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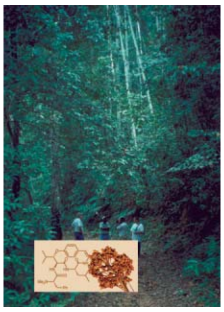
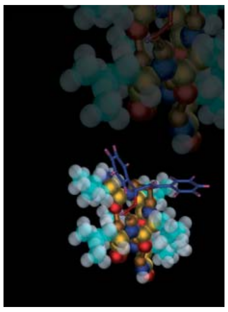




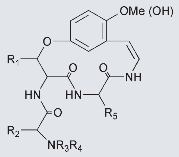
Cover (far left)
Cyclopeptide alkaloids can be found in abundance in nature. The structure of one such alkaloid, sanjoinine A (frangufoline), is shown against a background of *Maesopsis eminii* of the Rhamnaceae family, commonly referred to as "umbrella trees". Photo Gerard D. Hertel, West Chester University, www.forestryimages.org (pp. 2011–2015).

Inside cover (left)
Polyleucine catalyses the epoxidation of chalcone by increasing the rate of addition of hydroperoxide (pp. 2016–2017). This is achieved by stabilising the hydroperoxide-chalcone adduct in an oxyanion hole at the N-terminus of the polypeptide. (inside cover and pp. 2018–2020). Polyleucine prepared from scalemic monomers shows high chiral amplification, which may be akin to the mechanism of the prebiotic chiral switch (pp. 2021–2022).

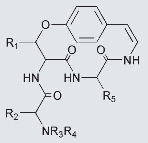
contents

FEATURE ARTICLE

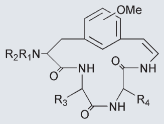
2011



4 (13): R_3 = alkyl, aryl, or H
5 (13): R_3 = amino acid derivative



4 (14): R_3 = alkyl, aryl, or H
5 (14): R_3 = amino acid derivative



4 (15)

Cyclopeptide alkaloids: chemistry and biology

Madeleine M. Joullié* and David J. Richard

Recent progress in the synthesis and investigation of the biological activities of cyclopeptide alkaloids is reviewed.

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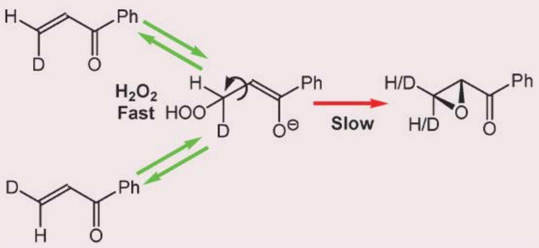
2016

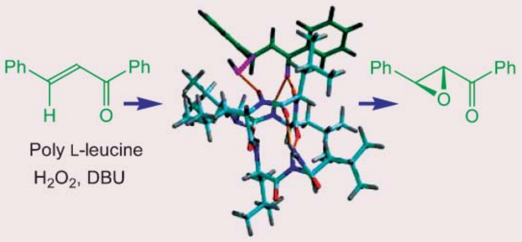


The isomerisation of (*Z*)-3-[$^2H_1$]-phenylprop-2-enone as a measure of the rate of hydroperoxide addition in Weitz–Scheffer and Juliá–Colonna epoxidations

David R. Kelly,* Eva Caroff, Robert W. Flood, William Heal and Stanley M. Roberts*

(*Z*)-3-[$^2H_1$]-Phenylprop-2-enone is isomerised by hydroperoxide to an equimolar mixture of the (*Z*)- and (*E*)-isomers prior to epoxidation. Poly-(L)-leucine (10 mole %) accelerates the addition of hydroperoxide by an order of magnitude and sequesters hydroperoxide from THF.

2018



The mechanism of polyleucine catalysed asymmetric epoxidation

David R. Kelly* and Stanley M. Roberts

Catalysis in the Juliá–Colonna epoxidation of α,β-unsaturated ketones is due to binding of the hydroperoxide enolate intermediate by the three *N*-terminal amidic N–H groups of α-helical polyleucine; the *N*-terminal pair forms an oxy-anion hole, whilst the third aids displacement of hydroxide.

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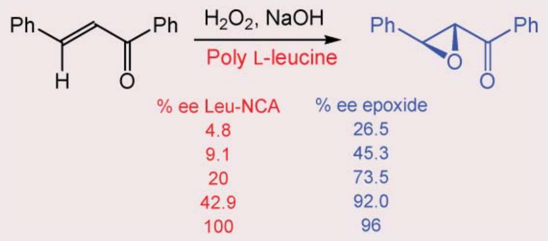
2021



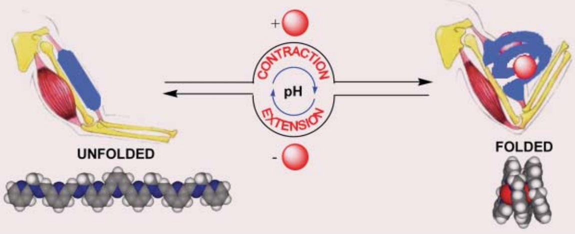
% ee Leu-NCA	% ee epoxide
4.8	26.5
9.1	45.3
20	73.5
42.9	92.0
100	96

Chiral amplification by polypeptides and its relevance to prebiotic catalysis

David R. Kelly,* Alastair Meek and Stanley M. Roberts

Polyleucine prepared from scalemic Leu-NCA monomers, shows high chiral amplification in the Juliá–Colonna epoxidation of chalcone.

2024

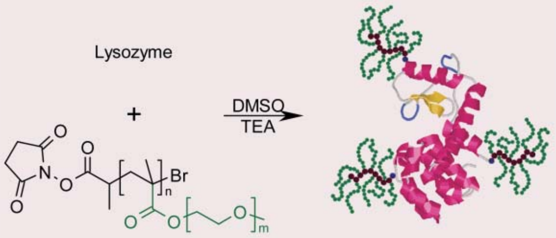


Reversible folding/unfolding of linear molecular strands into helical channel-like complexes upon proton-modulated binding and release of metal ions

Adrian-Mihail Stadler, Nathalie Kyritsakas and Jean-Marie Lehn*

The binding of appropriate metal ions to linear ligand strands obtained by hydrazone polycondensations generates channel-like complexes by reversible coiling of the ligand, thus allowing the generation of ion-induced, acid–base neutralisation fuelled, molecular nanomechanical contraction/extension motions of large amplitude.

