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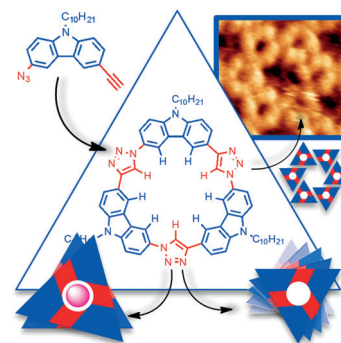


Supramolecular Chemistry

S. Lee, B. E. Hirsch, Y. Liu, J. R. Dobscha, D. W. Burke, S. L. Tait,*
A. H. Flood*

Multifunctional Tricarbazo Triazolophane Macrocycles: One-Pot Preparation, Anion Binding, and Hierarchical Self-Organization of Multilayers

Many programmed behaviors: Macrocycles programmed their own synthesis, chelated non-traditional anions on their insides, and adhered to each other in a regular manner on surfaces. In all these functions, they took advantage of the repeating units of alternating carbazoles and triazoles running along the macrocycles's backbone (see scheme).



Chem. Eur. J.
DOI: 10.1002/chem.201503161

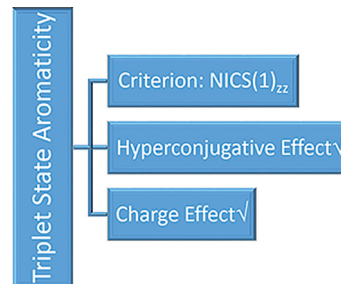


Aromaticity

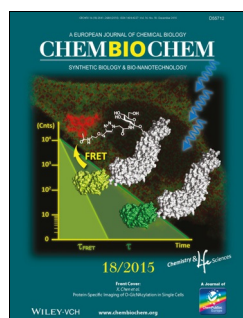
H. Sun, K. An, J. Zhu*

Triplet State Aromaticity: NICS Criterion, Hyperconjugation, and Charge Effects

Triplet state aromaticity: Compared with ground-state aromaticity, excited-state aromaticity is less developed. DFT calculations reveal that NICS(1)_{zz} is the best aromaticity index in the triplet state. In addition, hyperconjugation and charge have significant effects on triplet-state aromaticity.



Chem. Asian J.
DOI: 10.1002/asia.201500897

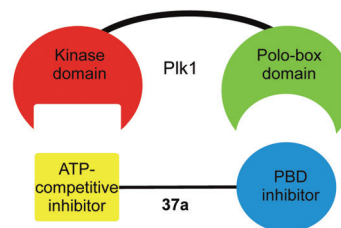


Protein-protein interactions

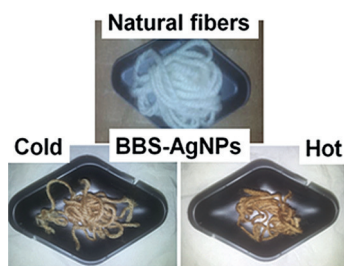
A. Scharow, D. Knappe, W. Reindl, R. Hoffmann, T. Berg*

Development of Bifunctional Inhibitors of Polo-Like Kinase 1 with Low-Nanomolar Activities Against the Polo-Box Domain

Take two: A design strategy for the development of polo-like kinase 1 (Plk1) inhibitors incorporating both an inhibitor of the enzymatic domain and an inhibitor of the polo-box domain (PBD) is reported. The most potent inhibitor displays low-nanomolar activity against the Plk1 PBD and excellent selectivity over the PBDs of Plk2 and Plk3.



ChemBioChem
DOI: 10.1002/cbic.201500535



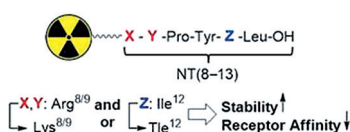
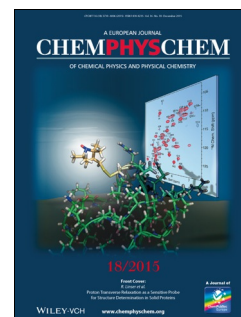
ChemPhysChem
DOI: 10.1002/cphc.201500721

Biopolymers

R. Nisticò,* M. Barrasso, G. A. Carrillo Le Roux, M. M. Seckler, W. Sousa, M. Malandrino, G. Magnacca

Biopolymers from Composted Biowaste as Stabilizers for the Synthesis of Spherical and Homogeneously Sized Silver Nanoparticles for Textile Applications on Natural Fibers

The greener, the better: Biopolymers obtained from biowaste are used as reducing agents/stabilizers for the production of Ag nanoparticles with an increased control in terms of shape, size, and aging. Surface functionalization of natural fibers (wool and cotton) and the release of Ag under both static and dynamic conditions, simulating the normal life of a tissue, are evaluated.



