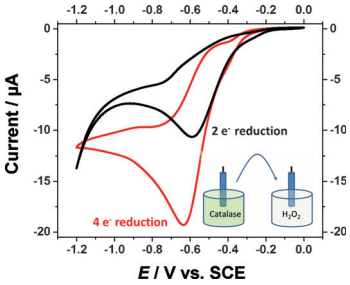
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Electrochemistry

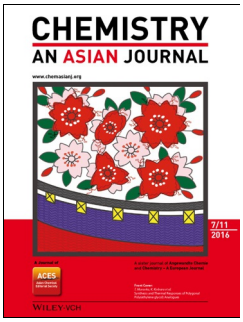
L. Sepunaru, E. Laborda, R. G. Compton*

Catalase-Modified Carbon Electrodes: Persuading Oxygen To Accept Four Electrons Rather Than Two

Enzyme electrochemistry: The natural highly efficient activity of an enzyme (catalase) together with carbon electrodes was successfully exploited to produce a hybrid electrode for oxygen reduction, very appropriate for energy transformation (see figure).



Chem. Eur. J.
DOI: **10.1002/chem.201600692**

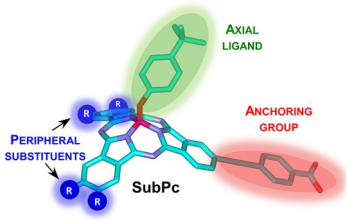


Dye-Sensitized Solar Cells

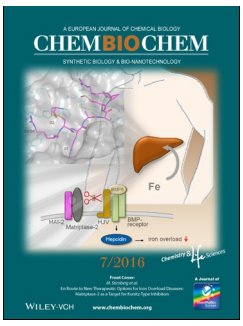
M. Urbani, F. A. Sarı, M. Grätzel, M. K. Nazeeruddin,* T. Torres,* M. Ince*

Effect of Peripheral Substitution on the Performance of Subphthalocyanines in DSSCs

It's about performance: A series of six new subphthalocyanines (SubPcs) with different peripheral substituents have been synthesized and their performances as photosensitizers in DSSC evaluated. SubPc **4** having octylthioether substituents gave rise to an efficiency four times higher than that of SubPc **1** bearing electron-withdrawing octylsulfonyl groups. This work emphasizes the importance of the peripheral substitution of SubPcs on their photovoltaic performances in DSSCs.



Chem. Asian J.
DOI: **10.1002/asia.201501308**

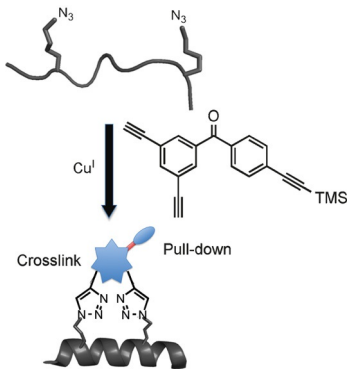


Stapled Peptides

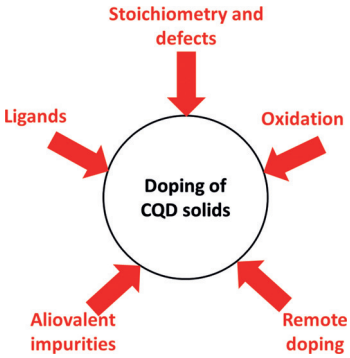
Y. Wu, L. B. Olsen, Y. H. Lau, C. H. Jensen, M. Rossmann, Y. R. Baker, H. F. Sore, S. Collins, D. R. Spring*

Development of a Multifunctional Benzophenone Linker for Peptide Stapling and Photoaffinity Labelling

Three functionalities, one linker: A novel multifunctional linker was designed for peptide stapling and photoaffinity labelling. This approach uses a benzophenone moiety for crosslinking and an additional alkyne handle for subsequent pull-down assays. The alternative labelling technique was applied to the p53/MDM2 interaction as proof of principle.



