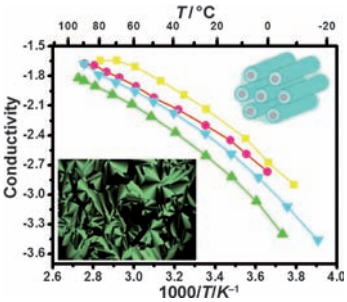
Liquid Crystals

C. Albayrak, A. Cihaner, Ö. Dag*

A New, Highly Conductive, Lithium Salt/Nonionic Surfactant, Lyotropic Liquid-Crystalline Mesophase and Its Application

Salty water! Lithium salts (LiCl, $LiNO_3$, and $LiClO_4$) at very high concentrations in water form lyotropic liquid crystalline (LLC) mesophases with a nonionic surfactant (10-lauryl ether) and display high ionic conductivities (10^{-2}–10^{-4} S cm^{-1}) over a broad temperature range (−10 to 80 °C) with excellent behavior as gel electrolytes in electrochemical applications.



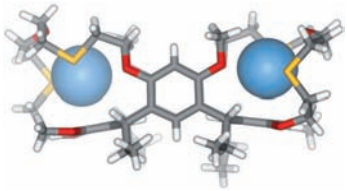
Chem. Eur. J.
DOI: **10.1002/chem.201103705**

Host-Guest Systems

K. Salorinne,* E. Nauha, M. Nissinen

Resorcinarene Bis-Thiacrowns: Prospective Host Molecules for Silver Encapsulation

Binding it soft but strong: Resorcinarene bis-thiacrowns containing soft sulfur donor atoms are shown to be ideal host molecules for high-affinity encapsulation of silver inside the resorcinarene cavity. A 1:2 host–guest binding was observed both in solution and in the solid state.



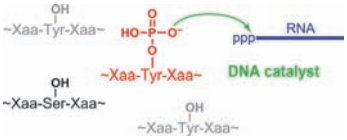
Chem. Asian J.
DOI: **10.1002/asia.201100969**

Phosphopeptides

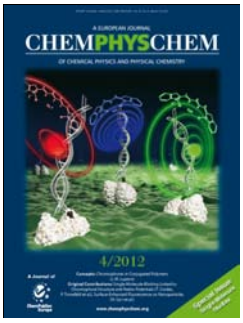
A. Sachdeva, M. Chandra, J. Chandrasekar, S. K. Silverman*

Covalent Tagging of Phosphorylated Peptides by Phosphate-Specific Deoxyribozymes

Hold your P's: Phosphorylated tyrosine and serine residues in peptides have been modified selectively by DNA catalysts (see graphic). These deoxyribozymes catalyze covalent attachment of an RNA tag to a range of peptide sequences, thus a proof of principle for a new approach to phosphopeptide analysis is established.



ChemBioChem
DOI: **10.1002/cbic.201200048**

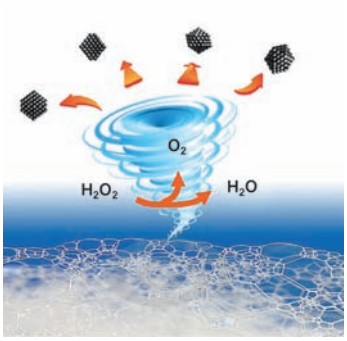


Nanocatalysts

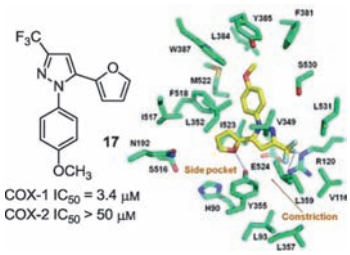
J. Monzó, M. T. M. Koper, P. Rodriguez*

Removing Polyvinylpyrrolidone from Catalytic Pt Nanoparticles without Modification of Superficial Order

Clean catalysts: A facile and novel chemical method is introduced for cleaning Pt nanoparticles with preferential orientation. The method is based on the idea that the decomposition of hydrogen peroxide may aid in removing organic components from the Pt-nanoparticle surface, and does not introduce any major loss of superficial structure.



