

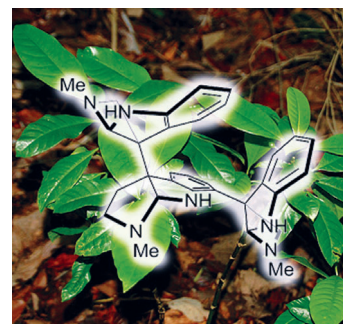


### Natural Product Synthesis

R. H. Snell, M. J. Durbin, R. L. Woodward, M. C. Willis\*

Catalytic Enantioselective Desymmetrisation as a Tool for the Synthesis of Hodgkinsine and Hodgkinsine B

**Two palladium-catalysed amination protocols** are deployed in the desymmetrisation of the complex dimeric alkaloid *meso*-chimonanthine. The power of these transformations is showcased in efficient formal and total synthesis of the natural products hodgekinsine and hodgekinsine B (see figure), respectively.



Chem. Eur. J.  
DOI: 10.1002/chem.201203150

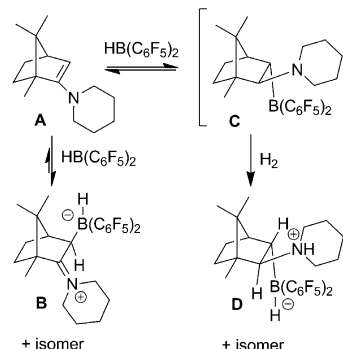


### Frustrated Lewis Pairs

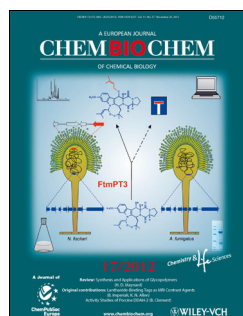
S. Schwendemann, S. Oishi, S. Saito, R. Fröhlich, G. Kehr, G. Erker\*

Reaction of an "Invisible" Frustrated N/B Lewis Pair with Dihydrogen

**I'm frustrated—why do I seem so invisible to you:** Piers' borane [HB(C<sub>6</sub>F<sub>5</sub>)<sub>2</sub>] forms a Lewis acid/Lewis base adduct **B** with the enamine **A**. This reacts with dihydrogen via the "invisible" frustrated N/B Lewis pair **C**, probably formed by means of hydroboration under equilibrium conditions, to yield the zwitterionic ammonium/hydrido-borate product **D**.



Chem. Asian J.  
DOI: 10.1002/asia.201200776

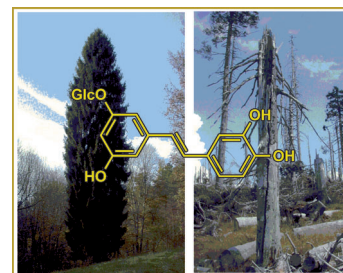


### Phytochemistry

S.-H. Li, N. E. Nagy, A. Hammerbacher, P. Krokene X.-M. Niu, J. Gershenzon\*, B. Schneider\*

Localization of Phenolics in Phloem Parenchyma Cells of Norway Spruce (*Picea abies*)

**Beetling about:** Phloem parenchyma (PP) cells accumulate phenolics upon attack by the bark beetle *Ips typographus* and its associated fungus, *Ceratocystis polonica*. NMR spectra demonstrated significantly higher concentrations of stilbenes in PP cells than in adjacent tissue. However, after infection by *C. polonica*, the astringin (shown) content decreased relative to the control.



ChemBioChem  
DOI: 10.1002/cbic.201200547

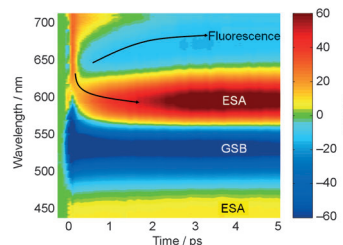


### Dye-Sensitized Solar Cells

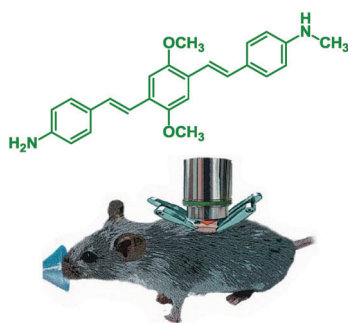
E. Rohwer, C. Richter, N. Heming, K. Strauch, C. Litwinski, T. Nyokong, D. Schlettwein, H. Schwörer\*

Ultrafast Photodynamics of the Indoline Dye D149 Adsorbed to Porous ZnO in Dye-Sensitized Solar Cells

**Good morning, sunshine!** The ultrafast dynamics of the photoinduced electron transfer between surface-adsorbed indoline D149 dye and porous ZnO as used in the working electrodes of dye-sensitized solar cells is investigated by means of transient absorption spectroscopy (see picture). The addition of the redox electrolyte to the system results in faster regeneration times.



