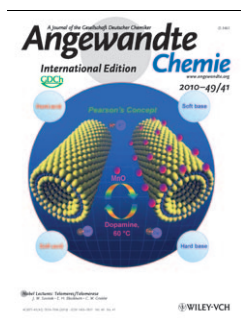




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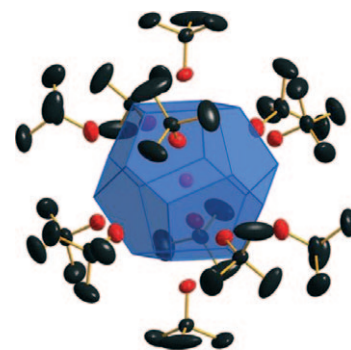


## Container Molecules

M. Podewitz, J. D. van Beek, M. Wörle, T. Ott, D. Stein, H. Rügger, B. H. Meier,\* M. Reiher,\* H. Grützmacher\*

### Ion Dynamics in Confined Spaces: Sodium Ion Mobility in Icosahedral Container Molecules

**Cage it:** A central  $\text{PH}_2^-$  ion (see picture, magenta) is encapsulated within a container of twelve *tert*-butoxides (red and black) in an icosahedral arrangement. The twelve or thirteen sodium counterions are dynamically disordered over the twenty corners of a regular dodecahedron (blue). The estimated activation barriers for sodium exchange are remarkably low ( $10\text{--}30 \text{ kJ mol}^{-1}$ ) and in the range of fast  $\text{Li}^+$  ion conductors.



Angew. Chem. Int. Ed.  
DOI: 10.1002/anie.201003441

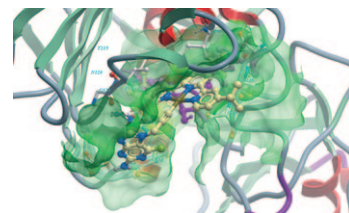


## Organoplatinum Complexes

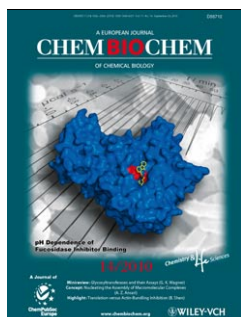
P. Wang, C.-H. Leung, D.-L. Ma, W. Lu, C.-M. Che\*

### Organoplatinum(II) Complexes with Nucleobase Motifs as Inhibitors of Human Topoisomerase II Catalytic Activity

**No relaxation in sight:** Platinum(II) complexes containing acetylidate ligands bearing nucleobase motifs have been synthesized. The identification of the  $[\text{Pt}^{\text{II}}(\text{tBu}_3\text{N}^{\wedge}\text{N}^{\wedge}\text{N})]^{2+}$  moieties bearing nucleobase motifs represents, to the best of our knowledge, the first examples of platinum(II)-based TopoII inhibitors, which inhibit the DNA relaxation activity of TopoII through the suppression of TopoII-catalyzed ATP hydrolysis.



