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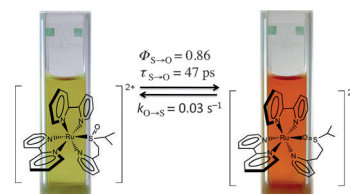


Isomerization

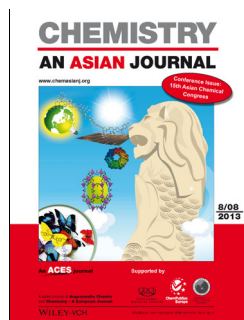
K. Garg, J. T. Engle, C. J. Ziegler, J. J. Rack*

Tuning Excited State Isomerization Dynamics through Ground State Structural Changes in Analogous Ruthenium and Osmium Sulfoxide Complexes

Faster than a speeding bullet: A six-membered chelating sulfoxide ring leads to rapid excited isomerization (47 ps) in comparison to a five-membered chelate (see graphic). This is the most rapid sulfoxide isomerization reported to date.



Chem. Eur. J.
DOI: 10.1002/chem.201301553

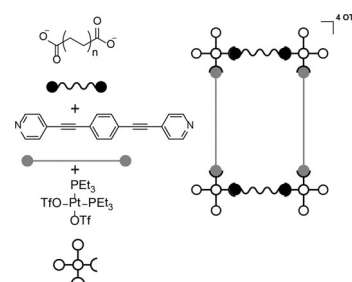


Supramolecular Chemistry

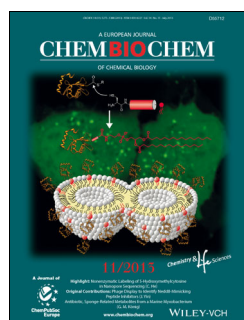
J. B. Pollock, T. R. Cook, G. L. Schneider, P. J. Stang*

Multi-Component Coordination-Driven Self-Assembly: Construction of Alkyl-Based Structures and Molecular Modelling

Stay flexible: Supramolecular coordination complexes (SCCs) have largely been confined to structurally rigid architectures with increasing complexity coming from the inclusion of more subunits and functional groups. Herein, 2D and 3D flexible SCCs, which could find applications in catalysis and sensing, were synthesized from three components by preferentially forming a heteroligated coordination sphere around bis(phosphine) Pt^{II} metal nodes with alkyl-based carboxylate and pyridyl donors.



Chem. Asian J.
DOI: 10.1002/asia.201300427

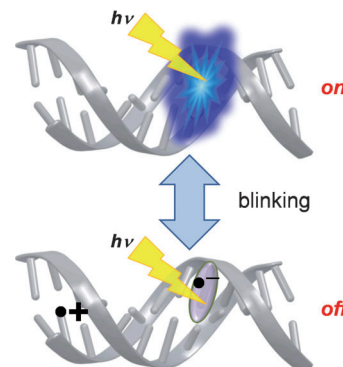


Genotyping

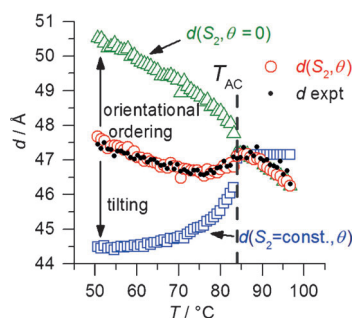
K. Kawai,* T. Majima, A. Maruyama

Detection of Single-Nucleotide Variations by Monitoring the Blinking of Fluorescence Induced by Charge Transfer in DNA

Charge transfer dynamics in DNA: Photo-induced charge separation and charge-recombination dynamics in DNA was assessed by monitoring the blinking of fluorescence. Single nucleotide variations, mismatch and one base deletion, were differentiated based on the length of the off-time of the blinking, which corresponds to the lifetime of the charge-separated state.



ChemBioChem
DOI: 10.1002/cbic.201300380



ChemPhysChem

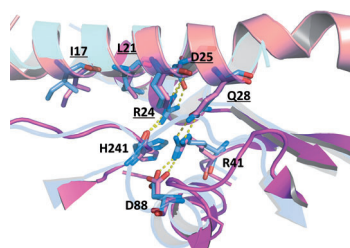
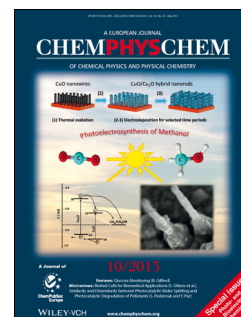
DOI: 10.1002/cphc.201300358

Liquid Crystals

D. Nonnenmacher, S. Jagiella, Q. Song, R. P. Lemieux, F. Giesselmann*

Orientational Fluctuations Near the Smectic A to Smectic C Phase Transition in Two “de Vries”-Type Liquid Crystals

Do you know about shrinkage? The nature of “de Vries” smectic liquid crystals, in which rodlike molecules tilt inside a smectic layer without changing the thickness of the layer, has been an issue of debate since their discovery in the early 1970s. X-ray diffraction experiments on monodomain samples of two de Vries smectics now reveal that the practical absence of layer contraction originates from counteracting effects of molecular tilt and orientational ordering.



