

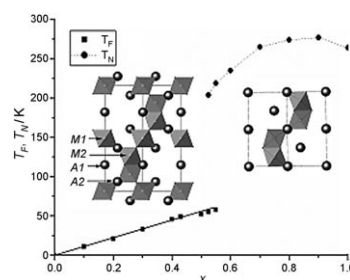


Perovskites

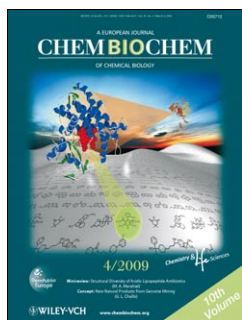
C. Yin, G. Li, J. Lin,* J. P. Attfield*

Structural and Magnetic Properties of $\text{Ba}_{0.7}\text{Sr}_{0.3}\text{Ru}_{1-x}\text{Mn}_x\text{O}_3$ Hexagonal Perovskites

Tuning perovskites! A dramatic structural control of magnetic properties is reported in $\text{Ba}_{0.7}\text{Sr}_{0.3}\text{Ru}_{1-x}\text{Mn}_x\text{O}_3$ hexagonal perovskites. These are spin-glasses with freezing temperatures proportional to x in the 6H polytype up to $x \approx 0.5$, but show high temperature antiferromagnetism in 4H phases at high x .



Chem. Asian J.
DOI: 10.1002/asia.200800469

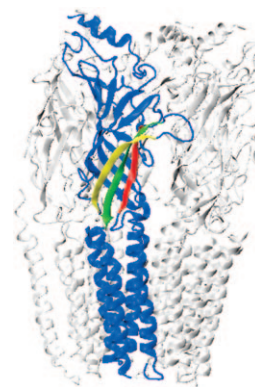


Allosterism

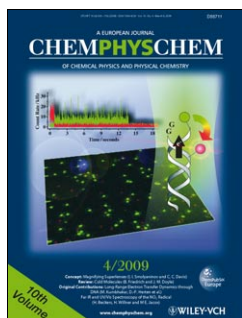
K. R. Gleitsman, H. A. Lester, D. A. Dougherty*

Probing the Role of Backbone Hydrogen Bonding in a Critical β Sheet of the Extracellular Domain of a Cys-Loop Receptor

Probing the sheet: The network of hydrogen bonds formed in the outer β sheet of the nicotinic acetylcholine receptor (nAChR; see figure) is fairly robust and tolerates single amide-to-ester mutations throughout. However, eliminating two proximal hydrogen bonds completely destroys receptor function; this adds further support to gating models that ascribe important roles to these β strands of the nAChR extracellular domain.



ChemBioChem
DOI: 10.1002/cbic.200900092

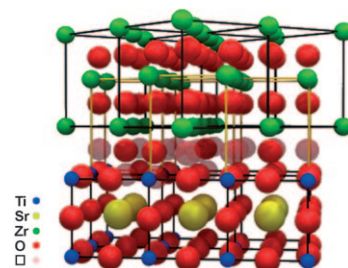


Fuel Cells

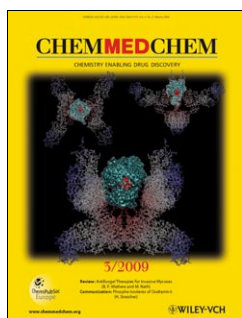
J. Garcia-Barriocanal, A. Rivera-Calzada, M. Varela, Z. Sefrioui, M. R. Díaz-Guillén, K. J. Moreno, J. A. Díaz-Guillén, E. Iborra, A. F. Fuentes, S. J. Pennycook, C. Leon, J. Santamaria*

Tailoring Disorder and Dimensionality: Strategies for Improved Solid Oxide Fuel Cell Electrolytes

Towards cooler solid oxide fuel cells: Disorder and dimensionality (see picture) play an important role in determining ion mobility of bulk and artificially nanolayered materials and should be considered in the design of new electrolytes with enhanced conductivity.



