

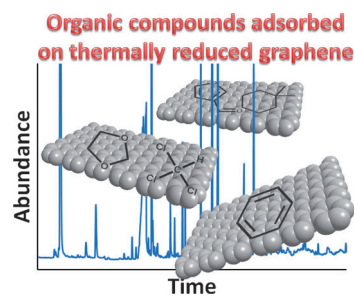


Graphene

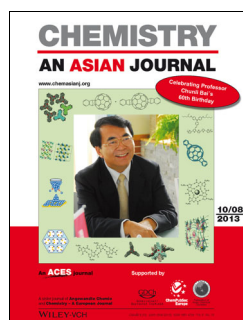
A. Ambrosi, G. K. S. Wong, R. D. Webster, Z. Sofer, M. Pumera*

Carcinogenic Organic Residual Compounds Readsorbed on Thermally Reduced Graphene Materials are Released at Low Temperature

Taking out the trash: The composition of the potentially carcinogenic organic compounds that are adsorbed onto the graphene material during the thermal reduction/exfoliation of graphite oxide has been investigated. Such compounds can be easily released during the following processing steps even at temperatures as low as 50 °C (see figure).



Chem. Eur. J.
DOI: 10.1002/chem.201302413

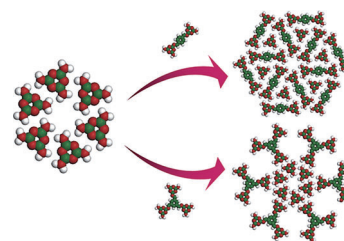


Self-Assembly

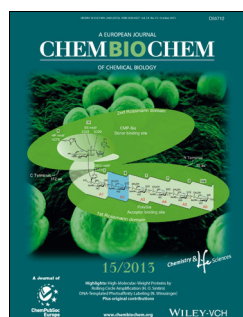
X.-H. Liu, D. Wang,* L.-J. Wan*

Surface Tectonics of Nanoporous Networks of Melamine-Capped Molecular Building Blocks formed through Interface Schiff-Base Reactions

Networking skills: A simple on-surface synthetic route for the functionalization of rigid molecular cores of 2-fold or 3-fold symmetry with melamine terminal groups, which can steer the assembly of nanoporous networks on a graphite surface, has been developed.



Chem. Asian J.
DOI: 10.1002/asia.201300546

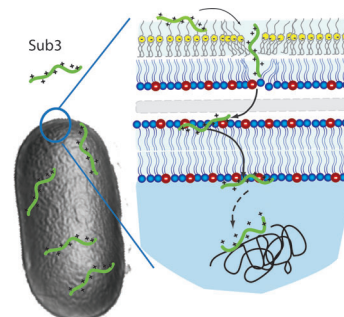


Antimicrobial Peptides

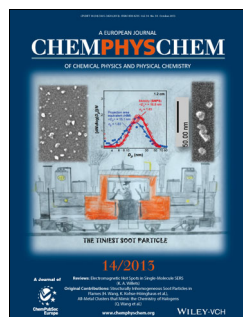
I. M. Torcato, Y.-H. Huang, H. G. Franquelim, D. D. Gaspar, D. J. Craik, M. A. R. B. Castanho, S. T. Henriques*

The Antimicrobial Activity of Sub3 is Dependent on Membrane Binding and Cell-Penetrating Ability

Sub targets the enemy: By using AFM imaging, ζ potential, flow cytometry and fluorescence methodologies we show that the antimicrobial peptide Sub3 targets the bacterial membrane and internalises inside the cell at lethal concentrations without permeabilising the membranes. Furthermore, it internalises into human cells, yet is not toxic.



ChemBioChem
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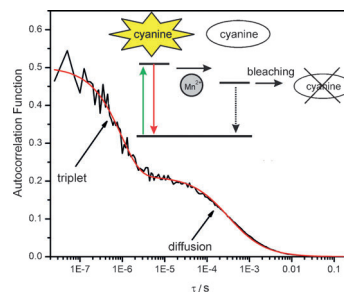


Flourescent Dyes

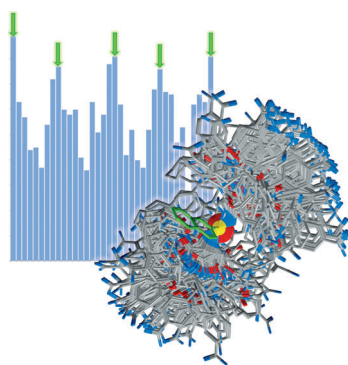
M. A. Ciuba, M. Levitus*

Manganese-Induced Triplet Blinking and Photobleaching of Single Molecule Cyanine Dyes

Triplet blinking: Controlling the triplet-state quantum yield, lifetime, and deactivation pathways of organic dyes is of great interest in single-molecule spectroscopy and super-resolution imaging. Triplet states play a central role in the photobleaching and blinking properties of fluorescent dyes. In this work, the paramagnetic ion Mn^{2+} is found to induce intersystem crossing to the triplet state in Cy3, Cy3B and Cy5, which results in increased photobleaching and triplet blinking.