ChemMedChem

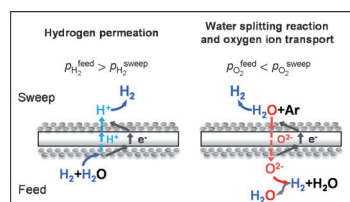
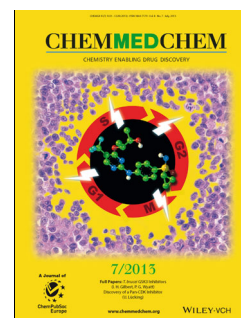
DOI: 10.1002/cmdc.201300256

Molecular Modeling

Z. Zhao, Z. Zhang, Y. Li, M. Zhou, X. Li, B. Yu, R. Wang*

Probing the Key Interactions between Human Atg5 and Atg16 Proteins: A Prospective Application of Molecular Modeling

Breaking things down: Disruption of the Atg5–Atg16 protein–protein interaction is a potential strategy for the development of effective inhibitors of autophagy. Using a structural model of the human Atg5–Atg16 complex, a total of 30 Atg16-based peptides were designed and tested for their binding affinity to Atg5. A number of these peptides exhibited binding affinities in the low micromolar range. Furthermore, three Atg16 residues were identified as the key factors in Atg5 binding.



Fuel Cells

S. Escolastico, J. Seeger, S. Roitsch, M. Ivanova, W. A. Meulenbergh, J. M. Serra*

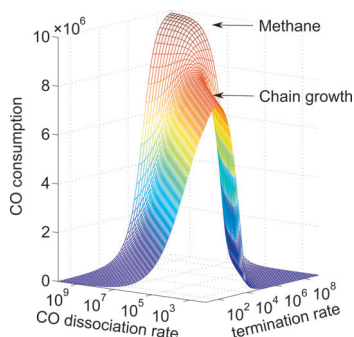
Enhanced H₂ Separation through Mixed Proton–Electron Conducting Membranes Based on La_{5.5}W_{0.8}Mo_{0.2}O_{11.25–δ}

Party in full flow! La_{5.5}WO_{11.25–δ}-based H₂ separation flows are improved by using Re and Mo as dopants in the W position. The influence of the H₂ concentration on the feed stream, degree of humidification, and operating temperature are studied for both compounds. Unrivaled H₂ flow values are reached for the La_{5.5}W_{0.8}Re_{0.2}O_{11.25–δ} membrane, and good stability in CO₂ is demonstrated.



ChemSusChem

DOI: 10.1002/cssc.201300091



ChemCatChem

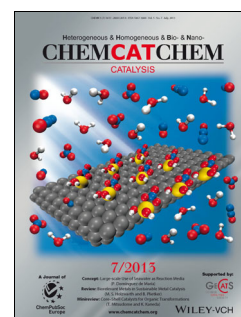
DOI: 10.1002/cctc.201300173

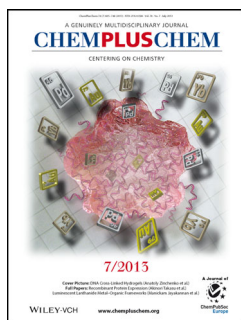
CO Insertion

R. A. van Santen,* A. J. Markvoort

Chain Growth by CO Insertion in the Fischer–Tropsch Reaction

Oh the chain, the chain of it all! Optimal Fischer–Tropsch chain growth through CO insertion (the Pichler–Schulz mechanism) requires the conflicting condition of low and equal rates of CO dissociation as well as hydrocarbon chain growth termination.



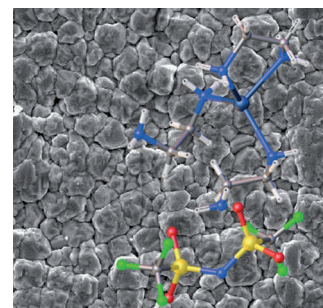


Ionic Liquids

D. Depuydt, N. R. Brooks, S. Schaltin, L. Van Meervelt, J. Fransaer, K. Binnemans*

Silver-Containing Ionic Liquids with Alkylamine Ligands

All that glitters is not gold: Thermally stable liquid metal salts have been synthesised by using readily available organic amine ligands and silver bis(trifluoromethylsulfonyl)imide. These compounds are useful for the electrodeposition of metallic silver with high deposition rates (see picture).



