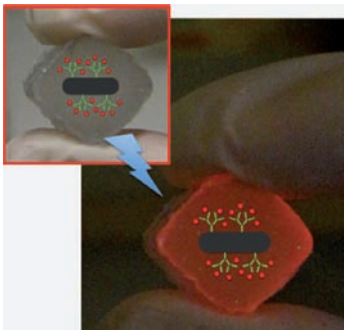
Luminescent Materials

L. Maggini, F. M. Toma, L. Feruglio, J. M. Malicka, T. Da Ros, N. Armaroli,* M. Prato,* D. Bonifazi*

Luminescent Blooming of Dendronic Carbon Nanotubes through Ion-Pairing Interactions with an Eu^{III} Complex

Red light from the dark: Combining a positively charged dendronic carbon nanotube (CNT) and a negatively charged Eu^{III} complex, a unique hybrid material characterized by an intense luminescence has been prepared, proving for the first time that ion-pairing interactions are a potent supramolecular tool to assemble CNT materials with potentially relevant applicative perspectives (see figure).



Chem. Eur. J.
DOI: **10.1002/chem.201200237**

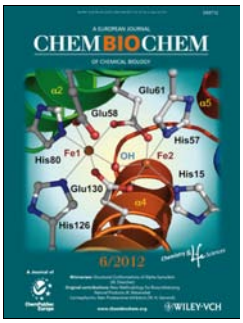
Metal Hydrides

R. Kretschmer, M. Schlangen, H. Schwarz*

Thermal Ammonia Activation by Cationic Transition-Metal Hydrides of the First Row – Small but Mighty

Wanted—Dead or Alive: The reactions of cationic transition-metal hydrides MH^+ of the first row with ammonia have been studied both experimentally and computationally. All ions investigated are wanted; they don't spare ammonia and react predominantly under N–H bond activation (Sc, Ti, Cr), ligand exchange (Co, Ni), or proton transfer (Mn, Fe, Zn).

Chem. Asian J.
DOI: **10.1002/asia.201101045**

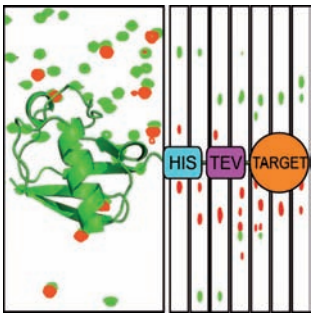


Protein Expression

V. V. Rogov,* A. Rozenknop, N. Y. Rogova, F. Löhr, S. Tikole, V. Jaravine, P. Güntert, I. Dikic, V. Dötsch*

A Universal Expression Tag for Structural and Functional Studies of Proteins

Modified ubiquitin sequences, each completed with a His tag and a TEV cleavage site, were designed to enhance the expression of protein/peptide targets. With this new system we have been able to characterize several peptide–protein interactions by ITC and by NMR and CD spectroscopic methods, including the interactions of LIR domains with autophagy modifiers.



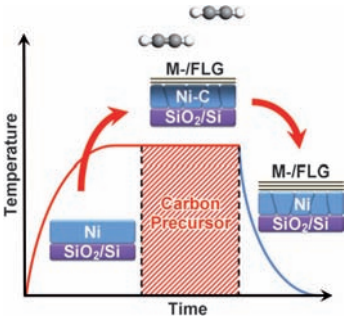
ChemBioChem
DOI: **10.1002/cbic.201200045**

Graphene

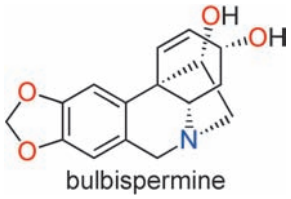
R. S. Weatherup,* B. C. Bayer, R. Blume, C. Baehtz, P. R. Kidambi, M. Fouquet, C. T. Wirth, R. Schlögl, S. Hofmann

On the Mechanisms of Ni-Catalysed Graphene Chemical Vapour Deposition

How does your graphene grow? In situ X-ray photoelectron spectroscopy and X-ray diffraction measurements during chemical vapor deposition on Ni catalyst films show that graphene forms both isothermally and by precipitation on cooling (see picture). A coherent graphene growth model is devised and sub-surface dissolved carbon is shown to play an important role.



