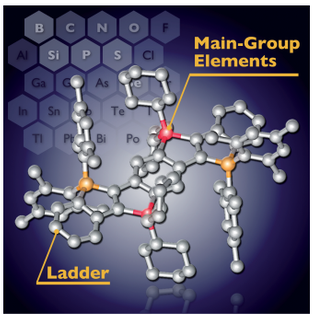
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley InterScience.

Optoelectronic Devices

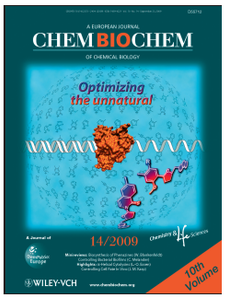
A. Fukazawa, S. Yamaguchi*

Ladder π-Conjugated Materials Containing Main-Group Elements

Main entry: Incorporation of main-group elements, such as B, Si, P, S, and Se, into ladder π-conjugated skeleton as bridging moieties is a powerful strategy to endow attractive (opto)electronic properties. This Focus Review highlights recent progress in this chemistry, focusing on several important classes of ladder π-conjugated skeletons and on the influence of the main-group elements.



Chem. Asian J.
DOI: **10.1002/asia.200900179**

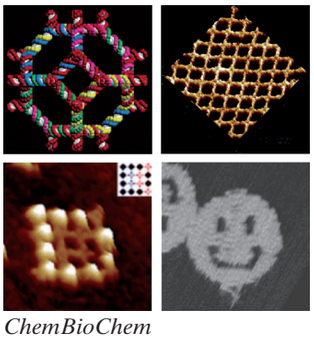


DNA

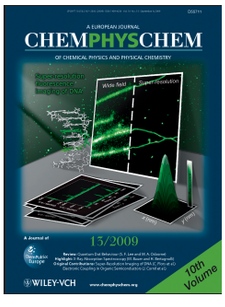
M. Endo,* H. Sugiyama*

Chemical Approaches to DNA Nanotechnology

The power of DNA: In this review, we focus on the intersection of DNA chemistry and nanotechnology and describe the potential of synthetic chemistry and its contribution to DNA nanotechnology. We also describe recent progress relating to the construction of DNA assemblies, nanoscale structures, and programmed arrangements of functional molecules and materials.



ChemBioChem
DOI: **10.1002/cbic.200900286**

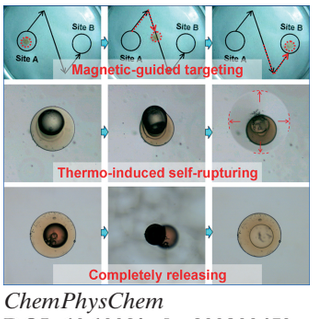


Microencapsulation

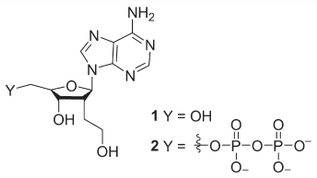
W. Wang, L. Liu, X.-J. Ju, D. Zerrouki, R. Xie, L. Yang, L.-Y. Chu*

A Novel Thermo-Induced Self-Bursting Microcapsule with Magnetic-Targeting Property

A novel thermo-induced self-bursting microcapsule with magnetic-targeting property is developed (see figure). The Fe_3O_4 nanoparticles-embedded PNIPAM shell enables magnetic-targeting and thermo-induced self-bursting of the microcapsules. Lipophilic chemicals dissolved in the oil core are completely released with the burst release of the encapsulated oil.



ChemPhysChem
DOI: **10.1002/cphc.200900450**



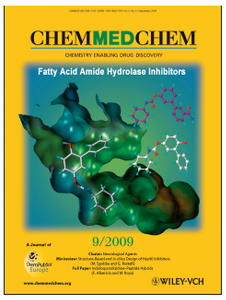
ChemMedChem
DOI: **10.1002/cmdc.200900236**

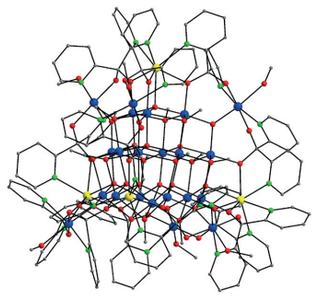
Drug Design

D. Sun, H. Xu, S. R. Wijerathna, C. Dealwis,* R. E. Lee*

Structure-Based Design, Synthesis, and Evaluation of 2′-(2-Hydroxyethyl)-2′-deoxyadenosine and the 5′-Diphosphate Derivative as Ribonucleotide Reductase Inhibitors

Potential chemotherapeutics: Deoxyadenosine **1** and the 5′-diphosphate derivative **2** were designed and synthesized in an attempt to displace a critical conserved water molecule from the active site of RnrI in order to improve binding affinity. Herein we report the synthesis of analogues **1** and **2**, and the co-crystal structure of adenosine diphosphate analogue **2** bound to ScRnr1, which shows the conserved water molecule is displaced as hypothesized.





