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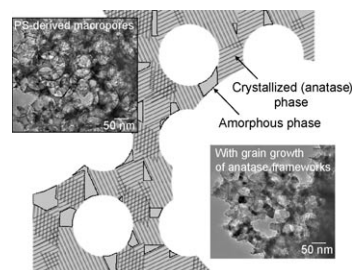


## Mesoporous Materials

T. Kimura,\* N. Miyamoto, X. Meng, T. Ohji, K. Kato

Rapid Fabrication of Mesoporous Titania Films with Controlled Macroporosity to Improve Photocatalytic Property

**Finding the balance:** Photodegradation of methylene blue (MB) over mesoporous anatase titania films with controlled macroporosity is investigated and is clearly shown to be accelerated by effective diffusion of MB molecules in the PS-derived macropores. It is important to regulate the balance between the effectiveness of the diffusion in the macropores and the decrease of the surface area by embedding the macropores, as well as the reduction in the transparency of the porous films.



Chem. Asian J.  
DOI: 10.1002/asia.200900154

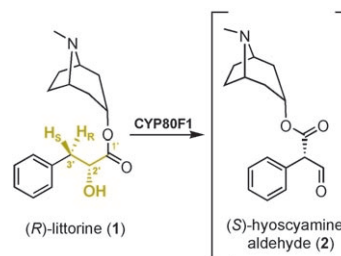


## Enzyme Catalysis

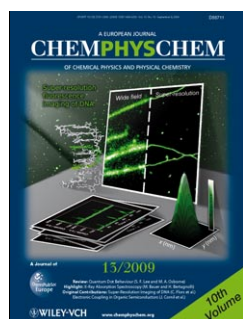
P. Nasomjai, D. W. Reed, D. J. Tozer, M. J. G. Peach, A. M. Z. Slawin, P. S. Covello,\* D. O'Hagan\*

Mechanistic Insights into the Cytochrome P450-Mediated Oxidation and Rearrangement of Littorine in Tropane Alkaloid Biosynthesis

**Radical departure:** Isomerisation of littorine (**1**) to hyoscyamine involves an oxidation/rearrangement catalysed by CYP80F1. We have probed this mechanism with deuterio and arylfluoro analogues of littorine. The data suggest that hydroxylation takes place via a benzylic carbocation intermediate, whereas the product profile arising from rearrangement is more consistent with a benzylic radical intermediate.



ChemBioChem  
DOI: 10.1002/cbic.200900318

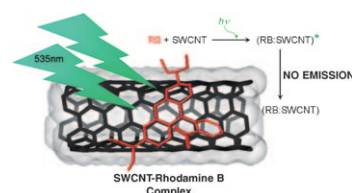


## Carbon Nanotubes

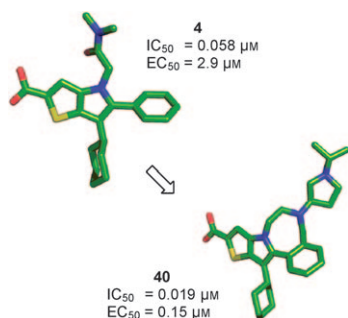
A. Ahmad,\* T. Kurkina, K. Kern, K. Balasubramanian\*

Applications of the Static Quenching of Rhodamine B by Carbon Nanotubes

**SWCNTs quench rhodamine B** through a static mode of action by forming a stable ground state (non-fluorescing) complex (see figure). Such complexation has been successfully used for characterizing an unknown suspension of SWCNTs by identifying the presence of specific chiral forms.



ChemPhysChem  
DOI: 10.1002/cphc.200900246



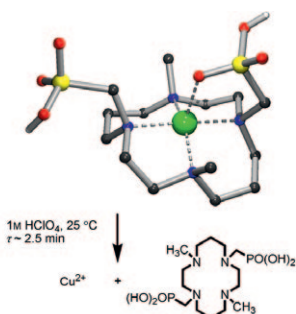
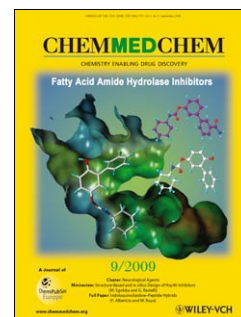
ChemMedChem  
DOI: 10.1002/cmdc.200900184

## Antiviral Agents

J. I. Martin Hernando, J. M. Ontoria, S. Malancona, B. Attenni, F. Fiore, F. Bonelli, U. Koch, S. Di Marco, S. Colarusso, S. Ponzi, N. Gennari, S. E. Vignetti, M. d. R. Rico Ferreira, J. Habermann, M. Rowley, F. Narjes\*

Optimization of Thienopyrrole-Based Finger-Loop Inhibitors of the Hepatitis C Virus NS5B Polymerase

**Infections caused by the hepatitis C virus (HCV)** are a significant world health problem for which novel therapies are in urgent demand. We previously discovered allosteric inhibitors of the HCV NS5B polymerase based on a thieno[3,2-*b*]pyrrole scaffold, exemplified by **4**. X-ray crystallography confirmed binding of thienopyrroles to the upper-thumb domain of NS5B. Extensive structure–activity relationship studies around compound **4** identified the potent tetracyclic thienopyrrole **40**, which displayed a favorable pharmacokinetic profile in rats and dogs.



