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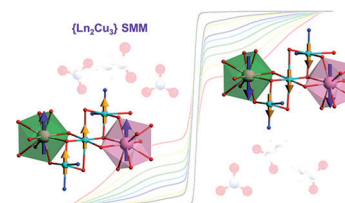


Single-Molecule Magnets

M. Heras Ojea, V. A. Milway, G. Velmurugan, L. H. Thomas, S. J. Coles, C. Wilson, W. Wernsdorfer, G. Rajaraman,* M. Murrie*

Enhancement of Tb^{III}–Cu^{II} Single-Molecule Magnet Performance through Structural Modification

Mixing up your metals: A new series of {Ln₂Cu₃(H₃L)₂X_n} complexes (Ln=Gd, Tb, Dy, Ho and Er), assembled using the ligand 2,2'-(propane-1,3-diyl-diimino)bis[2-(hydroxymethyl)propane-1,3-diol], are reported. When Ln=Tb, Dy, Ho or Er, slow magnetic relaxation in zero applied dc field is seen. Changing the auxiliary ligands (X) leads to the largest reported relaxation barrier, in zero applied DC field, for a Tb/Cu-based single-molecule magnet (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201601971

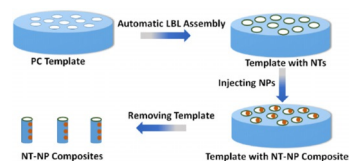


Layer-by-layer Assembly

R. Fan, J. Li, J. Fei, J. Zhao, A. Wang, B. Sun, J. Li*

Automatic Assembly of Ultra-Multilayered Nanotube–Nanoparticle Composites

It's about time: Nanotube–nanoparticle composites are fabricated by template-directed automatic layer-by-layer assembly with the assistance of pressure. This assembly strategy above allows the facile construction of uniform complex nanostructures with ultra-multilayers (≈ 200). Importantly, it takes much less time than conventional manual manipulation.



Chem. Asian J.
DOI: 10.1002/asia.201600405

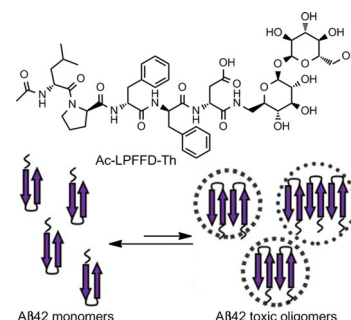


Amyloid peptides

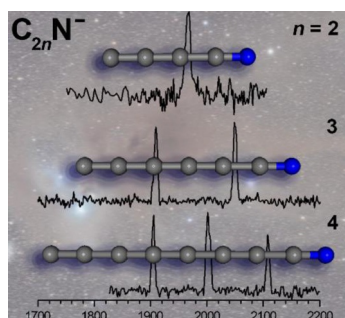
A. Sinopoli, A. Giuffrida, M. F. Tomasello, M. L. Giuffrida, M. Leone, F. Attanasio, F. Caraci, P. De Bona, I. Naletova, M. Saviano, A. Copani, G. Pappalardo,* E. Rizzarelli

Ac-LPFFD-Th: A Trehalose-Conjugated Peptidomimetic as a Strong Suppressor of Amyloid- β Oligomer Formation and Cytotoxicity

Neuroprotective agents: Ac-LPFFD-Th prevents A β fibrillization, allows the survival of monomeric A β in solution. The compound protects the viability of cortical neurons exposed to toxic A β oligomers. A combined synergic action of the peptide/glycosyl moieties is envisaged. Evidence from this work provides insights for future design of neuroprotective agents.



ChemBioChem
DOI: 10.1002/cbic.201600243



ChemPhysChem

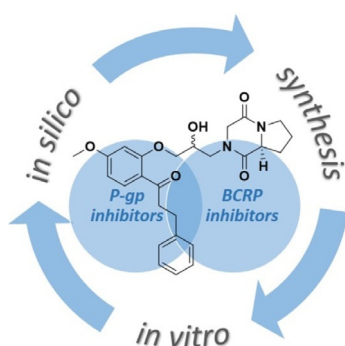
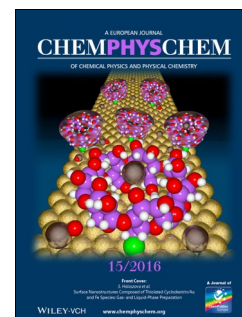
DOI: 10.1002/cphc.201600598