2026

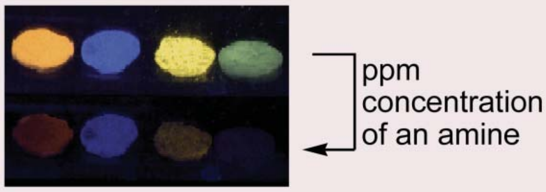


A new approach to bioconjugates for proteins and peptides ("pegylation") utilising living radical polymerisation

François Lecolley, Lei Tao, Giuseppe Mantovani, Ian Durkin, Sylvie Lautru and David M. Haddleton*

The synthesis of protein–polymer bioconjugates is reported using *N*-succinimidyl ester functionalised polymers from transition metal mediated living radical polymerisation; a powerful new method for the pegylation and conjugation of synthetic polymers to proteins.

2028

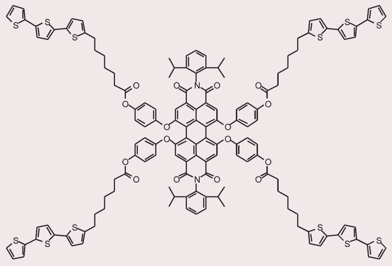


Optical sensing of amine vapors with a series of tin compounds

Evonne A. Baldauff and Jillian M. Buriak*

Room temperature luminescence of commercially available tin(II) compounds can be quenched by ppm and high ppb concentrations of amines in air or nitrogen. These salts could serve as the basis of selective and reversible amine sensing arrays.

2030



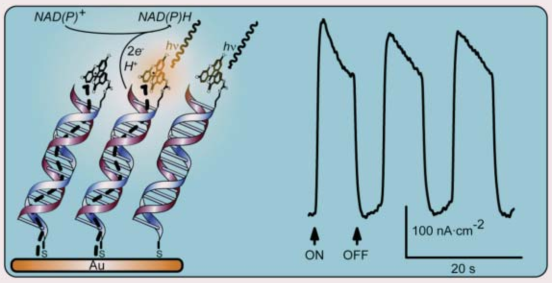
Synthesis and electropolymerization of novel oligothiophene-functionalized perylene bisimides

Chang-Cheng You, Chantu R. Saha-Möller and Frank Würthner*

Fourfold oligothiophene-functionalized perylene bisimides have been synthesized by esterification of hydroxyphenoxy-substituted perylene bisimides and their optical properties as well as electrochemical polymerization properties have been investigated.

COMMUNICATIONS

2032

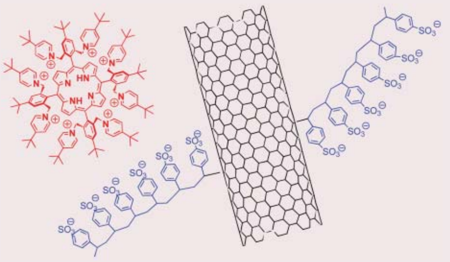


Photoinduced production of NAD(P)H from an activated fluorescein–DNA monolayer

Yi-Tao Long, Todd C. Sutherland, Heinz-Bernhard Kraatz* and Jeremy S. Lee*

A photosynthetic mimic consisting of a fluorescein-labeled DNA monolayer on a gold surface which generates a photocurrent and ultimately reduces NAD(P)$^+$ to NAD(P)H.

2034



Donor–acceptor nanoensembles of soluble carbon nanotubes

Dirk M. Guldi,* G. N. A. Rahman, Jeff Ramey, Massimo Marcaccio, Demis Paolucci, Francesco Paolucci,* Shuhui Qin, Warren T. Ford,* Domenico Balbinot, Norbert Jux,* Nikos Tagmatarchis and Maurizio Prato*

Functionalized SWNTs play a remarkable acceptor role in intra-ensemble electron transfer processes.

2036

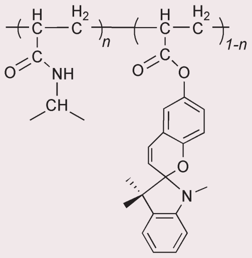
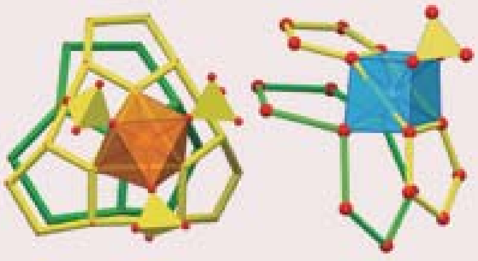


Photo-reversible Pb^{2+}-complexation of thermosensitive poly(*N*-isopropyl acrylamide-*co*-spiropyran acrylate) in water

Takayuki Suzuki,* Tatsuya Kato and Hiraku Shinozaki

Photo-reversible Pb^{2+}-complexation in a purely aqueous environment exhibiting a thermosensitive phase transition at a lower critical solution temperature was achieved using a synthetic copolymer composed of *N*-isopropyl acrylamide and spiropyran acrylate.

2038

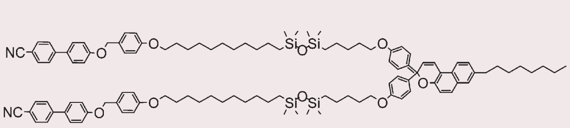


En route to coordination chemistry under confined conditions in a porous capsule: Pr^{3+} with different coordination shells

Achim Müller,* Yunshan Zhou, Lijuan Zhang, Hartmut Bögge, Marc Schmidtmann, Martin Dressel and Joris van Slageren

Highly charged molybdenum-oxide based nanocontainer capsules of the type $\{\text{pentagon}\}_{12}\{\text{linker}\}_{30}$ with 20 pores and channels allow the entrance of cations which can be positioned at different sites with different coordination shells, corresponding to coordination chemistry under confined conditions.