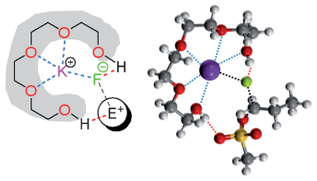
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.200900223**

Carbonyl Group Activation

T. C. Stamatatos, C. G. Efthymiou, C. C. Stoumpos, S. P. Perlepes*

Adventures in the Coordination Chemistry of Di-2-pyridyl Ketone and Related Ligands: From High-Spin Molecules and Single-Molecule Magnets to Coordination Polymers, and from Structural Aesthetics to an Exciting New Reactivity Chemistry of Coordinated Ligands

The coordination chemistry of di-2-pyridyl ketone and related ligands is discussed in detail. The activation of the carbonyl group(s) of some of the ligands toward further reactions is an important area of synthetic inorganic chemistry. Emphasis is placed on structural features and magnetic properties of the resulting metal clusters and coordination polymers.



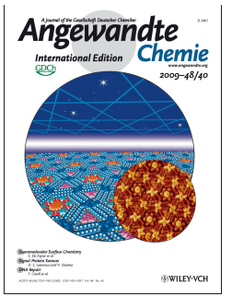
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.200903903**

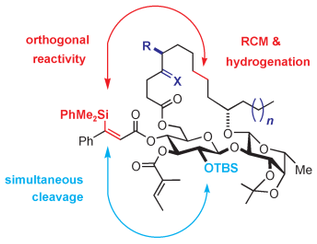
Cooperative Catalysis

J. W. Lee, H. Yan, H. B. Jang, H. K. Kim, S.-W. Park, S. Lee,* D. Y. Chi,* C. E. Song*

Bis-Terminal Hydroxy Polyethers as All-Purpose, Multifunctional Organic Promoters: A Mechanistic Investigation and Applications

Achiral polyether derivatives have been shown to dramatically accelerate S_N2 reactions by the simultaneous activation of both the nucleophile (KF) and electrophile (sulfonate; see picture). By using chiral variants as catalysts, the desilylative kinetic resolution of the silyl ethers of racemic secondary alcohols has been achieved. Density functional calculations provide detailed insight into the modes of action of this type of organic promoter.





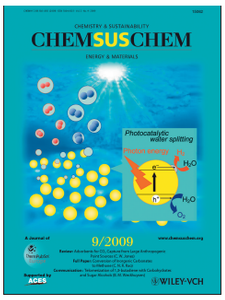
Chem. Eur. J.
DOI: **10.1002/chem.200901449**

Natural Products

T. Nagano, J. Pospíšil, G. Chollet, S. Schulthoff, V. Hickmann, E. Moulin, J. Herrmann, R. Müller, A. Fürstner*

Total Synthesis and Biological Evaluation of the Cytotoxic Resin Glycosides Ipomoeassin A–F and Analogues

Multitasking: *C*-Silylation of the lateral ester constitutes the key strategic element of a total synthesis of all known ipomoeassin resin glycosides and a small collection of analogues. This uncommon protecting group manoeuvre precludes the lateral cinnamate from interfering with the RCM closure of the macrocycle and protects it against hydrogenation during the saturation of the cycloalkene.

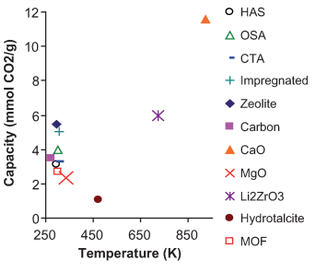


Carbon Dioxide Capture

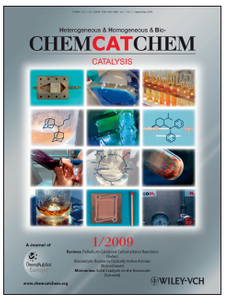
S. Choi, J. H. Drese, C. W. Jones*

Adsorbent Materials for Carbon Dioxide Capture from Large Anthropogenic Point Sources

Getting the point: As concern over the rise in atmospheric CO_2 concentration has increased, recent research efforts have focused on capturing CO_2 from large anthropogenic point sources. Many solid adsorbent classes, including zeolites, activated carbons, calcium oxides, hydrotalcites, organic–inorganic hybrids, and MOFs, have been considered as alternatives to the current benchmark aqueous amine absorption technology for CO_2 capture.



ChemSusChem
DOI: **10.1002/cssc.200900036**

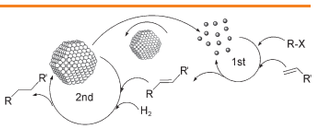


Bifunctional Catalyst

S. Jansat, J. Durand, I. Favier, F. Malbosc, C. Pradel, E. Teuma, M. Gómez*

A Single Catalyst for Sequential Reactions: Dual Homogeneous and Heterogeneous Behavior of Palladium Nanoparticles in Solution

One becomes two: Palladium nanoparticles stabilized by ionic liquids are used as the sole catalytic precursors for sequential Heck and hydrogenation processes. The dual role of these systems, which act as both a heterogeneous catalyst and also as a reservoir of catalytically active molecular species, is investigated.



ChemCatChem
DOI: **10.1002/cctc.200900127**