ChemBioChem
DOI: **10.1002/cbic.201500648**

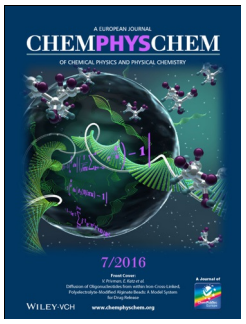


Colloidal Quantum Dots

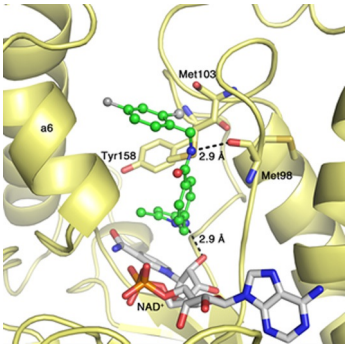
A. Stavrinadis,* G. Konstantatos*

Strategies for the Controlled Electronic Doping of Colloidal Quantum Dot Solids

Mind the gap: This Minireview aims survey the various strategies towards controlling the electronic doping of colloidal quantum dot (CQD) solids. Additional attention is given to the many challenges associated with the task of doping CQDs, as well as to optoelectronic applications of the resulting doped CQD solids.



ChemPhysChem
DOI: **10.1002/cphc.201500834**

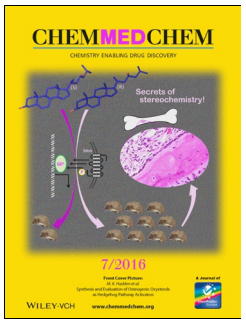


Antimycobacterial Agents

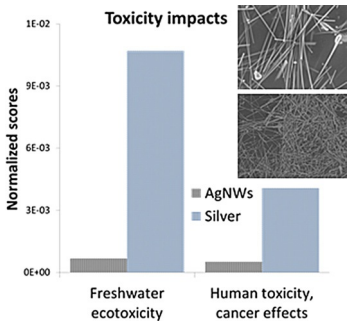
A. Guardia,* G. Gulten, R. Fernandez, J. Gómez, F. Wang, M. Convery, D. Blanco, M. Martínez, E. Pérez-Herrán, M. Alonso, F. Ortega, J. Rullás, D. Calvo, L. Mata, R. Young, J. C. Sacchettini, A. Mendoza-Losana, M. Remuiñán, L. Ballell Pages, J. Castro-Pichel

N-Benzyl-4-((heteroaryl)methyl)benzamides: A New Class of Direct NADH-Dependent 2-*trans* Enoyl–Acyl Carrier Protein Reductase (InhA) Inhibitors with Antitubercular Activity

KatG is out of the picture! We discovered a novel class of antitubercular compounds that directly target InhA. Unlike isoniazid, these InhA inhibitors do not require prior activation by KatG. We describe our SAR optimization attempts to improve the whole-cell activity and physicochemical profile of the initial hit. We also report its co-crystal structure, showing the binding mode within the InhA active site, which will serve as a template for the design of new scaffolds.



ChemMedChem
DOI: **10.1002/cmdc.201600020**

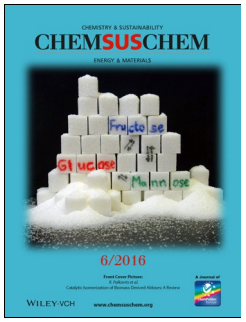


Solar Cells

N. Espinosa, R. R. Søndergaard, M. Jørgensen, F. C. Krebs*

Flow Synthesis of Silver Nanowires for Semitransparent Solar Cell Electrodes: A Life Cycle Perspective

Silver lining: We develop the scaled preparation of silver nanowires by flow and batch synthesis and perform life cycle and environmental impact analysis for their employment as semitransparent electrodes for solar cells. We find marginal benefits in terms of embodied energy but significant benefits in terms of toxicity compared to the use of flake silver.