ChemPlusChem
DOI: 10.1002/cplu.201300063

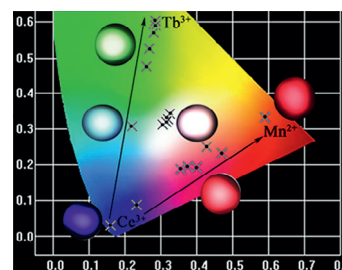


Tunable Phosphors

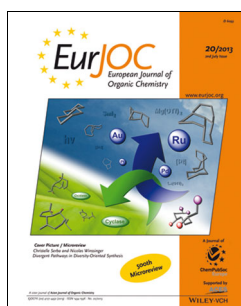
Y. Zhang, D. Geng, M. Shang, Y. Wu, X. Li, H. Lian, Z. Cheng, J. Lin*

Single-Composition Trichromatic White-Emitting $\text{Ca}_9\text{MgNa}(\text{PO}_4)_7:\text{Ce}^{3+}/\text{Tb}^{3+}/\text{Mn}^{2+}$ Phosphors – Soft Chemical Synthesis, Luminescence, and Energy-Transfer Properties

The tunable luminescence and energy-transfer properties of $\text{Ca}_9\text{MgNa}(\text{PO}_4)_7:\text{Ce}^{3+}/\text{Tb}^{3+}/\text{Mn}^{2+}$ phosphors were investigated. The phosphors show promise for use in field emission displays (FEDs).



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201300430

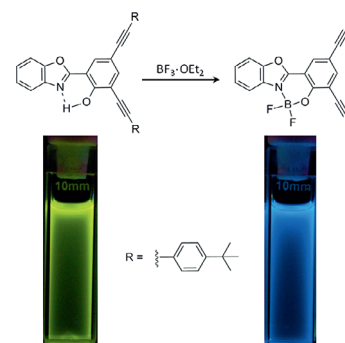


HBO Dyes and Borate Complexes

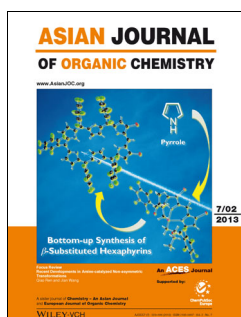
J. Massue,* G. Ulrich,* R. Ziessel*

Effect of 3,5-Disubstitution on the Optical Properties of Luminescent 2-(2'-Hydroxyphenyl)benzoxazoles and Their Borate Complexes

A series of luminescent 3,5-disubstituted 2-(2'-hydroxyphenyl)benzoxazoles (HBOs) and their corresponding borate complexes are synthesized and their optical properties investigated. HBO dyes display excited-state intramolecular proton-transfer fluorescence, which can be fine-tuned depending on the substituents. Blueshifted BF_2 complexes exhibit typical S_0-S_1 fluorescence.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201300616

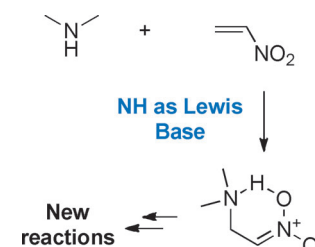


Nitroalkene Activation

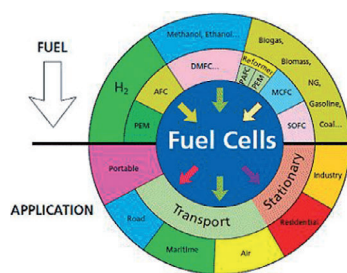
W. Yan, X. Shi,* C. Zhong*

Secondary Amines as Lewis Bases in Nitroalkene Activation

Second to none: Secondary amines are well-known enamine and iminium catalysts that can also be used as Lewis bases for the activation of electron-deficient olefins. In this Focus Review, a series of systematic studies on activation of nitroolefins with secondary amines as Lewis bases that give different multicomponent condensation products are described. Asymmetric syntheses of heterocycles based on this strategy are also presented.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300048



ChemViews magazine
DOI: 10.1002/chemv.201300069

Fuel Cells

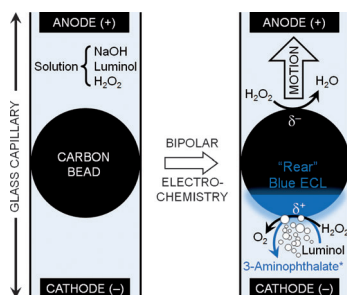
H. Shinokubo

Fuel Cell Capacity and Cost Trends

Platinum loading in fuel cells continue to fall as more efficient catalysts are developed. The resulting reduction in production costs has led to sales of fuel cells and hydrogen systems generating over \$1 billion in 2012. This is forecast to increase to over \$2 billion in 2013. ChemViews magazine gives an overview of these and other trends from the fuel cell market.

ChemViews
Magazine of ChemPubSoc Europe

www.ChemViews.org
New online magazine
of ChemPubSoc Europe
and Wiley-VCH
Associated with ChemistryViews



ChemElectroChem
DOI: 10.1002/celc.201300042

Redox Self-Propulsion

L. Bouffier,* D. Zigah, C. Adam, M. Sentic, Z. Fattah, D. Manojlovic, A. Kuhn, N. Sojic

Lighting Up Redox Propulsion with Luminol Electrogenerated Chemiluminescence

Particle self-tracking: A blue-light-emitting swimmer driven by bipolar electrochemistry is reported here for the first time. The approach involves the controlled motion of a conducting carbon bead through localized oxygen bubble generation, resulting from the oxidation of hydrogen peroxide. Simultaneous oxidation of luminol leads to the emission of light through electrogenerated chemiluminescence.

