

Cover
Crystal structures of quadruple hydrogen bonded units based on ureidotriazine and ureidopyrimidinone, which have been used in supramolecular polymers.



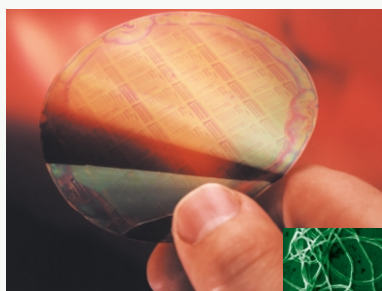
Chemical biology articles published in this journal also appear in the *Chemical Biology Virtual Journal*:
www.rsc.org/chembiol

contents

FOCUS ARTICLE

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Twenty-five years of conducting polymers



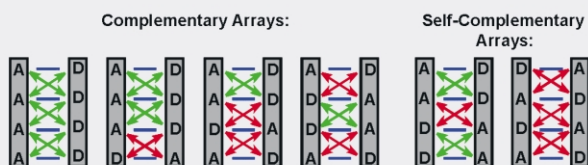
The publication of a seminal *ChemComm* paper in 1977 by Shirakawa, MacDiarmid and Heeger on the simplest conducting polymer, polyacetylene (doped with halogens) led to the new field of conducting polymers – work which was recognised by the award of the Chemistry Nobel Prize in 2000.

FEATURE ARTICLE

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Quadruple hydrogen bonded systems

Rint P. Sijbesma* and E. W. Meijer



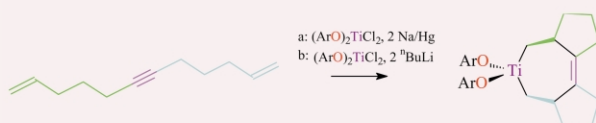
In this feature article, the development of linear quadruple hydrogen bonded systems is discussed, emphasizing applications in supramolecular chemistry and self-assembly.

COMMUNICATIONS

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Novel, stereoselective tricyclization of a dienyne by titanium aryloxy centers

Richard A. Himes, Phillip E. Fanwick and Ian P. Rothwell*

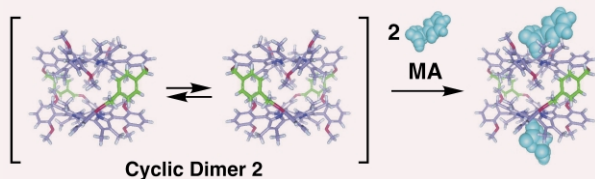


Titanium centers supported by aryloxy ligation mediate the novel tricyclization of a dienyne *via* an unprecedented intramolecular insertion of an olefin into the titanium–vinyl bond of a titanacyclopent-2-ene.

20

Nonlinear amplification of circular dichroism activity upon cyclodimerization of a chiral saddle-shaped porphyrin

Yukitami Mizuno and Takuzo Aida*

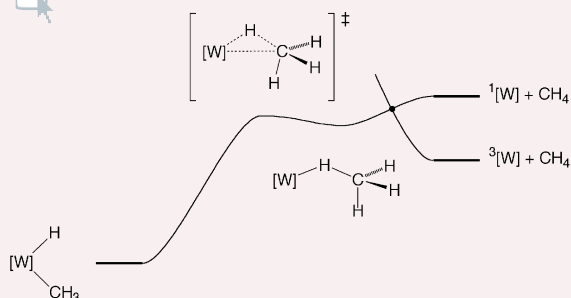


A cyclic dimer of chiral saddle-shaped porphyrin with *p*-xylylene spacers (**2**), upon hydrogen-bonding interactions with mandelic acid (MA), showed an enhanced circular dichroism activity, which was more than 7 times as large as that of a monomeric reference.

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Computational evidence that the inverse kinetic isotope effect for reductive elimination of methane from a tungstenocene methyl-hydride complex is associated with the inverse equilibrium isotope effect for formation of a σ -complex intermediate

Kevin E. Janak, David G. Churchill and Gerard Parkin*

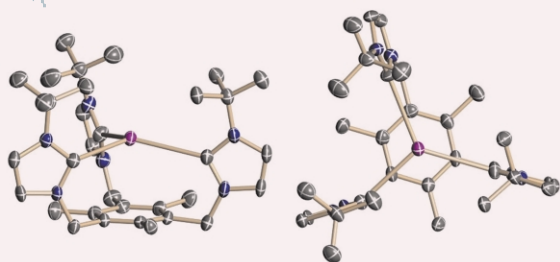


Calculations on $[\text{H}_2\text{Si}(\text{C}_5\text{H}_4)_2]\text{W}(\text{Me})\text{H}$ provide the first theoretical evidence that the inverse kinetic isotope effect for reductive elimination of methane is a manifestation of the existence of a σ -complex intermediate.

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A new entry to *N*-heterocyclic carbene chemistry: synthesis and characterisation of a triscarbene complex of thallium(I)

Hidetaka Nakai, Yongjun Tang, Peter Gantzel and Karsten Meyer*

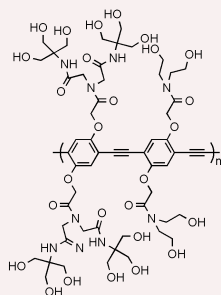


The synthesis and characterisation of a thallium(I) triscarbene complex is reported. This complex represents the first example of a Tl(I) carbene complex and is the only reported complex of this class of percarbene ligand.

26

Synthesis of a nonionic water soluble semiconductive polymer

Kenichi Kuroda and Timothy M. Swager*

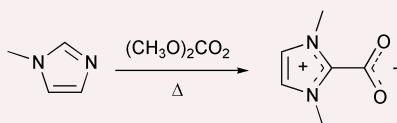


New water soluble semiconducting poly(phenylene ethynylene)s are reported. Previous ionic water-soluble materials have been demonstrated to be useful in high sensitivity biosensory schemes. The present materials have the advantage that the polymers are uncharged and will not be as susceptible to non-specific interactions with charged biomolecules or changes in ionic strength/pH.

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1,3-Dimethylimidazolium-2-carboxylate: the unexpected synthesis of an ionic liquid precursor and carbene- CO_2 adduct

John D. Holbrey, W. Matthew Reichert, Igor Tkatchenko,* Ezzedine Bouajila, Olaf Walter, Immacolata Tommasi and Robin D. Rogers*

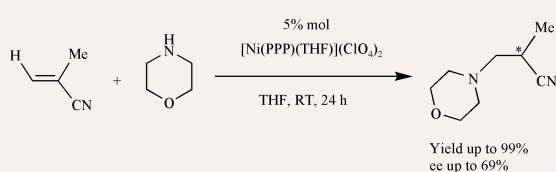


1,3-Dimethylimidazolium-2-carboxylate is formed, rather than the anticipated organic salt, 1,3-dimethylimidazolium methyl carbonate, as the unexpected product from combined *N*-alkylation and *C*-carboxylation of 1-methylimidazole with dimethyl carbonate.

30

Ni(II) Complexes containing chiral tridentate phosphines as new catalysts for the hydroamination of activated olefins

Luca Fadini and Antonio Togni*

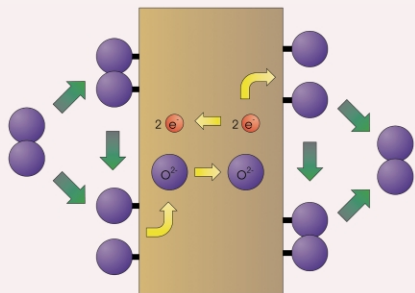


Ni(II) complexes bearing the tridentate phosphine Pigiphos display a surprisingly high activity as catalysts for the addition of secondary amines to activated olefins.