Vibrational Spectroscopy

E. C. Stanca-Kaposta,* F. Schwaneberg, M. R. Fagiani, M. Lalanne, L. Wöste, K. R. Asmis*

Infrared Photodissociation Spectroscopy of C_4N^- , C_6N^- and C_8N^-

Are you out there? Vibrational spectra of cold $C_{2n}N^-$ ($n=2-4$) anions are measured in the C–C and C–N multiple bond stretching region and assigned to N-terminated linear structures with $^3\Sigma^-$ ground states, based on comparison with vibrational frequencies and intensities from DFT computations. These results might prove beneficial in detecting these species in the interstellar medium and circumstellar envelopes.



ChemMedChem

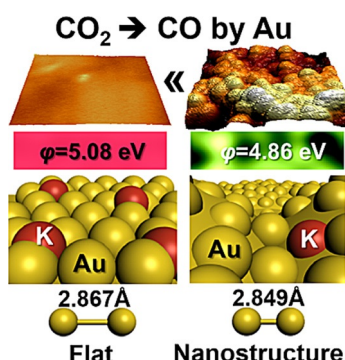
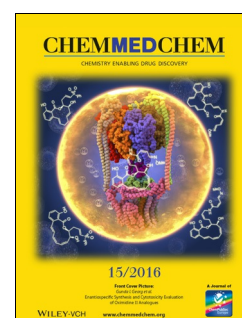
DOI: 10.1002/cmdc.201500592

Polypharmacology

T. Schwarz, F. Montanari, A. Cseke, K. Wlcek, L. Visvader, S. Palme, P. Chiba, K. Kuchler, E. Urban, G. F. Ecker*

Subtle Structural Differences Trigger Inhibitory Activity of Propafenone Analogues at the Two Polyspecific ABC Transporters: P-Glycoprotein (P-gp) and Breast Cancer Resistance Protein (BCRP)

P-gp versus BCRP: This study comprises a combined approach of synthesis, in silico prediction, and in vitro testing to identify molecular features triggering transporter selectivity. Synthesis and testing of a series of 15 propafenone analogues with varied rigidity and basicity of substituents provide first trends for selective and dual inhibitors.



ChemSusChem

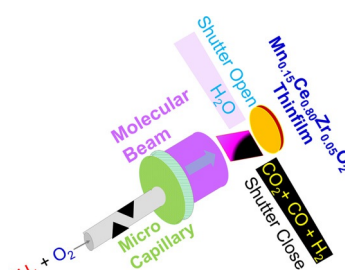
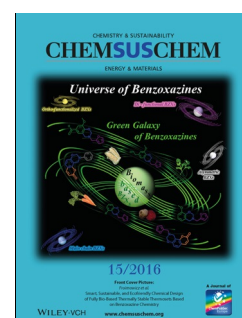
DOI: 10.1002/cssc.201600228

Carbon Dioxide Chemistry

H. Kim, H. S. Jeon, M. S. Jee, E. B. Nursanto, J. P. Singh, K. Chae, Y. J. Hwang,* B. K. Min*

Contributors to Enhanced CO_2 Electroreduction Activity and Stability in a Nanostructured Au Electrocatalyst

Enhanced CO_2 reduction activity! A combination of extended X-ray absorption fine structure analysis and Kelvin probe force microscopy identified differences in the Au–Au bond length and work function values between nanostructured and flat Au. The deposition of cations from the electrolyte on the Au surface after CO_2 reduction was investigated to determine its role in the degradation of the reduction performance.



ChemCatChem

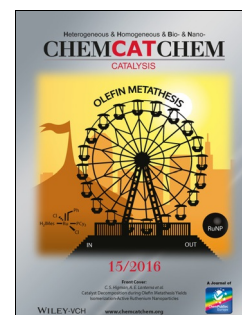
DOI: 10.1002/cctc.201600365

Methane to Syngas

A. Dubey, S. K. Kolekar, C. S. Gopinath*

C–H Activation of Methane to Syngas on $Mn_xCe_{1-x-y}Zr_yO_2$: A Molecular Beam Study

Lights on elementary revelations: Mechanistic details of methane-to-syngas formation and activation of methane on Mn-doped ceria zirconia porous thin films are explored by means of a molecular-beam investigation. Competition and cooperation among different elementary reactions under complementary conditions are found.



