nitride Intermediate

The new Ru_2 azido complex $[Ru_2(chp)_4N_3]$ (chp = 2-chloro-6-hydroxypyridinate) reacts with PPh_3 under photolytic conditions to form $[H_2NPPH_3]^+ Cl^-$ and $[Ru_2(chp)_4Cl]$, from which the azide complex can be regenerated.



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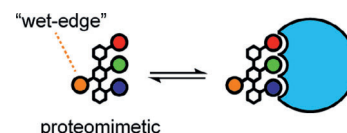


Foldamers

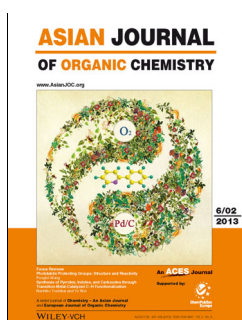
P. Prabhakaran, A. Barnard, N. S. Murphy, C. A. Kilner, T. A. Edwards, A. J. Wilson*

Aromatic Oligoamide Foldamers with a "Wet Edge" as Inhibitors of the α -Helix-Mediated p53-hDM2 Protein-Protein Interaction

A 3-O-alkylated aromatic oligoamide foldamer incorporating an additional and hydrophilic 6-O-alkyl substituent in the central monomer is shown to have improved solubility, adopt an active binding conformation and disrupt the p53-hDM2 interaction.



Eur. J. Org. Chem.
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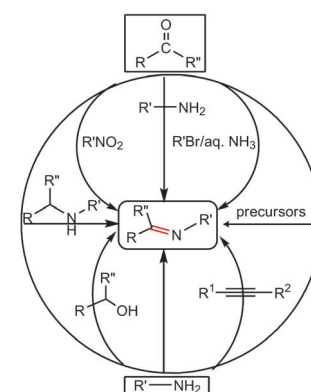


Imine Synthesis

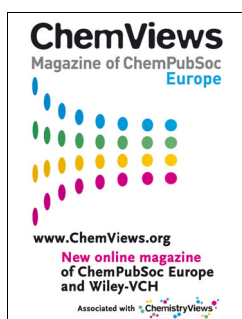
R. D. Patil, S. Adimurthy*

Catalytic Methods for Imine Synthesis

Know what imine? Methods used for imine synthesis that involve metal catalysts, including Ru, Au, V, Cu, Mn, Co, and Pd, as well as photocatalysis, electrocatalysis, organocatalysis, and other techniques are discussed. Special attention is paid to the condensation of carbonyl compounds/alcohols with amines, direct oxidation of amines to give imines, and copper-catalyzed imine synthesis, as copper offers more sustainable approaches to catalysis.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300012



Industry Regulation

V. Köster

Challenges of REACH – Interview with Geert Dancet

After REACH has passed its second deadline, Geert Dancet, Executive Director of the European Chemicals Agency (ECHA), Helsinki, Finland, gives insights into the working processes of the agency, what will change for the next deadline, and how he sees international developments.



ChemViews magazine
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