2040

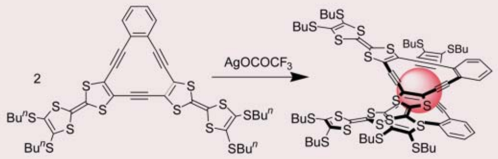


Room temperature photochromic liquid crystal [3*H*]-naphtho[2,1-*b*]pyrans—photochromism in the mesomorphic state

Michel Frigoli and Georg H. Mehl*

The first photochromic liquid crystals based on the photochromic chromene core and cyanobiphenyl based mesogens, separated from the core by flexible siloxane and alkyl spacers, were synthesised and the photochromic and mesomorphic behaviour was investigated.

2042

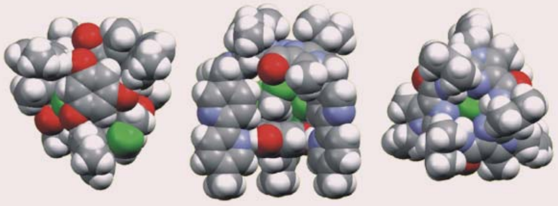


Mono- and bis(tetrathiafulvaleno)hexadehydro[12]annulenes

Kenji Hara, Masashi Hasegawa, Yoshiyuki Kuwatani,
Hideo Enozawa and Masahiko Iyoda*

TTF-annelated hexadehydro[12]annulenes have been synthesized to investigate their π-amphoteric properties based on the TTF and [12]annulene moieties. These compounds exhibit multi-redox potentials, solvatochromism and the formation of large sandwich complexes.

2044

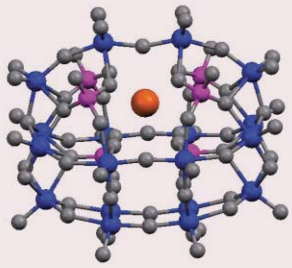


A C_3-symmetric molecular scaffold for the construction of large receptors

Gebhard Haberhauer,* Thomas Oeser and Frank Rominger

A novel C_3-symmetric scaffold has been efficiently synthesized exhibiting the property that variable receptor arms can be easily attached; for example the first non-cage inclusion receptor for phloroglucinol is reported.

2046

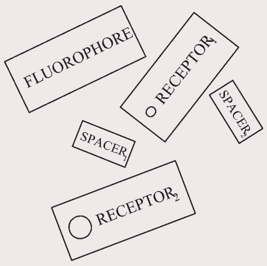


The three-electron heteropoly blue $[P_6Mo_{18}O_{73}]^{11-}$ with a basket-shaped skeleton

Xian-Ming Zhang,* Hai-Shun Wu, Fu-Qiang Zhang,
Alexander Prikhod'ko, Shigemasa Kuwata and Peter Comba*

The novel basket-shaped three-electron-reduced heteropoly blue $[H_2dmpip]_5[K \subset P_6Mo_{18}O_{73}]$ was prepared and characterized; it shows reversible one-electron redox properties.

2048

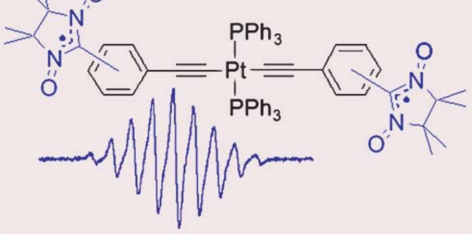


Switching between molecular switch types by module rearrangement: Ca^{2+}-enabled, H^+-driven 'Off–On–Off', H^+-driven YES and PASS 0 as well as H^+, Ca^{2+}-driven AND logic operations

John F. Callan, A. Prasanna de Silva and
Nathan D. McClenaghan

Several logic gates and switches can be accessed from two different combinations of a single set of fluorophore, receptor and spacer components.

2050

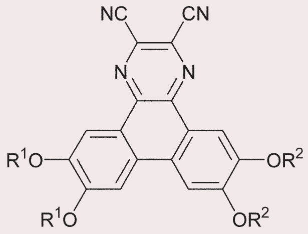


Intramolecular exchange interaction in twofold spin-labelled platinum complexes

Christophe Stroh, Marcel Mayor,* Carsten von Hänisch and
Philippe Turek

Bis-(*meta*-) and bis-(*para*-ethynyl-phenyl-nitronyl-nitroxide) platinum complexes present an intramolecular exchange interaction along the backbone of the rigid-rod molecular structure. EPR spectroscopy evidenced this long range coupling by a nine line pattern.

2052



Synthesis of unsymmetrical dibenzoquinoxaline discotic mesogens

E. Johan Foster, Jarret Babuin, Natalie Nguyen and Vance E. Williams*

We have developed a convenient synthesis of unsymmetrical benzil derivatives that provides access to a broad array of potential mesogens

2054

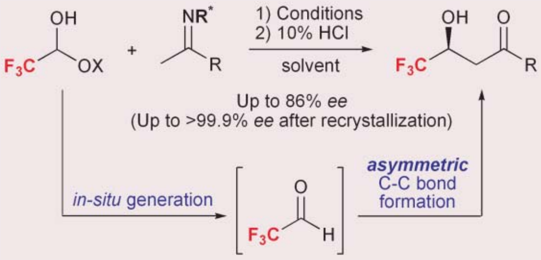
$$H_2 + O_2 \xrightarrow[\text{(in 0.03 M } H_3PO_4\text{)}]{\text{Brominated Pd-catalyst}} H_2O_2 \text{ (with high selectivity/yield)}$$

Drastic increase of selectivity for H_2O_2 formation in direct oxidation of H_2 to H_2O_2 over supported Pd catalysts due to their bromination

Vasant R. Choudhary,* Chanchal Samanta and A. G. Gaikwad

Bromination of Pd/Al_2O_3, Pd/ZrO_2, Pd/H-β, Pd/Ga_2O_3 and Pd/SiO_2 catalysts causes a large enhancement in their selectivity for H_2O_2 formation in the H_2-to-H_2O_2 oxidation because of the inhibition of their H_2O_2 decomposition activity.

