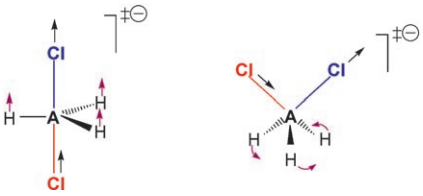
## Reaction Mechanisms

A. P. Bento, F. M. Bickelhaupt*

Frontside versus Backside $S_N2$ Substitution at Group 14 Atoms: Origin of Reaction Barriers and Reasons for Their Absence

*Chem. Asian J.*
DOI: **10.1002/asia.200800065**




**Two don't fit through the door**: Our Activation Strain analyses show that frontside $S_N2$ substitution at group-14 atoms (A = C, Si, Ge, Sn, and Pb in $Cl^- + AH_3Cl$) has a much higher barrier than the regular backside pathway, mainly because of an increased strain that results from the sterically unfavorable adjacent positions of the larger nucleophile and leaving group.

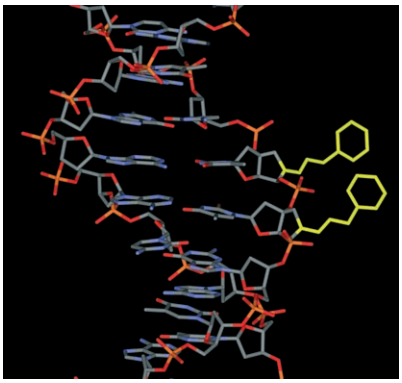
## Nucleic Acids

S. Luisier, C. J. Leumann*

Screening the Structural and Functional Properties of Bicyclo-DNA: $bc^{ox}$-DNA

*ChemBioChem*
DOI: **10.1002/cbic.200800322**

**Adjusting nucleic acid conformations**: A novel carbohydrate-modified bicyclo-DNA nucleoside carrying a lipophilic benzyloxime substituent on the carbocyclic ring was synthesized and incorporated into DNA. It destabilizes DNA but can stabilize RNA duplexes. While no cellular uptake of the modified oligonucleotides into HeLa cells occurred in the absence of transfecting agents, improved cellular uptake properties were observed when they were complexed to lipofectamine.



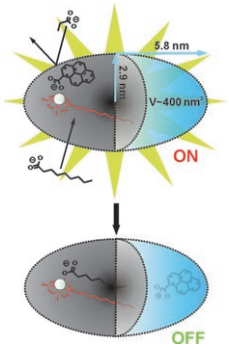
## Nanodevices

G. Chirico, M. Collini, L. D'Alfonso, F. Denat, Y. A. Diaz-Fernandez, L. Pasotti, Y. Rousselin, N. Sok, P. Pallavicini*

Micelles as Containers for Self-Assembled Nanodevices: A Fluorescent Sensor for Lipophilicity

*ChemPhysChem*
DOI: **10.1002/cphc.200800292**

**Sensors included**: The interaction of 1-pyrenecarboxylate with the $Zn^{2+}$ complex of a lipophilized cyclen is dramatically promoted by micellar inclusion, which results in a strong increase in fluorescence (see picture). The system works as a self-assembled nanodevice capable of sensing the lipophilicity of added molecules, which is reported by means of fluorescence variation.



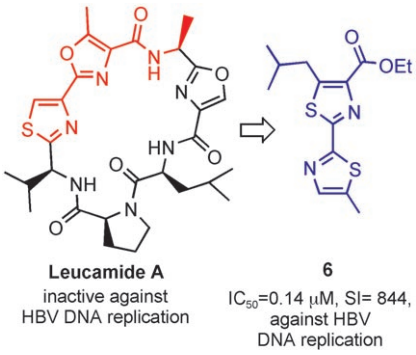

## Antiviral Agents

H.-J. Chen, W.-L. Wang, G.-F. Wang, L.-P. Shi, M. Gu, Y.-D. Ren, L.-F. Hou, P.-L. He, F.-H. Zhu, X.-G. Zhong, W. Tang, J.-P. Zuo,* F.-J. Nan*

Rational Design and Synthesis of 2,2-Bisheterocycle Tandem Derivatives as Non-Nucleoside Hepatitis B Virus Inhibitors

*ChemMedChem*
DOI: **10.1002/cmdc.200800136**

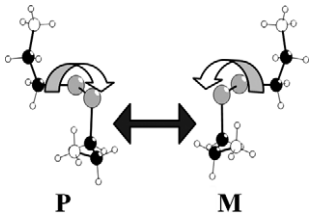
**Non-nucleoside tandem derivatives**: Potent hepatitis B antiviral activity is established for 2,2′-bisthiazole heterocyclic derivatives. The core structure of these compounds differs from those of known non-nucleoside hepatitis B antiviral agents, constituting a new direction in hepatitis B virus drug development.