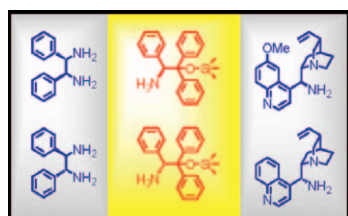
Eur. J. Inorg. Chem.  
DOI: 10.1002/ejic.200900358

## Copper(II) Complexation

I. Svobodová, J. Havlíčková, J. Plutnar, P. Lubal,\* J. Kotek,\* P. Hermann

Metal Complexes of  
4,11-Dimethyl-1,4,8,11-tetraazacyclotetradecane-1,8-bis(methylphosphonic acid) – Thermodynamic and Formation/Decomplexation Kinetic Studies

A novel synthetic approach for the introduction of a methylphosphonic acid pendant arm onto the cyclam backbone is presented. The stability of selected divalent metal complexes is described as well as the X-ray structure of the copper(II) complex. Mechanisms of formation/dissociation of copper(II), zinc(II) and cadmium(II) complexes were established.



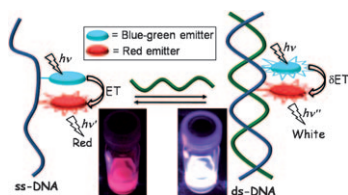
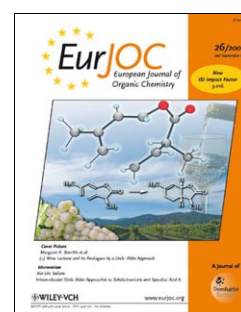
Eur. J. Org. Chem.  
DOI: 10.1002/ejoc.200900664

## Primary Amine Organocatalysis

T. E. Kristensen, K. Vestli, F. K. Hansen, T. Hansen\*

New Phenylglycine-Derived Primary Amine Organocatalysts for the Preparation of Optically Active Warfarin

Whereas chiral diamines and Cinchona-derived primary amines have been the traditional organocatalysts for the preparation of warfarin, we want to introduce a new, fully synthetic phenylglycine derivative, equally available in both enantiomeric forms. This organocatalyst may be perceived as a type of primary amine analogue of the Jørgensen/Hayashi diarylprolinol.



Chem. Eur. J.  
DOI: 10.1002/chem.200901147

## DNA Fluorescence

R. Varghese, H.-A. Wagenknecht\*

White-Light-Emitting DNA (WED)

**White knight:** A DNA-based energy donor–acceptor couple exhibits red fluorescence in the single strand that changes to white light upon duplex formation in a completely reversible manner (see picture).



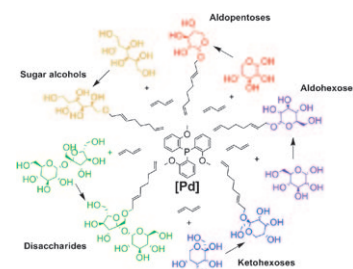


### Telomerization

P. J. C. Hausoul, P. C. A. Bruijninx, R. J. M. Klein Gebbink,\*  
B. M. Weckhuysen\*

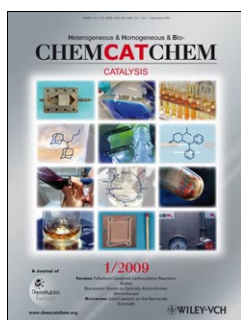
Base-free Pd/TOMPP-Catalyzed Telomerization of 1,3-Butadiene with Carbohydrates and Sugar Alcohols

**Sugar and alcohol—a superior combo:** The telomerization activity of the Pd/TOMPP catalyst is screened using thirteen different biomass-derived carbohydrates and sugar alcohols. High substrate conversions are achieved by using low Pd loading and without the use of an added base. In terms of butadiene conversion, a clear structure–activity relationship is found, which is in line with the series: sugar alcohols > sucrose > aldohexoses > aldopentoses > ketohexoses.



ChemSusChem

DOI: 10.1002/cssc.200900115

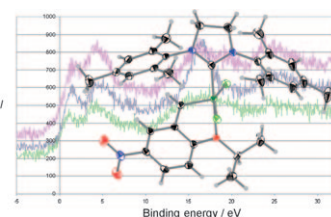


### Photoelectron Spectroscopy

K. Jarzemska, S. Seal, K. Woźniak,\* A. Szadkowska, M. Bieniek,  
K. Grela\*

X-Ray Photoelectron Spectroscopy and Reactivity Studies of a Series of Ruthenium Catalysts

**X-Ray photoelectron spectroscopy (XPS)** is applied to six selected ruthenium precatalysts. The XPS data obtained, compared by reactivity and structural results, confirm some dependencies such as the electron-donor properties of the substituents at the ruthenium center. Additionally, the data combined with structural and reactivity results explain the differences between the character of Grubbs and Hoveyda catalysts.



ChemCatChem

DOI: 10.1002/cctc.200900052

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