Chem. Asian J.  
DOI: 10.1002/asia.201000451

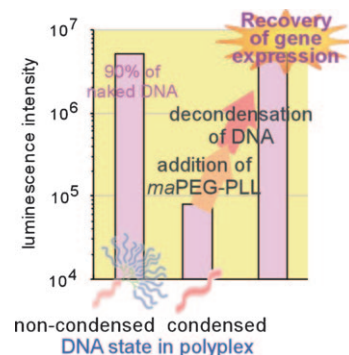


## Gene Expression

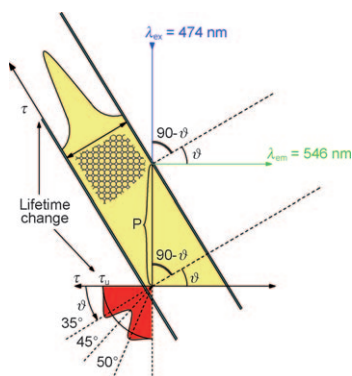
A. Harada,\* Y. Kimura, K. Kono

### Cationic Polymers with Inhibition Ability of DNA Condensation Elevate Gene Expression

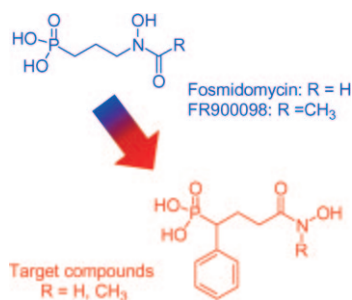
**Plasmid DNA molecules in polyplexes** with poly(L-lysine) (PLL) and multiarm PEG-installed PLL (*ma*PEG-PLL) adopted condensed and noncondensed states, respectively. *ma*PEG-PLL polyplexes showed comparable cell-free gene expression with naked pDNA. The inhibition ability of DNA condensation of *ma*PEG-PLL provided not only the recovery of cell-free gene expression but also elevated the gene expression of cultured cells.



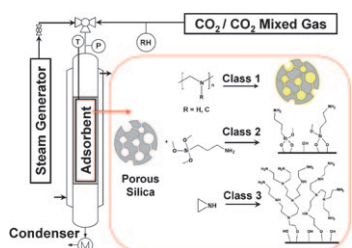
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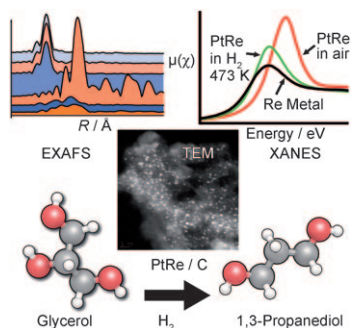
ChemPhysChem  
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ChemMedChem  
DOI: 10.1002/cmdc.201000276



ChemSusChem  
DOI: 10.1002/cssc.201000131



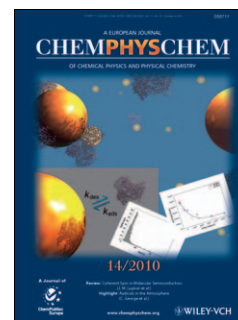
ChemCatChem  
DOI: 10.1002/cctc.201000093

### Photonic Crystals

E. Bovero, K. Yano, T. Nakamura, Y. Yamada,  
F. C. J. M. van Veggel\*

#### Directional Study of the Optical Properties of Tb<sup>3+</sup>- and Eu<sup>3+</sup>-Doped Nanoparticles Embedded in Silica Photonic Crystals

Angular modulation of emission lifetime is achieved by exploiting different penetrations of the excitation beam controlled by the effect of the photonic stop band in a silica photonic crystal in which Tb<sup>3+</sup> and Eu<sup>3+</sup> nanoparticles are embedded (see picture).

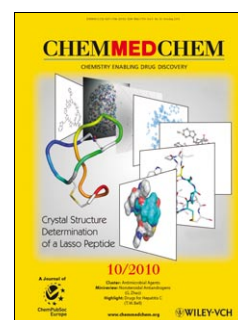


### Antimalarial Agents

C. T. Behrendt, A. Kunfermann, V. Illarionova, A. Matheussen,  
T. Gräwert, M. Groll, F. Rohdich, A. Bacher, W. Eisenreich,  
M. Fischer, L. Maes, T. Kurz\*

#### Synthesis and Antiplasmodial Activity of Highly Active Reverse Analogues of the Antimalarial Drug Candidate Fosmidomycin

Inhibition of enzymes involved in the nonmevalonate pathway of isoprenoid biosynthesis represents a promising strategy for the development of novel antimalarial agents. A small series of reverse hydroxamate-based fosmidomycin analogues was synthesized and evaluated for their inhibitory activity against the recombinant 1-deoxy-D-xylulose 5-phosphate reductoisomerases (DXRs) of *Escherichia coli* and *Plasmodium falciparum*, as well as for their in vitro antiplasmodial activity and cytotoxicity.