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Studies on the performance stability of mixed conducting BSCFO membranes in medium temperature oxygen permeation

Andre C. van Veen,* Michael Rebeilleau, David Farrusseng and Claude Mirodatos

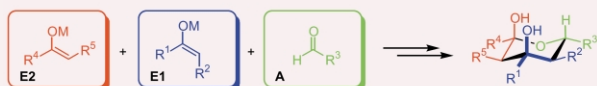


Mixed conducting non-porous BSCFO membranes allow for very high oxygen permeation fluxes. However, the operation conditions are crucial to achieve a stable performance.

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The elusive aldol reaction of enolates with aldolates—a highly stereoselective process using three different carbonyl components

Michael Schmittel,* Andreas Haeuserler, Tom Nilges and Arno Pfizner

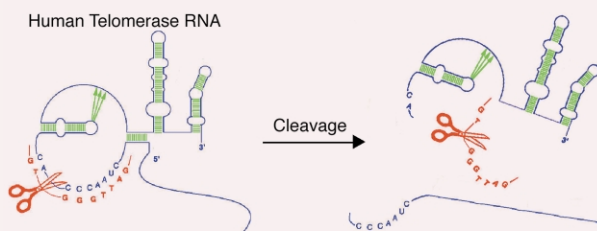


Contrary to the ample usage of the aldol reaction in domino/tandem processes, its use in two consecutive aldol-aldol reactions is rare and often limited to trimerisation protocols. The present report describes the first case of an **E1** + **E2** + **A** aldol-aldol protocol to yield structurally diversified tetrahydropyran-2,4-diols with up to 5 different groups R^1 – R^5 in a highly stereoselective manner.

36

Site-specific cleavage of human telomerase RNA using PNA-neocuproine-Zn(II) derivatives

Andrew Whitney, Gérald Gavory and Shankar Balasubramanian*

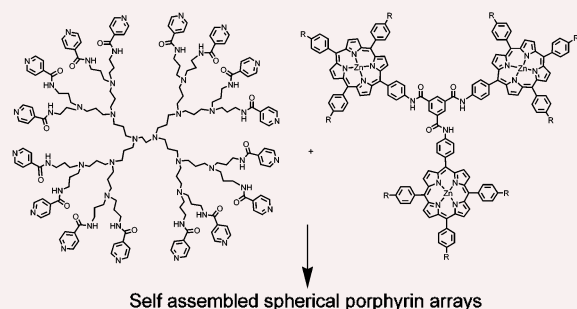


Here we report the synthesis of a novel PNA based neocuproine-Zn RNA cleaving agent. We demonstrate that such agents sequence specifically cleave a synthetic RNA target and in particular the RNA component of human telomerase.

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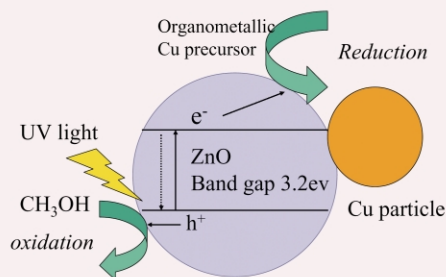
Dendrimers as scaffolds for the synthesis of spherical porphyrin arrays

Pablo Ballester, Rosa M. Gomila, Christopher A. Hunter, Amy S. H. King and Lance J. Twyman*



This paper describes the first use of *multivalent interactions* to increase the self-assembly at a dendrimer surface. Specifically, we have demonstrated that between three and four trimeric porphyrins can be complexed to the pyridine surface groups of a dendrimer.

40



A novel preparation of nano-Cu/ZnO by photo-reduction of $\text{Cu}(\text{OCH}(\text{Me})\text{CH}_2\text{NMe}_2)_2$ on ZnO at room temperature

Lianhai Lu, Andreas Wohlfart, Harish Parala, Alexander Birkner and Roland A. Fischer*

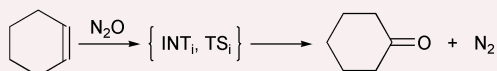
Room-temperature preparation of nano-Cu on ZnO by photo-reduction of $\text{Cu}(\text{OCH}(\text{Me})\text{CH}_2\text{NMe}_2)_2$ precursor was achieved, indicating a novel direct synthesis of supported nano-Cu.

42

Mechanism of direct oxidation of cyclohexene to cyclohexanone with nitrous oxide. Theoretical analysis by DFT method

Vasilii I. Avdeev,* Sergey Ph. Ruzankin and Georgii M. Zhidomirov

New very effective results on the liquid-phase oxidation of cyclohexene to cyclohexanone by nitrous oxide are analyzed using the B3LYP/6-31G* approximation to predict a two-step reaction mechanism correlated with the experimental data.

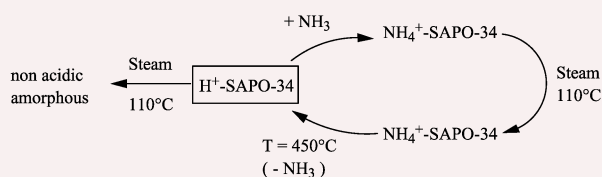


44

Improvement of the hydrothermal stability of SAPO-34

F. D. P. Mees,* L. R. M. Martens, M. J. G. Janssen, A. A. Verberckmoes and E. F. Vansant

Transforming H^+ -SAPO-34 into NH_4^+ -SAPO-34 by the reversible chemisorption of NH_3 strongly improves the hydrothermal stability.

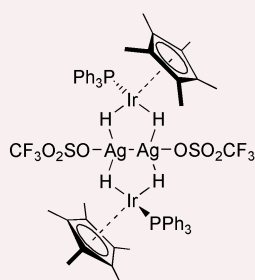


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Unprecedented stabilisation of the Ag_2^{2+} -ion by two hydrido-iridium(III) complexes

Michael Gorol, Nadia C. Mösch-Zanetti, Herbert W. Roesky,* Mathias Noltemeyer and Hans-Georg Schmidt

The first example of a compound that contains the Ag_2^{2+} -ion coordinated by two hydrido-iridium(III) complexes, intermediately formed during the reaction, is accessible *via* facile synthesis.

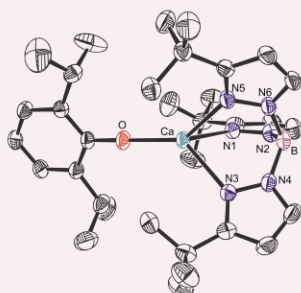


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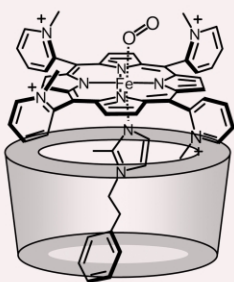
Lactide polymerization by well-defined calcium coordination complexes: comparisons with related magnesium and zinc chemistry

Malcolm H. Chisholm,* Judith Gallucci and Khamphree Phomphrai

A new family of calcium amide and alkoxide complexes has been synthesized and shown to be remarkably reactive for lactide polymerization.



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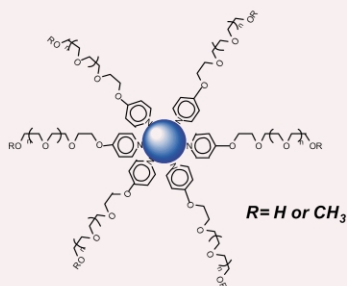


meso-Tetrakis[*o*-(*N*-methyl)pyridinium]porphyrin ensembles with axially coordinated cyclodextrin-penetrating phenethylimidazole: reversible dioxygen-binding in aqueous DMF solution

Teruyuki Komatsu, Shoichi Hayakawa, Eishun Tsuchida and Hiroyuki Nishide*

α -Cyclodextrin (α CD)-penetrating 2-methyl-1-phenethylimidazole coordinates to the zinc(II) and iron(II) complexes of tetrakis[*o*-(*N*-methyl)pyridinium]porphyrinate, giving non-covalently linked α CD-porphyrin ensembles; the iron(II) complex can reversibly bind and release dioxygen in aqueous DMF solution.

