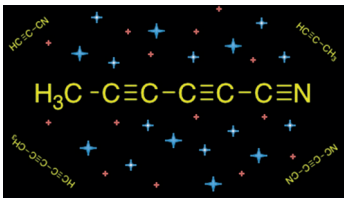
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Interstellar Chemistry

N. Kerisit, L. Toupet, Y. Trolez,* J.-C. Guillemin*

Methylcyanobutadiyne: Synthesis, X-ray Structure and Photochemistry; Towards an Explanation of Its Formation in the Interstellar Medium

Out of this world: A new convenient synthesis of methylcyanobutadiyne (see figure), an interstellar compound, is described. It was characterized by various techniques including X-ray structure determination. Photolysis experiments were carried out on binary gaseous mixtures of interstellar relevant compounds to understand how methylcyanobutadiyne could be formed in the interstellar medium.



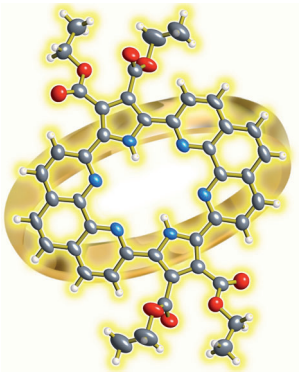
Chem. Eur. J.
DOI: **10.1002/chem.201303377**

Macrocycles

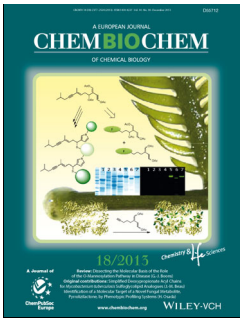
A. McSkimming, S. Shrestha, M. M. Bhadbhade, P. Thordarson, S. B. Colbran*

Macrocyclic Bis(phenanthroline-pyrrole): A Convenient One-Pot Synthesis, Structure(s), Spectroscopic, and Redox Properties, and the Binding of Amine Guests, Protons, and Lanthanide Ions

This MC is great: A remarkable chemistry—including the cooperative binding and catalytic electrooxidation of primary amines, the photodehydrochlorination of dichloromethane, and the formation of unique lanthanide complexes—is uncovered for the highly luminescent large-ring macrocycle $H_2\mathbf{L}_{MC}$, which is easily made in large (multi-gram scale) quantities.



Chem. Asian J.
DOI: **10.1002/asia.201301053**

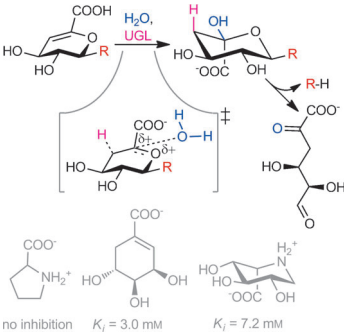


Enzyme Mechanisms

S. A. K. Jongkees, H. Yoo, S. G. Withers*

Mechanistic Insights from Substrate Preference in Unsaturated Glucuronyl Hydrolase

Transition state mimicry: Kinetic data from synthetic aryl unsaturated glycosides and unsaturated glucuronyl fluorides provide evidence for a positively charged transition state in *Clostridium perfringens* unsaturated glucuronyl hydrolase. Testing of inhibitors based on this transition state showed poor inhibition and suggests that the current model is incomplete.



ChemBioChem
DOI: **10.1002/cbic.201300547**

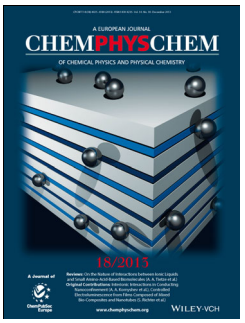
ChemPhysChem
DOI: **10.1002/cphc.201300744**

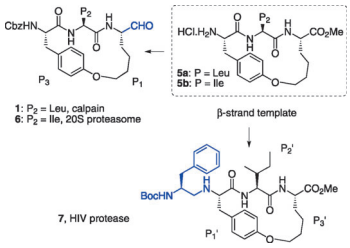
Biomimetics

Y. Zhao*

Cooperatively Enhanced Receptors for Biomimetic Molecular Recognition

Stick, twist, or fold? A characteristic of protein receptors is the delocalization of binding interactions. Unlike preorganized hosts, these cooperatively enhanced receptors rely on positive cooperativity between intrahost interactions, altered solvent shells, and released solvent molecules to achieve high binding affinity. Such receptors abound in nature and have inspired chemists to create synthetic hosts that mimic proteins in their binding cooperativity.





