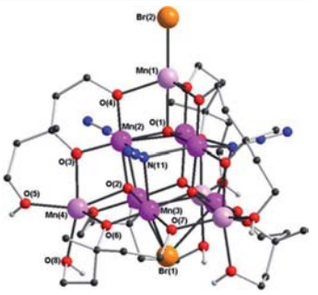
On these pages, we feature a selection of the excellent work that has recently been published in our sister journals. If you are reading these pages on a computer, click on any of the items to read the full article. Otherwise please see the DOIs for easy online access through Wiley Online Library.

Neutron Scattering

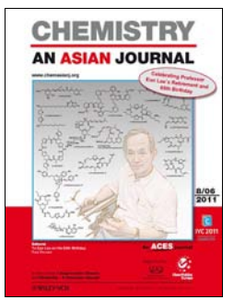
S. Stuiber, G. Wu, J. Nehrkorn, J. Dreiser, Y. Lan, G. Novitchi, C. E. Anson, T. Unruh, A. K. Powell,* O. Waldmann*

Inelastic Neutron Scattering on an Mn_{10} Supertetrahedron: Assessment of Exchange Coupling Constants, Ferromagnetic Spin Waves and an Analogy to the Hückel Method

Spin-wave theory for chemists! The synthesis, crystal structure and magnetism of an Mn_{10} supertetrahedron is reported (see figure). Inelastic neutron scattering and magnetic data permit the accurate determination of the ferromagnetic exchange coupling constants. An analogy to the Hückel method can be drawn, which allows one to understand the results of the spin-wave theory, that is, magnetic excitation spectrum in a chemical language.



Chem. Eur. J.
DOI: **10.1002/chem.201100500**

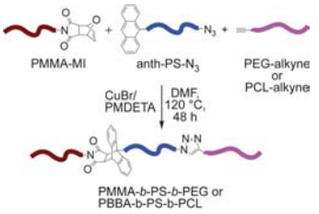


Polymers

O. Altintas, U. Tunca*

Synthesis of Terpolymers by Click Reactions

Cycloadditions: Well-defined polymeric structures were easily generated through living polymerization systems, in particular, living radical polymerizations. These precursors with orthogonal functionalities were subsequently clicked with each other in a single or double (combination) click reaction (see scheme).



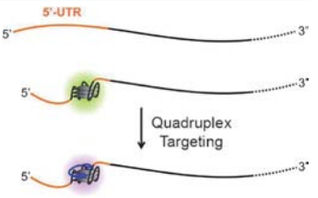
Chem. Asian J.
DOI: **10.1002/asia.201100138**

Gene Expression

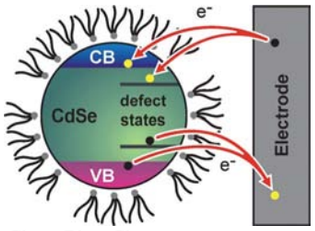
K. Halder, E. Largy, M. Benzler, M.-P. Teulade-Fichou,* J. S. Hartig*

Efficient Suppression of Gene Expression by Targeting 5′-UTR-Based RNA Quadruplexes with Bisquinolinium Compounds

Fourth amendment: RNA quadruplexes located in the 5′-untranslated regions (5′-UTR in the figure) of mRNAs inhibit gene expression. This effect can be amplified by targeting RNA quadruplexes with specific bisquinolinium compounds.



ChemBioChem
DOI: **10.1002/cbic.201100228**



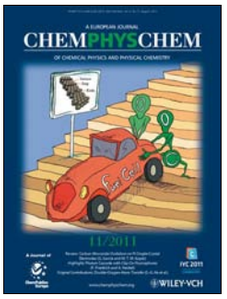
ChemPhysChem
DOI: **10.1002/cphc.201100300**

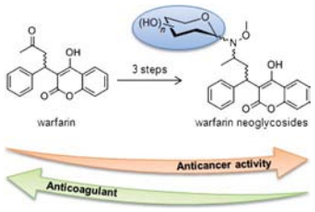
Nanocrystals

M. Amelia, S. Impellizzeri, S. Monaco, I. Yildiz, S. Silvi, F. M. Raymo,* A. Credi*

Structural and Size Effects on the Spectroscopic and Redox Properties of CdSe Nanocrystals in Solution: The Role of Defect States

Nobody's perfect: A comparison between the spectroscopic and electrochemical data for two homogeneous series of CdSe nanocrystals of different diameters has enabled the proposal of a model for the size-dependent evolution of surface defects, based on the mechanism of formation and growth of these quantum dots (see picture; CB/VB = conduction/valence bands).





