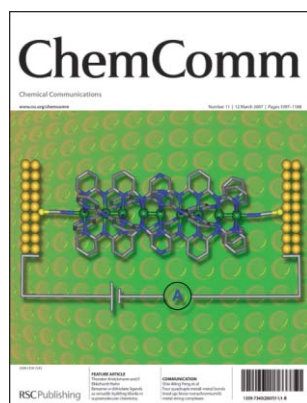


IN THIS ISSUE

ISSN 1359-7345 CODEN CHCOFS (11) 1097–1188 (2007)



Cover

See Shie-Ming Peng *et al.*, page 1121. Four metal-metal quadruple bonds lined up and formed a molecular metal wire. Image reproduced by permission of Rayyat H. Ismayilov, Wen-Zhen Wang, Rui-Ren Wang, Chen-Yu Yeh, Gene-Hsiang Lee and Shie-Ming Peng, from *Chem. Commun.*, 2007, 1121.

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C17

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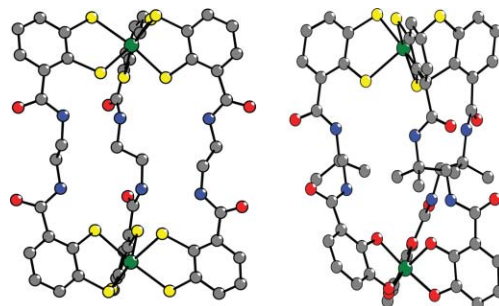
FEATURE ARTICLE

1111

Benzene-*o*-dithiolate ligands as versatile building blocks in supramolecular chemistry

Thorsten Kreickmann and F. Ekkehardt Hahn*

Bis(benzene-*o*-dithiol) and mixed benzene-*o*-dithiol/catechol ligands can be used for the preparation of supramolecular assemblies. In this review, their use for the generation of metallohelicates and the geometrical problems associated from helicate formation with such ligands will be discussed based on selected examples.



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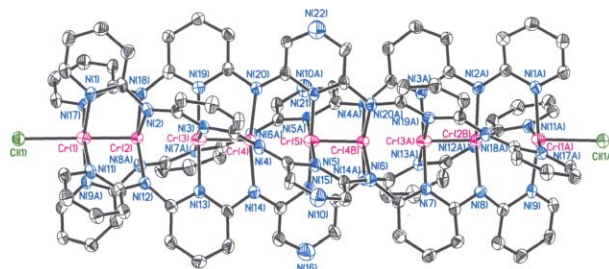
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1121

Four quadruple metal–metal bonds lined up: linear nonachromium(II) metal string complexes

Rayyat H. Ismayilov, Wen-Zhen Wang, Rui-Ren Wang, Chen-Yu Yeh, Gene-Hsiang Lee and Shie-Ming Peng*

Through a new pyrazine-modulated pentapyridyltetraamine ligand, H_4N_9 -mpz, linear nonachromium(II) complexes with four quadruple metal–metal bonds were successfully obtained, and their structure, magnetic and electrochemistry properties were studied.

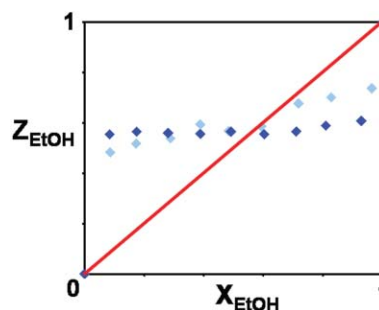


1124

Clathrates with mixed guests

Tanya le Roex,* Luigi R. Nassimbeni and Edwin Weber

Crystal structure analysis gives new insight into clathrates with mixed guests through correlation with selectivity profiles.

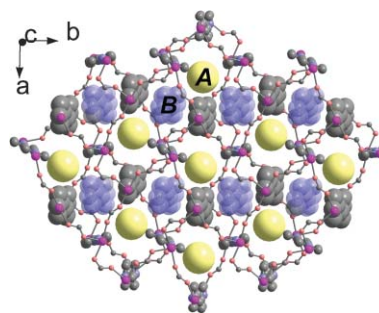


1127

A pillared layer MOF with anion-tunable magnetic properties and photochemical [2 + 2] cycloaddition

Xin-Yi Wang, Zhe-Ming Wang and Song Gao*

A magnetic MOF with two distinct functions was prepared and characterized: [2 + 2] photodimerization and antiferromagnetism with a well-pronounced anion-tunable spin–flop transition below 2.5 K were both observed.