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The use of 4-substituted pyridines to afford amphiphilic, pegylated cadmium selenide nanoparticles

Habib Skaff and Todd Emrick*

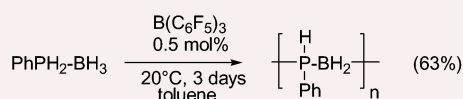
Amphiphilic cadmium selenide (CdSe) nanoparticles were prepared by surface functionalization with novel ligands **1** and **2**, composed of pyridine moieties substituted in the 4-position with polyethylene glycol (PEG) chains.

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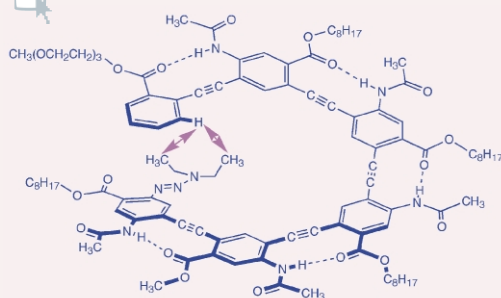
$B(C_6F_5)_3$ -catalyzed formation of B–P bonds by dehydrocoupling of phosphine–boranes

Jean-Marc Denis,* Henrietta Forintos, Helga Szelke, Loic Toupet, Thi-Nhàn Pham, Pierre-Jean Madec and Annie-Claude Gaumont*



Tris(pentafluorophenyl)borane $B(C_6F_5)_3$ was used as a new catalyst in the formation of P–B bonds by dehydrocoupling from phosphine–boranes.

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A new strategy for folding oligo(*m*-phenylene ethynylenes)

Xiaowu Yang, Amy L. Brown, Mako Furukawa, Shoujian Li, Wendy E. Gardinier, Eric J. Bukowski, Frank V. Bright, Chong Zheng, Xiao Cheng Zeng and Bing Gong*

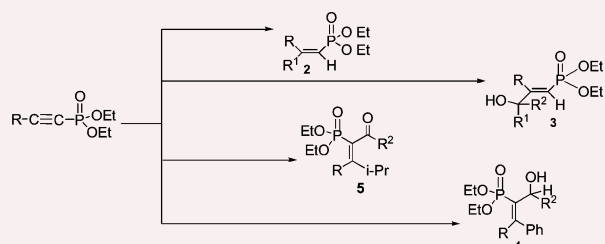
Backbone-rigidified oligo(*m*-phenylene ethynylenes) fold into crescent or helical conformations in non-polar organic solvents.

58



Novel addition reactions of titanacycle phosphonates by tuning of $Ti(O-i-Pr)_4/2i-PrMgCl$

Abed Al Aziz Quntar and Morris Srebnik*



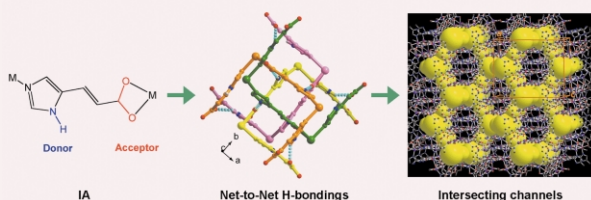
Compounds **2**, **3**, **4**, and **5** (di- and trisubstituted vinylphosphonates) can be selectively synthesized from 1-alkynylphosphonates in a stereo- and regiospecific manner by manipulating the ratio of i -PrMgCl/ $Ti(O-i-Pr)_4$.

60

Crystal engineering toward intersecting channels in a interpenetrated diamondoid network based on a net-to-net H-bonding interaction

Yen-Hsiang Liu, Huang-Chun Wu, Hsiu-Mei Lin, Wei-Hsien Hou and Kuang-Lieh Lu*

A thermally stable, four-fold interpenetrating diamondoid coordination network, $\text{Cd}(\text{imidazole-4-acrylate})_2$, with porous intersecting channels within the interwoven nets, is strategically designed and synthesized on the basis of a net-to-net hydrogen-bonding interaction.

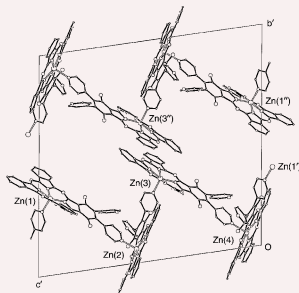


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1,4-Dibutoxy-2,3-di(4-pyridyl)-8,11,15,18,22,25-hexakis(hexyl)-phthalocyaninato zinc, a self-assembled coordination polymer in the solid state

Shaya Y. Al-Raqa, Michael J. Cook* and David L. Hughes

The title compound forms intermolecular zinc–nitrogen coordinated species in solution and self assembles to form a coordination polymer in the solid state, the X-ray structure for which shows that the unit cell contains eight macrocycle units in two ‘zigzag’ chains comprising both enantiomeric forms as ABBA/BAAB sequences.

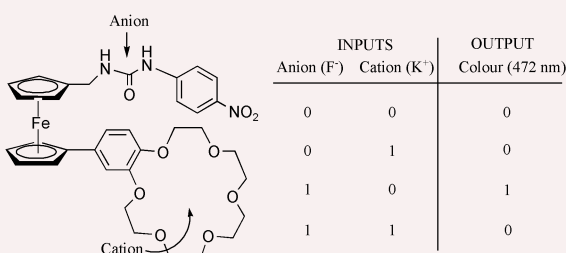


64

A ditopic ferrocene receptor for anions and cations that functions as a chromogenic molecular switch

Hidekazu Miyaji,* Simon R. Collinson, Ivan Prokeš and James H. R. Tucker*

A ferrocene-containing ditopic receptor changes its colour in the presence of fluoride anions that bind at the urea moiety. The chromogenic process may be switched off by potassium cations that bind in the crown ether cavity.

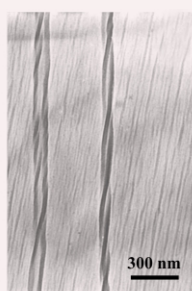


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Chirality of photopolymerized organized supramolecular polydiacetylene films

Xin Huang and Minghua Liu*

Photopolymerized organized molecular films of polydiacetylene showed chirality although the monomeric amphiphilic diacetylene was achiral.

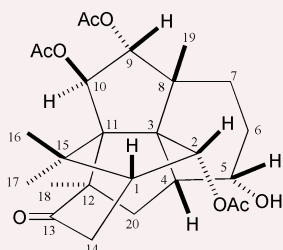


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First example of a taxane-derived propellane in *Taxus canadensis* needles

Qing Wen Shi, Françoise Sauriol, Orval Mamer and Lolita O. Zamir*

The first example of a propellane isolated from the needles of a yew is reported. A biogenesis from a putative taxane precursor is proposed.

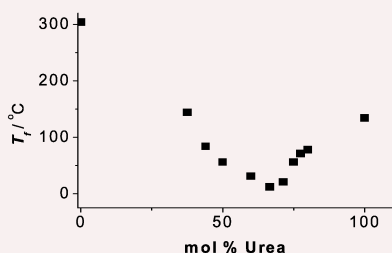


70

Novel solvent properties of choline chloride/urea mixtures

Andrew P. Abbott,* Glen Capper, David L. Davies, Raymond K. Rasheed and Vasuki Tambyrajah

A new type of solvent can be formed from a mixture of an amide and a quaternary ammonium salt that is environmentally compatible and also exhibits unusual solvent properties.

