

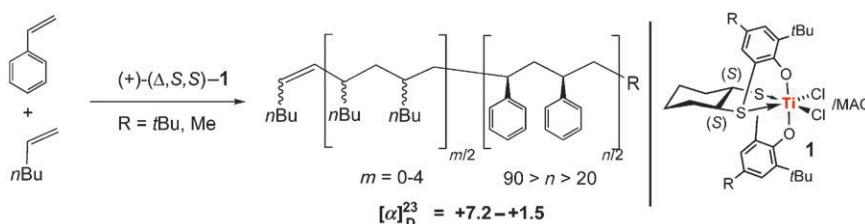
Styrene Oligomerization

G.-J. M. Meppelder, K. Beckerle,
R. Manivannan, B. Lian, G. Raabe,
T. P. Spaniol, J. Okuda*

**Enantiomerically Pure Titanium
Complexes Containing an
[OSSO]-Type Bis(phenolate) Ligand:
Synthesis, Structure, and Formation of
Optically Active Oligostyrenes**

Chem. Asian J.

DOI: 10.1002/asia.200800064



The configurational stability of chiral bis(phenolate) titanium complexes results from the diastereoselective chirality transfer from the ligand to the metal center. When activated with MAO using 1-hexene as chain-transfer

agent, this chirality can be catalytically transferred from the enantiopure catalyst to the incoming styrene monomer to give homochiral isotactic oligostyrenes.

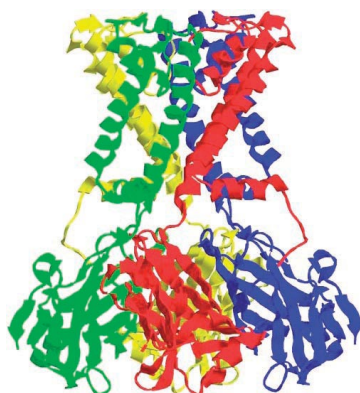
Ion Channels

Y. Nagaoka, L. Shang, A. Banerjee,
H. Bayley, S. J. Tucker*

**Peptide Backbone Mutagenesis of
Putative Gating Hinges in a Potassium
Ion Channel**

ChemBioChem

DOI: 10.1002/cbic.200800133



Who's the gatekeeper? The mechanism by which K⁺ channels open and close or "gate" is still not fully understood. In this study, we use unnatural amino acid mutagenesis to change the flexibility of the pore-lining helices of the Kir2.1 potassium channel at two key glycine residues that have been implicated in channel gating.

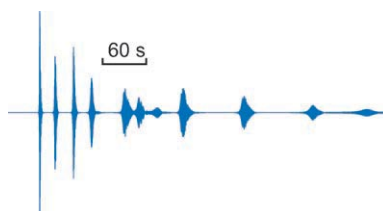
NMR Master

D. J.-Y. Marion, G. Huber,
P. Berthault, H. Desvaux*

**Observation of Noise-Triggered
Chaotic Emissions in an NMR-Maser**

ChemPhysChem

DOI: 10.1002/cphc.200800113



Multiple maser emissions: Dissolved hyperpolarized ¹²⁹Xe in which the magnetization is anti-aligned with the magnetic field, is able to emit a series of rf bursts spontaneously, without rf excitation. This chaotic NMR-maser illustrates the increase in the complexity of spin dynamics at high magnetization levels.

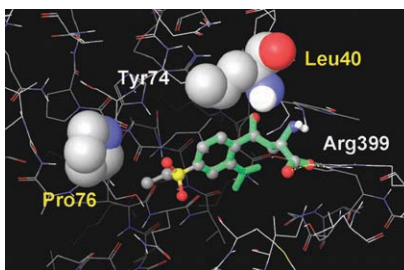
Enzyme Inhibitors

R. Pellicciari,* F. Venturoni,
D. Bellocchi, A. Carotti,
M. Marinozzi, A. Macchiarulo,
L. Amori, R. Schwarcz

**Sequence Variants in Kynurenine
Aminotransferase II (KAT II)
Orthologs Determine Different
Potencies of the Inhibitor S-ESBA**