2056

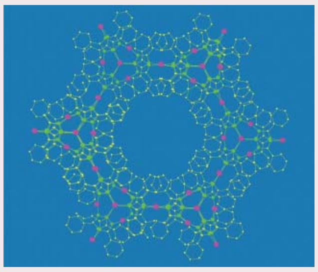


Practical asymmetric synthesis of β-hydroxy-β-trifluoromethylated ketones *via* the first example of the *in situ* generation of trifluoro-acetaldehyde and its successive asymmetric carbon–carbon bond formation reaction with chiral imines

Kazumasa Funabiki,* Wataru Hashimoto and Masaki Matsui

Polyfluoroalkylaldehyde acetals or hydrates react with chiral imines, followed by hydrolysis to produce (*S*)-β-hydroxy-β-polyfluoroalkyl ketones in good yields and enantioselectivities.

2058

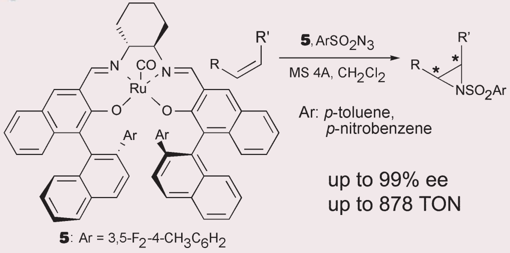


A robust, porous, cationic silver(I) 3,5-diphenyl-1,2,4-triazolate framework with a uninodal $4^9.6^6$ net

Guang Yang and Raphael G. Raptis*

The 3D-structure of the title compound consists of interconnected Ag_5tz_6 trigonal prismatic units (tz = 3,5-Ph_2-1,2,4-triazolate). Hexagonal hydrophobic channels of 7.8 Å effective diameter can accommodate alkanes, while anions and interstitial H_2O occupy sites within the channel walls.

2060

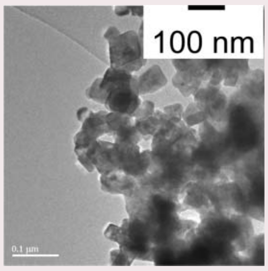


Design of a robust Ru(salen) complex: aziridination with improved turnover number using *N*-arylsulfonyl azides as precursors

Kazufumi Omura, Tatsuya Uchida, Ryo Irie and Tsutomu Katsuki*

A new robust fluorinated (OC)Ru(salen) complex was rationally designed to show improved turnover numbers and enantioselectivities in aziridination reactions using *p*-toluenesulfonyl (Ts) or *p*-nitrobenzenesulfonyl (Ns) azide as the nitrene precursor.

2062

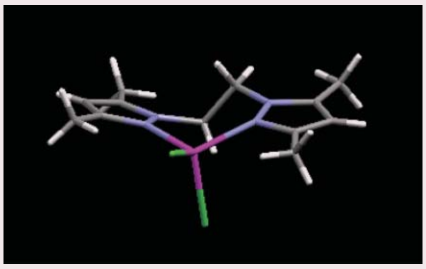


Fabrication and photoluminescence of chemically stable $La_2O_3:Eu^{3+}$–$La_2Sn_2O_7$ core–shell-structured nanoparticles

Eiji Hosono and Shinobu Fujihara*

Red luminescent, core–shell-structured $La_2O_3:Eu^{3+}$–$La_2Sn_2O_7$ nanoparticles were successfully fabricated through SnO_2-coating of $LaOF:Eu^{3+}$ in an aqueous solution and subsequent heat treatments at a higher temperature.

2064

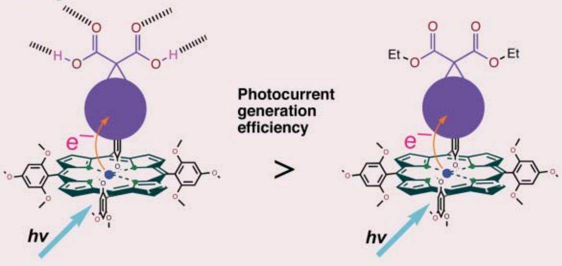


Mesomorphism of a tetrahedral zinc complex

Raquel Giménez, Ana Belén Manrique, Santiago Uriel, Joaquín Barberá and José Luis Serrano*

The self-organisation of a tetrahedral zinc(II) coordination complex to give smectic mesophases is made possible by suitable ligand design.

2066

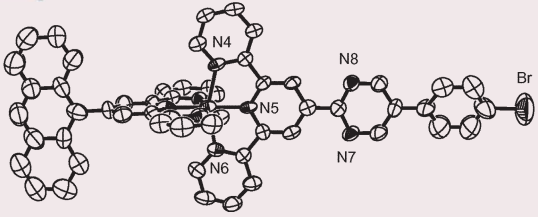


Hydrogen bonding effect on photocurrent generation in porphyrin–fullerene photoelectrochemical devices

Hiroshi Imahori,* Jia-Cheng Liu, Kohei Hosomizu, Tomoo Sato, Yukie Mori, Hiroki Hotta, Yoshihiro Matano,* Yasuyuki Araki, Osamu Ito,* Norihiko Maruyama and Shizuo Fujita

A hydrogen bonding effect on photoelectrochemical properties has been evaluated successfully in a mixed film of porphyrin and fullerene with hydrogen bonding on an ITO electrode, which exhibits efficient cathodic photocurrent generation as compared to the reference system without hydrogen bonding.

2068

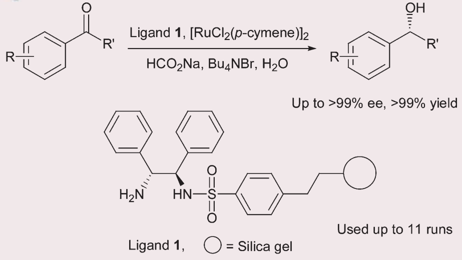


Prolonged luminescence lifetimes of Ru(II) complexes *via* the multichromophore approach: the excited-state storage element can be on a ligand not involved in the MLCT emitting state

Jianhua Wang, Garry S. Hanan,* Frédérique Loiseau and Sebastiano Campagna*

Bichromophoric Ru(II) complexes of tridentate ligands possess luminescence lifetimes in excess of 1 µs, which is more than 10^3 times longer than the lifetime of the parent $Ru(tpy)_2{}^{2+}$ complex.