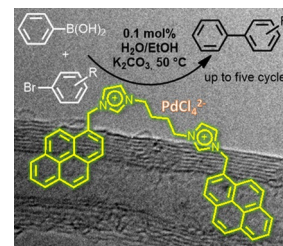


Carbon Nanotubes

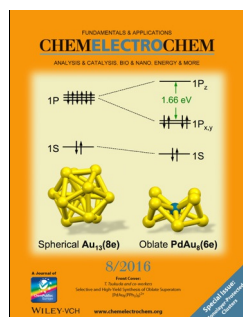
A. M. P. Salvo, V. La Parola, L. F. Liotta, F. Giacalone,*
M. Gruttadauria*

Highly Loaded Multi-Walled Carbon Nanotubes Non-Covalently Modified with a Bis-Imidazolium Salt and their Use as Catalyst Supports

Two birds with one stone: A molecule has been synthesised with two pyrenyl and two imidazolium moieties, which anchored the catalyst tetrachloropalladate to multi-walled carbon nanotubes with high loading. Such noncovalently modified materials could be used up to five times in the Suzuki–Miyaura reaction (see scheme).



ChemPlusChem
DOI: 10.1002/cplu.201600023

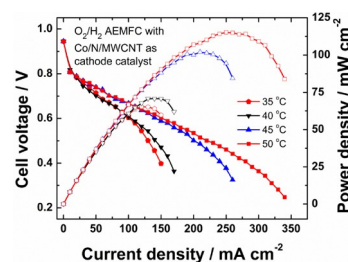


Non-PGM Cathode Catalysts

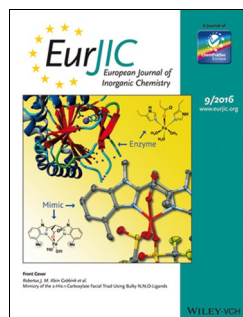
I. Kruusenberg, D. Ramani, S. Ratso, U. Joost, R. Saar, P. Rauwel,
A. M. Kannan,* K. Tammeveski*

Cobalt–Nitrogen Co-doped Carbon Nanotube Cathode Catalyst for Alkaline Membrane Fuel Cells

Not precious? Cobalt-containing nitrogen-doped carbon nanotubes are employed as non-precious metal cathode catalysts for oxygen reduction reaction in alkaline membrane fuel cells. These catalysts exhibit high ORR activity in alkaline media and excellent fuel cell performance that is comparable to that of Pt/C catalysts.



ChemElectroChem
DOI: 10.1002/celec.201600241

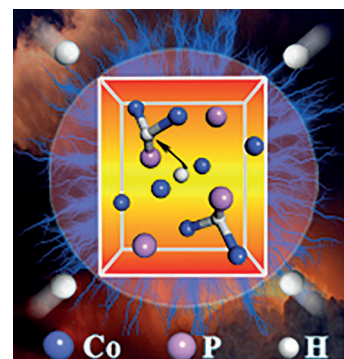


Hydrogen-Storage Materials

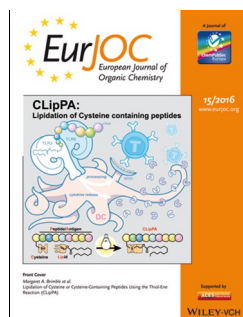
D. Bao, P. Gao,* C. Li,* G. Wu, Y. Wang, Y. Chen,* H. Zhou, P. Yang*

Intracell Hydrogen Adsorption–Transmission in a Co₂P Solid Hydrogen-Storage Material

An intracell Kubas-enhanced adsorption mechanism for improving the hydrogen-storage capacity of Co₂P has been described for the first time.