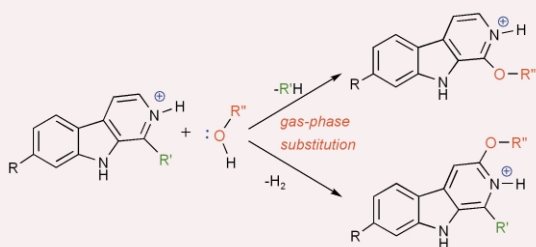


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Novel gas-phase ion–molecule aromatic nucleophilic substitution in β -carboline

Norberto P. Lopes, Tatiana Fonseca, John P. G. Wilkins, James Staunton and Paul J. Gates*

Previous MS/MS studies of β -carboline ions at higher mass than the parent ion. We report that these ions are probably due to a Chichibabin type gas-phase ion–molecule substitution reaction occurring with water vapour.

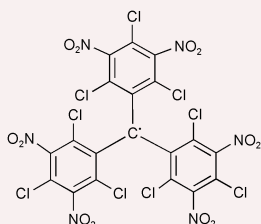


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Tris(2,4,6-trichloro-3,5-dinitrophenyl)methyl radical: a new stable coloured magnetic species as a chemosensor for natural polyphenols

Josep L. Torres, Begoña Varela, Enric Brillas and Luis Juliá*

A new stable organic radical of the TTM series as sensor of natural and synthetic polyphenols is described.

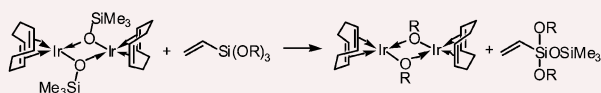


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Alkoxy/siloxy group exchange in the system vinyltrialkoxysilane–iridium(I) siloxide complex

Ireneusz Kownacki, Bogdan Marciniak* and Maciej Kubicki

A new type of reaction—alkoxy group transfer from silicon to iridium with simultaneous transfer of a siloxy group from iridium to silicon—has been revealed. The occurrence of such transfers in the reaction of $[\{\text{Ir}(\text{cod})(\mu\text{-OSiMe}_3)_2\}]$ with vinyltriethoxysilane (vinyltrimethoxysilane) yielding $[\{\text{Ir}(\text{cod})(\mu\text{-OR})_2\}]$ (where R = Me, Et) and vinyltrialkoxysilane is reported.

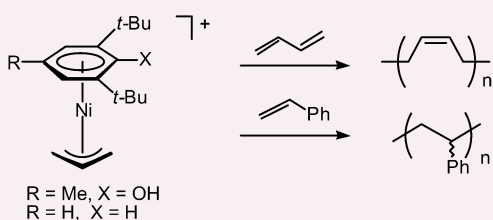


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 η^6 -Arene complexes of Ni(II), efficient catalysts for 1,3-butadiene and styrene polymerization

Juan Cámpora,* María del Mar Conejo, Manuel L. Reyes, Kurt Mereiter and Elisa Passaglia

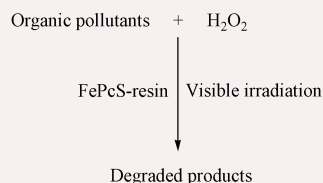
Chloride abstraction from the nickel allyl dimer $[\text{Ni}(\eta^3\text{-C}_3\text{H}_5)(\mu\text{-Cl})_2]$ in the presence of aromatic molecules provides ready access to η^6 -arene complexes, which are very active catalysts for the polymerization of butadiene and styrene.



80

Efficient degradation of organic pollutants mediated by immobilized iron tetrasulfophthalocyanine under visible light irradiation

Xia Tao, Wanhong Ma, Jing Li, Yingping Huang, Jincai Zhao* and Jimmy C. Yu

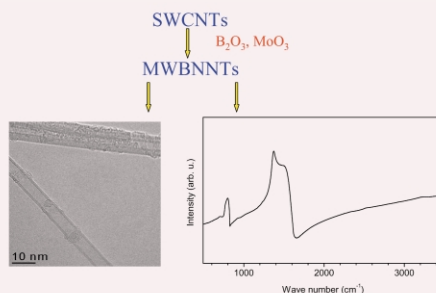


A novel approach based on the photocatalytic power of an immobilized iron tetrasulfophthalocyanine (FePcS-resin) for the degradation of organic pollutants by H₂O₂ under visible radiation has been developed.

82

Infrared response of multiwalled boron nitride nanotubes

E. Borowiak-Palen,* T. Pichler, G. G. Fuentes, B. Bendjemil, X. Liu, A. Graff, G. Behr, R. J. Kalenczuk, M. Knupfer and J. Fink

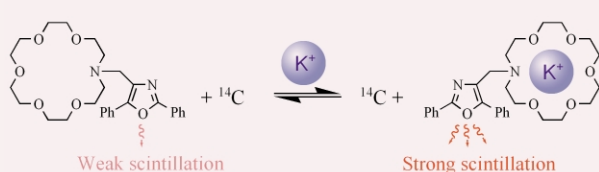


The preparation and characterization of multiwalled boron nitride nanotubes by TEM and infrared spectroscopy is presented.

84

Scintillation-based potassium signalling using 2,5-diphenyloxazole-tagged aza-18-crown-6

Bruce Clapham and Andrew J. Sutherland*

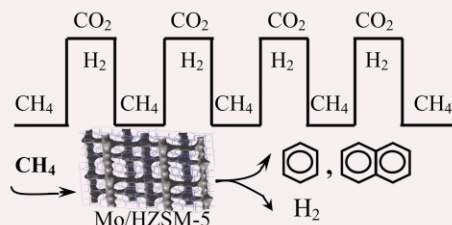


2,5-Diphenyloxazole-tagged-aza-18-crown-6 scintillates weakly in the presence of ¹⁴C. Addition of potassium ions to this system causes a significant increase in scintillation, with the increase being proportional to the concentration of potassium ions present.

86

Highly stable performance of catalytic methane dehydrocondensation towards benzene on Mo/HZSM-5 by a periodic switching treatment with H₂ and CO₂

Yuying Shu, Hongtao Ma, Ryuichiro Ohnishi and Masaru Ichikawa*

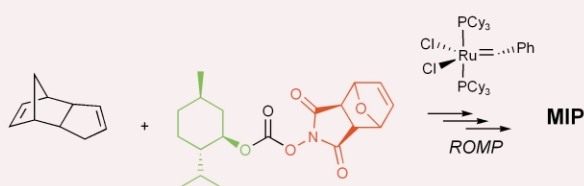


Highly active and stable performance of catalytic methane dehydrocondensation towards benzene on Mo/HZSM-5 was achieved by a periodic switching treatment with H₂ or CO₂ due to efficient removal of the coke poisoning.

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Enantioselective molecularly imprinted polymers *via* ring-opening metathesis polymerisation

Alpesh Patel, Sandra Fouace and Joachim H. G. Steinke*

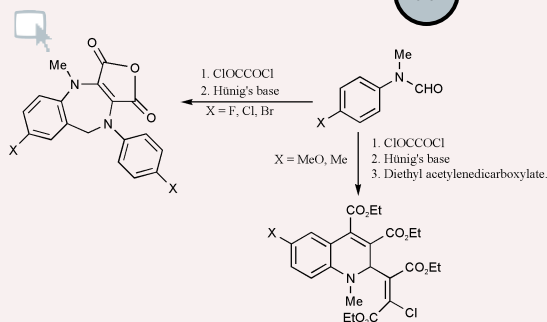


Enantioselective molecularly imprinted polymers (MIPs) have been synthesised *via* ROMP for the first time.

90

The unique nucleophilic reactivity of arylaminochlorocarbenes

Ying Cheng,* Hua Yang and Otto Meth-Cohn*

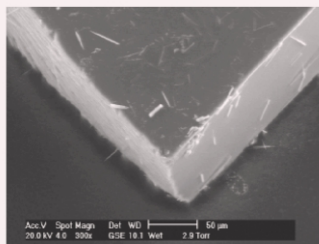


4-Methyl and 4-methoxyphenylaminochlorocarbene reacted with diethyl acetylenedicarboxylate to give 1:2 quinoline adducts, while *p*-halophenylaminochlorocarbenes yielded benzoazepine derivatives from 2:1 interaction of the carbene with oxalyl chloride under the same reaction conditions.

