

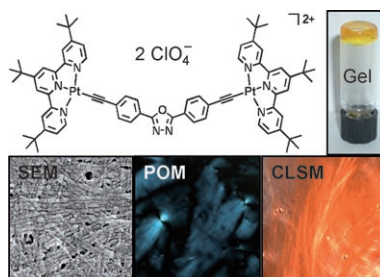
Phosphorescent Gelators

W. Lu, Y.-C. Law, J. Han, S. S.-Y. Chui, D.-L. Ma, N. Zhu, C.-M. Che*

A Dicationic Organoplatinum(II) Complex Containing a Bridging 2,5-Bis-(4-ethynylphenyl)-[1,3,4]oxadiazole Ligand Behaves as a Phosphorescent Gelator for Organic Solvents

Chem. Asian J.

DOI: 10.1002/asia.200700265



It all gels! A binuclear terpyridyl platinum(II) salt with a 2,5-bis(4-ethynylphenyl)[1,3,4]oxadiazole bridging ligand acts as a low-molecular-mass phosphorescent gelator for acetonitrile or acetonitrile/alcohol mixtures. Notably, this metal-containing gelator carries neither conventional gelating motifs nor long alkyl chains.

Quantum Dots

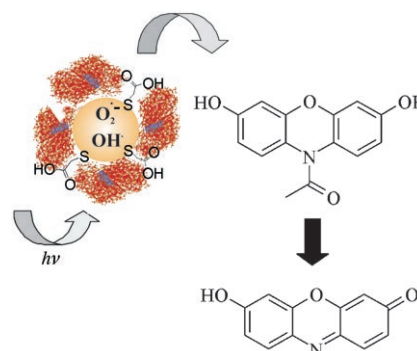
L. Fruk, V. L. Rajendran, M. Sprengler, C. M. Niemeyer*

Light-Induced Triggering of Peroxidase Activity Using Quantum Dots

ChemBioChem

DOI: 10.1002/cbic.200700594

On the dot. Peroxidase enzymes, which play a key role in numerous applications in biocatalysis and bioanalytics, were reversibly switched on and off by photoirradiation in the presence of CdS quantum dots (QDs). Four different peroxidases were successfully activated by using this QD-irradiation methodology. These light switchable catalysts could prove useful in biosensing, biocatalysis, and design of novel cellular assay procedures.



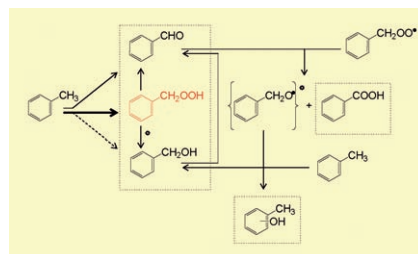
Toluene

I. Hermans,* J. Peeters, L. Vereecken, P. A. Jacobs

Mechanism of Thermal Toluene Autoxidation

ChemPhysChem

DOI: 10.1002/cphc.200700563



The pivotal intermediate in toluene autoxidation (see scheme) is identified as the highly reactive benzyl hydroperoxide by a combined experimental and theoretical investigation. Co-oxidation of benzaldehyde yields benzoic acid and benzyl alcohol, and causes deactivation by the formation of radical inhibitors such as cresols.

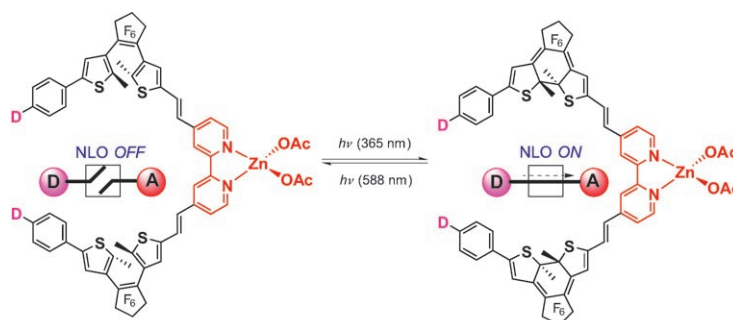
Nonlinear Optics

V. Aubert, V. Guerschais, E. Ishow, K. Hoang-Thi, I. Ledoux, K. Nakatani, H. Le Bozec*

Efficient Photoswitching of the Nonlinear Optical Properties of Dipolar Photochromic Zinc(II) Complexes

Angew. Chem. Int. Ed.

