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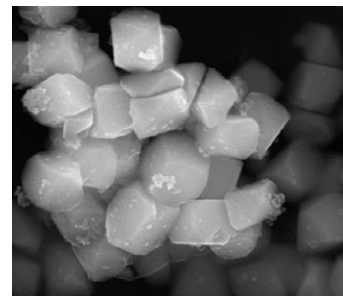


Organometallic Chemistry

S. Schulz*

Low-Valent Organometallics—Synthesis, Reactivity, and Potential Applications

Far beyond lab curiosities: The synthesis of kinetically stabilized (sterically demanding substituents) and electronically stabilized (base stabilization) low-valent complexes of Groups 2, 12, 13, and 15 is summarized as well as their potential application as selective reductants, unusual ligands in coordination chemistry, and as novel precursors in material sciences (see graphic).



Chem. Eur. J.
DOI: [10.1002/chem.201000580](https://doi.org/10.1002/chem.201000580)

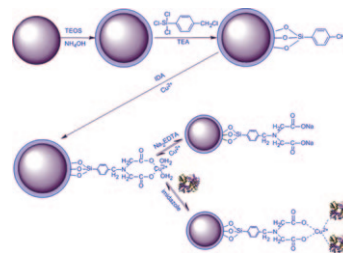


Microspheres

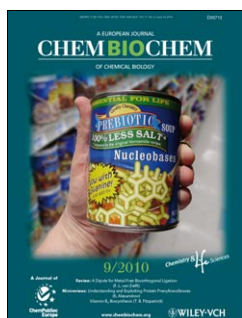
M. Zhang, D. Cheng, X. He, L. Chen,* Y. Zhang*

Magnetic Silica-Coated Sub-Microspheres with Immobilized Metal Ions for the Selective Removal of Bovine Hemoglobin from Bovine Blood

Vampire microspheres: Superparamagnetic silica-coated magnetite (Fe_3O_4) sub-microspheres with an immobilized metal-affinity ligand are prepared largely through a novel route (see scheme). Protein adsorption results show that the sub-microspheres have a high selective adsorption for bovine hemoglobin (BHb), low nonspecific adsorption, and are capable of efficient removal of BHb from bovine blood.



Chem. Asian J.
DOI: [10.1002/asia.200900463](https://doi.org/10.1002/asia.200900463)

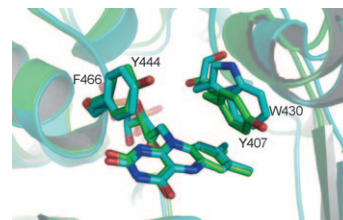


Enzyme Catalysis

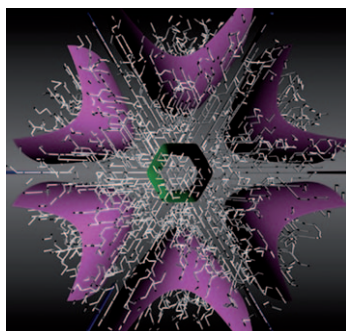
R. V. Dunn, A. W. Munro, N. J. Turner, S. E. J. Rigby, N. S. Scrutton*

Tyrosyl Radical Formation and Propagation in Flavin Dependent Monoamine Oxidases

MAO enzymes: Demonstration of the presence of tyrosyl radicals in partially reduced monoamine oxidases (MAO) was achieved by a combination of specific isotopic labelling and pulsed ENDOR techniques. Comparative studies between human MAO A and MAO N indicate that the equilibrium distribution of the radical species is not localised to the active site residues near the flavin cofactor.



ChemBioChem
DOI: [10.1002/cbic.201000184](https://doi.org/10.1002/cbic.201000184)



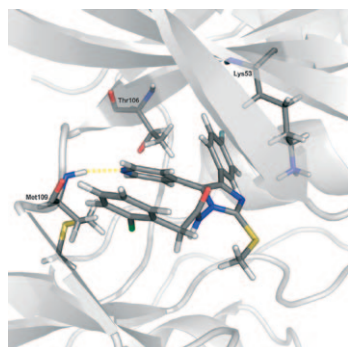
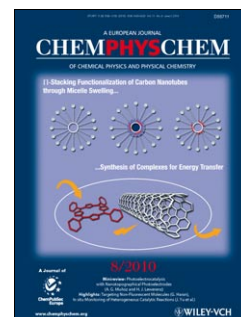
ChemPhysChem
DOI: 10.1002/cphc.201000232

Nanocomposites

J. Brickmann,* R. Paparcone, S. Kokolakis, D. Zahn, P. Duchstein, W. Carrillo-Cabrera, P. Simon, R. Kniep*

Fluorapatite–Gelatin Nanocomposite Superstructures: New Insights into a Biomimetic System of High Complexity

The beauty of complexity is reflected by the formation of hierarchical patterns on various length scales (see picture). The simulation of the fibril pattern inside a fluorapatite-gelatin nanocomposite superstructure reveals excellent agreement with TEM data and seems to be a key scenario for the development of biogenic composite shapes and architectures.