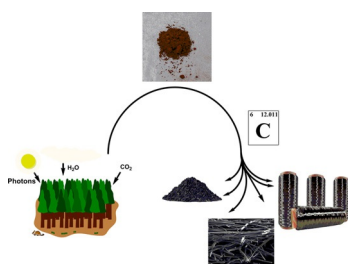
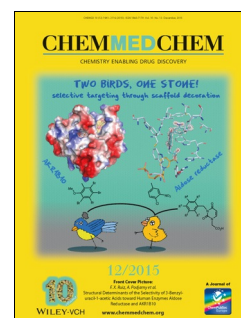
ChemMedChem
DOI: 10.1002/cmdc.201500468

Radiopharmaceuticals

A. Mascarin, I. E. Valverde, T. L. Mindt*

Structure–Activity Relationship Studies of Amino Acid Substitutions in Radiolabeled Neurotensin Conjugates

A level playing field: Standardized experimental conditions for the pre-clinical in vitro evaluation of radiolabeled neurotensin [NT(8–13)] derivatives enabled a thorough structure–activity relationship study of the effects of commonly applied amino acid substitutions on the biological properties of these tumor-targeting peptide conjugates.



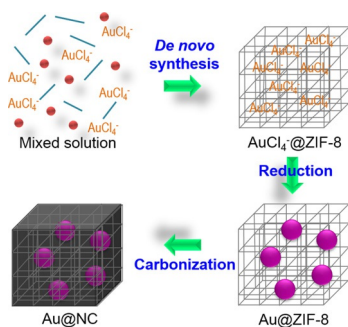
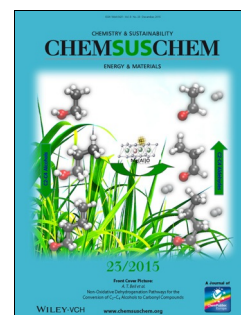
ChemSusChem
DOI: 10.1002/cssc.201500692

Renewable Resources

S. Chatterjee, T. Saito*

Lignin-Derived Advanced Carbon Materials

From trees to advanced carbon materials: Lignin is a highly abundant source of renewable carbon that can be considered as a valuable sustainable source of biobased materials. Lignin manufacturing processes, in particular, the effects of pretreatments and manufacturing methods on the properties of product lignin for various applications of lignin-derived carbon materials are reviewed.



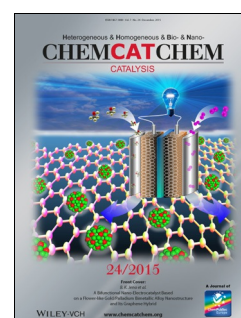
ChemCatChem
DOI: 10.1002/cctc.201501020

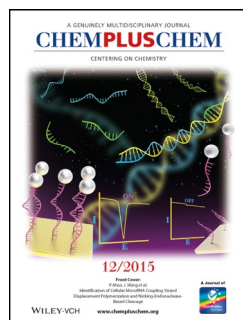
Gold on Carbon

Y.-T. Liao, J. E. Chen, Y. Isida, T. Yonezawa,* W.-C. Chang, S. M. Alshehri, Y. Yamauchi, K. C.-W. Wu*

De Novo Synthesis of Gold-Nanoparticle-Embedded, Nitrogen-Doped Nanoporous Carbon Nanoparticles (Au@NC) with Enhanced Reduction Ability

Pot of gold: Gold-embedded, nitrogen-doped nanoporous carbon nanoparticles (Au@NC) are successfully synthesized from zeolitic imidazolate framework-8 (ZIF-8) and are utilized as a reductive catalyst with enhanced ability to reduce 4-nitrophenol. Au@NC shows a turnover frequency of $1185 \text{ g}^{-1} \text{ s}^{-1}$, which is higher than that of conventional naked Au nanoparticles and that of Au nanoparticles on activated carbon.



