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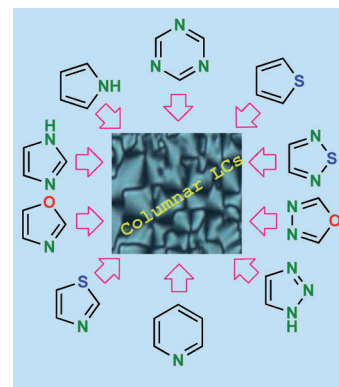


Liquid Crystals

B. Roy,* N. De, K. C. Majumdar*

Advances in Metal-Free Heterocycle-Based Columnar Liquid Crystals

Discipline in fluids! Recent approaches involving the synthesis of columnar liquid crystals based on heterocyclic moieties are highlighted (see figure). This review is intended to realize the important structural features; mesomorphic, electronic, and optical properties; and superiority of applications of these materials.



Chem. Eur. J.
DOI: 10.1002/chem.201200483



Self-Assembly

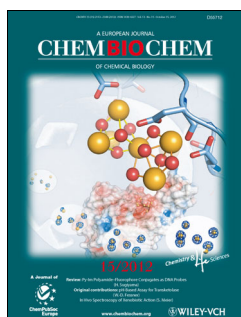
L.-Y. Yao, L. Qin, S.-Y. Yu*

Self-Assembly of Nano-Sized Neutral Metal–Organic Macrocycles from Bis(β -diketone) Ligands

It's hip to be square: Self-assembly of bis(β -diketone) linkers with 90° or 120° angles and square-planer-coordinated divalent copper ions gives rise to the formation of nano-sized M_4L_4 -type neutral metal–organic supramolecular macrocycles, which show promise towards encapsulating solvent or guest molecules.



Chem. Asian J.
DOI: 10.1002/asia.201200588

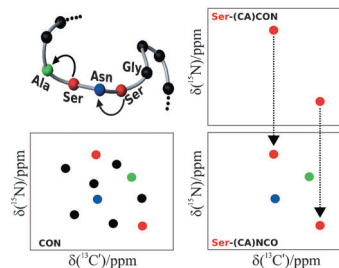


Intrinsically Disordered Proteins

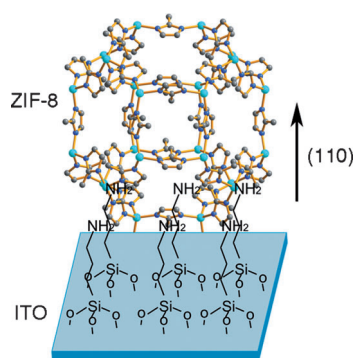
W. Bermel, I. Bertini, J. Chill, I. C. Felli,* N. Haba, V. Kumar M. V., R. Pierattelli*

Exclusively Heteronuclear ^{13}C -Detected Amino-Acid-Selective NMR Experiments for the Study of Intrinsically Disordered Proteins (IDPs)

Avoiding the crowds: We present a suite of ^{13}C -detected amino-acid-selective NMR experiments (CAS-NMR) to simplify crowded spectra, aid the sequence-specific assignment process, and focus on selected amino acids. This set of experiments provides an additional tool, particularly well suited to the study of intrinsically disordered proteins (IDPs).



ChemBioChem
DOI: 10.1002/cbic.201200447



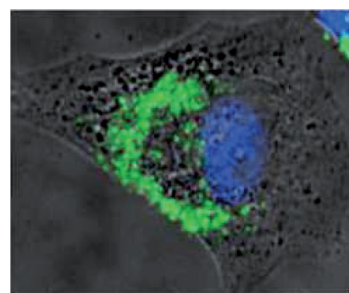
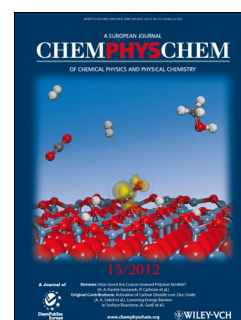
ChemPhysChem
DOI: 10.1002/cphc.201200677

Thin Films

C. Hou, Q. Xu, J. Peng, Z. Ji, X. Hu*

(110)-Oriented ZIF-8 Thin Films on ITO with Controllable Thickness

Layer it down: (110)-oriented zeolitic imidazolate framework-8 thin films with controllable thickness are successfully deposited on self-assembled monolayer-modified indium tin oxide electrodes at room temperature (see picture).