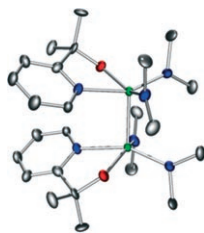
DOI: 10.1002/anie.200704138



Flipping the switch: A new type of bipyridine-based ligand functionalized by phenyl- and dimethylaminophenyldithienylethene groups allows the preparation of photochromic dipolar zinc(II)

complexes. For the first time, efficient on/off photoswitching of the NLO response of metallochromophores is observed.

Ditungsten(III) Complexes



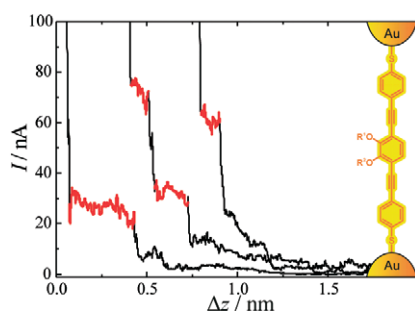
A new dimeric tungsten(III) complex containing amido and chelating pyridine-alkoxido ligands was synthesized through protonolysis of $[W_2(NMe_2)_6]$ by 2-(2-pyridyl)propan-2-ol and fully characterized. Grafting of this compound onto silica has been investigated by elemental analysis, DRIFTS, and solid-state NMR spectroscopy.

O. Coutelier, R. M. Gauvin,*
G. Nowogrocki, J. Trébosc, L. Delevoe,
A. Mortreux*

A New Donor-Stabilized Ditungsten Amido Alkoxido Species: Synthesis, Crystal Structure, Fluxionality, and Grafting onto Silica

Eur. J. Inorg. Chem.
DOI: 10.1002/ejic.200700732

Molecular Electronics



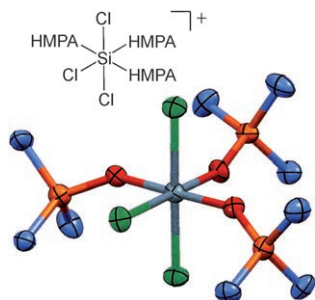
Several molecular rods comprising variously protected catechol subunits have been synthesized and investigated as potential precursors of a catechol-functionalized molecular rod. Furthermore, molecular junctions formed by the dimethyl-protected catechol-functionalized rod in an electrochemical STM set-up allowed preliminary single-molecule transport measurements.

N. Weibel, A. Błaszczuk, C. von Hänisch,
M. Mayor,* I. Pobelov, T. Wandlowski,*
F. Chen, N. Tao*

Redox-Active Catechol-Functionalized Molecular Rods: Suitable Protection Groups and Single-Molecule Transport Investigations

Eur. J. Org. Chem.
DOI: 10.1002/ejoc.200700810

Organic Chemistry



The Lewis acid-Lewis base complexation chemistry of $SiCl_4$ and HMPA has been studied in solution and the solid state. The cationic complex $3HMPA \cdot SiCl_3^+ HCl_2^-$ (see figure) has been structurally characterized for the first time.

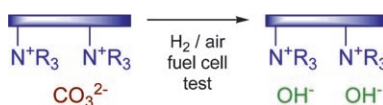
S. E. Denmark,* B. M. Eklov

Neutral and Cationic Phosphoramidate Adducts of Silicon Tetrachloride: Synthesis and Characterization of Their Solution and Solid-State Structures

Chem. Eur. J.
DOI: 10.1002/chem.200701466

Fuel Cells

Fuelling the discussion: A carbonate-form metal-cation-free alkaline membrane was evaluated in a fuel cell, and, contrary to prior wisdom, the carbonate content of the membranes was found to decrease. Surprisingly, the power performance was higher relative to tests with the equivalent hydroxide-form membranes.



L. A. Adams, S. D. Poynton, C. Tamain,
R. C. T. Slade, J. R. Varcoe*

A Carbon Dioxide Tolerant Aqueous-Electrolyte-Free Anion-Exchange Membrane Alkaline Fuel Cell

ChemSusChem
DOI: 10.1002/cssc.200700013



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