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.201600345

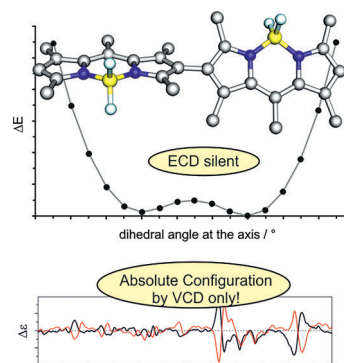


Cryptochirality

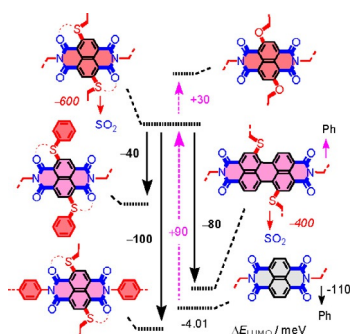
T. Bruhn,* G. Pescitelli, F. Witterauf, J. Ahrens, M. Funk, B. Wolfram,
H. Schneider, U. Radius, M. Bröring*

Cryptochirality in 2,2'-Coupled BODIPY DYEmers

Much too linear. 2,2'-Coupled BODIPY DYEmers are nearly ECD-silent due to the linear alignment of their main transition dipole moments and to the high conformational flexibility at the axis. Only VCD investigations are suitable for elucidating the absolute configurations of these compounds by chiroptical methods in combination with DFT/TDDFT calculations.



Eur. J. Org. Chem.
DOI: 10.1002/ejoc.201600585



ChemistryOpen

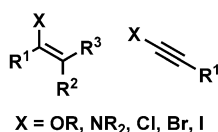
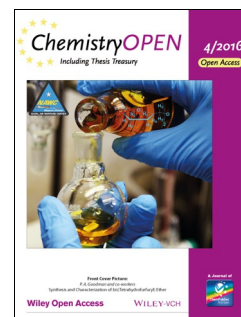
DOI: 10.1002/open.201500222

LUMO Engineering

F. N. Miros, S. Matile*

Core-Substituted Naphthalenediimides: LUMO Levels Revisited, in Comparison with Perylenediimides with Sulfur Redox Switches in the Core

The big picture: Core-substituted naphthalenediimides (NDIs) attract increasing attention to bind, transport, and transform electrons, anions, anionic intermediates, and anionic transition states, and to shine as most colorful rainbow fluorophores. Contributions from primary and secondary substituents to LUMO engineering of NDIs are clarified and summarized in a comprehensive reference table, including pertinent comparisons with perylenediimides and fullerenes.



Applications in
Iodine(III) chemistry

Asian J. Org. Chem.

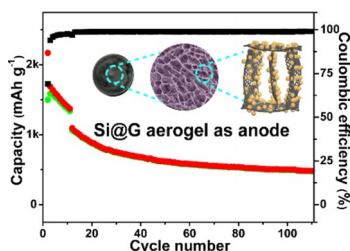
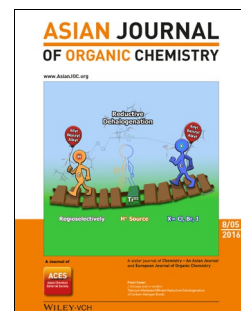
DOI: 10.1002/ajoc.201600246

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

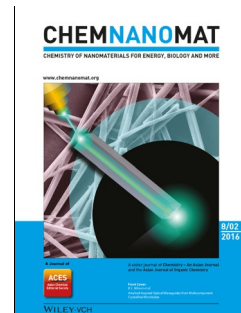
DOI: 10.1002/cnma.201600105

Aerogels

X. Hu, Y. Jin, B. Zhu, Y. Tan, S. Zhang, L. Zong, Z. Lu, J. Zhu*

Free-Standing Graphene-Encapsulated Silicon Nanoparticle Aerogel as an Anode for Lithium Ion Batteries

A free-standing and binder-free anode composed of graphene and Si nanoparticles was fabricated by a facile freeze-drying strategy. Si nanoparticles were anchored on the graphene sheets, which could serve as mechanical support, electrical network, and buffer layer for volume change of Si. This free-standing aerogel showed good electrochemical performance with a high specific charge storage capacity of 617 mAh g⁻¹ after 50 cycles.



ChemViews magazine

DOI: 10.1002/chemv.201600052

Safety

E. Kunz, B. Hubesch

Easy Chemical Safety Prediction

AMBIT is an open-source chemoinformatics system. It allows toxicology or product safety experts to predict unknown properties of one chemical from known properties of similar chemicals. It can access a variety of chemical databases, and uses computational methods to minimize toxicity tests for new compounds on animals.