2070

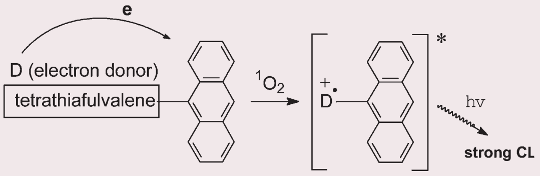


Highly efficient and recyclable heterogeneous asymmetric transfer hydrogenation of ketones in water

Pei Nian Liu, Jin Gen Deng, Yong Qiang Tu* and Shao Hua Wang

A highly efficient heterogeneous asymmetric transfer hydrogenation of ketones in water was developed for the first time, which exhibited excellent enantioselectivities, distinct acceleration effect and remarkably high recyclabilities.

2072

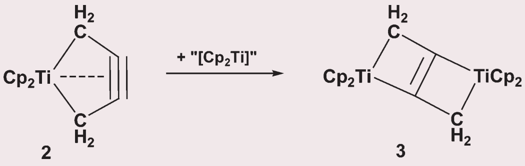


A selective and sensitive chemiluminescence reaction of 4,4′(5′)-bis[2-(9-anthryloxy)ethylthio]tetrathiafulvalene with singlet oxygen

Guanxin Zhang, Xiaohua Li, Huimin Ma,* Deqing Zhang,* Jun Li and Daoben Zhu*

4,4′(5′)-Bis[2-(9-anthryloxy)ethylthio]tetrathiafulvalene bearing an electron-rich tetrathiafulvalene unit and a luminophore of anthracene shows a highly selective and sensitive chemiluminescence response to singlet oxygen.

2074

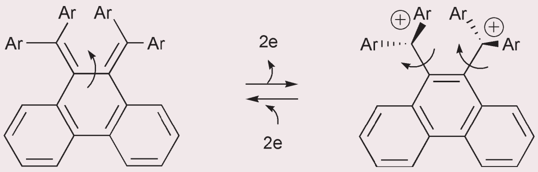


Reduction of 1,4-dichlorobut-2-yne by titanocene to a 1,2,3-butatriene. Formation of a 1-titanacyclopent-3-yne and a 2,5-dititanabicyclo[2.2.0]hex-1(4)-ene

Vladimir V. Burlakov, Perdita Arndt, Wolfgang Baumann, Anke Spannenberg, Uwe Rosenthal,* Pattiyil Parameswaran, Eluvathingal D. Jemmis*

Starting from [$Cp_2Ti(\eta^2\text{-}Me_3SiC_2SiMe_3)$] (**1**) and 1,4-dichlorobut-2-yne by *in situ* generated titanocene *via* the 1-titanacyclobut-3-yne (**2**) the bis-titanocene-μ-(*Z*)-1,2,3-butatriene complex (**3**) is formed.

2076

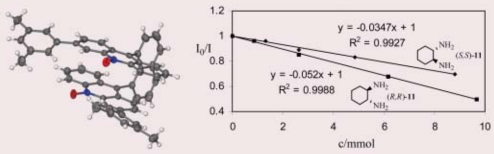


First stable 7,7,8,8-tetraaryl-*o*-quinodimethane: isolation, X-ray structure, electrochromic response of 9,10-bis(dianisylmethylene)-9,10-dihydrophenanthrene

Shinichi Iwashita, Eisuke Ohta, Hiroki Higuchi, Hidetoshi Kawai, Kenshu Fujiwara, Kazunori Ono, Masami Takenaka and Takanori Suzuki*

A vivid change in color upon electrolysis was realized based on the novel dynamic redox pair featuring the tetraaryl-*o*-quinodimethane and phenylenebis(diarylmethylium) skeletons

2078

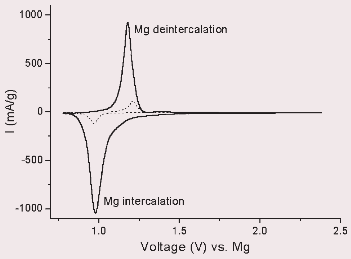


A highly congested *N*,*N*′-dioxide fluorosensor for enantioselective recognition of chiral hydrogen bond donors

Xuefeng Mei and Christian Wolf*

Enantioselective fluorosensing of chiral hydrogen bond donors such as amines and amino acids has been achieved using a rigid C_2-symmetric 1,8-diacridylnaphthalene *N*,*N*′-dioxide sensor.

2080

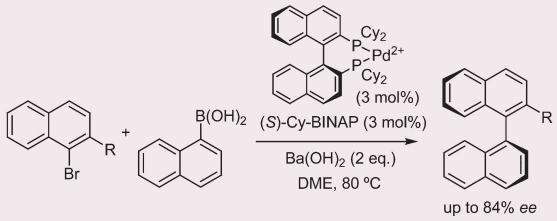


TiS_2 nanotubes as the cathode materials of Mg-ion batteries

Zhan-Liang Tao, Li-Na Xu, Xing-Long Gou, Jun Chen* and Hua-Tang Yuan

Higher capacity rechargeable magnesium-ion batteries can be constructed by using titanium disulfide (TiS_2) nanotubes as the cathode materials. The picture shows the cyclic voltammograms of a nanotube electrode (solid curve) and a polycrystalline powder electrode (dotted curve).

2082

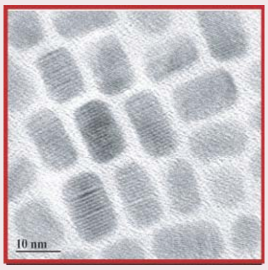


A highly efficient asymmetric Suzuki–Miyaura coupling reaction catalyzed by cationic chiral palladium(II) complexes

Koichi Mikami,* Takashi Miyamoto and Manabu Hatano

Cationic chiral palladium(II) complexes with (*S*)-Cy-BINAP (Cy = cyclohexyl) are shown to catalyze the asymmetric Suzuki–Miyaura coupling reaction of aryl boronates and aryl halides within a short period of time in good yield and enantioselectivity.