ChemPhysChem
DOI: **10.1002/cphc.201101020**



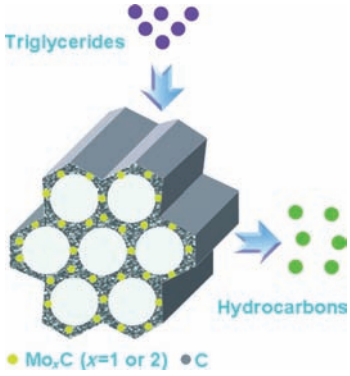
Anticancer Agents

G. Luchetti, R. Johnston, V. Mathieu, F. Lefranc, K. Hayden, A. Andolfi, D. Lamoral-Theys, M. R. Reisenauer, C. Champion, S. C. Pelly, W. A. L. van Otterlo, I. V. Magedov, R. Kiss, A. Evidente, S. Rogelj, A. Kornienko*

Bulbispermine: A Crinine-Type Amaryllidaceae Alkaloid Exhibiting Cytostatic Activity toward Apoptosis-Resistant Glioma Cells

Combating cancer resistance: The Amaryllidaceae alkaloid bulbispermine inhibits proliferation of glioblastoma cells through cytostatic effects that are possibly due to rigidification of the actin cytoskeleton. These findings argue that crinine-type alkaloids could be useful drug leads for the treatment of apoptosis-resistant cancers and glioblastoma in particular.

ChemMedChem
DOI: **10.1002/cmdc.201100608**



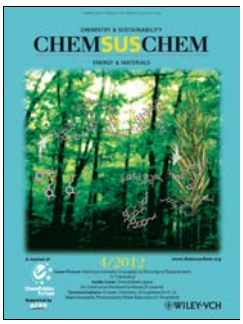
Biofuels

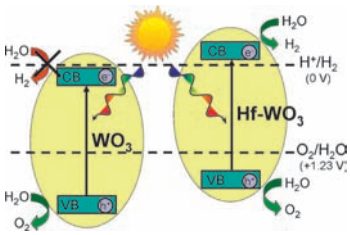
J. Han, J. Duan, P. Chen, H. Lou,* X. Zheng, H. Hong

Carbon-Supported Molybdenum Carbide Catalysts for the Conversion of Vegetable Oils

Regulated support: Ordered mesoporous carbon-supported molybdenum carbide catalysts are prepared in one pot. By changing the amount of Mo precursor from less than 2% to over 5%, molybdenum carbide structures are easily regulated from Mo_2C to MoC. Compared with Mo_2C, MoC exhibits a high product selectivity and excellent resistance to leaching when converting vegetable oils into diesel-like hydrocarbons (see picture).

ChemSusChem
DOI: **10.1002/cssc.201100476**





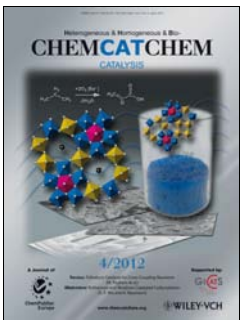
Water Splitting

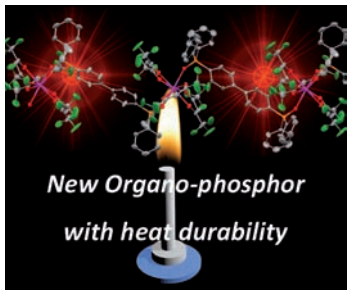
F. Wang, C. Di Valentin,* G. Pacchioni

Rational Band Gap Engineering of WO_3 Photocatalyst for Visible light Water Splitting

A band better than the Beatles? Tungsten oxide doping by hafnium induces a shift of the valence and conduction bands towards higher energies without losing the visible light absorption properties of the material and introducing impurity states in the gap. The new band edges position with respect to the redox potentials for both H_2 and O_2 evolution is suitable for efficient water splitting.