ChemPhysChem
DOI: 10.1002/cphc.200800691

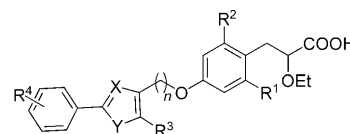


Drug Design

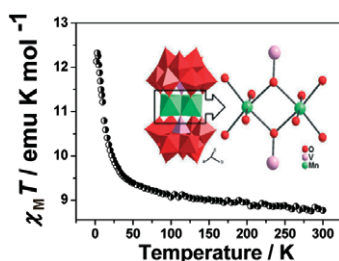
U. Grether,* A. Bénardeau, J. Benz, A. Binggeli, D. Blum, H. Hilpert, B. Kuhn, H. P. Märki, M. Meyer, P. Mohr, K. Püntener, S. Raab, A. Ruf, D. Schlatter

Design and Biological Evaluation of Novel, Balanced Dual PPAR α/γ Agonists

An X-ray-guided design approach led to the identification of a novel, balanced class of α -ethoxy-phenylpropionic acid-derived dual PPAR α/γ agonists. The series shows a wide range of PPAR α/γ ratios within a rather narrow structural space. Advanced compounds possess favorable physicochemical and pharmacokinetic profiles and show a high efficacy in T2D and dyslipidemia animal models.



ChemMedChem
DOI: 10.1002/cmdc.200800425



Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200801133

Ferromagnetic Polyoxometalates

Y. Yang, L. Xu,* G. Gao, F. Li, X. Liu, W. Guo

An Unexpected Ferromagnetic Coupling in a Dinuclear Manganese(II) Linked Trivacant Heteropolymolybdate Derivative

An unexpected ferromagnetically coupled dinuclear manganese(II) linked trivacant heteropolymolybdate $[\text{HN}(\text{CH}_3)_3]_{10}[\text{Mn}_2(\text{V}^{\text{VI}}\text{Mo}_9\text{O}_{33})_2] \cdot 10\text{H}_2\text{O}$ has been synthesized in aqueous solution and characterized by elemental analysis, IR spectroscopy, thermal gravimetric analysis, and single-crystal X-ray diffraction.



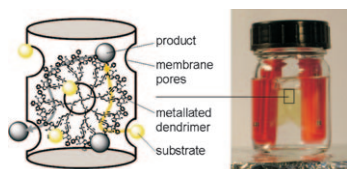
Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200900075

Chemical Biology

M. Verdoes, B. I. Florea, G. A. van der Marel, H. S. Overkleeft*

Chemical Tools To Study the Proteasome

Electrophilic traps, evolved in nature, have inspired the design and synthesis of chemical probes that greatly contributed to expanding our knowledge of proteasome activity and function. This microreview discusses the latest developments in this field, ranging from functional chemical biology probes to potential therapeutic candidates.



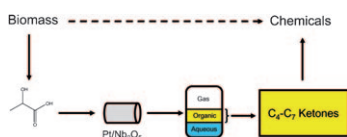
Chem. Eur. J.
DOI: 10.1002/chem.200900504

Homogeneous Catalysis

M. Gaab, S. Bellemin-Laponnaz,* L. H. Gade*

"Catalysis in a Tea Bag": Synthesis, Catalytic Performance and Recycling of Dendrimer-Immobilised Bis- and Trisoxazoline Copper Catalysts

Trapped in a "tea bag": Membrane bags, fabricated from a dialysis membrane, have been employed as semipermeable containers for dendrimer-immobilised oxazoline-copper(II) Lewis acid catalysts. Dipping them into reactant solutions leads to the catalytic conversion of the substrates which penetrate the membrane as does the product in the reverse direction (see scheme).



ChemSusChem
DOI: 10.1002/cssc.200900004

Catalysis

J. C. Serrano-Ruiz, J. A. Dumesic*

Catalytic Processing of Lactic Acid over $\text{Pt}/\text{Nb}_2\text{O}_5$

Aqueous solutions of lactic acid derived from biomass can be catalytically upgraded over $\text{Pt}(0.1\%)/\text{Nb}_2\text{O}_5$ into an organic phase rich in C_4 – C_7 ketones that spontaneously separates from water. The single-reactor process retains 50% of the feed carbon in the organic layer. The niobia support catalyzes C–C coupling reactions and plays a key role in directing the synthesis towards these valuable products.



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