ChemPhysChem
DOI: **10.1002/cphc.201100894**



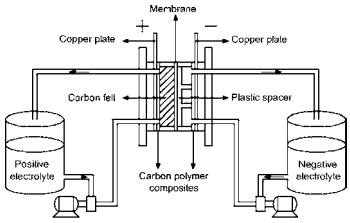
ChemMedChem
DOI: **10.1002/cmdc.201100530**

Isoform Selectivity

M. G. Perrone, P. Vitale, P. Malerba, A. Altomare, R. Rizzi, A. Lavecchia, C. Di Giovanni, E. Novellino, A. Scilimati*

Diarylheterocycle Core Ring Features Effect in Selective COX-1 Inhibition

Getting to the core: The role of the central nucleus in the diarylheterocycle COX-1 inhibitor class was investigated. We identified 5-(furan-2-yl)-1-(4-methoxyphenyl)-3-(trifluoromethyl)-1*H*-pyrazole (**17**) as a selective inhibitor of COX-1 activity. The results of molecular docking studies shed light on the binding mode of **17** into the catalytic site of COX-1.



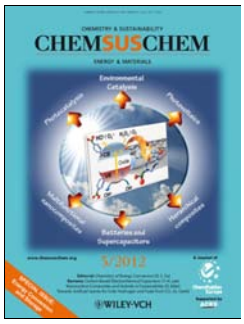
ChemSusChem
DOI: **10.1002/cssc.201100530**

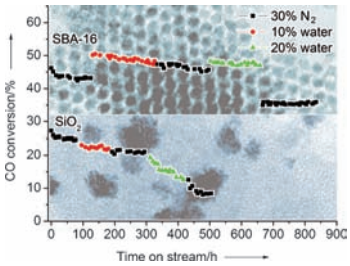
Batteries

L. Zhang, Q. Lai, J. Zhang, H. Zhang*

A High-Energy-Density Redox Flow Battery based on Zinc/Polyhalide Chemistry

Zn and the Art of Battery Development: A zinc/polyhalide redox flow battery employs $Br^-/ClBr^{2-}$ and Zn/Zn^{2+} redox couples in its positive and negative half-cells, respectively. The performance of the battery is evaluated by charge–discharge cycling tests and reveals a high energy efficiency of 81%, based on a Coulombic efficiency of 96% and voltage efficiency of 84%. The new battery technology can provide high performance and energy density at an acceptable cost.





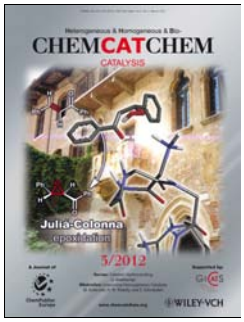
ChemCatChem
DOI: **10.1002/cctc.201100223**

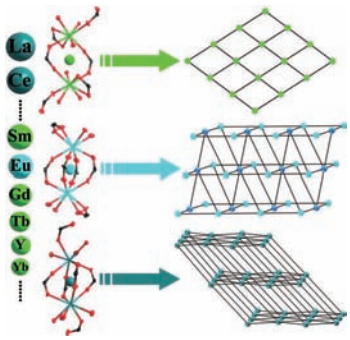
Fischer-Tropsch Synthesis

Y. Zhao, Y. Zhang, J. Chen, J. Li,* K. Liew
M. R. B. Nordin

SBA-16-Supported Cobalt Catalyst with High Activity and Stability for Fischer–Tropsch Synthesis

The importance of being SBA-16: Co/SBA-16 catalysts are prepared by means of the incipient wetness impregnation method for Fischer–Tropsch synthesis (FTS). Most of the Co_3O_4 nanoparticles are introduced into the SBA-16 cages. High FTS activity and stability are observed on the SBA-16-supported catalyst. SBA-16 support can efficiently prevent the aggregation and sintering of cobalt nanoparticles.