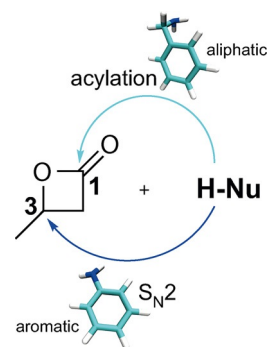


Computational Chemistry

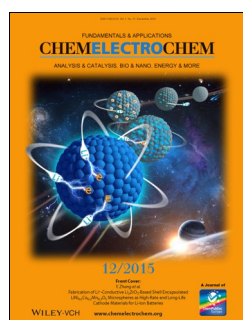
E. N. Wiedemann, F. A. Mandl, I. D. Blank, C. Ochsenfeld,*
A. R. Ofial,* S. A. Sieber*

Kinetic and Theoretical Studies of Beta-Lactone Reactivity—A Quantitative Scale for Biological Application

How reactive? Pharmacologically relevant electrophilic scaffolds, such as beta-lactones and beta-lactams, are kinetically evaluated according to their reactivity towards nucleophiles under physiological conditions (see figure). The ambident character of beta-butyrolactone (C1 vs. C3 attack) towards aromatic and primary aliphatic amines can be shown by kinetic studies and explained by QM/MM calculations using linear-scaling QM methods.



ChemPlusChem
DOI: 10.1002/cplu.201500246

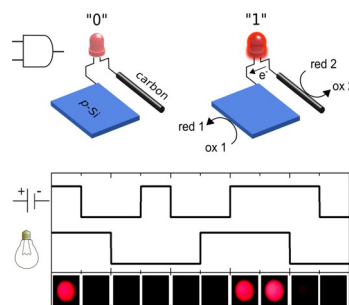


Logic Gates

G. Loget,* B. Fabre*

Light-Driven Bipolar Electrochemical Logic Gates with Electrical or Optical Outputs

Leave the light on: Bipolar electrochemistry is used to operate light-driven AND and OR logic gates that can generate electrical or light outputs. They can be used in a large range of electrolyte concentrations and their operating potential can be lowered using a reversible redox couple in solution.



ChemElectroChem
DOI: 10.1002/celec.201500345

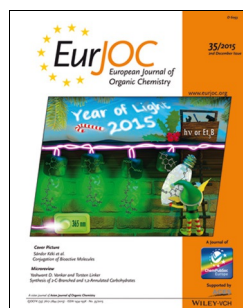
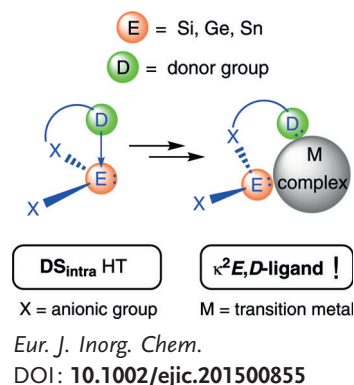


Tetrylenes

J. A. Cabeza, P. García-Álvarez,* D. Polo

Intramolecularly Stabilized Heavier Tetrylenes: From Monodentate to Bidentate Ligands

This microreview shows that intramolecularly stabilized heavier tetrylenes (**DS_{intra}** HTs), which are equipped with only one accessible lone pair of electrons (on the E atom), are attractive candidates to bind transition metals in a bidentate κ^2E,D manner. This might be a useful approach to more robust metallic complexes containing HT ligands.

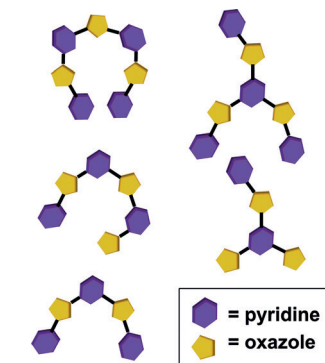


Pyridyl-Oxazole Oligomers

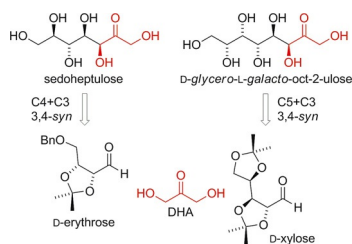
N. Rizeq, S. N. Georgiades*

Linear and Branched Pyridyl-Oxazole Oligomers: Synthesis and Circular Dichroism Detectable Effect on c-Myc G-Quadruplex Helicity