92

Transparent thin films and monoliths synthesized from fullerene doped mesoporous silica: evidence for embedded monodispersed C₆₀

Selvaraj Subbiah and Robert Mokaya*

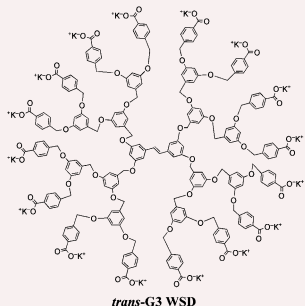
SEM micrograph of C₆₀/MMS monolith

C₆₀ fullerenes may be incorporated into mesoporous silica hosts *via* a sol-gel route or post-synthesis adsorption. The embedded C₆₀ exist predominantly in monomeric form.

94

Water-soluble stilbene dendrimers

Junpei Hayakawa, Atsuya Momotake and Tatsuo Arai*

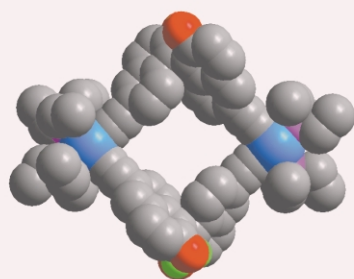


The third generation of novel photo-responsive water-soluble stilbene dendrimers (*trans*- and *cis*-G3 WSD) undergoes unusual one-way *trans*-to-*cis* isomerization to give 100% of *cis* isomer at the photostationary state on UV irradiation in water.

96

A chiral metallacyclophane for asymmetric catalysis

Hua Jiang, Aiguo Hu and Wenbin Lin*

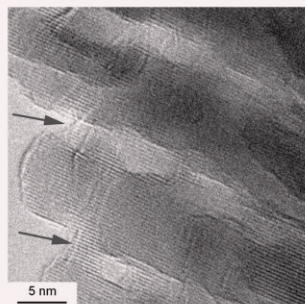


A family of chiral metallacyclophanes **1–3** were self-assembled from *cis*-(PEt₃)₂PtCl₂ and enantiopure atropisomeric 1,1'-binaphthyl-6,6'-bis(acetylenes) in good yields. A combination of **3** and Ti(O^{*i*}Pr)₄ catalyzed highly enantioselective additions of diethylzinc to aldehydes, and such a supramolecular approach will add a new dimension to the expanding field of asymmetric catalysis.

98

Preparation of three-dimensional chromium oxide porous single crystals templated by SBA-15

Kake Zhu, Bin Yue, Wuzong Zhou* and Heyong He*

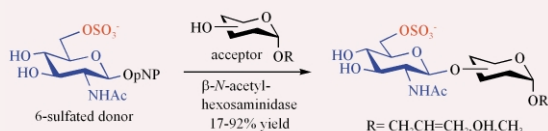


Three-dimensional porous chromium oxide single crystals, which can be regarded as single crystals carved with a honeycomb pattern, have been prepared by using SBA-15 as a template.

100

Synthesis of 6'-sulfodisaccharides by β -*N*-acetylhexosaminidase-catalyzed transglycosylation

Hirota Uzawa,* Xiaoxiong Zeng and Norihiko Minoura



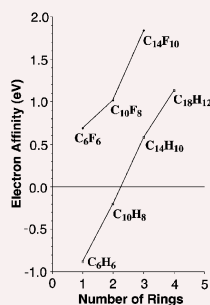
Direct enzyme-assisted transglycosylation is efficient for constructing regioselectively sulfated sugars; presulfated monosaccharide with the 6-sulfo-*N*-acetylglucosaminyl group was used as a glycosyl donor to afford critically stereocontrolled 6'-sulfodisaccharides by β -*N*-acetylhexosaminidase.

102

The radical anions and the electron affinities of perfluorinated benzene, naphthalene and anthracene

Yaoming Xie, Henry F. Schaefer III* and F. Albert Cotton

Like their unsubstituted counterparts, the electron affinities of the perfluoro PAHs increase with number of rings. However, all the perfluoro compounds have positive EAs, while the unsubstituted anthracene is the first to display a positive EA.

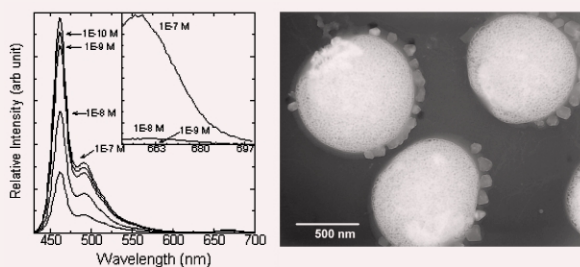


104

Capture and detection of a quencher labeled oligonucleotide by poly(phenylene ethynylene) particles

Joong Ho Moon, Robert Deans, Elizabeth Krueger and Lawrence F. Hancock*

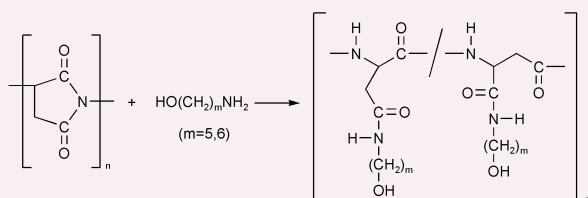
Fluorescence quenching of poly(phenylene ethynylene) particles by a Cy-5 labeled oligonucleotide is 2 orders of magnitude more sensitive than direct excitation of the Cy-5 fluorophore.



106

Biodegradable thermoresponsive poly(amino acid)s

Yoichi Tachibana, Motoichi Kurisawa, Hiroshi Uyama, Toyoji Kakuchi and Shiro Kobayashi*



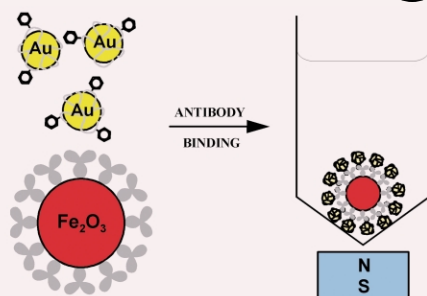
Reaction of poly(succinimide) with a mixture of 5-aminopentanol and 6-aminohexanol produced new thermoresponsive polymers based on biodegradable poly(amino acid)s, poly(*N*-substituted α / β -asparagine)s, showing a clear LCST in water.

108

Haptenylated mercaptodextran-coated gold nanoparticles for biomolecular assays

Robert Wilson*

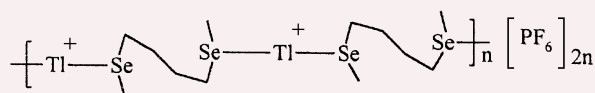
Dinitrophenyl-gold nanoparticle conjugates, which bind specifically to the corresponding antibody coated paramagnetic beads, are reported as an example of a generic method for preparing nanoparticle conjugates for biomolecular assays.



110

Synthesis and structural features of the first thallium(I) selenoether derivatives

Nicholas J. Hill, William Levason, Mark E. Light and Gillian Reid

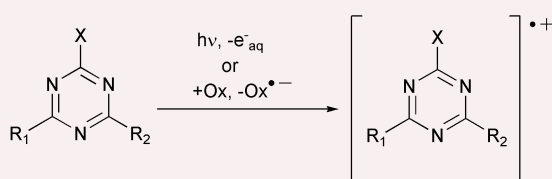


The first evidence for thallium(I) complexes involving selenoether ligands is presented, together with the structure determinations for the 1D chain species $[\text{Tl}\{\text{MeSe}(\text{CH}_2)_3\text{SeMe}\}\text{PF}_6]$ and the 3D network species $[\text{Tl}\{\text{MeSe}(\text{CH}_2)_2\text{SeMe}\}\text{PF}_6]$.

