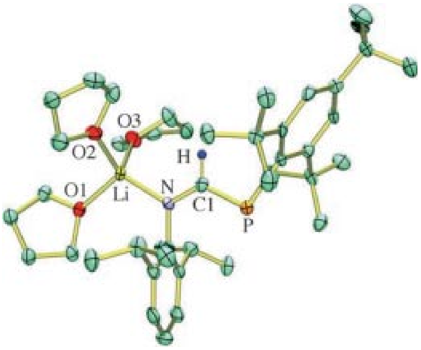
# SPOTLIGHTS …

## *Phosphaalkenes*

M. Song, B. Donnadieu,
M. Soleilhavoup, G. Bertrand*

### Synthesis of Phosphaformamidines and Phosphaformamidinates

*Chem. Asian J.*
DOI: **10.1002/asia.200700103**



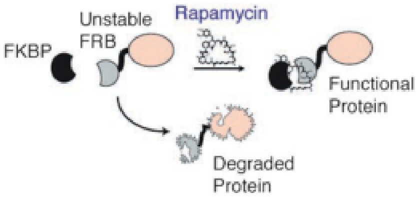
**Forming a formation**: Phosphaformamidines and -formamidinates can be readily prepared by reaction of *N*-arylformimidates with lithium phosphanides. These compounds were previously inaccessible by methods for the preparation of phosphaamidines and -amidinates. They have the potential to be precursors of P,N-heterocyclic carbenes, which are as yet unknown.

## *Chemical Chaperones*

K. Stankunas, J. H. Bayle,
J. J. Havranek, T. J. Wandless,
D. Baker, G. R. Crabtree,
J. E. Gestwicki*

### Rescue of Degradation-Prone Mutants of the FK506-Rapamycin Binding (FRB) Protein with Chemical Ligands

*ChemBioChem*
DOI: **10.1002/cbic.200700087**



**Chemical chaperones**. Single point mutations in the ligand-binding pocket of the FK506-rapamycin binding (FRB) protein were found to severely damage its folding and stability. However, addition of a chemical ligand, rapamycin, stabilized the mutants and protected them from degradation in cells or thermal denaturation in vitro.

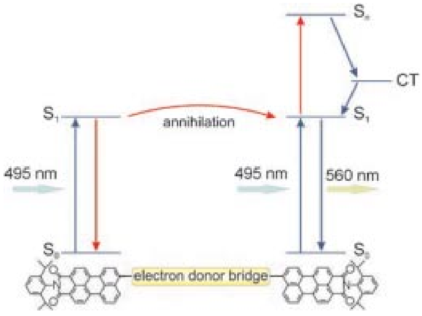
## *Time-Resolved Spectroscopy*

E. Fron, G. Schweitzer, J. Jacob,
A. Van Vooren, D. Beljonne,
K. Müllen, J. Hofkens,
M. Van der Auweraer,
F. C. De Schryver*

### Singlet–Singlet Annihilation Leading to a Charge-Transfer Intermediate in Chromophore-End-Capped Pentaphenylenes

*ChemPhysChem*
DOI: **10.1002/cphc.200700136**

**Higher excited states**: A singlet–singlet annihilation mechanism was found to promote one chromophore into a higher excited state, thus allowing observation of an ultrashort-living intermediate charge-transfer (CT) state in the $S_n$–$S_1$ deactivation pathway (see picture).

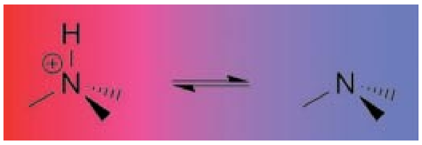


## *Drug Lead Optimization*

M. Morgenthaler, E. Schweizer,
A. Hoffmann-Röder, F. Benini,
R. E. Martin, G. Jaeschke, B. Wagner,
H. Fischer, S. Bendels, D. Zimmerli,
J. Schneider, F. Diederich,*
M. Kansy,* K. Müller*