ChemCatChem
DOI: **10.1002/cctc.201100446**





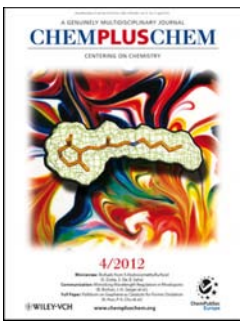
Coordination Polymers

K. Miyata, T. Ohba, A. Kobayashi, M. Kato, T. Nakanishi, K. Fushimi, Y. Hasegawa*

Thermostable Organo-phosphor: Low-Vibrational Coordination Polymers That Exhibit Different Intermolecular Interactions

Novel thermostable organo-phosphor compounds composed of coordination polymers are reported. Tight-binding structures with intermolecular interactions of the coordination polymer induce both thermostability (decomposition point $>300\,^{\circ}C$) and high emission quantum yield ($\Phi_{Ln}=83\,\%$). Their structures (see picture), thermogravimetric analyses, and remarkable photophysical properties are presented for the first time.

ChemPlusChem
DOI: **10.1002/cplu.201200002**

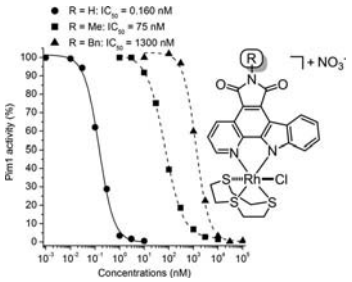


Metal-Based Enzyme Inhibitors

S. Dieckmann, R. Riedel, K. Harms, E. Meggers*

Pyridocarbazole-Rhodium(III) Complexes as Protein Kinase Inhibitors

Inert octahedral rhodium(III) complexes were used as structural templates for the design of highly potent inhibitors of the protein kinase Pim1.



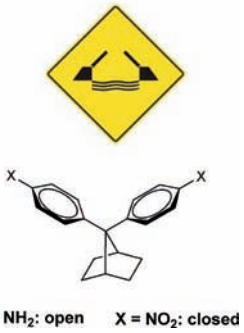
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201101175**

Aromatic Homoconjugation

N. Herrero-García, M. del Rosario Colorado Heras, M. del Rosario Torres, I. Fernández,* J. Osío Barcina*

A Joint Experimental and Computational Investigation on Homoconjugated Push-Pull Chromophores Derived from 7,7-Diphenylnorbornane

Electronic communication through homoconjugation between aromatic moieties can be easily controlled by changing the nature and the position of the substituents attached at the aryl rings. The electron delocalization (communication) is clearly revealed by the new homoconjugation bands in the UV/Vis spectra of the compounds studied as well as by charge transfer absorptions in push-pull systems.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201200159**

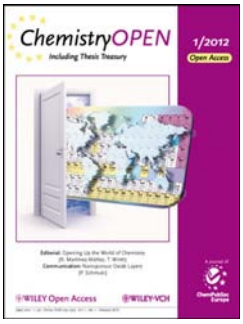
Radical Chemistry

Vera Köster

Armido Studer on Radical Chemistry

Radicals are often considered as hard to tame intermediates. A. Studer, Westfälische Wilhelms University Münster, discusses how 40–45% of polymers have come to be made by radical processes, why transition metals–not usually looked at from a radical view–are gaining importance, and what prompted him to get involved with the *Encyclopedia of Radicals in Chemistry, Biology and Materials.*

ChemViews magazine
DOI: **10.1002/chemv.201200023**

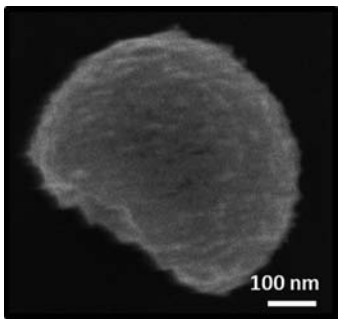


Templated Growth

D. Rodríguez-Fernández, J. Pérez-Juste, I. Pastoriza-Santos, L. M. Liz-Marzán*

Colloidal Synthesis of Gold Semishells

Growing gold: Colloidal gold semishells were obtained by seeded growth on submicron Janus silica spheres and HF etching, thus avoiding lithographic methods. The method offers tunability of dimensions and of the corresponding plasmonic response.



ChemistryOpen
DOI: **10.1002/open.201200002**