ChemPhysChem
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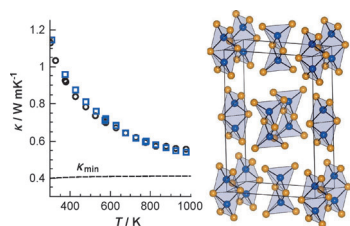
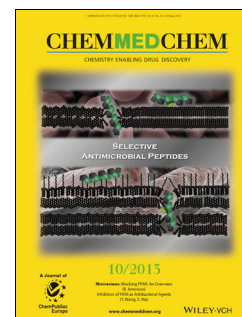
ChemMedChem
DOI: 10.1002/cmdc.201300242

Computational Chemistry

C. Schärfer, T. Schulz-Gasch, J. Hert, L. Heinzerling, B. Schulz, T. Inhester, M. Stahl, M. Rarey*

CONFECT: Conformations from an Expert Collection of Torsion Patterns

We can generate low-energy conformational ensembles based on an expert-driven collection of torsion angle preferences derived from an experimental crystal structure database of small molecules (CSD). This allows us to decrease the ensemble size relative to current state-of-the-art conformation generators while still exhaustively covering the conformational space that is energetically relevant to the drug design process.



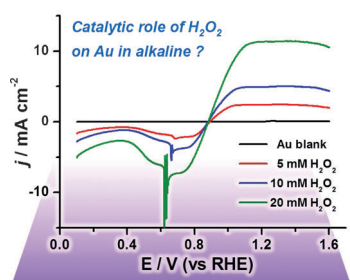
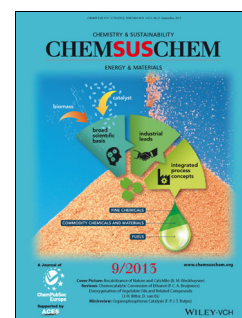
ChemSusChem
DOI: 10.1002/cssc.201300518

Thermoelectric Materials

A. Zevalkink, G. Pomrehn, Y. Takagiwa, J. Swallow, G. J. Snyder*

Thermoelectric Properties and Electronic Structure of the Zintl-Phase Sr_3AlSb_3

Zintlating chemistry! The Zintl compound Sr_3AlSb_3 exhibits a band gap of about 0.6 eV, intrinsic electronic properties, and extremely low lattice thermal conductivity; this makes it a promising material for high-temperature thermoelectric applications (see picture).



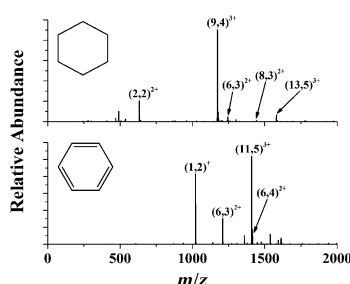
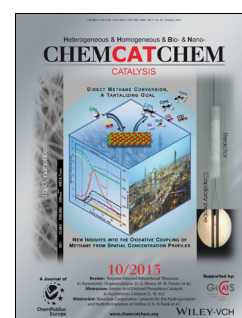
ChemCatChem
DOI: 10.1002/cctc.201300460

Gold Catalysis

Y. Kwon, S. J. Raaijman, M. T. M. Koper*

Role of Peroxide in the Catalytic Activity of Gold for Oxidation Reactions in Aqueous Media: An Electrochemical Study

Going blonde? Think twice! The presence of peroxide has no significant effect on the overall oxidation activity or product selectivity during the gold-catalyzed (electro-)catalytic oxidation of glycerol at low temperature.