112

On the kinetics and energetics of one-electron oxidation of 1,3,5-triazines

M. E. D. G. Azenha, H. D. Burrows, M. Canle L.,* R. Coimbra, M. I. Fernández, M. V. García, A. E. Rodrigues, J. A. Santaballa and S. Steenken

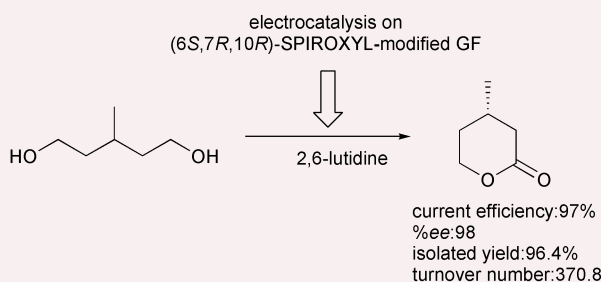


One-electron oxidation of 1,3,5-triazines with $^*\text{UO}_2^{2+}$ and $\text{SO}_4^{\cdot-}$ allowed estimation of the standard reduction potentials E° of 1,3,5-triazine radical cations as ≈ 2.3 V vs. NHE, in agreement with theoretical calculations.

114

Asymmetric electrochemical lactonization of diols on a chiral 1-azaspiro[5.5]undecane *N*-oxyl radical mediator-modified graphite felt electrode

Yoshitomo Kashiwagi,* Futoshi Kurashima, Shinya Chiba, Jun-ichi Anzai, Tetsuo Osa and James M. Bobbitt

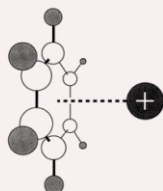


The electrolysis of diols on a (6*S*,7*R*,10*R*)-4-amino-2,2,7-trimethyl-10-isopropyl-1-azaspiro[5.5]undecane *N*-oxyl ((6*S*,7*R*,10*R*)-SPIROXYL)-modified graphite felt electrode gave selectively the (*S*)-isomer of lactones with high enantiopurity.

116

Cation- π interactions as a tool to enhance the power of a chiral auxiliary during asymmetric photoreactions within zeolites

Lakshmi S. Kaanumalle, J. Sivaguru, N. Arunkumar, S. Karthikeyan and V. Ramamurthy*

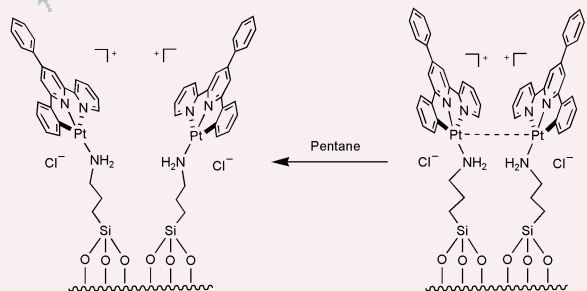


Owing to the existence of cation- π interactions, aryl chiral auxiliaries perform far better than alkyl chiral auxiliaries during asymmetric photoreaction.

118

Solvatochromic response imposed by environmental changes in matrix/chromophore entities: luminescent cyclometalated platinum(II) complex in Nafion and silica materials

Chi-Ming Che,* Wen-Fu Fu, Siu-Wai Lai, Yuan-Jun Hou and Yun-Ling Liu



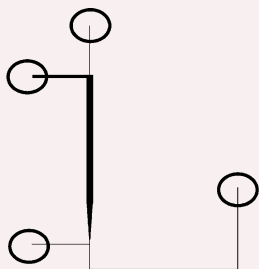
The $[\text{Pt}(\text{L})\text{py}]^+$ luminophore exhibits a solvatochromic shift from λ_{max} 530 to 650 nm in the presence of ethanol, while the emission of $[\text{Pt}(\text{L})]^+$ moieties immobilised into silica materials undergoes a vapochromic blue shift from ~ 665 to 550 nm for pentane.

120

On-line gas chromatographic monitoring of catalyst processes in a microfabricated chemical reactor

Bashar R. M. Al-Gailani and Tom McCreedy*

A versatile method is reported for the on-line monitoring of gas phase reactions in a micro reactor—heterogeneous catalysis is used for the proof of principle.

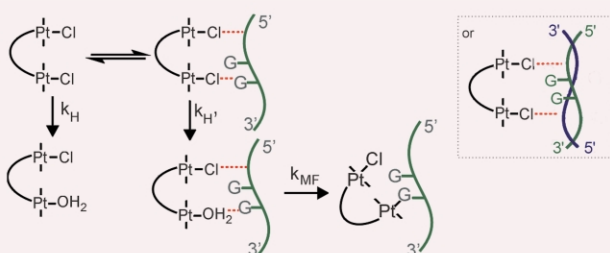


122

The nature of the DNA template (single- versus double-stranded) affects the rate of aquation of a dinuclear Pt anticancer drug

Murray S. Davies, Susan J. Berners-Price,* John W. Cox and Nicholas Farrell*

The rate of aquation of a dinuclear platinum anticancer agent is altered in the presence of template DNA with enhancement of hydrolysis in the presence of single-stranded over double-stranded DNA.



124

First linear alignment of five C–Se···O···Se–C atoms in anthraquinone and 9-(methoxy)anthracene bearing phenylselenanyl groups at 1,8-positions

Warô Nakanishi,* Satoko Hayashi and Norio Itoh

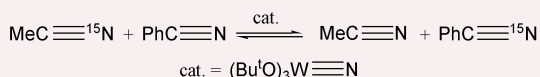
Five C_i–Se···O···Se–C_i atoms in anthraquinone and 9-(methoxy)anthracene bearing phenylselenanyl groups at 1,8-positions align linearly, the origin of which is shown to be a non-bonded 5c–6e interaction of the five atoms.



126

Nitrogen atom exchange between molybdenum, tungsten and carbon. A convenient method for N-15 labeling

Malcolm H. Chisholm,* Ewan E. Delbridge, Andy R. Kidwell and Kristine B. Quinlan



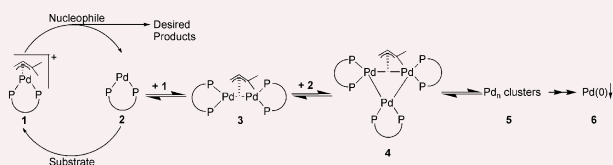
The compound (Bu^tO)₃W≡N serves to exchange the nitrogen atoms between nitriles (MeC≡N and PhC≡N), itself and (Bu^tO)₃Mo≡N in solution at room temperature.

128

Deactivation processes of homogeneous Pd catalysts using *in situ* time resolved spectroscopic techniques

Moniek Tromp, Jelle R. A. Sietsma, Jeroen A. van Bokhoven, Gino P. F. van Strijdonck, Richard J. van Haaren, Ad M. J. van der Eerden, Piet W. N. M. van Leeuwen and Diek C. Koningsberger*

Combined time resolved UV-Vis and ED-XAFS give, for the first time, detailed structural information about the deactivation processes of important homogeneous palladium catalysed reactions.

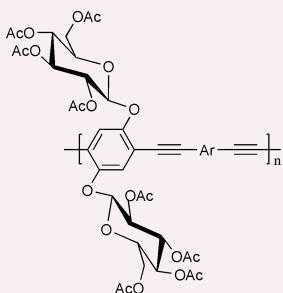


130

Synthesis of poly(aryleneethynylene)s bearing glucose units as substituents

Francesco Babudri, Donato Colangiuli, Paolo A. Di Lorenzo, Gianluca M. Farinola, Omar Hassan Omar and Francesco Naso*

New poly(aryleneethynylene) polymers and copolymers bearing acetylated glucopyranosyl units on the phenylene rings have been synthesized by Pd-catalyzed coupling of trimethylsilylethynyl derivatives with suitable aromatic halides.