ChemMedChem
DOI: 10.1002/cmdc.201200306

Toxicology

M. Muehlbacher, P. Tripal, F. Roas, J. Kornhuber*

Identification of Drugs Inducing Phospholipidosis by Novel in vitro Data

Supercalifragilistic phospholipidosis! Drug-induced phospholipidosis (PLD) is a lysosomal storage disorder characterized by the accumulation of phospholipids within the lysosome. We tested 297 drug-like compounds at two different concentrations (2.5 μM and 5.0 μM), identifying 28 previously unknown PLD-inducing agents. We also developed a binary classification model to predict PLD-inducing agents based on their molecular properties and discuss associations to other related activities.



green nanopaper



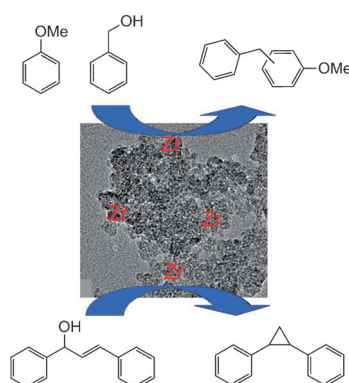
ChemSusChem
DOI: 10.1002/cssc.201200516

Renewable Materials

J. Gutierrez, S. C. M. Fernandes, I. Mondragon, A. Tercjak*

Conductive Photoswitchable Vanadium Oxide Nanopaper based on Bacterial Cellulose

Flexible, conductive nanopaper: A bacterial cellulose mat is used as template for the fabrication of a conductive photoswitchable hybrid nanopaper by the incorporation of sol-gel synthesized vanadium nanoparticles. A simple, rapid, and low-cost pathway is developed for the production of vanadium oxide nanopaper. This work enables a new strategy for the fabrication of flexible, conductive, and optically active photochromic nanopaper.



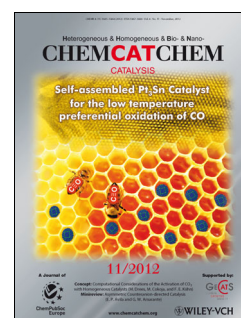
ChemCatChem
DOI: 10.1002/cctc.201200175

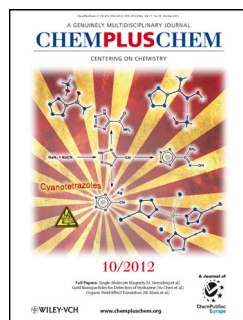
Mixed Oxides

H. Kaper,* K. Bouchmella, P. H. Mutin, F. Goettmann

High-Surface-Area $\text{SiO}_2\text{-ZrO}_2$ Mixed Oxides as Catalysts for the Friedel–Crafts-Type Alkylation of Arenes with Alcohols and Tandem Cyclopropanation Reactions

In the mix: High-surface-area $\text{ZrO}_2\text{-SiO}_2$ mixed oxides synthesized by using non-hydrolytic sol-gel chemistry show good catalytic activity for the Friedel–Crafts-alkylation reaction. The catalyst can also be used in a tandem intra-Friedel–Crafts-alkylation/*trans*-hydrogenation process for the synthesis of substituted cyclopropanes.



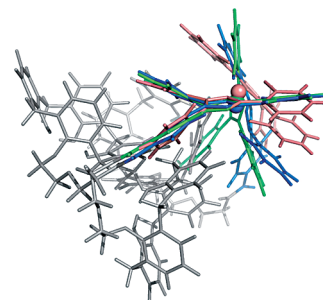


Substituted Calix[4]arenes

P. Rouge, A. Dassonville-Klimpt, C. Cézard, S. Boudesocque, R. Ourouda, C. Amant, F. Gaboriau, I. Forfar, J. Guillon, E. Guillon, E. Vanquelef, P. Cieplak, F.-Y. Dupradeau, L. Dupont, P. Sonnet*

Synthesis, Physicochemical Studies, Molecular Dynamics Simulations, and Metal-Ion-Dependent Antiproliferative and Antiangiogenic Properties of Cone ICL670-Substituted Calix[4]arenes

Let's stick together: A series of calix[4]arenes substituted at the lower rim with ICL670, a strong Fe^{III} chelator (see figure), has been synthesized. This grafting improved the iron-chelating and lipophilicity properties of the calixarenes and their antiproliferative and antiangiogenic properties were investigated.



