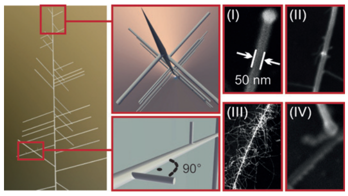
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Nanostructures

P. Schönherr, T. Hesjedal*

One-Step SnO_2 Nanotree Growth

If a nanotree falls in the forest...: A comparison between Au, TiO_2 and self-catalysed growth of SnO2 nanostructures using chemical vapour deposition is reported. Using Au catalyst, single-crystalline SnO_2 nanowire trees can be grown in a one-step process. Two types of trees are identified that differ in size, presence of a catalytic tip and degree of branching.



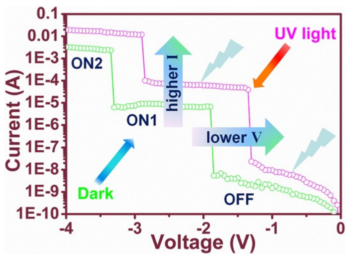
Chem. Eur. J.
DOI: **10.1002/chem.201602333**

Donor–Acceptor Systems

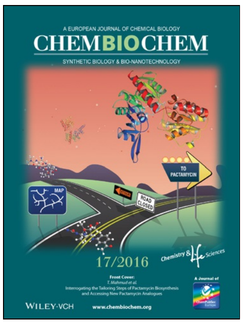
Y. Li, H. Li,* J. He, Q. Xu, N. Li, D. Chen, J. Lu*

Towards Highly-Efficient Phototriggered Data Storage by Utilizing a Diketopyrrolopyrrole-Based Photoelectronic Small Molecule

Phototrigger happy TV: A cooperative photoelectrical strategy is proposed for improving the working parameters of a ternary memory-storage device. By taking advantage of organic photoelectronic molecules as storage media, this study opens up the possibility of integrating multiple functionalities into a single device for highly efficient multi-level data storage.



Chem. Asian J.
DOI: **10.1002/asia.201600692**

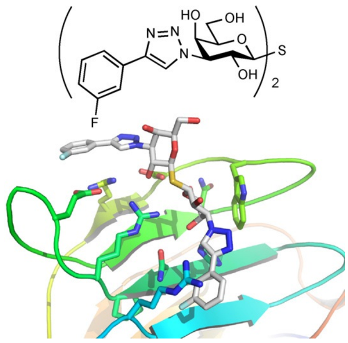


Glycomimetics

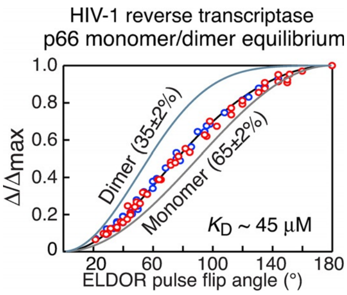
T. Delaine, P. Collins, A. MacKinnon, G. Sharma , J. Stegmayr, V. K. Rajput, S. Mandal, I. Cumpstey, A. Larumbe, B. A. Salameh, B. Kahl-Knutsson, H. van Hattum, M. van Scherpenzeel, R. J. Pieters, T. Sethi, H. Schambye, S. Oredsson, H. Leffler, H. Blanchard,* U. J. Nilsson*

Galectin-3-Binding Glycomimetics that Strongly Reduce Bleomycin-Induced Lung Fibrosis and Modulate Intracellular Glycan Recognition

Dot removal: Highly potent galectin-1 and -3 antagonists were discovered through synthesis, optimization, and structural analysis of doubly C3-aryltriazolyl-substituted thiodigalactosides. The synthetic ligands efficiently inhibit intracellular galectin-3 accumulation in dots on damaged vesicles and attenuate experimentally induced lung fibrosis.