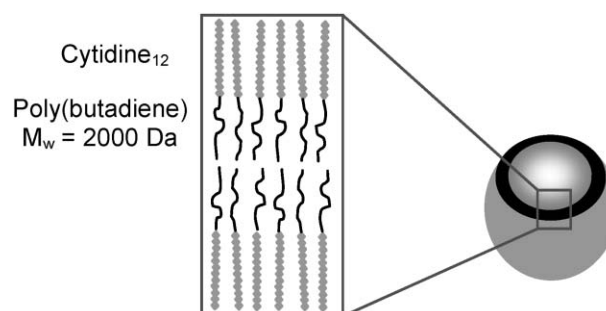


1130

Nucleo-copolymers: oligonucleotide-based amphiphilic diblock copolymers

Francisco Teixeira Jr., Per Rigler and Corinne Vebert-Nardin*

For the first time, the conjugation of a hydrophobic polymer segment to a sequence of nucleotides has been performed. Poly(butadiene) was covalently linked to a nucleotide sequence and the resulting nucleo-copolymer exhibits amphiphilic properties. In dilute aqueous solution, nanometer-sized spherical structures are detected by microscopy.





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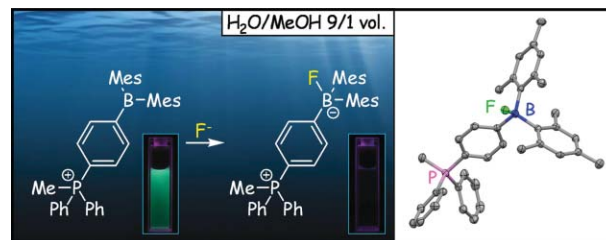
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Fluoride ion complexation by a cationic borane in aqueous solution

Min Hyung Lee, Tomohiro Agou, Junji Kobayashi, Takayuki Kawashima* and François P. Gabbaï*

The presence of a phosphonium moiety in $[p\text{-Mes}_2\text{B}(\text{C}_6\text{H}_4)\text{P}^+\text{MePh}_2]^\oplus$ increases the Lewis acidity of this unusual borane which, unlike its neutral analogs, captures fluoride in aqueous solution.

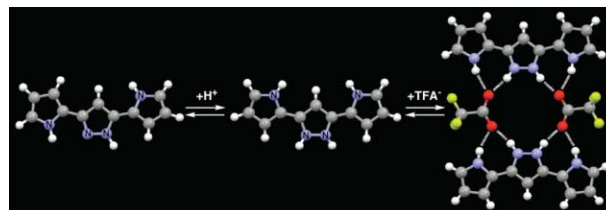


1136

Dipyrrolylpyrazoles: anion receptors in protonated form and efficient building blocks for organized structures

Hirimitsu Maeda,* Yoshihiro Ito, Yukio Kusunose and Takashi Nakanishi

Synthesis of dipyrrolyl-substituted pyrazoles (dpp) and anion binding studies in protonated form are reported. Dpp show [2 + 2] binding of trifluoroacetate in the solid state to afford nanometer- and micrometer-scale architectures.

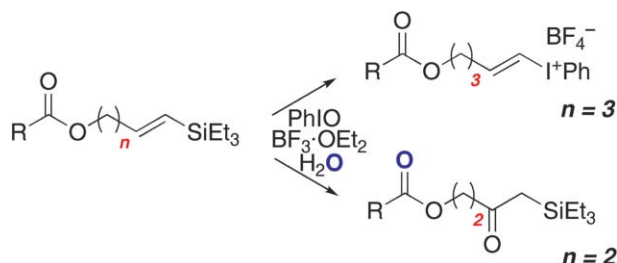


1139

Oxygenation vs iodonio substitution during the reactions of alkenylsilanes with iodosylbenzene: participation of the internal oxy group

Morifumi Fujita,* Hee Jin Lee, Takashi Sugimura and Tadashi Okuyama

Reaction of 4-acyloxybut-1-enylsilanes with iodosylbenzene in the presence of $\text{BF}_3 \cdot \text{OEt}_2$ gave 4-acyloxy-2-oxobutylsilane and 3-acyloxytetrahydrofuran-2-ylsilane *via* a 1,3-dioxan-2-yl cation intermediate, which is generated by participation of the acyloxy group.