ChemPhysChem  
DOI: 10.1002/cphc.201200715



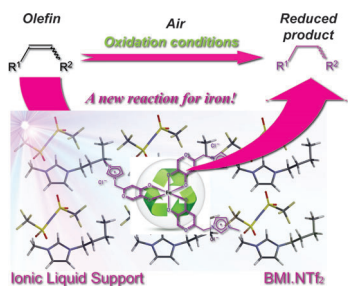
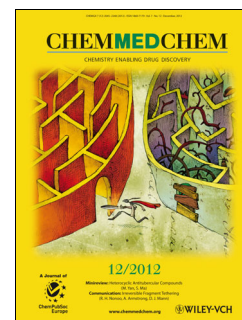
ChemMedChem  
DOI: 10.1002/cmdc.201200343

## Imaging Agents

A. G. Condie, S. L. Gerson, R. H. Miller, Y. Wang\*

Two-Photon Fluorescent Imaging of Myelination in the Spinal Cord

**An illuminating Case:** Myelin imaging compound CIC (shown) was synthesized via an improved route and evaluated for its ability to visualize myelin in the spinal cords of mice. In vivo imaging was conducted using two-photon fluorescence microscopy. CIC could distinguish myelin content between healthy and pathological mouse models, indicating its potential as a useful probe in multiple sclerosis drug discovery.



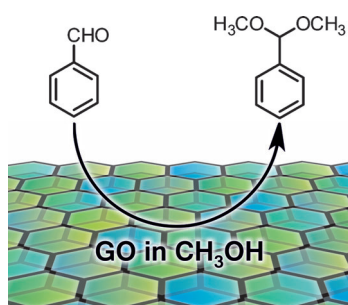
ChemSusChem  
DOI: 10.1002/cssc.201200344

## Earth-Abundant Catalysts

M. R. d. Santos, A. F. Gomes, F. C. Gozzo, P. A. Z. Suarez, B. A. D. Neto\*

Iron Complex with Ionic Tag-Catalyzed Olefin Reduction under Oxidative Conditions—A Different Reaction for Iron

**A new reaction for an old metal:** A new reaction for iron is described. The abundant and inexpensive metal is applied to the reduction of different olefins under oxidative conditions in ionic liquids with high yields. The catalytic system is recovered and at least ten recycles can be performed. The catalyst with ionic tags is used for ESI-MS analyses to reveal the mechanism of this new reaction. Isotopic labeling experiments are performed to confirm the proposed intermediates of the suggested catalytic cycle.



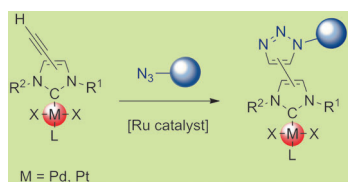
ChemCatChem  
DOI: 10.1002/cctc.201200461

## Graphene Oxide

A. Dhakshinamoorthy, M. Alvaro, M. Puche, V. Fornes, H. Garcia\*

Graphene Oxide as Catalyst for the Acetalization of Aldehydes at Room Temperature

**Promotion through Hummers:** Graphene oxide obtained through the standard Hummers oxidation of graphite and subsequent exfoliation promotes the acetalization of aldehydes in methanol. It is a highly efficient reusable heterogeneous catalyst because of its advantages of absence of transition metals, sustainable resources, and high activity, large surface area, and accessibility of active sites.



Targeting metal-based anticancer agents?