A family of pyridyl-oxazole oligomers with either linear or branched connectivity of their subunits is synthesized. According to circular dichroism spectroscopy, some of the members of this family enhance the helicity of a partially folded c-myc G-quadruplex.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201501269



Carbohydrate Synthesis

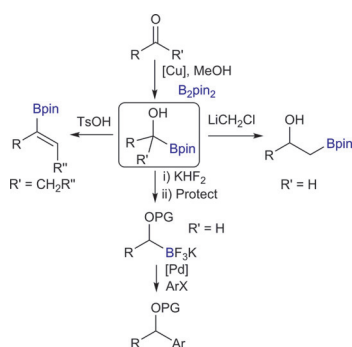
O. Popik, M. Pasternak-Suder, S. Baś, J. Mlynarski*

Organocatalytic Synthesis of Higher-Carbon Sugars: Efficient Protocol for the Synthesis of Natural Sedoheptulose and D-Glycero-L-galacto-oct-2-ulose

Carbo loading: Herein we report a short and efficient protocol for the synthesis of naturally occurring higher-carbon sedoheptulose (D-altohept-2-ulose) and D-glycero-L-galacto-oct-2-ulose from readily available sugar aldehydes and dihydroxyacetone (DHA). The key step includes a diastereoselective organocatalytic syn-selective aldol reaction of DHA with D-erythrose and D-xylose, respectively.

ChemistryOpen

DOI: 10.1002/open.201500099

 α -Hydroxyboronate Esters

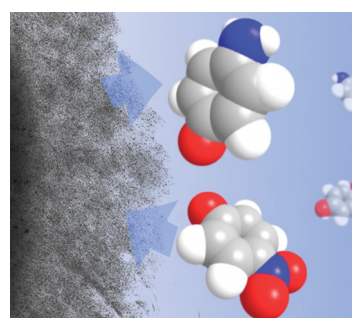
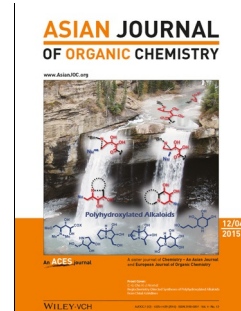
T. B. Clark*

 α -Hydroxyboronate Esters: Formation and Synthetic Applications

α -Hydroxyboronate esters: A review of the formation and synthetic utility of α -hydroxyboronate esters is provided. Access to β -hydroxyboronate esters, trisubstituted vinylboronate esters, and enantioenriched secondary alcohols from the diboronated products are all described. B_2pin_2 = bis(pinacolato)diboron; PG = protecting group.

Asian J. Org. Chem.

DOI: 10.1002/ajoc.201500284



Hybrid Materials

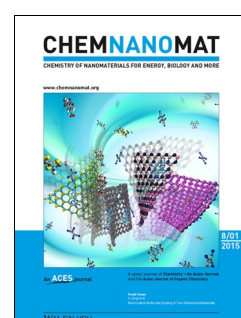
A. Zinchenko,* C. Nagahama, S. Murata

Gold Nanoparticles in DNA-Based Multilayer Films: Synthesis, Size Control, and Influence of the Multilayer Structure on Catalytic Properties

DNA-containing polyelectrolyte multilayers were utilized as host matrices for the synthesis and size control of ultrasmall gold nanoparticles (Au NPs). The resulting thin films with embedded Au NPs are promising hybrid materials for catalytic applications. The size and catalytic activity of Au NPs was shown to depend on the structure of the host multilayer.

ChemNanoMat

DOI: 10.1002/cnma.201500089



Nanomaterials

C. Cobley, H. Yang

Self-Heating Nanocrystal Syntheses

In "Behind the Science", *ChemViews Magazine* gives readers a peek behind the scenes of a research article. This time, Claire Cobley, *ChemNanoMat*, talks to Hong Yang about his recent article on self-heating nanocrystal syntheses that can be used to easily generate a variety of metal nanostructures with uniform morphologies.

ChemViews magazine

DOI: 10.1002/chemv.201500092