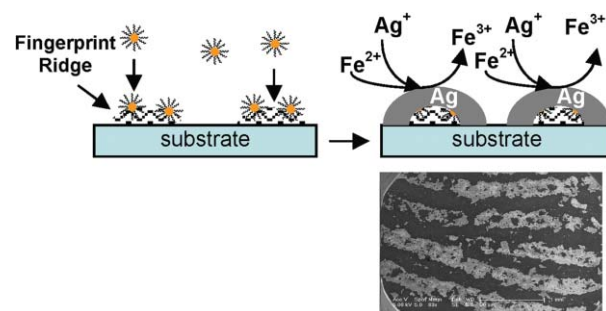


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Application of nanoparticles for the enhancement of latent fingerprints

Matias Sametband, Itzhak Shweky, Uri Banin, Daniel Mandler* and Joseph Almog*

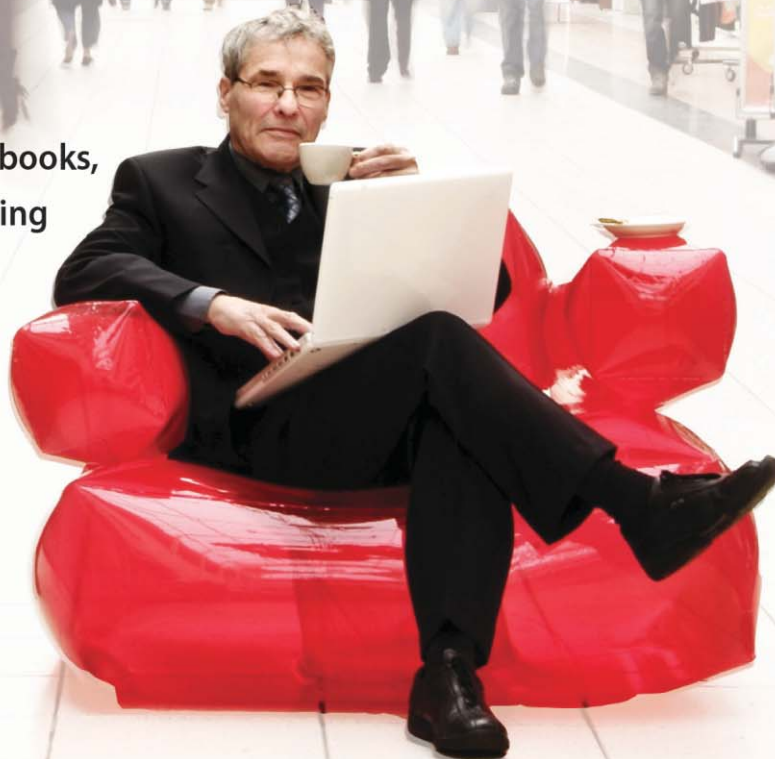
Introduction of nanoparticles into the ridges of fingerprints enhances their visualization.



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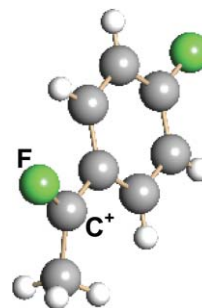
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1145

Isolating fluorinated carbocations

Christos Douvris, Evgenii S. Stoyanov, Fook S. Tham and Christopher A. Reed*

Fluorinated carbocations with carborane anions can be “put in a bottle” for structural study at room temperature.