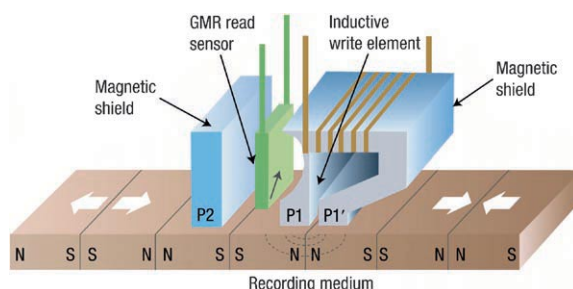
ChemMedChem

DOI: 10.1002/cmdc.200800109



We report a novel and more efficient synthesis of S-ESBA and an analysis of its inhibitory activity toward recombinant human KAT II. The data are discussed in light of the crystal structure of human KAT II and on the basis of conserved and nonconserved residues of species-specific orthologs of KAT II (human, rat, and mouse).

Spintronics



Going for a spin: The discovery of giant magnetoresistance (GMR) opened up a new area of technology—spintronics—which, in contrast to conventional electronics, uses not only the charge, but also the spin of the elec-

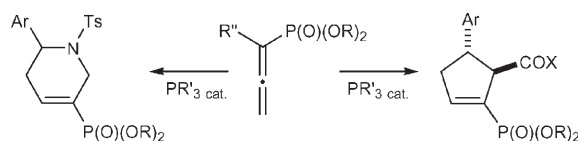
tron. Applications of GMR have revolutionized hard-disk technology (see picture). Albert Fert, Nobel laureate in Physics 2007, describes firsthand the discovery of GMR and the development of spintronics.

A. Fert*

Origin, Development, and Future of Spintronics (Nobel Lecture)

Angew. Chem. Int. Ed.

DOI: 10.1002/anie.200801093



Allenylphosphonates react with imines, α,β -unsaturated esters, and enones in Bu_3P - or $i\text{Bu}_3\text{P}$ -promoted reactions to afford pyrrolines, tetrahydropyridines, and cyclopentenes bearing phosphoryl

functions. Enantioselective variants of these cyclization reactions afforded enantiomeric excesses of up to 90% when a chiral phosphine was used as the catalyst.

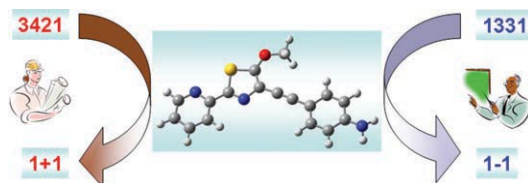
Phosphane Organocatalysts

A. Panossian, N. Fleury-Brégeot, A. Marinetti*

Use of Allenylphosphonates as New Substrates for Phosphane-Catalyzed [3+2] and [4+2] Annulations

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200800347



Molecular defense: A secured molecular computing platform to defend against illegal information theft and invasion is obtained by the rational control of chemical reaction sequences in a newly prepared multi-switchable fluorophore. The binding between the

fluorescent switch and the guest signal is activated after sequence sensitive in situ conversion, therefore, the user's password entry enables not only the user's identity to be checked (see figure).

Molecular Devices

W. Sun, C. Zhou, C.-H. Xu, C.-J. Fang, C. Zhang, Z.-X. Li, C.-H. Yan*

A Fluorescent-Switch-Based Computing Platform in Defending Information Risk

Chem. Eur. J.

DOI: 10.1002/chem.200800576

An important interaction: K_2CO_3 -promoted hydrotalcite-based and alumina-based materials are cheap and excellent materials for high-temperature (300–500 °C) adsorption of CO_2 and particularly promising in the sorption-enhanced water gas shift reaction. Potassium ions strongly interact with aluminium oxide centres in aluminium-containing materials and generate basic sites in hydrotalcite which reversibly adsorb CO_2 at 400 °C.



CO₂ Sorption Materials

S. Walspurger,* L. Boels, P. D. Cobden, G. D. Elzinga, W. G. Haije, R. W. van den Brink

The Crucial Role of the K⁺-Aluminium Oxide Interaction in K⁺-Promoted Alumina- and Hydrotalcite-Based Materials for CO₂ Sorption at High Temperatures

ChemSusChem

DOI: 10.1002/cssc.200800085