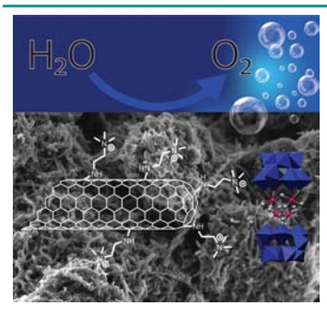
ChemMedChem
DOI: **10.1002/cmdc.201100178**

Drug Discovery

P. Peltier-Pain, S. C. Timmons, A. Grandemange, E. Benoit, J. S. Thorson*

Warfarin Glycosylation Invokes a Switch from Anticoagulant to Anticancer Activity

Changing lanes! Glycosylation of the classical pharmacophore warfarin fundamentally alters the drug's mechanism-of-action, leading to a dramatic reduction in anticoagulant function and a concomitant marked increase in anticancer cytotoxicity.



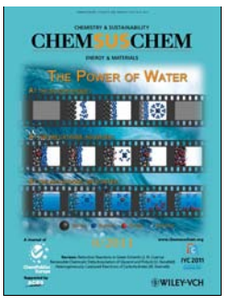
ChemSusChem
DOI: **10.1002/cssc.201100089**

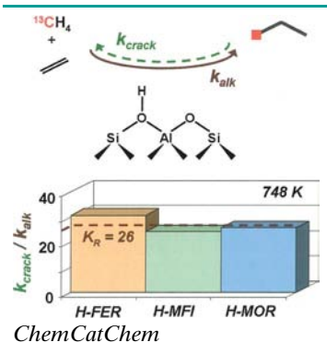
Carbon Nanotubes

F. M. Toma, A. Sartorel, M. Iurlo, M. Carraro, S. Rapino, L. Hoober-Burkhardt, T. Da Ros, M. Marcaccio, G. Scorrano, F. Paolucci,* M. Bonchio,* M. Prato*

Tailored Functionalization of Carbon Nanotubes for Electrocatalytic Water Splitting and Sustainable Energy Applications

Oxygenic carbon nanotubes: Covalent and non-covalent strategies are utilized for the functionalization of carbon nanotubes with positively charged groups and subsequently negatively charged, inorganic catalysts, leading nanomaterials for electrocatalytic water splitting. Both multi- and single-walled carbon nanotubes react with under microwave irradiation and solvent-free conditions, whereas the formation of non-covalent nanoconjugates is accomplished by reaction of carbon nanotubes with trimethylammonium acetyl pyrene.





ChemCatChem
DOI: **10.1002/cctc.201100051**

Zeolites

R. Gounder, E. Iglesia*

Catalytic Alkylation Routes via Carbonium-Ion-Like Transition States on Acidic Zeolites

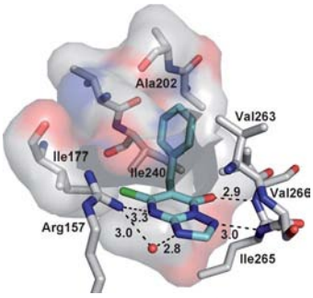
Zeolites going crackers: Brønsted acid sites in zeolites (H-FER, H-MFI, H-MOR) catalyze CH_4-alkene reactions at high temperatures (>700 K) via carbonium-ion-like transition states. The ratio of rate constants for forward and reverse reactions (alkane alkylation-cracking, alkene dimerization-cracking) equal their respective equilibrium constants (K_R). In contrast, relative rates of CH_4 and alkene reactions with a given alkoxide are influenced by the local environment around acid sites.

Herbicides

M. C. Witschel,* H. W. Höffken, M. Seet, L. Parra, T. Mietzner, F. Thater, R. Niggeweg, F. Röhl, B. Illarionov, F. Rohdich, J. Kaiser, M. Fischer,* A. Bacher,* F. Diederich*

Inhibitors of the Herbicidal Target IspD: Allosteric Site Binding

The pick of the pockets: The first inhibitors for IspD, an enzyme from the non-mevalonate pathway of isoprenoid biosynthesis, are described. High-throughput-screening revealed a hit with an IC_{50} value of 140 nM. Co-crystal structure analyses of the binding mode in the newly formed allosteric pocket (see structure, red ball water O atom), lead to the synthesis of a set of 17 derivatives which were tested to optimize the herbicidal activity.



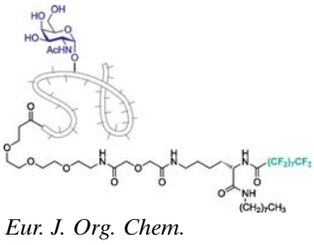
Angew. Chem. Int. Ed.
DOI: **10.1002/anie.201102281**

Fluorous Glycopeptide Antigens

T. Platen, T. Schüler, W. Tremel, A. Hoffmann-Röder*

Synthesis and Antibody Binding of Highly Fluorinated Amphiphilic MUC1 Glycopeptide Antigens

Functional fluorous mucin-type antigens have been prepared in which double-tailed hydrocarbon/fluorocarbon lysine derivatives are conjugated to a tumor-associated T_N building block and a full 20 amino acid tandem repeat sequence of the glycopeptide mucin-1. The latter specifically binds to various anti-MUC1 mouse antibodies.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201100648**