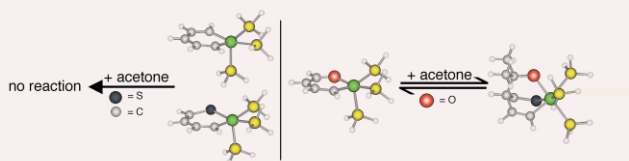


132

Mechanistic aspects of acetone addition to metalloaromatic complexes of iridium: a DFT investigation

Mark A. Iron, Jan M. L. Martin* and Milko E. van der Boom*

A computational mechanistic investigation reveals why the reactivity of iridia-aromatic complexes towards acetone is reversible and highly dependent on the nature of the other ring atoms.

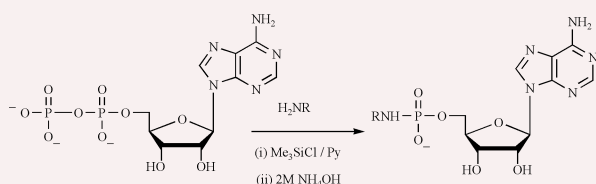


134

Reaction of ADP with amino acid methyl esters mediated by trimethylsilyl chloride

Hua Fu,* Bo Han and Yu-Fen Zhao

Reaction of ADP with amino acid methyl esters mediated by trimethylsilyl chloride in pyridine produced adenosine 5'-phosphoramidates in good yields under mild conditions.

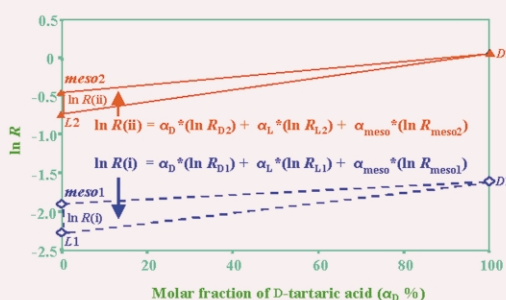


136

Chiral quantification of D-, L-, and meso-tartaric acid mixtures using a mass spectrometric kinetic method

Lianming Wu, Rebecca L. Clark and R. Graham Cooks*

Accurate quantification of the optical isomers in a ternary mixture of D-, L-, and meso-tartaric acids is achieved using electrospray ionization tandem mass spectrometry for in-situ metal complex formation and a three-point calibration method to quantify the dissociation kinetics.

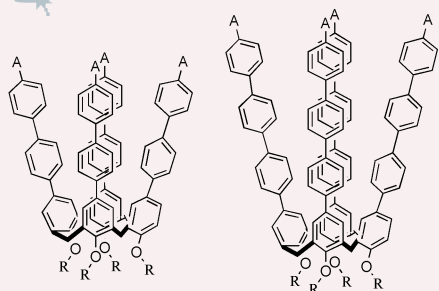


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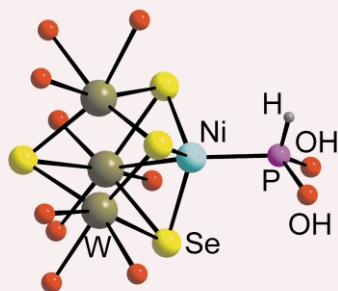
Synthesis and fluorescence enhancement of oligophenylene-substituted calix[4]arene assemblies

Man Shing Wong,* Xiao Ling Zhang, Dong Zhong Chen and Wai Ho Cheung

The first synthesis of tetra-oligophenylene substituted calix[4]arene assemblies has been accomplished using a modified Suzuki cross-coupling protocol and excitonic chromophore interaction leads to a fluorescence enhancement in donor-acceptor type assemblies relative to the corresponding monomer.



140



Stabilization of the previously unknown tautomer HP(OH)_2 of hypophosphorous acid as ligand; preparation of $[\text{W}_3(\text{Ni}(\text{HP(OH)}_2))\text{Q}_4(\text{H}_2\text{O})_9]^{4+}$ ($\text{Q} = \text{S}, \text{Se}$) complexes

Maxim N. Sokolov,* Rita Hernández-Molina, William Clegg, Vladimir P. Fedin and Alfredo Mederos

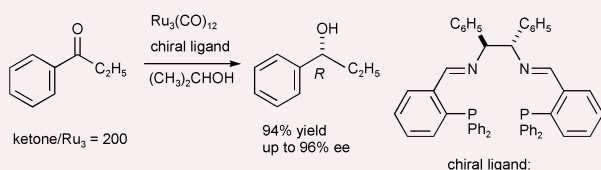
Bis(hydroxy)phosphine, the isomer of hypophosphorous acid which remained elusive for a long time, coordinates to the Ni site of heterometallic clusters with a W_3NiQ_4 core ($\text{Q} = \text{S}, \text{Se}$) to give $[\text{W}_3(\text{Ni}(\text{HP(OH)}_2))\text{Q}_4(\text{H}_2\text{O})_9]^{4+}$ ($\text{Q} = \text{S}, \text{Se}$).

142

Highly efficient chiral metal cluster systems derived from $\text{Ru}_3(\text{CO})_{12}$ and chiral diiminodiphosphines for the asymmetric transfer hydrogenation of ketones

Hui Zhang, Chuan-Bo Yang, Yan-Yun Li, Zhen-Rong Donga, Jing-Xing Gao,* Hideaki Nakamura, Kunihiko Murata and Takao Ikariya*

The chiral Ru cluster-based catalyst systems generated *in situ* from $\text{Ru}_3(\text{CO})_{12}$ and chiral diiminodiphosphine tetradentate ligands effected asymmetric transfer hydrogenation of propiophenone.

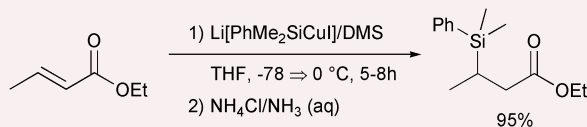


144

Employing the simple monosilylcopper reagent, $\text{Li}[\text{PhMe}_2\text{SiCuI}]$, in 1,4-addition reactions

Jesse Dambacher and Mikael Bergdahl*

Conjugate addition reactions using the simple $\text{Li}[\text{PhMe}_2\text{SiCuI}]$ reagent to a variety of α,β -unsaturated carbonyl compounds is described. Dimethyl sulfide plays a key-role for very high yields and high levels of stereoselectivities.

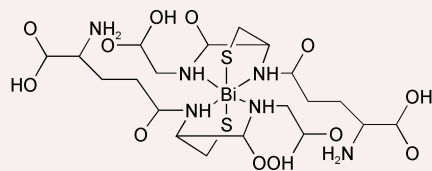


146

Definitive identification of cysteine and glutathione complexes of bismuth by mass spectrometry: assessing the biochemical fate of bismuth pharmaceutical agents

Neil Burford,* Melanie D. Eelman, David E. Mahony and Michael Morash

Solutions containing BiCl_3 , bismuth subsalicylate or $\text{Bi}(\text{NO}_3)_3$ with L-cysteine, DL-homocysteine, D-methionine or glutathione have been examined by electrospray mass spectrometry. Prominent peaks are assigned to bismuth complexes of these biomolecules and provide insight towards understanding the bioactivity of bismuth compounds.