ChemBioChem
DOI: **10.1002/cbic.201600285**



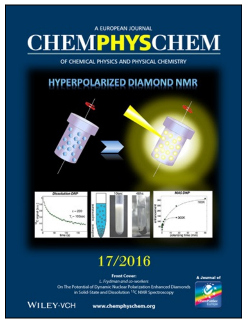
EPR Spectroscopy

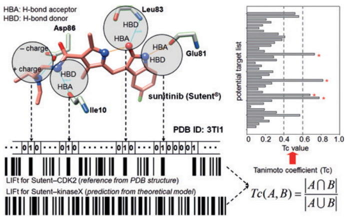
T. Schmidt, R. Ghirlando, J. Baber, G. M. Clore*

Quantitative Resolution of Monomer-Dimer Populations by Inversion Modulated DEER EPR Spectroscopy

DEER in the headlights: Analysis of modulation depth for a double electron–electron resonance dipolar evolution curve as a function of electron double resonance (ELDOR) pulse flip angle is an effective and reliable electron paramagnetic resonance (EPR) method for resolving monomer/dimer populations in a frozen glass. The technique is demonstrated using the p66 subunit of HIV-1 reverse transcriptase where dimerization is modulated by glycerol, a universal cryo-protectant widely used in EPR spectroscopy.

ChemPhysChem
DOI: **10.1002/cphc.201600726**





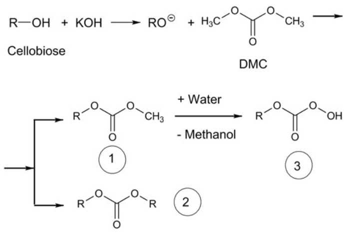
Polypharmacology

R. Cao, Y. Wang*

Predicting Molecular Targets for Small-Molecule Drugs with a Ligand-Based Interaction Fingerprint Approach

Off-target prediction: Herein we introduce a ligand-based interaction fingerprint (LIFt) approach to predict molecular targets for small-molecule drugs. The power of this approach is evident for both retrospectively modeling the polypharmacology of established kinase inhibitors and prospectively predicting new targets for clinical drug candidates.

ChemMedChem
DOI: **10.1002/cmdc.201500228**



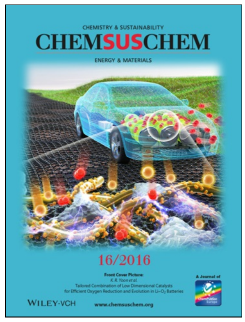
Renewables

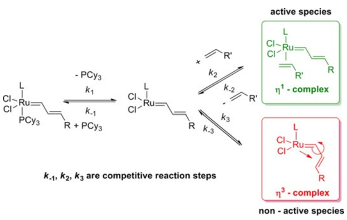
R. Khiari, M.-C. Brochier-Salon, M. F. Mhenni, E. Mauret, M. N. Belgacem*

A New Way to Produce Cellobiose Carbonates Using Green Chemistry

The green route: The derivatization of cellobiose through green chemistry is established using dimethyl carbonate as an carbonylation reagent. This reaction holds promise for applications in the industrial-scale derivatization of cellulose, as it enables a form of cellobiose carbonate to be prepared at low temperatures using cheap, environmentally friendly, and low-toxicity reagents.

ChemSusChem
DOI: **10.1002/cssc.201600430**





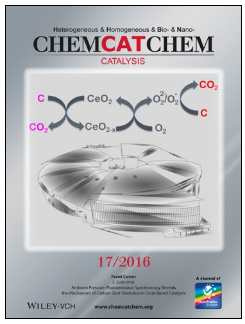
Metathesis

Á. Balla, M. Al-Hashimi, A. Hlil, H. S. Bazzi, R. Tuba*

Ruthenium-Catalyzed Metathesis of Conjugated Polyenes

Metathesize it up: An understanding of the mechanism of the interconversion of ruthenium N-heterocyclic carbene η^1–η^3-allyl complexes may open the way for the development of a new generation of ruthenium-based latent metathesis catalyst systems. This review summarizes the most relevant pioneering work focused on conjugated polyene metathesis to lead to new ideas for the development of forthcoming metathesis catalysts in different applications.