### Carbon Dioxide Capture

W. Li, S. Choi, J. H. Drese, M. Hornbostel, G. Krishnan,  
P. M. Eisenberger, C. W. Jones\*

#### Steam-Stripping for Regeneration of Supported Amine-Based CO<sub>2</sub> Adsorbents

Amine-based solid CO<sub>2</sub> adsorbents have been investigated intensively in recent years. However, the focus has routinely been on their adsorption capacity and not on their regeneration. Here, a practical desorption process for supported amine adsorbents, steam-stripping, is demonstrated for the first time.

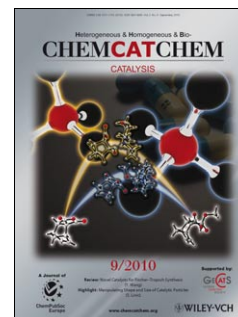


### Spectroscopy

O. M. Daniel, A. DeLaRiva, E. L. Kunkes, A. K. Datye,  
J. A. Dumesic, R. J. Davis\*

#### X-ray Absorption Spectroscopy of Bimetallic Pt–Re Catalysts for Hydrogenolysis of Glycerol to Propanediols

Propanediols are produced by hydrogenolysis of glycerol over nanometer size carbon-supported Pt–Re particles at 443 K, whereas analogous monometallic particles are inactive. X-ray absorption spectroscopy above the Pt and Re L<sub>III</sub> edges reveal that both metals are reduced by H<sub>2</sub> at 473 K to form bimetallic particles. The presence of oxophilic Re in contact with Pt promoted the selective hydrogenolysis reaction.



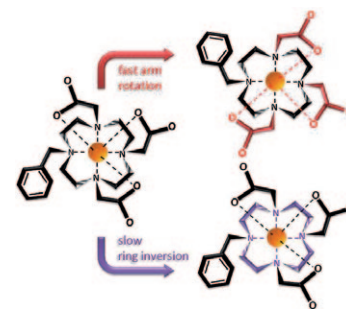


## Lanthanide Complexes

M. Regueiro-Figueroa, D. Esteban-Gómez, A. de Blas, T. Rodríguez-Blas,\* C. Platas-Iglesias\*

### Structure and Dynamics of Lanthanide(III) Complexes with an *N*-Alkylated do3a Ligand ( $H_3do3a = 1,4,7,10$ -Tetraazacyclododecane-1,4,7-triacetic Acid): A Combined Experimental and DFT Study

A study on the solution structure and dynamics of  $Ln^{III}(do3a)$  complexes ( $H_3do3a = 1,4,7,10$ -tetraazacyclododecane-1,4,7-triacetic acid) shows that the  $\Delta(\lambda\lambda\lambda)$  conformation is favored over the  $\Delta(\delta\delta\delta)$  one. The energy barrier associated with the ring inversion is similar to that observed for  $Ln^{III}(dota)$  ( $H_4dota = 1,4,7,10$ -tetraazacyclododecane-1,4,7,10-tetraacetic acid) complexes, whereas the low energy barrier for the arm rotation is responsible for fast isomer interconversion.



*Eur. J. Inorg. Chem.*  
DOI: 10.1002/ejic.201000334

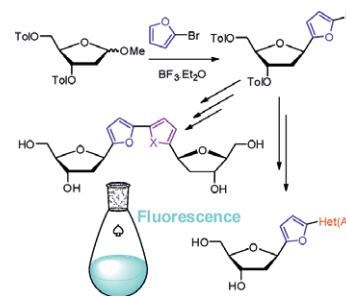


## C-Nucleosides

J. Bárta, L. Slavětínská, B. Klepetářová, M. Hocek\*

### Modular Synthesis of 5-Substituted Furan-2-yl C-2'-Deoxyribonucleosides and Biaryl Covalent Base-Pair Analogues

Fluorescent 5-(hetero)arylfuran C-2'-deoxyribonucleosides were prepared by Friedel–Crafts C-glycosidation of 2-bromofuran followed by cross-coupling reactions. Novel covalent nucleoside pairs were prepared by borylation and cross-coupling.



*Eur. J. Org. Chem.*  
DOI: 10.1002/ejoc.201000726

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