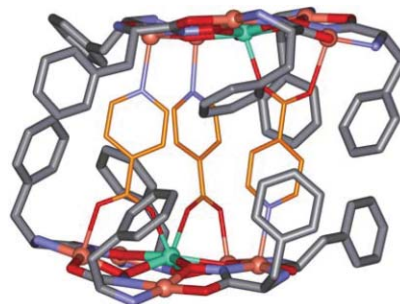


1148

Metallacrown-based compartments: selective encapsulation of three isonicotinate anions in non-centrosymmetric solids

Gellert Mezei, Jeff W. Kampf, Shilie Pan, Kenneth R. Poepelmeier, Byron Watkins and Vincent L. Pecoraro*

Upon crystallization in high yields, metallacrowns form compartments that are capable of asymmetrically encapsulating three isonicotinate guests.

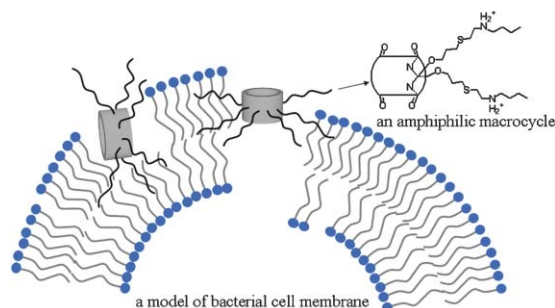


1151

A rationally designed macrocyclic cavitant that kills bacteria with high efficacy and good selectivity

Jinny Choi, Jeeyeon Kim, Kimoon Kim,* Sung-Tae Yang, Jae-II Kim and Sangyong Jon*

An amphiphilic macrocyclic cavitant has been synthesized by rational design and shows a broad spectrum of antibacterial activity comparable to that of peptide-based antibiotics.

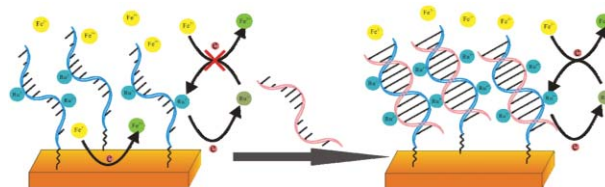


1154

DNA hybridization “turns on” electrocatalysis at gold electrodes

Jiong Zhang, Lihua Wang, Dun Pan, Shiping Song and Chunhai Fan*

The efficiency of electrocatalysis occurring at DNA-modified gold electrodes is highly dependent on the density of DNA monolayers, as a result, DNA hybridization can “turn on” electrocatalysis by increasing the DNA surface density.



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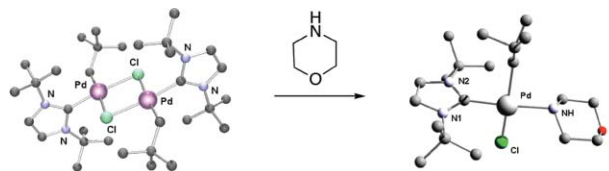
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1157

Synthesis and reactivity of alkylpalladium *N*-heterocyclic carbene complexes

Oriana Esposito, Alexandra K. de K. Lewis, Peter B. Hitchcock, Stephen Caddick* and F. Geoffrey N. Cloke*

The transamination of alkylpalladium halide *N*-heterocyclic carbene complexes has enabled the isolation of products that reveal interesting insights into the factors which might be barriers to the development of a palladium-catalysed alkyl-amination reaction.

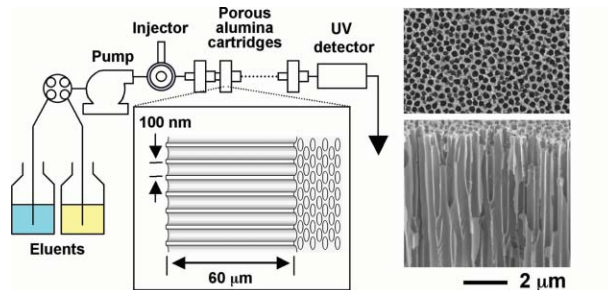


1160

Use of porous anodic alumina membranes as a nanometre-diameter column for high performance liquid chromatography

Tomohisa Yamashita,* Shuji Kodama, Mikiya Ohto, Eriko Nakayama, Nobutaka Takayanagi, Tomoko Kemmei, Akira Yamaguchi, Norio Teramae and Yukio Saito

The possibility of using porous anodic alumina membranes as a column for normal-phase high performance liquid chromatography was evaluated using phenol and toluene.