ChemCatChem
DOI: **10.1002/cctc.201600479**

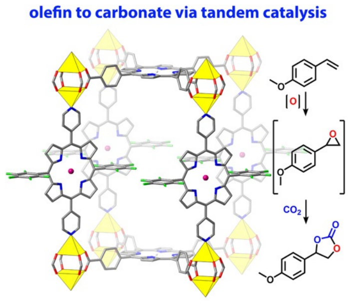


Metal–Organic Frameworks

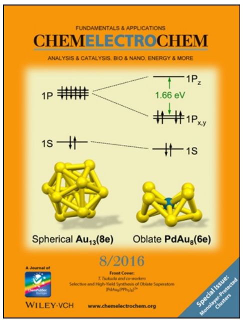
M. H. Beyzavi, N. A. Vermeulen, K. Zhang, M. So, C.-W. Kung, J. T. Hupp,* O. K. Farha*

Liquid-Phase Epitaxially Grown Metal–Organic Framework Thin Films for Efficient Tandem Catalysis Through Site-Isolation of Catalytic Centers

Tandem catalysis: A tandem epoxidation/CO_2 insertion is shown in a metal–organic framework, composed of two Mn-porphyrin units, which catalyze the epoxidation of an olefin substrate, and a Zn-porphyrin, which catalyzes the epoxide-opening reaction (see figure). A film of this MOF constructed in layer-by-layer fashion is more catalytically active than the bulk prepared crystalline MOF.



ChemPlusChem
DOI: **10.1002/cplu.201600046**

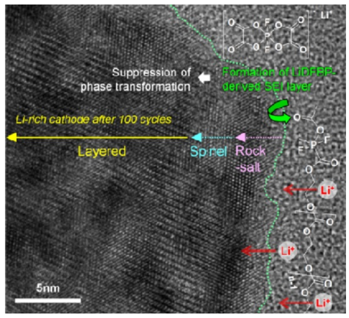


Lithium-rich Cathodes

J.-G. Han, I. Park, J. Cha, S. Park, S. Park, S. Myeong, W. Cho, S.-S. Kim, S. Y. Hong, J. Cho,* N.-S. Choi*

Interfacial Architectures Derived by Lithium Difluoro(bisoxalato) Phosphate for Lithium-Rich Cathodes with Superior Cycling Stability and Rate Capability

Surface alterations: The lithium difluoro(bisoxalato)phosphate (LiDFBP)-derived solid electrolyte interphase (SEI) layer effectively suppresses unwanted electrolyte decomposition at high voltages and mitigates the voltage decay of lithium-rich cathodes caused by phase transformation to spinel-like phases during cycling (see figure). Lithium-rich cathodes with the LiDFBP additive exhibit substantially improved cycling performance and rate capability.



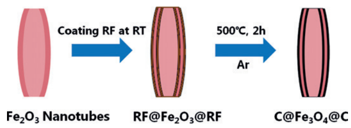
ChemElectroChem
DOI: **10.1002/celc.201600297**

Hollow Sandwiched Structures

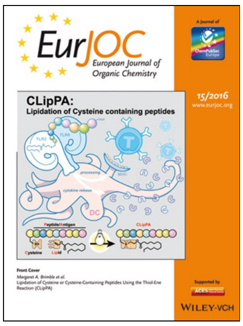
X. Ma, L. Huang, F. Wu, S. Xiong, B. Xi*

Formation of $C@Fe_3O_4@C$ Hollow Sandwiched Structures with Enhanced Lithium-Storage Properties

$C@Fe_3O_4@C$ hollow sandwiched composite structures are obtained by a hydrothermal process and are coated with a resorcinol–formaldehyde (RF) resin layer by the sol–gel method, followed by subsequent thermal treatment. The excellent electrochemical activities are due to the unique hollow sandwiched composite structure and good electrical conductivity.



Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201600432**

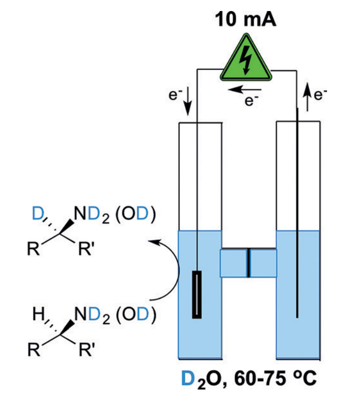


Electrocatalysis

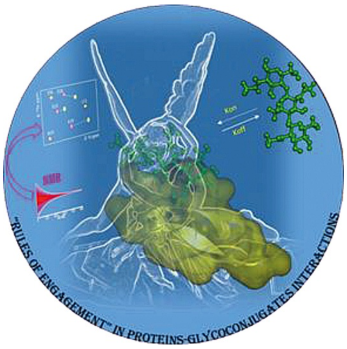
S. Bhatia, G. Spahlinger, N. Boukhumseen, Q. Boll, Z. Li, J. E. Jackson*