### Predicting and Tuning Physicochemical Properties in Lead Optimization: Amine Basicities

*ChemMedChem*
DOI: **10.1002/cmdc.200700059**

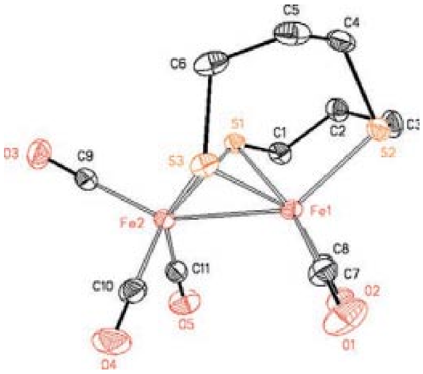


**Predicting and tuning** amine basicity is one of the crucial factors determining physicochemical properties of leads in drug-discovery research. We present simple-to-use rules for p$K_a$ prediction based on extensive database mining and several case studies from our medicinal chemistry programs over the last years. Stereochemical and conformational factors influencing amine basicity are discussed, and the emergent computational approaches to p$K_a$ predictions are briefly surveyed.

# … ON OUR SISTER JOURNALS

## [Fe-only]-Hydrogenase Models

The syntheses of novel [Fe-only]-hydrogenase models starting from 1,2,4-trithiolane, 1,2,5-trithiepane, 1,2,5-trithiocane and 1,2,6-trithionane are described. The products were characterised by spectroscopic methods and X-ray structure analyses. The electrochemical behaviour of one representative complex is described in detail.



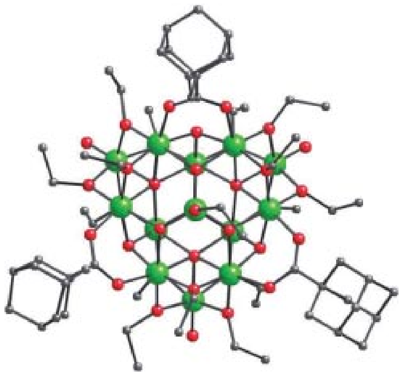
J. Windhager, M. Rudolph,*
S. Bräutigam, H. Görls, W. Weigand*

**Reactions of 1,2,4-Trithiolane, 1,2,5-Trithiepane, 1,2,5-Trithiocane and 1,2,6-Trithionane with Nonacarbonyldiiron: Structural Determination and Electrochemical Investigation**

*Eur. J. Inorg. Chem.*
DOI: **10.1002/ejic.200700049**

## Polyoxometalates

**High nuclearity, but low oxidation states**: A family of high-nuclearity vanadium(III/IV/V) clusters (an example of which is shown here; green: vanadium; red: oxygen; grey: carbon) are reported, analogous to the polyoxo(alkoxo)vanadates but in uniquely low oxidation states.

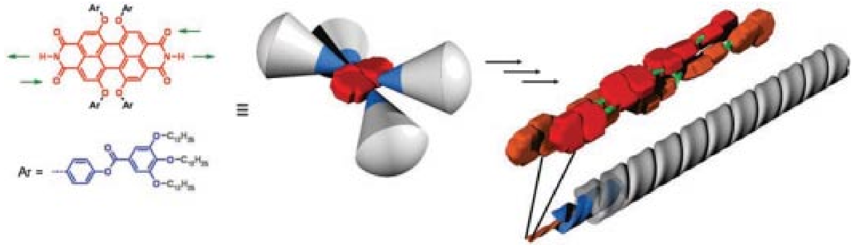


I. S. Tidmarsh, R. H. Laye,*
P. R. Brearley, M. Shanmugam,
E. C. Sañudo, L. Sorace, A. Caneschi,
E. J. L. McInnes*

**Highly Reduced, Polyoxo(alkoxo)vanadium(III/IV) Clusters**

*Chem. Eur. J.*
DOI: **10.1002/chem.200700247**

## Self-Assembly Processes



**Luminous nanorods**: The self-assembly of core-twisted perylene bisimide fluorophores (see structures) in nonpolar organic solvents is directed by hydrogen-bonding interactions. This supermolecular concept resulted in one-dimensional J-aggregates with a fluorescence quantum yield of near unity.

T. E. Kaiser, H. Wang,
V. Stepanenko, F. Würthner*

**Supramolecular Construction of Fluorescent J-Aggregates Based on Hydrogen-Bonded Perylene Dyes**

*Angew. Chem. Int. Ed.*
DOI: **10.1002/anie.200701139**

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