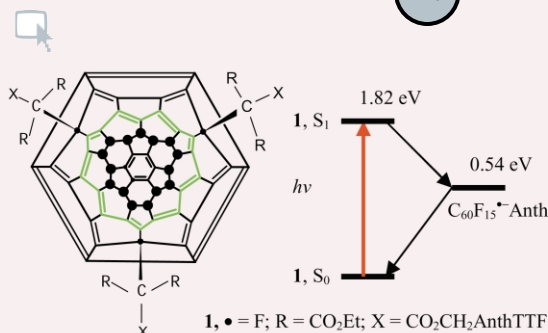


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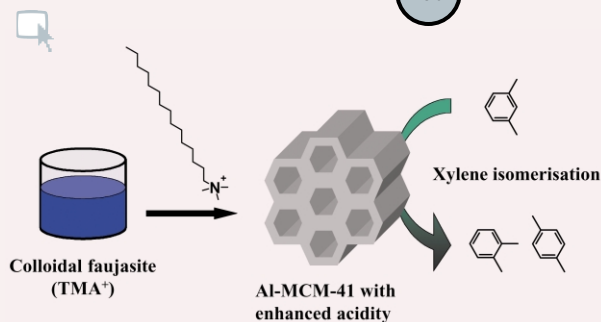
A light-harvesting fluorinated fullerene donor-acceptor ensemble; long-lived charge separation

Glenn A. Burley, Anthony G. Avent, Olga V. Boltalina, Ilya V. Gol'dt, Dirk M. Guldi, Massimo Marcaccio, Francesco Paolucci, Demis Paolucci and Roger Taylor

Visible light photoexcitation of the all-*trans* annulene (**1**) generates, via rapid intramolecular electron-transfer process, an energetically low lying (0.54 eV) and long-lived (870 ns) charge-separated state.



150

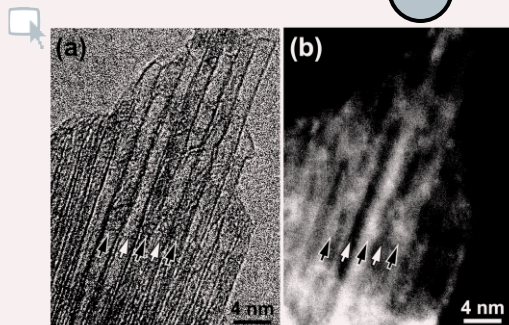


High acid catalytic activity of aluminosilicate molecular sieves with MCM-41 structure synthesized from precursors of colloidal faujasite

Javier Agúndez, Isabel Díaz, Carlos Márquez-Álvarez, Joaquín Pérez-Pariente* and Enrique Sastre

Al-MCM-41 aluminosilicates synthesised by hexadecyltrimethylammonium-templating in colloidal faujasite solutions containing tetramethylammonium cations show high catalytic activity in *m*-xylene conversion.

152



Formation and structural observation of cesium encapsulated single-walled carbon nanotubes

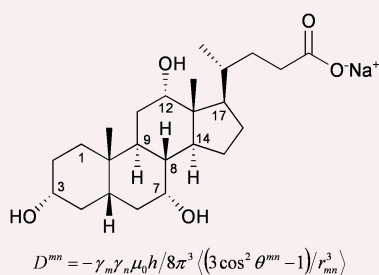
Goo-Hwan Jeong,* Rikizo Hatakeyama, Takamichi Hirata, Kazuyuki Tohji, Kenichi Motomiya, Toshie Yaguchi and Yoshiyuki Kawazoe

Cs-encapsulated SWNTs, which are evidently demonstrated by the Z-contrast method and FE-TEM, are realized. This result suggests that our plasma method is effective for developing more intricate applications, like intratube nano-devices.

154

Configuration assignment in small organic molecules *via* residual dipolar couplings

Alfonso Mangoni, Veronica Esposito and Antonio Randazzo*

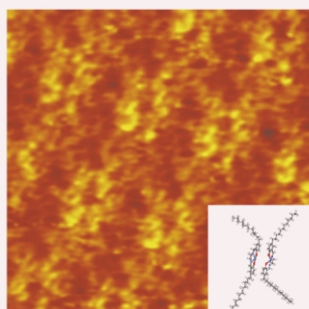


A new method to assign relative configurations of stereocenters in small organic molecules by using residual dipolar couplings is proposed. The main advantage of this method over NOE is that spatial proximity of the stereocenters is not required.

156

Formation and observation of dimers of a metal complex with long alkyl side chains aligned on a graphite surface

Ichiro Sakata and Kazuo Miyamura*

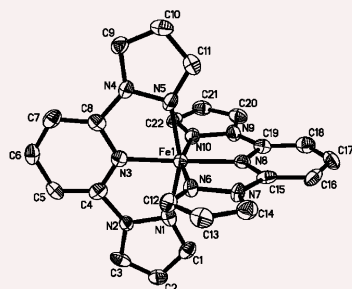


Scanning tunnelling microscope was successfully applied to observe self-assembled molecular images of (bis(5-dodecylsalicylidene) ethylenediaminato)nickel(II) in the form of dimers on highly oriented pyrolytic graphite.

158

Light induced excited high spin-state trapping in [FeL₂](BF₄)₂ (L = 2,6-di(pyrazol-1-yl)pyridine)

Victoria A. Money, Ivana Radosavljevic Evans, Malcolm A. Halcrow, Andrés E. Goeta and Judith A. K. Howard*

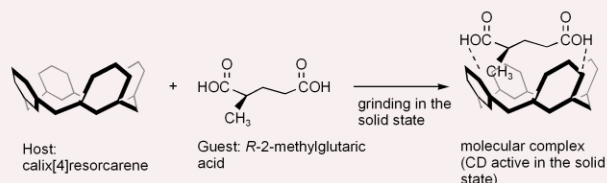


The spin-crossover complex [FeL₂](BF₄)₂ undergoes a LIESST transition at 30(2) K on irradiation; the structure of the low-spin ground and high-spin metastable states at this temperatures are presented.

160

Chiral information transfer by solid–solid interaction: application for absolute configuration assignment

Yasutaka Tanaka,* Yoshinobu Murakami and Riemi Kiko

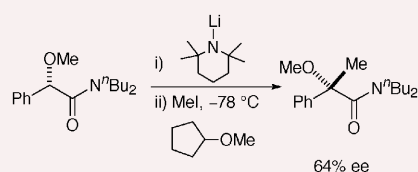


Host–guest complexes of calix[4]resorcinarene with chiral molecules were efficiently formed by solid–solid grinding and exhibited CD Cotton effects reflecting the absolute configuration of the guest.

1162

Chirality transfer during alkylation of chiral amides

Takeo Kawabata,* Orhan Öztürk, Jianyong Chen and Kaoru Fuji

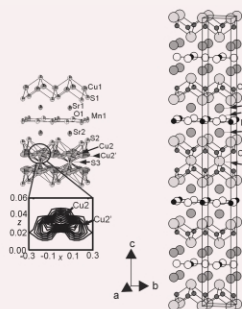


Chiral memory was observed during α -methylation of chiral amides, although the enolate intermediate itself is achiral. A mixed aggregate consisting of an achiral enolate and an undeprotonated chiral amide is proposed as a crucial intermediate for the asymmetric induction.

164

A novel layered oxysulfide intergrowth compound $\text{Sr}_4\text{Mn}_2\text{Cu}_5\text{O}_4\text{S}_5$ containing a fragment of the α - Cu_2S antiferroite structure

Nicolas Barrier and Simon J. Clarke*



The novel intergrowth oxysulfide $\text{Sr}_4\text{Mn}_2\text{Cu}_5\text{O}_4\text{S}_5$ contains manganese oxide sheets separated by Cu_3S_3 layers which closely resemble slabs of the antiferroite-type high-temperature α - Cu_{2-x}S structure.

ADDITIONS AND CORRECTIONS

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Carolyn Moorlag, Olivier Clot,
Michael O. Wolf and Brian O.
Patrick

Switchable thiophene coordination in Ru(II) bipyridyl phosphinoterthiophene complexes

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Kun Jin, Xiaoying Huang, Long
Pan, Jing Li, Aaron Appel and Scot
Wherland

 $[\text{Cu}(\text{I})(\text{bpp})]\text{BF}_4$: the first extended coordination network prepared solvothermally in an ionic liquid solvent

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Dates, venues and contact details of forthcoming events.

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NOTE: An asterisk in the heading of each paper indicates the author who is to receive any correspondence.