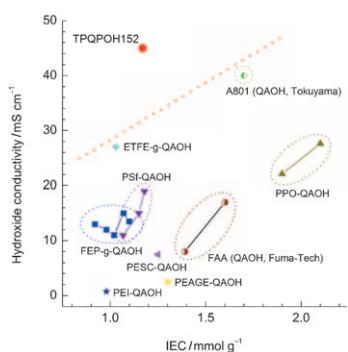
ChemMedChem
DOI: 10.1002/cmdc.201000114

Drug Discovery

C. Bracht, D. R. J. Hauser, V. Schattel, W. Albrecht, S. A. Laufer*

Synthesis and Biological Testing of *N*-Aminoimidazole-Based p38 α MAP Kinase Inhibitors

We developed novel tetrasubstituted pyridinylimidazoles with acyl residues at the imidazole N1 position that interact with specific regions of p38 mitogen-activated protein (MAP) kinase α to improve both selectivity and activity. The substitution pattern was optimized by variation of the acyl group at the N1 position of the *N*-aminoimidazole core.



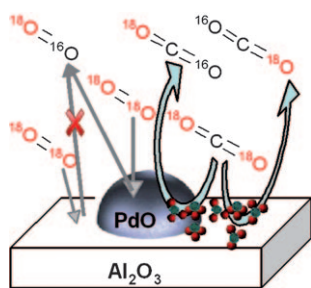
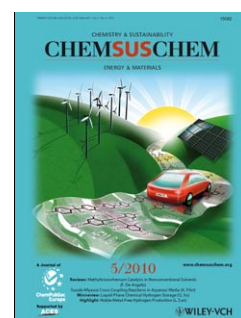
ChemSusChem
DOI: 10.1002/cssc.201000074

Fuel Cells

S. Gu, R. Cai, T. Luo, K. Jensen, C. Contreras, Y. S. Yan*

Quaternary Phosphonium-Based Polymers as Hydroxide Exchange Membranes

A new class of hydroxide exchange membranes (HEMs) is prepared by using a quaternary phosphonium-based polymer. The membranes display desirable properties, most notably a high conductivity. A corresponding fuel cell exhibits the highest HEM fuel cell performance to date and shows a better intrinsic catalyst-activity compared with state-of-the-art proton exchange membrane fuel cells.



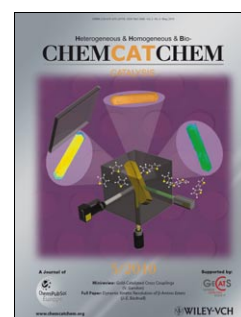
ChemCatChem
DOI: 10.1002/cctc.201000033

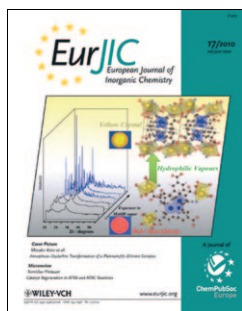
Supported Catalysts

S. Ojala, N. Bion,* S. Rijo Gomes, R. L. Keiski, D. Duprez

Isotopic Oxygen Exchange over Pd/Al₂O₃ Catalyst: Study on C¹⁸O₂ and ¹⁸O₂ Exchange

Exchange would do you good: Labeled C¹⁸O₂ was used to study oxygen isotopic exchange over Pd/Al₂O₃ catalyst. The improvement in exchange rate compared with the exchange from ¹⁸O₂ is at least a factor of ten. The roles of PdO and carbonates are essential in enhancing the oxygen exchange from C¹⁸O₂. C¹⁸O₂ exchange can be applied instead of ¹⁸O₂, when oxygen activation on Pd/Al₂O₃ catalysts is studied at low temperatures.



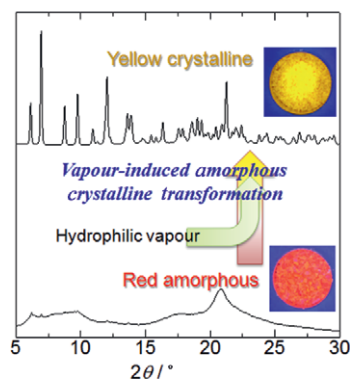


A Vapour History Sensor

A. Kobayashi, T. Yonemura, M. Kato*

Vapour-Induced Amorphous–Crystalline Transformation of a Luminescent Platinum(II)–Diimine Complex

A newly synthesized Pt^{II}–diimine complex, Na₂[Pt(CN)₂(dcbpy)]·2H₂O, exhibited a vapour-induced amorphous–crystalline transformation responding to hydrophilic solvent vapour, which is a promising phenomenon for a vapour history sensor.



Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.201000289

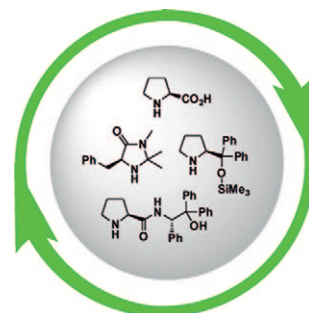


Polymer-Supported Organocatalysts

T. E. Kristensen, T. Hansen*

Polymer-Supported Chiral Organocatalysts: Synthetic Strategies for the Road Towards Affordable Polymeric Immobilization

The preparation and utilization of enamine and iminium organocatalysts have seen a tremendous growth during the last decade. In this microreview, we highlight the polymer-supported versions of these catalysts, with a special focus on the synthetic strategies that have been undertaken to prepare them and analyze these strategies in a historical context.



Eur. J. Org. Chem.

DOI: 10.1002/ejoc.201000319

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