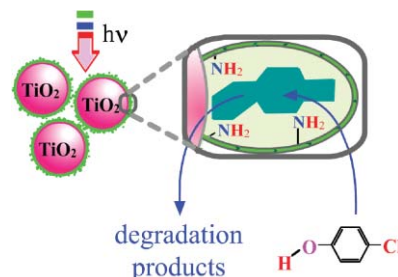


1163

Synthesis of molecular imprinted polymer coated photocatalysts with high selectivity

Xiantao Shen, Lihua Zhu,* Jing Li and Heqing Tang*

As a strategy for improving the selectivity of TiO₂ photocatalysis, nano TiO₂ photocatalysts coated with a molecular imprinted polymer layer have been successfully prepared in the presence of target organic pollutants.

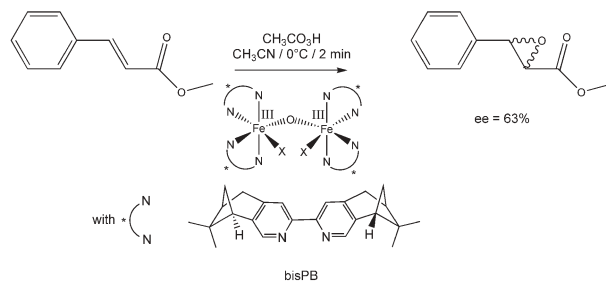


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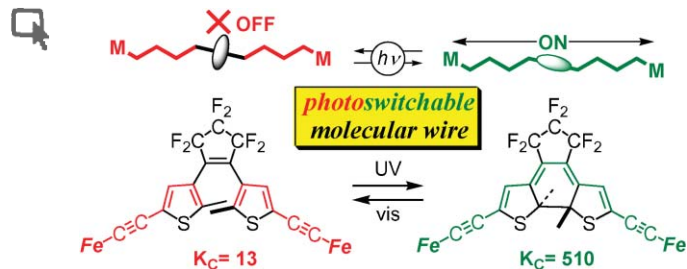
A new chiral diiron catalyst for enantioselective epoxidation

Caroline Marchi-Delapierre, Adeline Jorge-Robin, Aurore Thibon and Stéphane Ménage*

The dinuclear chiral complex Fe₂O(bisPB)₄(X)₂(ClO₄)₄ (X = H₂O or CH₃CN) catalyzes with high efficiency (up to 850 TON) and moderate enantioselectivity (63%) the epoxidation of electron deficient alkenes at 0 °C by a peracid.



1169

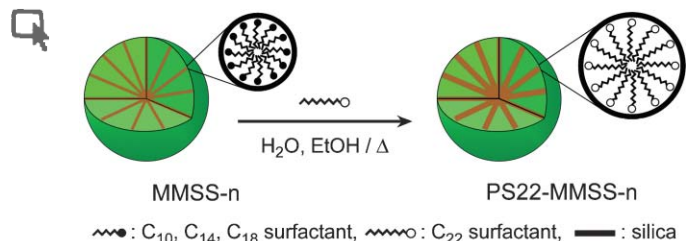


A photoswitchable molecular wire with the dithienylethene (DTE) linker, $(dppe)(\eta^5-C_5Me_5)Fe-C\equiv C-DTE-C\equiv C-Fe(\eta^5-C_5Me_5)(dppe)$

Yuya Tanaka, Akiko Inagaki and Munetaka Akita*

A redox-active diiron complex with the diethynylated dithienylethene (DTE) linker, $(dppe)(\eta^5-C_5Me_5)Fe-C\equiv C-DTE-C\equiv C-Fe(\eta^5-C_5Me_5)(dppe)$, shows photochromic behaviour, through which the communication between the two metal centres can be switched on and off as revealed by electrochemical measurements.