ChemPlusChem
DOI: **10.1002/cplu.201100083**

Coordination Polymers

S.-L. Huang, Y.-J. Lin, W.-B. Yu, G.-X. Jin*

Porous Frameworks Based on Carborane–$Ln_2(CO_2)_6$: Architecture Influenced by Lanthanide Contraction and Selective CO_2 Capture

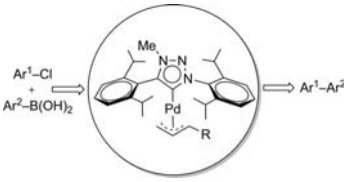
Cast your net widely: Three distinct structure types of porous frameworks based on carborane–$Ln_2(CO_2)_6$ (structure type I with Schläfli symbol of $4^4{\cdot}6^2$, structure type II with Schläfli symbol of $(4^8{\cdot}6^6{\cdot}8)$-$(4^8{\cdot}6^6{\cdot}8)$, and structure type III with Schläfli symbol of $4^{12}{\cdot}6^3$) have been synthesized and structurally characterized (see figure). Gas sorption was studied and selective CO_2 capture over CH_4 and N_2 was observed.

Palladium Complexes

T. Terashima, S. Inomata, K. Ogata, S. Fukuzawa*

Synthetic, Structural, and Catalytic Studies of Well-Defined Allyl 1,2,3-Triazol-5-ylidene (*tz*NHC) Palladium Complexes

A series of (η^3-allyl)palladium complexes bearing 1,2,3-triazole carbene (*tz*NHC) ligands has been prepared and characterized. The donor properties of *tz*NHC ligands are stronger than those of imidazole carbene ligands. The [1,4-bis(2,6-diisopropylphenyl)-3-methyl-1,2,3-triazol-5-ylidene](cinnamyl)PdCl complex shows high activity in the room-temperature Suzuki–Miyaura coupling reaction with aryl chlorides.



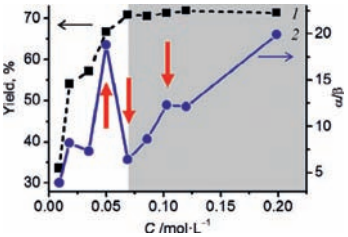
Eur. J. Inorg. Chem.
DOI: **10.1002/ejic.201101383**

Glycosylation

L. O. Kononov,* N. N. Malysheva, A. V. Orlova, A. I. Zinin, T. V. Laptinskaya, E. G. Kononova, N. G. Kolotyrkina

Concentration Dependence of Glycosylation Outcome: A Clue to Reproducibility and Understanding the Reasons Behind

Depending on the concentration, the reagents can form different supramers with distinct chemical properties. The changes in supramer structure (indicated by the red vertical arrows) correlate with the glycosylation yield (*1*) and stereoselectivity (*2*) and can be detected by physical methods.



Eur. J. Org. Chem.
DOI: **10.1002/ejoc.201101613**

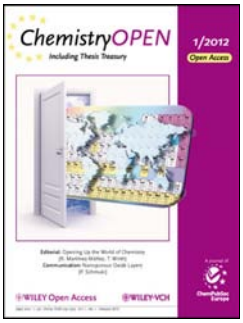
Guess the Chemist (3)

ChemViews

Every month ChemViews magazine challenges you to guess the chemist.

The person we are looking for this month never intended to have a career in science, but ended up making a profound impact on our understanding of the nature of matter and the physical world at the most fundamental level. Read more and guess the famous scientist.

ChemViews magazine
DOI: **10.1002/chemv.201200026**

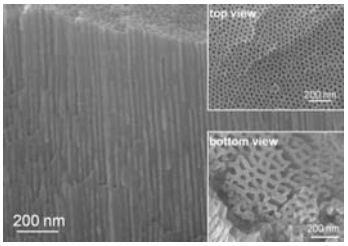


Metal Oxide Nanostructures

R. Kirchgeorg, W. Wei, K. Lee, S. So, P. Schmuki*

Through-Hole, Self-Ordered Nanoporous Oxide Layers on Titanium, Niobium and Titanium–Niobium Alloys in Aqueous and Organic Nitrate Electrolytes

Leaky layers: Several 10 μm-thick, highly aligned, porous structures of titanium dioxide, niobium pentoxide and mixed oxides can be grown anodically in nitrate-containing electrolytes with channel diameters in the range of 10–20 nm. Depending on the substrate, the electrochemical growth parameters need to be optimized to achieve a high degree of long-range order.



ChemistryOpen
DOI: **10.1002/open.201100012**