**Leucamide A**
inactive against HBV DNA replication

**6**
$IC_{50}$=0.14 μM, SI= 844, against HBV DNA replication

An organic–inorganic hybrid was found to undergo reversible structural transition under moderate conditions leading to a polymorph phase. Conformational changes in the disulfide molecules in the solid state resulted in an abrupt decrease in the second harmonic generation (SHG) intensity; thus, this material can be considered as an SHG switch controlled by temperature.




### Hybrid Materials

N. Louvain, N. Mercier,* J. Luc, B. Sahraoui

Example of Disulfide Conformational Change in the Solid State: Preparation, Optical Properties, and X-ray Studies of a Cystamine-Based Iodoplombate Hybrid

*Eur. J. Inorg. Chem.*
DOI: **10.1002/ejic.200800525**

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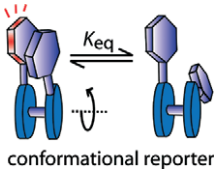
The solution-state conformation of a neutral analogue of a previously reported cationic π-stacking template is investigated to probe the effect of charge on conformation and to investigate the conformational control imparted by intramolecular aromatic association.




### Organic Solution State Conformation

P. P. Poudel, J. Chen, A. Cammers*

Intramolecular π-Stacking in Isostructural Conformational Probes Depends Strongly on Charge Separation, a Proton NMR Study

*Eur. J. Org. Chem.*
DOI: **10.1002/ejoc.200800663**

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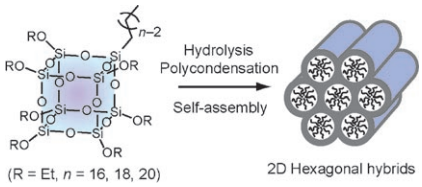


**Under orders**: Siloxane-organic hybrid compounds with well-ordered mesostructures were synthesized through the self-assembly of novel amphiphilic molecules (see figure) that consist of cubic siloxane heads and hydrophobic alkyl tails.

### Hybrid Materials

A. Shimojima,* R. Goto, N. Atsumi, K. Kuroda*

Self-Assembly of Alkyl-Substituted Cubic Siloxane Cages into Ordered Hybrid Materials

*Chem. Eur. J.*
DOI: **10.1002/chem.200801106**

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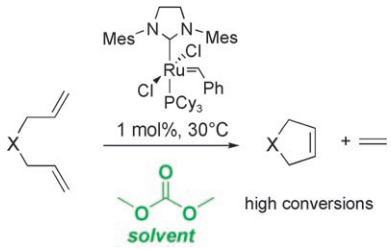


**Ru 'n' DMC**: A series of ruthenium-catalyzed olefin metathesis transformations were performed in the eco-friendly solvent dimethyl carbonate (DMC), and it was demonstrated that this solvent can be used as a substitute to dichloromethane or aromatic solvents. The ethenolysis of methyl oleate using the first-generation Hoveyda catalyst was also performed in DMC, where similar conversions were observed to those in toluene (82 vs 88%).

### Olefin Metathesis

X. Miao, C. Fischmeister,* C. Bruneau, P. H. Dixneuf

Dimethyl Carbonate: An Eco-Friendly Solvent in Ruthenium-Catalyzed Olefin Metathesis Transformations

*ChemSusChem*
DOI: **10.1002/cssc.200800074**

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Auf diesen beiden Seiten weisen wir auf wichtige aktuelle Beiträge in unseren Schwesterzeitschriften hin. Wenn Sie die Seiten online lesen, dann können Sie die Artikel mit einem Klick direkt aufrufen, ansonsten sind sie durch Eingabe der DOIs über Wiley InterScience leicht online zugänglich.