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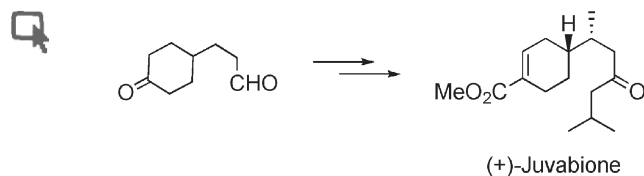


Pore-expansion of monodisperse mesoporous silica spheres by a novel surfactant exchange method

Mamoru Mizutani,* Yuri Yamada and Kazuhisa Yano

By adapting a novel surfactant exchange method, in which surfactants inside mesopores are completely exchanged by surfactants with longer alkyl-chain lengths, pore-expansion of monodisperse mesoporous silica spheres (MMSS) with radially ordered hexagonal regularity was attained while retaining spherical morphology and high monodispersity.

1175

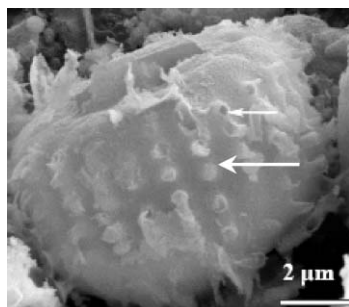


Enantio- and diastereocontrolled synthesis of (+)-juvabione employing organocatalytic desymmetrisation and photoinduced fragmentation

Noriaki Itagaki and Yoshiharu Iwabuchi*

(+)-Juvabione, a natural sesquiterpene exhibiting insect juvenile hormone activity, has been synthesized from σ -symmetric 4-(2-formylethyl)cyclohexanone by employing organocatalytic asymmetric aldolisation and Norrish I-type fragmentation as the key steps.

1177



Formation of nanostructured, nanocrystalline boron nitride microparticles with diatom-derived 3-D shapes

U. Kusari, Z. Bao, Y. Cai, G. Ahmad, K. H. Sandhage* and L. G. Sneddon*

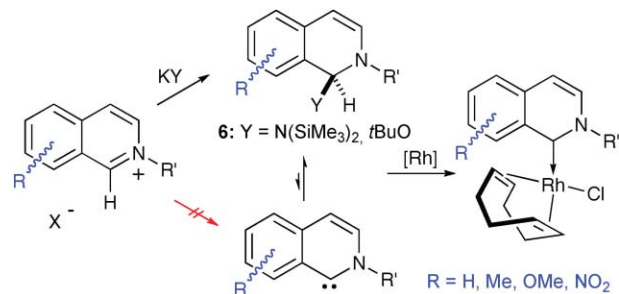
Boron nitride nanostructured microparticles with controlled 3-D shapes were generated using diatom frustule templates in conjunction with the polyborazylene ceramic precursor. These inverse replicas were used to form a new type of SiC/BN ceramic matrix composite.

1180

Isoquinolin-1-ylidenes as electronically tuneable ligands

Silvia Gómez-Bujedo, Manuel Alcarazo, Christophe Pichon, Eleuterio Álvarez, Rosario Fernández* and José M. Lassaletta*

Isoquinolin-1-ylidenes exhibit excellent ligand properties similar to those of NHCs. A fine tuning of the catalytic properties of their complexes can be effected by the introduction of electron withdrawing or donating substituents

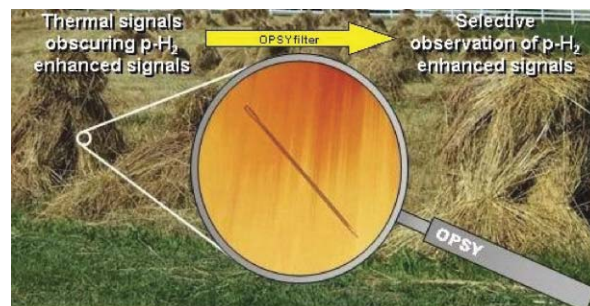


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Only *para*-hydrogen spectroscopy (OPSY), a technique for the selective observation of *para*-hydrogen enhanced NMR signals

Juan A. Aguilar, Paul I. P. Elliott, Joaquín López-Serrano, Ralph W. Adams and Simon B. Duckett*

A method is reported for the study of catalytic reactions by NMR spectroscopy that leaves intact signals derived from *para*-hydrogen induced polarisation (PHIP) while removing signals from nuclei with thermally equilibrated spin state populations.




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