2084

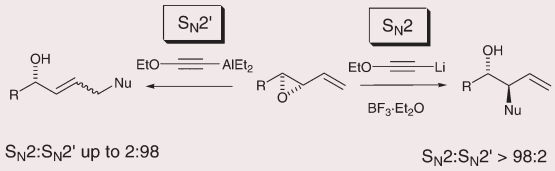


A multiple injection method for exerting kinetic control in the synthesis of CdSe nanorods

P. Sreekumari Nair, Karolina P. Fritz and Gregory D. Scholes*

A new methodology for imposing shape control in the growth of colloidal semiconductor quantum dots, by means of regulation of reagent concentrations involving a dual-precursor system.

2086

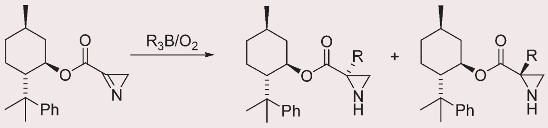


Regioselective and divergent opening of vinyl epoxides with ethoxyacetylene

Per Restorp and Peter Somfai*

A divergent protocol for nucleophilic opening of vinyl epoxides with ethoxyacetylide has been developed and demonstrated to give complete regioselectivity depending on reaction conditions. This approach provides a novel entry to β,γ-disubstituted γ-butyrolactones.

2088

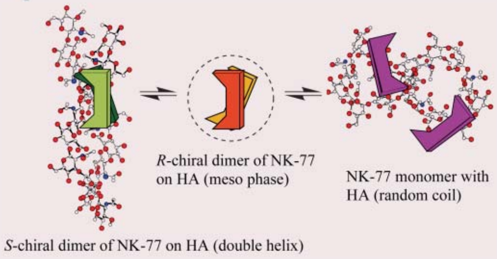


Asymmetric radical additions of trialkylboranes to 2*H*-azirine-3-carboxylates

Erik Risberg, Andreas Fischer and Peter Somfai*

Asymmetric additions of alkyl radicals, generated from R_3B, to chiral 2*H*-azirine-3-carboxylates offer a new entry to enantioenriched aziridines, and proceed with high diastereoselectivity when using 8-phenylmenthol as chiral auxiliary.

2090

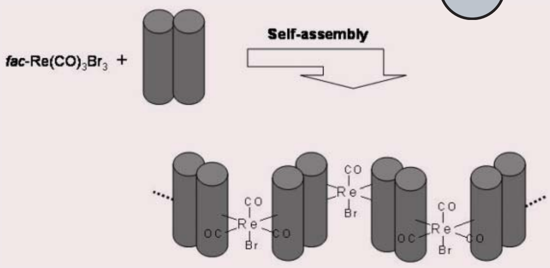


Exciton interactions in cyanine dye–hyaluronic acid (HA) complex: reversible and biphasic molecular switching of chromophores induced by random coil-to-double-helix phase transition of HA

Takashi Sagawa,* Haruko Tobata and Hirotaka Ihara*

Reversible and biphasic switching of monomer-to-*R*-chiral dimer transition and *R*-chiral-to-*S*-chiral dimer transition of cyanine chromophores were demonstrated by complex formation with hyaluronic acid.

2092

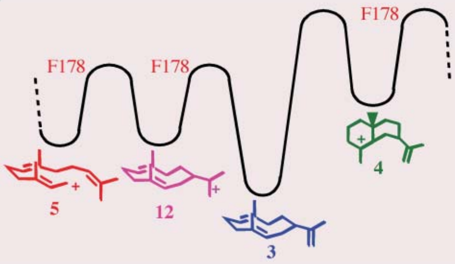


Metal-peptide nanoassemblies

Mikhail V. Tsurkan and Michael Y. Ogawa

A new class of metal-peptide nanoassemblies has been prepared by combining the principles of supramolecular coordination chemistry with those of *de novo* protein design.

2094

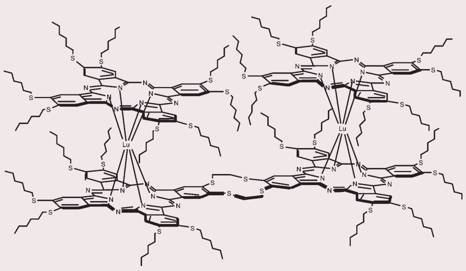


Dual role for phenylalanine 178 during catalysis by aristolochene synthase

Silvia Forcat and Rudolf K. Allemann*

Cations on C1, C2 and C11 of intermediates of aristolochene synthase catalysis are stabilised by Phe 178.

2096

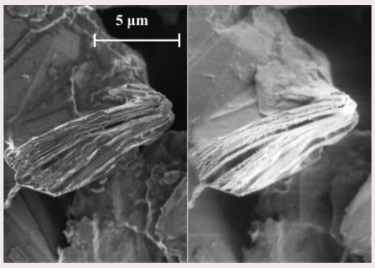


Synthesis, characterization, and electrical and electrochemical properties of sandwich dilutetium tetraphthalocyanine

Saziye Abdurrahmanoglu, Ahmet Altindal, Ali Riza Özkaya, Mustafa Bulut and Özer Bekaroglu*

Lu_2Pc_2 and dilithium octakis-hexylsulfanylphthalocyanine have been used to synthesize $[Lu_2(Pc)_4]$ which exhibits variable range hopping conductivity as inorganic semiconductors and also observed electrochromic effect from cyclic voltammetric (CV) measurement.

2098

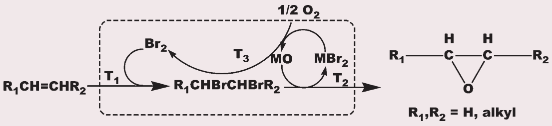


Stable cycling of graphite in an ionic liquid based electrolyte

Michael Holzapfel,* Carsten Jost and Petr Novák

Reversible intercalation/de-intercalation of lithium into/from graphite has been accomplished without fading in an ionic liquid based electrolyte containing small amounts of vinylene carbonate as a film forming additive.