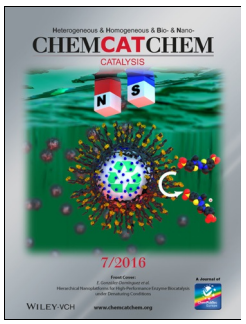
ChemSusChem
DOI: **10.1002/cssc.201501437**

Cascade Reactions

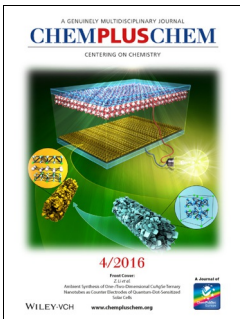
K. Liu, Y. Xu, Z. Yao, H. N. Miras,* Y.-F. Song*

Polyoxometalate-Intercalated Layered Double Hydroxides as Efficient and Recyclable Bifunctional Catalysts for Cascade Reactions

Cascade in a sandwich: Bifunctional catalysts consisting of tripodal-ligand-stabilized layered double hydroxides (top and bottom structures in the picture) with intercalated polyoxymetalate anions (middle) are synthesized by a facile ion exchange method. The composite materials are highly efficient catalysts for the synergistic oxidation–Knoevenagel condensation cascade reaction.



ChemCatChem
DOI: **10.1002/cctc.201501365**

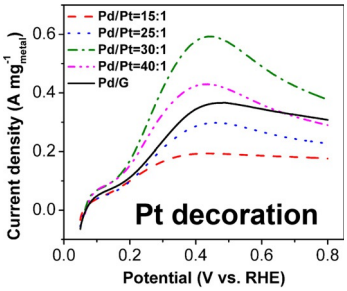


Electrocatalysis

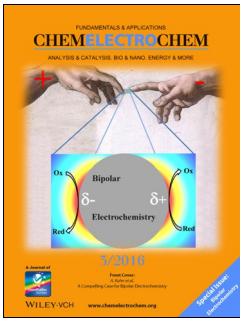
H. Wang, S. Lu,* Y. Zhang, F. Lan, J. Shang, Y. Xiang

Platinum-Decorated Ultrafine Pd Nanoparticles Monodispersed on Pristine Graphene with Enhanced Electrocatalytic Performance

Formic acid electro-oxidation: Ultrafine and monodispersed Pd nanoparticles on graphene sheets are decorated with a low Pt loading (see figure). The decorated particles exhibit enhanced electrocatalytic activity and stability for the formic acid oxidation reaction.



ChemPlusChem
DOI: **10.1002/cplu.201500404**

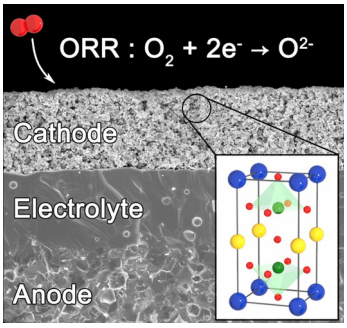


Perovskites

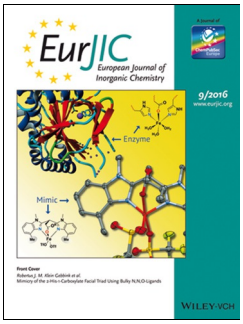
A. Jun, J. Kim, J. Shin,* G. Kim*

Perovskite as a Cathode Material: A Review of its Role in Solid-Oxide Fuel Cell Technology

Perovskite as cathode for SOFCs: One of the critical challenges with regard to the operation of a SOFC at intermediate temperature is to get rid of stability issues while keeping certain level of performance. The development of alternative materials such as perovskite cathodes is essential to create not only a reasonably high level of performance and fast oxygen reduction reaction, but also to ensure the highly reliable and stable operation of the resulting SOFCs.



ChemElectroChem
DOI: **10.1002/celc.201500382**

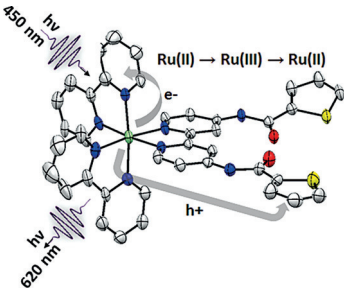


Long-Lived Excited States

M. B. Majewski, J. G. Smith, M. O. Wolf,* B. O. Patrick

Long-Lived, Emissive Excited States in Direct and Amide-Linked Thienyl-Substituted Ru^{II} Complexes

The photophysical properties of a series of Ru^{II} chromophores incorporating peripheral thienyl groups bound through secondary and tertiary amide linkages are compared to directly bound analogues. Nanosecond transient absorption and steady state optical spectroscopy data are correlated in an effort to elucidate the role of the amide linkage in photoinduced electron transfer from the periphery to the metal centre.