Stereoretentive H/D Exchange via an Electroactivated Heterogeneous Catalyst at sp^3 C–H Sites Bearing Amines or Alcohols

An electrocatalytic strategy is reported that allows stereoretentive and regioselective H/D exchange in amines, alcohols and amino acids. The conversions are performed at ambient pressure in D_2O at 60–75 °C and 10 mA.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201600719**



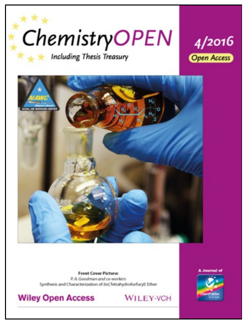
ChemistryOpen
DOI: **10.1002/open.201600024**

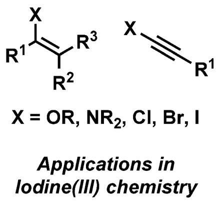
Glycoconjugates

R. Marchetti, S. Perez, A. Arda, A. Imberty, J. Jimenez-Barbero, A. Silipo,* A. Molinaro*

"Rules of Engagement" of Protein–Glycoconjugate Interactions: A Molecular View Achievable by using NMR Spectroscopy and Molecular Modeling

Rules of engagement: This review focuses on the development and use of modern nuclear magnetic resonance (NMR) techniques, complementing molecular modeling methodologies, able to provide a complete picture of protein–glycoconjugate binding mechanisms related to biomedicine applications against infectious diseases.





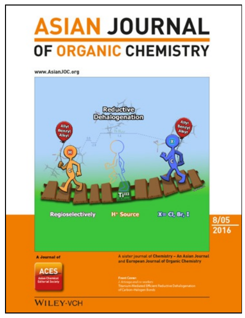
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201600246**

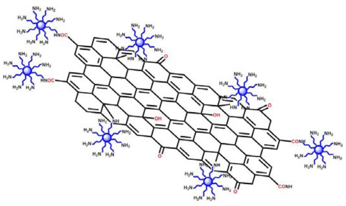
Hypervalent Iodine Chemistry

A. J.-D. Lauriers, C. Y. Legault*

Enol and Ynol Surrogates: Promising Substrates for Hypervalent Iodine Chemistry

Surrogates: In numerous iodine(III)-mediated methodologies that involve ketone compounds, the enol tautomer is expected to be the reactive species. In this context, the exploration of enol and ynol surrogates is of great interest. This Focus Review will describe the research involving these substrates to gain insight into the similarities and disparities observed in their reactivity profiles.





ChemNanoMat
DOI: **10.1002/cnma.201600131**

Graphene Oxide Functionalization

J. Fu,* P. Zong, L. Chen, X. Dong, D. Shang, W. Yu, L. Shi, W. Deng

A Facile Approach to Covalently Functionalized Graphene Nanosheet Hybrids and Polymer Nanocomposites

At the interface: A facile and cost-effective method is demonstrated to improve graphene oxide (GO) dispersion and interface quality in an epoxy matrix by simultaneously functionalizing and reducing GO by covalently grafting organic aminopropyl-functionalized nanosilica sols (OAS). The covalent functionalization of GO with OAS makes the hydrophilic GO become hydrophobic and provides the active sites that allow linking between the graphene-based sheets and the epoxy matrix, which ensures improved thermal conductivity and mechanical properties.

ChemViews magazine
DOI: **10.1002/chemv.201600076**

Desalination

C. Goedecke

TUM DeSal Challenge 2016: Team SolarPura

In the "TUM DeSal Challenge" at the Technical University of Munich, Germany, students build seawater desalination plants powered solely by renewable energies. In a video, Team SolarPura explain their humidification-dehumidification plant.