ChemPlusChem
DOI: 10.1002/cplu.201200141

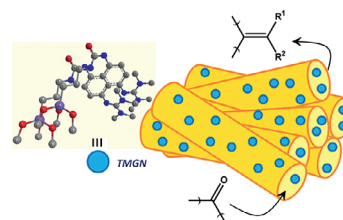


Hybrid Catalysts

E. Gianotti, U. Diaz, A. Velty, A. Corma*

Strong Organic Bases as Building Blocks of Mesoporous Hybrid Catalysts for C–C Forming Bond Reactions

The TMGN/SiO₂ hybrid catalyst was synthesized using 1,8-bis(tetramethylguanidino)naphthalene (TMGN). It combines the properties of guanidine and of proton sponges. A functionalized TMGN builder was introduced directly into a nonordered mesoporous silica by the NH₄F-catalyzed sol-gel route. This catalyst shows good catalytic performances in C–C bond forming reactions.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201200716

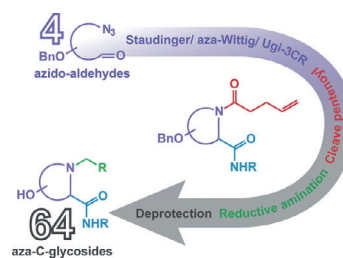


Aza-C-Glycosides

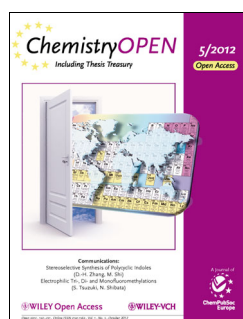
T. Wennekes, K. M. Bongers, K. Vogel, R. J. B. H. N. van den Berg, A. Strijland, W. E. Donker-Koopman, J. M. F. G. Aerts, G. A. van der Marel, H. S. Overkleeft*

The Development of an Aza-C-Glycoside Library Based on a Tandem Staudinger/Aza-Wittig/Ugi Three-Component Reaction

We report the synthesis of a 64-member compound library of aza-C-glycosides starting from four carbohydrate-derived azido aldehydes by using the Staudinger/aza-Wittig/Ugi three-component reaction. A preliminary biological evaluation of the compound library as inhibitors of human acid glucosylceramidase is also reported.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201200923

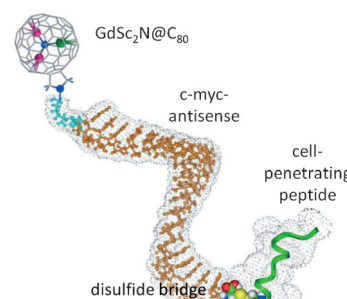


Molecular Imaging

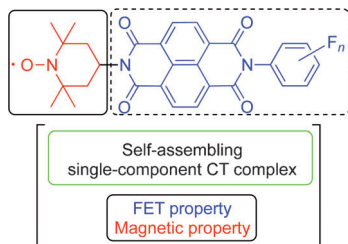
A. Svitova, K. Braun,* A. A. Popov, L. Dunsch*

A Platform for Specific Delivery of Lanthanide–Scandium Mixed-Metal Cluster Fullerenes into Target Cells

A shuttle into cells: A modular c-myc-antisense-Gd@BioShuttle system (see figure), comprising a gadolinium-containing nitride cluster fullerene as an imaging component, an address module (nuclear localization sequence) and a transmembrane carrier peptide, is prepared, and its facile intracellular localization is proven by in vitro studies.



ChemistryOpen
DOI: 10.1002/open.201200023



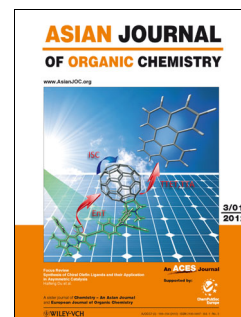
Asian J. Org. Chem.
DOI: 10.1002/ajoc.201200095

Self-Assembly

S. Nakatsuji,* K. Aoki, A. Kojoh, H. Akutsu, J.-i. Yamada, M. Karakawa, Y. Aso

Self-Assembling Aryl-Naphthalendiimide Derivatives with a Nitroxide Radical

Who's in charge? Polyfluorophenyl- as well as 2,2,6,6-tetramethylpiperidine-1-oxyl (TEMPO)-substituted naphthalenediimide derivatives form single-component charge-transfer complexes by self-assembly. In these complexes, the TEMPO group works as a donor and polyfluorophenyl-naphthalendiimide as an acceptor, respectively.



ChemViews magazine
DOI: 10.1002/chemv.201200093

Natural Products

ChemViews

Guess the Chemist (10)

This person is known for their work on the isolation and structural elucidation of natural products. In particular, this person was fascinated by the non-benzenoid aromatic ring of hinokitiol and performed many reactions on it and its derivatives. This led to the synthesis of tropolone and tropone and the exploration of their reactivity. Who are we looking for?