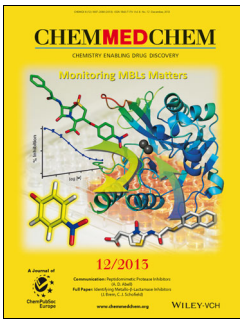
ChemMedChem
DOI: **10.1002/cmdc.201300387**

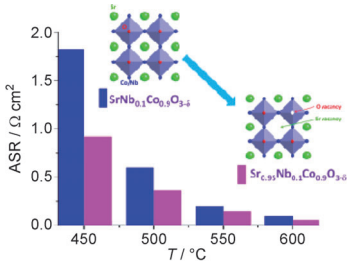
Peptidomimetics

S. A. Jones, P. M. Neilsen, L. Siew, D. F. Callen, N. E. Goldfarb, B. M. Dunn, A. D. Abell*

A Template-Based Approach to Inhibitors of Calpain 2, 20S Proteasome, and HIV-1 Protease

Specificity counts: A template-based approach to protease inhibitors is presented using a core macrocycle that presents a generic β-strand template for binding to protease active sites. This is then specifically functionalized at P_2, and the C and N termini to give inhibitors of calpain 2, 20S proteasome, and HIV-1 protease.





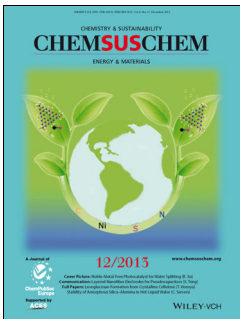
ChemSusChem
DOI: **10.1002/cssc.201300694**

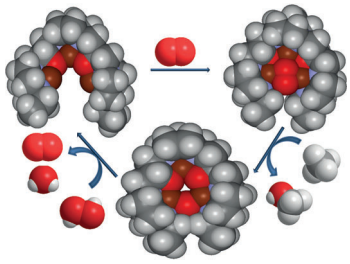
Fuel Cells

Y. L. Zhu, Z.-G. Chen, W. Zhou,* S. S. Jiang, J. Zou, Z. P. Shao*

An A-Site-Deficient Perovskite offers High Activity and Stability for Low-Temperature Solid-Oxide Fuel Cells

A site to be seen: The perovskite $Sr_{0.95}Nb_{0.1}Co_{0.9}O_{3-\delta}$ (SNC0.95) with A-site deficiencies shows high activity towards the oxygen reduction reaction (ORR) at low operating temperatures due to its large oxygen vacancy concentration and high electrical conductivity. Moreover, SNC0.95 shows excellent structural stability and chemical compatibility. The CO_2 resistivity is also improved. These merits show that SNC0.95 is a promising cathode material for low-temperature solid oxide fuel cells.





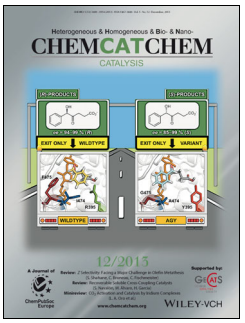
ChemCatChem
DOI: **10.1002/cctc.201300473**

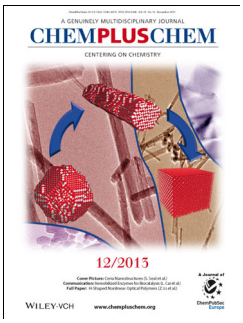
Methane Conversion

P. P.-Y. Chen, P. Nagababu, S. S.-F. Yu, S. I. Chan*

Development of the Tricopper Cluster as a Catalyst for the Efficient Conversion of Methane into MeOH

Three and easy: A class of tricopper complexes has been developed as mimics of the catalytic site of particulate methane monooxygenase. These $Cu^{I}Cu^{I}Cu^{I}$ clusters are capable of the efficient oxidation of methane into MeOH upon activation by O_2 at room temperature. The conversion is catalytic if H_2O_2 is used to drive the turnover.



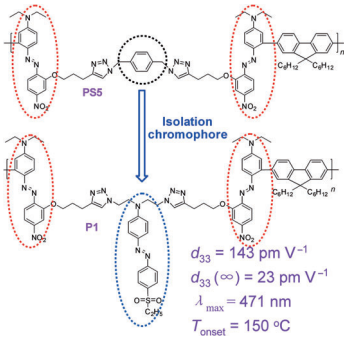


Nonlinear Optics

W. Wu, C. Ye, J. Qin, Z. Li*

Introduction of an Isolation Chromophore into an "H"-Shaped NLO Polymer: Enhanced NLO Effect, Optical Transparency, and Stability

Get in shape: "H"-shaped NLO polymer **P1** was designed and synthesized through Suzuki coupling copolymerization. An "isolation chromophore" was introduced to improve the comprehensive performance of the designed **P1**. In comparison with normal "H"-shaped NLO polymers, which only contain one type of chromophore moiety, performance in almost all areas was improved.



