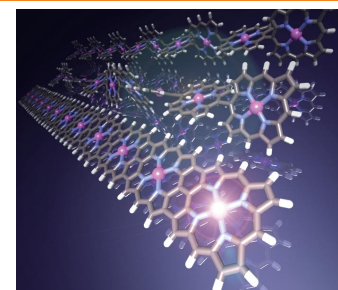


Nonlinear Optics

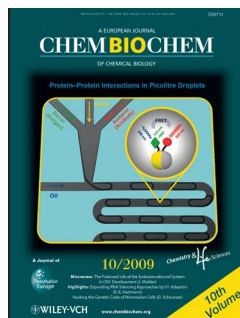
N. Aratani,* D. Kim,* A. Osuka*

π -Conjugation Enlargement Toward the Creation of Multi-Porphyrinic Systems with Large Two-Photon Absorption Properties

Arrays the way! Recent progress in the synthesis of covalently linked porphyrin arrays with large two-photon absorption (TPA) cross-section values has been reviewed with a particular focus on the relation of TPA properties with molecular structures. This will help understand the structural requirements of porphyrin arrays with large TPA values, which will be useful for future applications in optical communication in the IR region.



Chem. Asian J.
DOI: 10.1002/asia.200900045

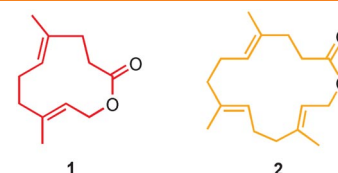


Chemical Ecology

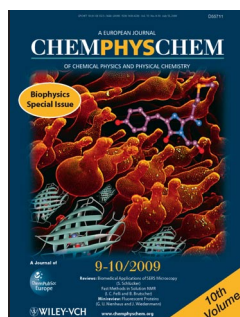
S. Yildizhan, J. van Loon, A. Sramkova, M. Ayasse, C. Arsene, C. ten Broeke, S. Schulz*

Aphrodisiac Pheromones from the Wings of the Small Cabbage White and Large Cabbage White Butterflies, *Pieris rapae* and *Pieris brassicae*

Pheromonally yours: The aphrodisiac pheromones of male Cabbage White butterflies were identified. The small butterfly uses the smaller molecule ferrulactone (**1**) to enhance its mating success, while the large butterfly uses the larger compound brassicalactone (**2**), which is a new natural product. Both compounds are active in combination with hexahydrofarnesylacetone and phytol.



ChemBioChem
DOI: 10.1002/cbic.200900183

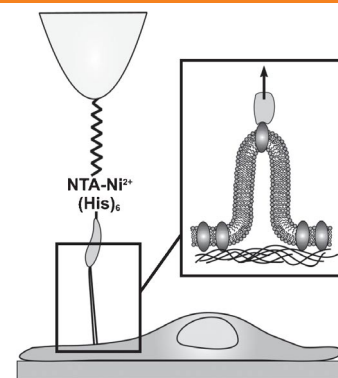


Pathogen–Host Interactions

V. Dupres, C. Verbelen, D. Raze, F. Lafont, Y. F. Dufrêne*

Force Spectroscopy of the Interaction Between Mycobacterial Adhesins and Heparan Sulphate Proteoglycan Receptors

New avenues in pathogenesis research: Single-molecule measurements using AFM elucidate the specific binding forces between pathogen–host interactions. A bacterial adhesin (HBHA) on the AFM tip detects single HSPG receptors directly on living host cells (see figure). In vivo HBHA-HSPG binding forces are similar to those measured in vitro for HBHA-heparin complexes.



ChemPhysChem
DOI: 10.1002/cphc.200900208

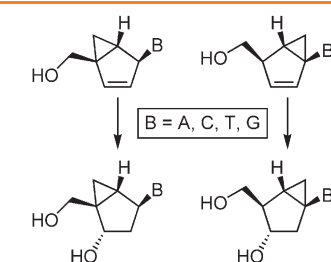


Antiviral Agents

P. L. Russ, M. J. Gonzalez-Moa, B. C. Vu, D. M. Sigano, J. A. Kelley, C. C. Lai, J. R. Deschamps, S. H. Hughes, V. E. Marquez*

North- and South-Bicyclo[3.1.0]Hexene Nucleosides: The Effect of Ring Planarity on Anti-HIV Activity

North or South? The syntheses of conformationally locked North- and South-bicyclo[3.1.0]hexene nucleosides is reported. The relationship between planarity and the *anti/syn* disposition of the nucleobase that is associated with a particular pseudosugar platform are discussed as key parameters in controlling anti-HIV activity.



ChemMedChem
DOI: 10.1002/cmdc.200900153

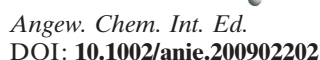


Adducts with Methyltrioxidorhenium

M.-D. Zhou, K. R. Jain, A. Günyar, P. N. W. Baxter,
E. Herdtweck, F. E. Kühn*

Bidentate Lewis Base Adducts of Methyltrioxidorhenium(VII): Ligand Influence on Catalytic Performance and Stability

CH₃ReO₃ (MTO) forms adducts with bidentate Lewis bases. The formation, stability and catalytic activity of the complexes depend on the functional groups attached to the Lewis base ligands.



Zinc–Zinc Bonds

S. Schulz,* D. Schuchmann, I. Krossing,* D. Himmel, D. Bläser,
R. Boese

Structural Characterization of a Base-Stabilized $[\text{Zn}_2]^{2+}$ Cation

Something to zinc about: A base-stabilized $[\text{Zn}_2]^{2+}$ dication, obtained from the reaction of $[\text{Cp}^*\text{Zn}_2(\text{dmap})_2]$ ($\text{Cp}^* = \text{C}_5\text{Me}_5$, $\text{dmap} = 4\text{-dimethylaminopyridine}$) with two equivalents of $[\text{H}(\text{OEt})_2][\text{Al}\{\text{OC}(\text{CF}_3)_3\}_4]$, is structurally characterized for the first time (see structure; red Zn, blue N, gray C; Zn–Zn 2.419(1) Å).

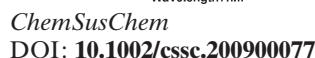


Zincation

W. Clegg, B. Conway,* D. V. Graham, E. Hevia, A. R. Kennedy,
R. E. Mulvey,* L. Russo, D. S. Wright

Structurally Defined Potassium-Mediated Zincation of Pyridine and 4-R-Substituted Pyridines (R = Et, *i*Pr, *t*Bu, Ph, and Me₂N) by Using Dialkyl-TMP-Zincate Bases

Metal cooperation: The direct zincation of various 4-substituted pyridines at the 2-position by potassium–dialkyl–TMP–zincate bases is manifested in novel dimeric dipotassium-capped anthracene-like structures with coordinatively saturated zinc centers (see figure).

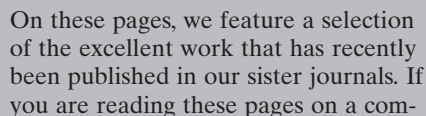


Solar Cells

L. Beverina,* R. Ruffo, C. M. Mari, G. A. Pagani, M. Sassi,
F. De Angelis,* S. Fantacci, J.-H. Yum, M. Grätzel,
M. K. Nazeeruddin*

Panchromatic Cross-Substituted Squaraines for Dye-Sensitized Solar Cell Applications

Forward from square one: The incorporation of a molecularly engineered original panchromatic squaraine sensitizer in a dye-sensitized solar cell enables the preparation of devices having external quantum efficiencies as high as 4.71 %; an unprecedented result for this class of compounds.



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