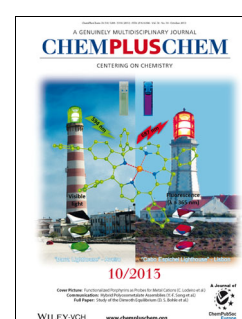
ChemPlusChem
DOI: 10.1002/cplu.201300134

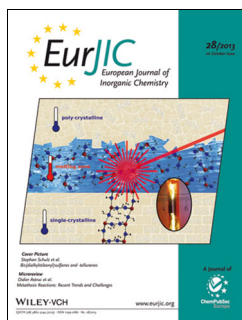
Mass Spectrometry

G. E. Johnson,* T. Priest, J. Laskin

Synthesis and Characterization of Gold Clusters Ligated with 1,3-Bis(dicyclohexylphosphino)propane

Gold rush: Gold clusters were synthesized using 1,3-bis(dicyclohexylphosphino)propane ligands. Mass spectrometry was used to determine the composition and to investigate the influence of phosphine substitution on the size and stability of the gold clusters (see figure).



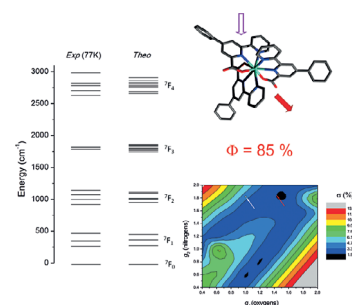


Antenna Effect in Eu(III) Complexes

M. B. S. Botelho, M. D. Gálvez-López, L. De Cola, R. Q. Albuquerque,*
A. S. S. de Camargo*

Towards the Design of Highly Luminescent Europium(III) Complexes

The synthesis of a tridentate ligand exhibiting appropriate spectral properties has led to the formation of a neutral, nine-coordinate Eu³⁺ complex that exhibits one of the largest emission quantum yields ever reported in solution, $\Phi = 85\%$. Photophysical measurements and ligand field calculations were also made to characterize this highly luminescent complex.



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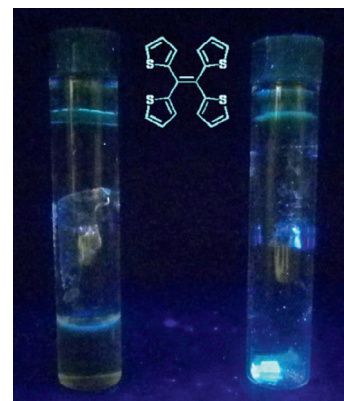


Thiophene Systems

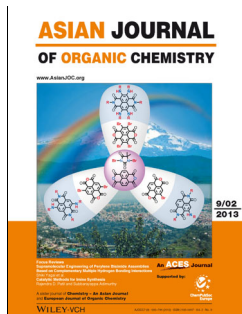
A. Bolzoni, L. Viglianti, A. Bossi, P. R. Mussini, S. Caeteruccio,
C. Baldoli,* E. Licandro*

Synthesis, Photophysics, and Electrochemistry of Tetra(2-thienyl)ethylene (TTE) Derivatives

A series of new TTE derivatives, selectively functionalized at the thiophene α positions, have been synthesized and structurally characterized. The electronic properties of TTE and its derivatives were elucidated by electrochemistry and optical spectroscopy revealed that TTE shows orange emission in a diluted 2-MeTHF matrix at 77 K and blue aggregation-induced emission in the solid state.



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DOI: 10.1002/ejoc.201300745

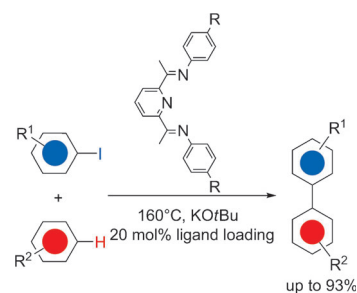


C–H Activation

S. A. X. Liu,* H. Li, C. He, Y. Mu*

Direct C–H Arylation of Unactivated Arenes with Aryl Halides Promoted by Bis(imino)pyridine Derivatives

Metals need not apply: A multichelating bis(imino)pyridine framework was shown to promote efficient transition-metal-free arylations of unactivated aromatic C–H bonds with aryl halides in the presence of potassium *tert*-butoxide.



Asian J. Org. Chem.
DOI: 10.1002/ajoc.201300129



Nanomaterials

Vera Köster

The Challenges of Regulating Nanomaterials

Nanomaterials have a wide variety of applications in areas ranging from pharmaceuticals to paints, thus making it difficult to control this very complex field. Dr. Otto Linher, Deputy Head of the Chemicals Industry Unit, European Commission, talks about the challenges of defining and regulating nanomaterials and where legislation is heading.



ChemViews magazine
DOI: 10.1002/chemv.201300093