2100

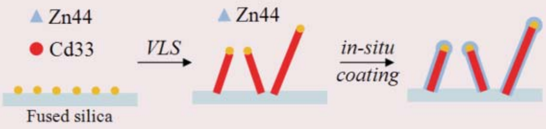


A general integrated process for synthesizing olefin oxides

Shouli Sun,* Ivan M. Lorkovic, Michael Weiss, Jeffrey H. Sherman, Galen D. Stucky, Peter C. Ford and Eric W. McFarland

Partial oxidation of alkenes *via* bromination followed by reaction with solid metal oxide mixtures is shown to form alkene oxides.

2102

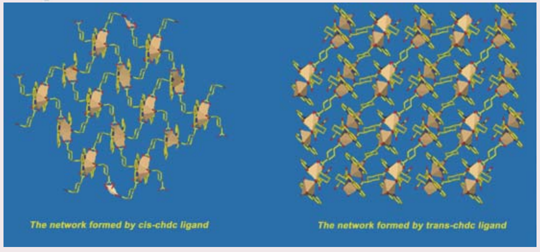


One-step preparation of coaxial CdS–ZnS nanowires

Yung-Jung Hsu and Shih-Yuan Lu*

A new approach was developed to prepare coaxial (core-shell) CdS–ZnS nanowires *via* a one-step metallo-organic chemical vapor deposition (MOCVD) process with co-fed single source precursors of CdS and ZnS. Single source precursors of CdS and ZnS with sufficiently different reactivity were prepared and paired up to form the coaxial heterostructure in a one-step process.

2104

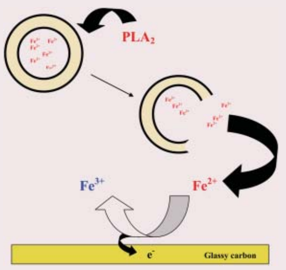


Isomer separation, conformation control of flexible cyclohexanedicarboxylate ligand in cadmium complexes

Wenhua Bi, Rong Cao,* Daofeng Sun, Daqiang Yuan, Xing Li, Yanqin Wang, Xiaoju Li and Maochun Hong

The *cis* and *trans* conformations of 1,4-cyclohexanedicarboxylic acid (chdcH_2) were separated completely in the hydrothermal syntheses of two 2D cadmium coordination polymers through changing the reaction temperature and pH value.

2106

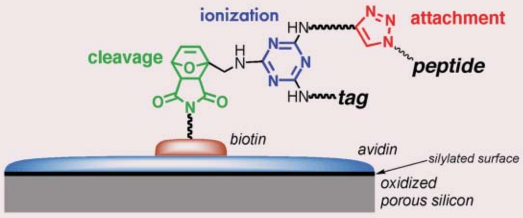


Electrochemical measurement of the interaction of *Crotalus adamanteus* venom with DMPC vesicles

A. Toby A. Jenkins* and Jonathan A. Olds

This communication describes an experiment to investigate the lysis of lipid vesicles encapsulating a redox probe by a phospholipase A2 rich snake venom. The lysis action of the venom was followed in real time and as a function of venom concentration, using voltammetry to follow the increase in free redox probe following vesicle rupture.

2108

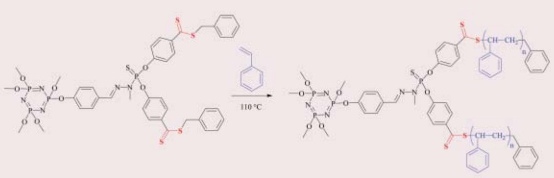


Affinity mass spectrometry from a tailored porous silicon surface

Jun-cai Meng, Gary Siuzdak and M. G. Finn*

The development of chemically stable porous silicon (pSi) materials for DIOS (Desorption/Ionization on Silicon) mass spectrometry, covalent linkers cleaved in the DIOS laser pulse, and efficient methods for bond formation to immobilized species, allows for on-chip affinity purification and mass detection.

2110

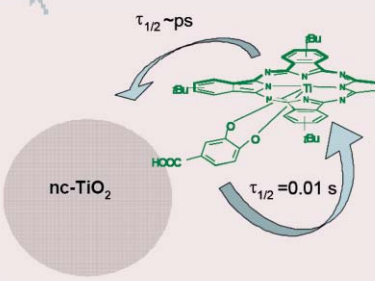


Synthesis of hybrid dendrimer-star polymers by the RAFT process

Vincent Darcos, Alex Duréault, Daniel Taton,* Yves Gnanou,* Patrice Marchand, Anne-Marie Caminade, Jean-Pierre Majoral, Mathias Destarac and Frédéric Leising

A phosphorus-containing dendrimer containing twelve peripheral benzyl dithiobenzoate functions was designed and subsequently served to derive star-shaped polystyrenes with a dendritic core by reversible addition-fragmentation chain transfer (RAFT) following an arm-first methodology.

2112

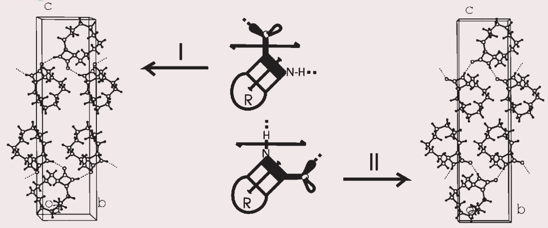


State selective electron injection in non-aggregated titanium phthalocyanine sensitised nanocrystalline TiO_2 films

Emilio Palomares, M. Victoria Martínez-Díaz, Saif A. Haque, Tomás Torres* and James R. Durrant*

A novel Ti phthalocyanine dye shows no aggregation when anchored to nanocrystalline TiO_2 films and state selective photoinduced electron injection into the conduction band of the metal oxide results in a long lived (0.01 s) charge separated state.