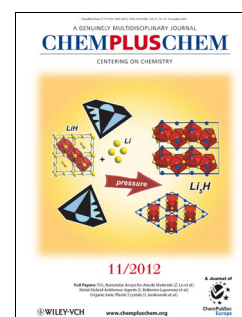
ChemPlusChem  
DOI: 10.1002/cplu.201200092

## N-Heterocyclic Carbene Complexes

E. Chardon, G. L. Puleo, G. Dahm, S. Fournel, G. Guichard,\* S. Bellemin-Laponnaz\*

Easy Derivatization of Group 10 N-Heterocyclic Carbene Complexes and In Vitro Evaluation of an Anticancer Oestradiol Conjugate

**Right on target!** Ruthenium-catalysed 1,3-dipolar cycloaddition has been used to functionalise a series of Pd and Pt N-heterocyclic carbene (NHC) complexes (see scheme). This strategy was applied to the conjugation of amino acid, polyethylene glycol and oestradiol derivatives. These results bode well for the development of Pt-NHC complexes functionalised with cell-targeting elements.



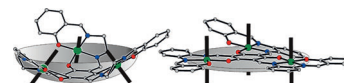


## Magnetic Complexes

C.-G. Freiherr von Richthofen, A. Stammler, H. Bögge, T. Glaser\*

Synthesis and Characterization of Trinuclear  $\text{Ni}^{\text{II}}_3$  and  $\text{Cu}^{\text{II}}_3$  Triplesalophen Complexes: Evaluation of Ligand Folding and Heteroradialene Formation and their Impact on the Magnetic Properties

The trinuclear  $\text{Ni}^{\text{II}}_3$  and  $\text{Cu}^{\text{II}}_3$  triplesalophen complexes exhibit planar molecular structures by the completely  $\text{sp}^2$  hybridized backbone leading to intermolecular  $\pi$  stacking. The  $\text{Cu}^{\text{II}}_3$  complexes exhibit ferromagnetic interactions although a strong heteroradialene contribution is observed.



*Eur. J. Inorg. Chem.*  
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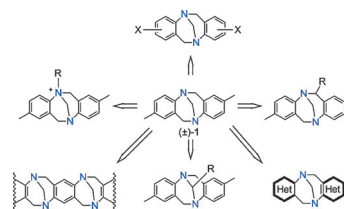


## Tröger's Base at 125

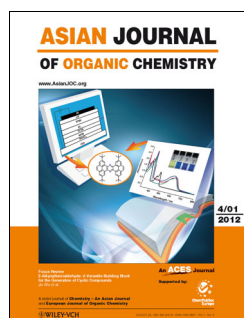
Ö. V. Rúnarsson, J. Artacho, K. Wärnmark\*

The 125<sup>th</sup> Anniversary of the Tröger's Base Molecule: Synthesis and Applications of Tröger's Base Analogues

Tröger's base [TB, ( $\pm$ )-1] has a unique position in the history of stereochemistry. Since the first use of TB analogues as synthetic receptors less than 30 years ago, interest in the system has exploded thanks to the development of new methods for TB functionalization (virtually all position in the skeleton are now accessible). We focus on synthetic advances and recent applications of TB chemistry



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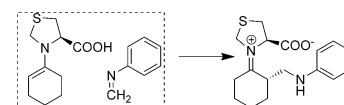


## Proline Catalysis

W. Parasuk, V. Parasuk\*

Factors that Influence Stereoselectivity in Proline-Catalyzed Mannich Reactions

**Pucker up:** By investigating the energy profiles of (*S*)-thiazolidine-4-carboxylic acid and (*S*)-5,5-dimethylthiazolidine-4-carboxylic acid-catalyzed Mannich reactions, it was determined that the ring pucker of the five-membered ring of the catalysts and the solvent play important roles in controlling the stereoselectivity.



*Asian J. Org. Chem.*  
DOI: 10.1002/ajoc.201200116

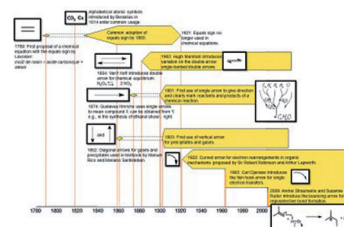


## Chemical Symbolism

Santiago Alvarez and ChemViews

History and Usage of Arrows in Chemistry

Early alchemists incorporated arrows into their chemical symbolism. Since then, the exact meaning of each type of arrow used has evolved with our understanding of substances, reactivity, and structure. This Clever Picture summarizes an Angewandte Essay by Santiago Alvarez and outlines the history of the arrow's evolution and where and how it is used today.



*ChemViews magazine*  
DOI: 10.1002/chemv.201200127