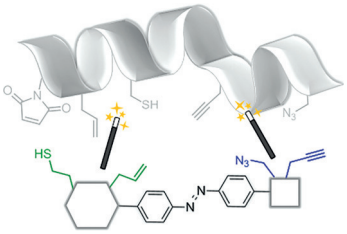
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201501436**

Bioorthogonal Cross-Linkers

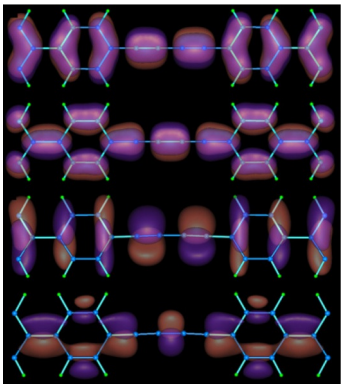
A. Müller, T. K. Lindhorst*

Synthesis of Hetero-bifunctional Azobenzene Glycoconjugates for Bioorthogonal Cross-Linking of Proteins

Cross-linking proteins with azobenzene derivatives allows their form and function to be controlled photochemically. For this, hetero-bifunctionalized glycoazobenzene cross-linker molecules are synthesized to enable bioorthogonal modification of proteins. Alkene, alkyne, azido, and sulfhydryl functional groups are combined accordingly.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201600136**



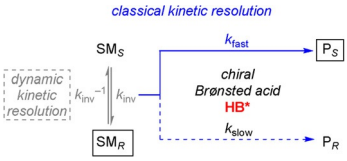
ChemistryOpen
DOI: **10.1002/open.201500154**

Nanowires

Y. Zhu, H. Bai, Y. Huang*

Electronic Property Modulation of One-Dimensional Extended Graphdiyne Nanowires from a First-Principle Crystal Orbital View

Mind the band gap! The semiconducting properties of extended graphdiyne wires can be readily maintained, and the band gaps can be tuned by several chemical and physical factors. The nanowires are good candidates for transport materials with high carrier mobility.



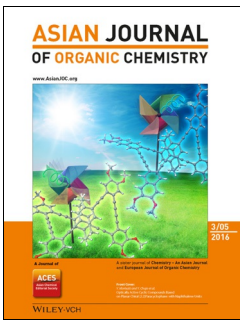
Asian J. Org. Chem.
DOI: **10.1002/ajoc.201600021**

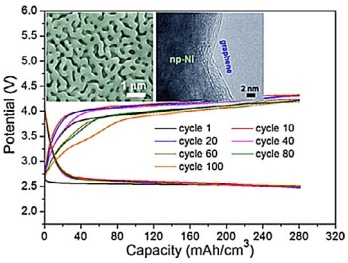
Kinetic Resolutions

K. S. Petersen*

Chiral Brønsted Acid Catalyzed Kinetic Resolutions

Resolving the problem: The synthesis of enantioenriched small molecules is an ongoing goal of organic chemists. This Focus Review explores the use of kinetic resolutions catalyzed by chiral Brønsted acids. Methods include classic kinetic resolutions and dynamic kinetic resolutions. The small molecules obtained are potentially valuable intermediates in the synthesis of biologically important compounds.





ChemNanoMat
DOI: **10.1002/cnma.201500214**

Electrode Materials

X. Guo, J. Han, P. Liu, Y. Ito, A. Hirata, M. Chen*

Graphene@Nanoporous Nickel Cathode for Li–O_2 Batteries

Nanoporous Ni covered by N-doped graphene has been developed as a cathode for Li-O_2 batteries. The novel cathode has low charge/discharge overpotentials, high volumetric capacity, and long cycling stability, and shows promise for practical implementation of economic nanoporous metals as binder-free cathodes for high-performance Li-O_2 batteries.

ChemViews magazine
DOI: **10.1002/chemv.201600017**

Snow

V. Barton

Faking It: The Science of Artificial Snow

Ski resorts worldwide increasingly depend on some form of machine-made snow. But how was it first made? How has snowmaking improved over the years? And, considering rising temperatures and the financial and environmental costs, does it have a future?