2114

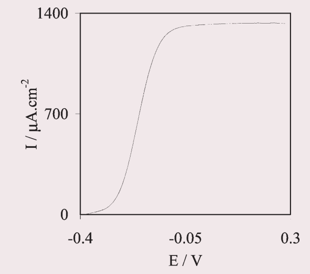


Two polymorphs of a β-lactam (*trans*-13-azabicyclo[10.2.0]tetradecan-14-one). Concomitant crystal polymorphism and isostructurality

László Fábián, Alajos Kálmán,* Gyula Argay, Gábor Bernáth and Zsuzsanna Cs. Gyarmati

Two polymorphs of *trans*-13-azabicyclo[10.2.0]tetradecan-14-one display a unique example of isostructurality, differing only in the orientation of a given hydrogen bond with respect to the β-lactam bond.

2116

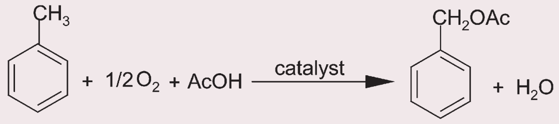


Electro-oxidation of glucose at an increased current density at a reducing potential

Nicolas Mano,* Fei Mao and Adam Heller

We report the electro-oxidation of glucose at −0.1 V *vs.* Ag/AgCl and at 1.3 mA cm^{-2} current density in a physiological buffer solution at 37 °C.

2118

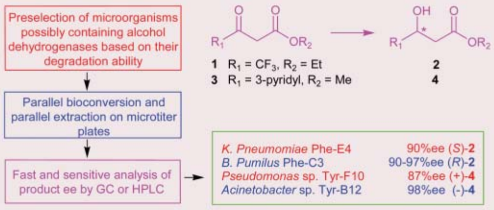


One-step synthesis of benzyl acetate by gas phase acetoxylation of toluene over highly active and selective Pd–Sb–TiO_2 catalysts

A. Benhmid, K. V. Narayana, A. Martin* and B. Lücke

A first report on vapour phase acetoxylation using Pd–Sb–TiO_2 catalysts that enables significantly higher conversion of toluene (∼ 93%) and higher yields of benzyl acetate (∼ 79%).

2120

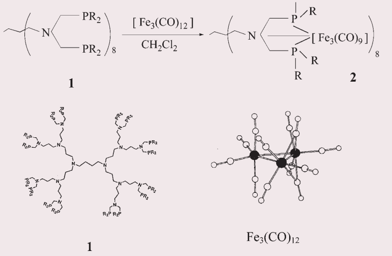


Rapid identification of new bacterial alcohol dehydrogenases for (*R*)- and (*S*)-enantioselective reduction of ß-ketoesters

Jie Zhang, Wouter A. Duetz, Bernard Witholt and Zhi Li*

New bacterial alcohol dehydrogenases with high and complementary enantioselectivity for the reduction of ethyl 3-keto-4,4,4-trifluorobutyrate **1** and methyl 3-keto-3-(3′-pyridyl)-propionate **3** have been rapidly identified by use of a new methodology consisting of preselection of microorganisms based on degradation ability and high-throughput screening with a miniaturized system coupled with fast analysis of enantioselectivities.

2122

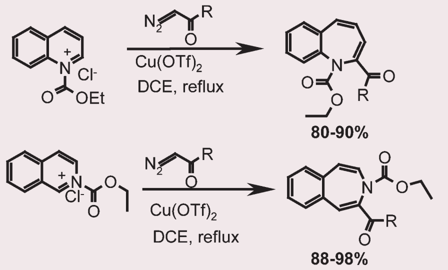


A nanoscale dendrimer-based Fe_{24} cluster: synthesis and molecular self-assembly

Junfeng Geng, Hongwei Li, Wilhelm T. S. Huck and Brian F. G. Johnson*

We report the synthesis, characterisation and self-assembly of a nanoscopic Fe_{24} cluster using an organic dendrimer as a molecular substrate for building up well-defined molecular nanostructures.

2124

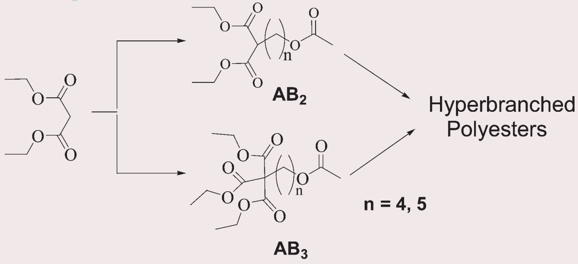


First example of ring expansion of activated quinolines and isoquinolines: novel benzoazepines

J. S. Yadav,* B. V. Subba Reddy, Manoj Kumar Gupta, A. Prabhakar and B. Jagadeesh

Activated quinoline and isoquinoline undergo unexpected ring expansion by diazocarbonyl compounds *via* C–C insertion in the presence of 5 mol% of copper triflate to produce ethyl 1*H*-benzo[*b*]-azepine-1-carboxylate and ethyl 3*H*-benzo[*d*]azepine-3-carboxylate, respectively, in excellent yields with a high degree of selectivity.

2126

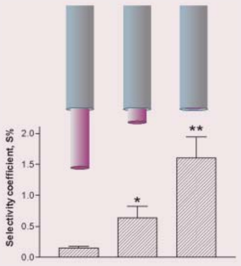


Facile synthesis of aliphatic hyperbranched polyesters based on diethyl malonate and their irreversible molecular encapsulation

Santimukul Santra and Anil Kumar*

In this communication we report on the synthesis and characterization of wholly aliphatic hyperbranched polyesters, based on AB_2 and AB_3 monomers derived from diethyl malonate, having suitable polar matrix for irreversible molecular encapsulation.

2128



The selectivity of electrosynthesised polymer membranes depends on the electrode dimensions: implications for biosensor applications

Colm P. McMahon, Sarah J. Killoran, Sarah M. Kirwan and Robert D. O'Neill*

A biosensor selectivity coefficient defined for poly(*o*-phenylenediamine) electrosynthesised onto Pt microdisks and cylinders was unexpectedly found to change as the scale of the electrodes decreased, mainly due to enhanced permeability of a ubiquitous interference species in biological systems, ascorbic acid.

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