



## Swiss Science Concentrates

A CHIMIA Column

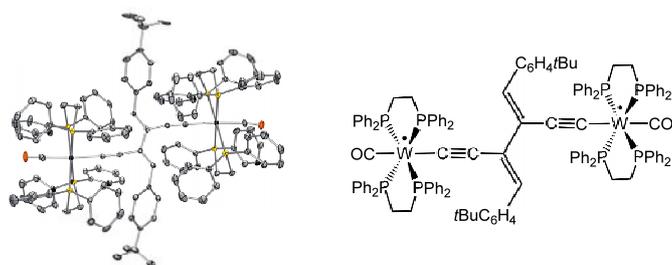
Short Abstracts of Interesting Recent Publications of Swiss Origin

### Self-Coupling of a 4-H-Butatrienylidene Tungsten Complex

S. N. Semenov, O. Blacque, T. Fox, K. Venkatesan, and H. Berke\* *Angew. Chem., Int. Ed.* **2009**, *48*, 5203

University of Zurich

Organometallic complexes with cumulated  $\pi$  systems as bridges have gained importance in view of potential applications in the emerging field of molecular electronics. In this paper, the authors have successfully isolated the first 4-H-butatrienylidene complex which is stable with an aromatic organic terminal functionality. This complex undergoes a unique self-coupling, which leads to a dimer (see picture; P pink, O red) with a cross-conjugated  $\pi$  system and with electrochemically and magnetically active metal centres.

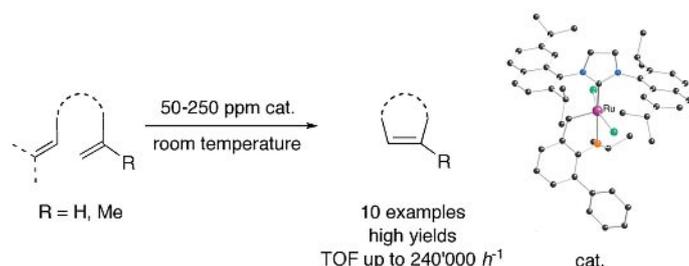


### Impact of NHC Ligand Conformation and Solvent Concentration on the Ruthenium-Catalyzed Ring-Closing Metathesis Reaction

M. Gatti, L. Vieille-Petit, X. Luan, R. Mariz, E. Drinkel, A. Linden, and R. Dorta\* *J. Am. Chem. Soc.* **2009**, *131*, 9498

University of Zurich

Ring-closing metathesis (RCM) reactions promoted by transition metal catalysts are essential tools in synthetic organic chemistry. In this paper, two saturated N-heterocyclic carbene ligands with substituted naphthyl side chains were used for the preparation of ruthenium metathesis precatalysts which were found to be superior in terms of activity to the original SIMes-derived Blechert catalyst. A study on the impact of solvent concentration in RCM reactions using the most active of these new catalysts ultimately led to the ring closing of a variety of substrates at very low catalyst loadings.

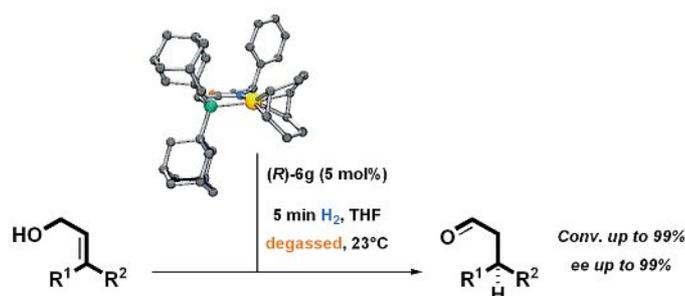


### Iridium-Catalyzed Asymmetric Isomerization of Primary Allylic Alcohols

L. Mantilli, D. Gérard, S. Torche, C. Besnard, and C. Mazet\* *Angew. Chem., Int. Ed.* **2009**, *48*, 5143

University of Geneva

In this article, the authors show that iridium-hydride complexes are efficient catalysts for the asymmetric isomerization of allylic alcohols into the corresponding chiral aldehydes. The best catalyst **1** (see drawing) yields under mild conditions the desired aldehydes with excellent levels of enantioselectivity (up to 99% *ee*). Mechanistic hypotheses are proposed based on preliminary investigations.



### Gold Nanoring Arrays from Responsive Block Copolymer Templates

L. Wang, F. Montagne,\* P. Hoffmann, and R. Pugin *Chem. Commun.* 2009, 3798

Centre Suisse d'Electronique et de Microtechnique SA, Neuchâtel; EPF Lausanne

In this work, a method for the synthesis of ordered arrays of gold nanorings having feature sizes below 100 nanometers is presented. The gold nanostructures were produced by using switchable block copolymer micelles as templates. The authors explain the ring-shape formation by a pH-dependent kinetic competition between micelle phase inversion and gold salt loading. They also demonstrate the ability to tune both the nanoring size and array periodicity by adjusting the dimensions of the micellar film. Gold nanorings deposited on semiconductor surfaces may find application in photonic and biosensing.