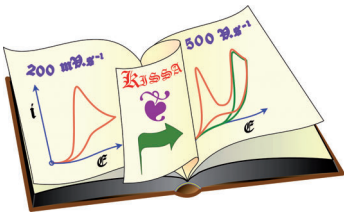
ChemPlusChem
DOI: **10.1002/cplu.201300252**

Reaction Mechanisms

O. V. Klymenko, O. Buriez, E. Labbé, D.-P. Zhan, S. Rondinini, Z.-Q. Tian, I. Svir,* C. Amatore*

Uncovering the Missing Link between Molecular Electrochemistry and Electrocatalysis: Mechanism of the Reduction of Benzyl Chloride at Silver Cathodes

Hidden Universe between two Worlds: The reduction of $PhCH_2Cl$ provides the first example of the missing link between molecular electrochemistry and electrocatalysis. This link is established from an investigation of the reaction mechanism over a wide range of experimental timescales and by comparison to theoretical voltammetric predictions by using KISSA-1D software.



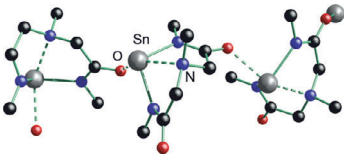
ChemElectroChem
DOI: **10.1002/celc.201300101**

N-Heterocyclic Diazastannylenes

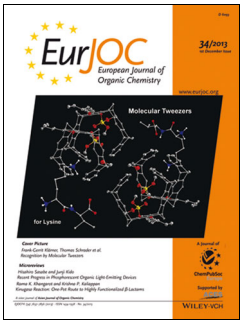
L. Iovkova-Berends, M. Seiger, T. Westfeld, A Hoffmann, S. Herres-Pawlis, K. Jurkschat*

Extending the Family of N-Heterocyclic Heavy Carbene Analogues: Synthesis and Crystal and Molecular Structures of $MeN[CH_2C(O)N(R)]_2Sn$ (R = $Me_2NCH_2CH_2$, $PhCH_2$, Me_3CCH_2)

A novel type of intramolecularly coordinated N-heterocyclic diazastannylene is reported that holds great potential for subsequent chemistry due to its high stability in air and the many possibilities to vary the substituents.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201300535**

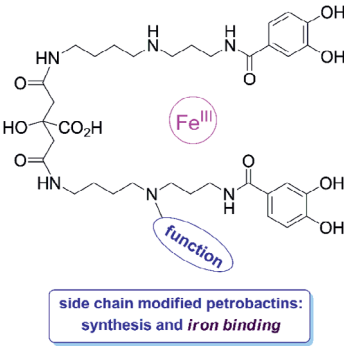


Siderophores

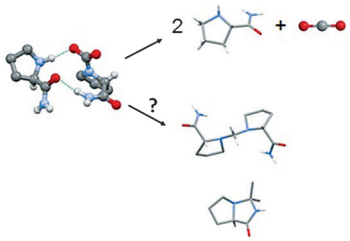
N. Bugdahn, M. Oberthür*

Syntheses and Iron Binding Affinities of the *Bacillus anthracis* Siderophore Petrobactin and Sidechain-Modified Analogues

The determination of the Fe^{III} binding affinity (pFe^{III}) for various sidechain-modified petrobactins proved that a modification of the central spermidine amino group has only a minor influence on complex formation. Accordingly, such siderophore derivatives are promising starting points for the development of tools for the study of iron homeostasis in bacteria.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201301340**



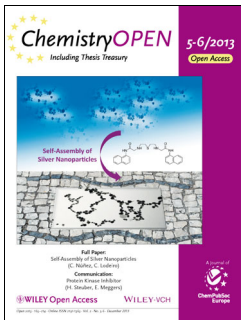
Solid-State Chemistry

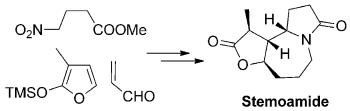
A. Tilborg, S. Lanners, B. Norberg, J. Wouters*

Solid-State-Trapped Reactive Ammonium Carbamate Self-Derivative Salts of Prolinamide

Trapped within: We report single-crystal characterization of polymorphs of the ammonium carbamate self-derivative salt of prolinamide, and the first crystal structure of prolinamide and of derived products. This study emphasizes the reactivity of carbonated amines in the solid state and opens perspectives for a systematic study of (solid-state) reactions involving these trapped reactive species.

ChemistryOpen
DOI: **10.1002/open.201300025**





Total Synthesis

Z. Li, L. Zhang,* F. G. Qiu*

A Concise Stereocontrolled Total Synthesis of (±)-Stemoamide

Hit for six: (±)-Stemoamide was synthesized in six steps starting from readily accessible 2-trimethylsilioxy-3-methylfuran, methyl-4-nitrobutyrate, and acrolein after converting the nitro group into a ketone and a subsequent reductive amination.

Asian J. Org. Chem.
DOI: **10.1002/ajoc.201300205**