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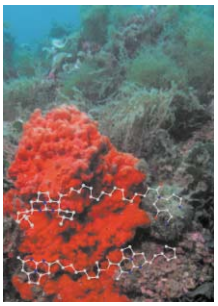

Cover
Crambe Crambe, a marine sponge from which crambescidin alkaloids have been isolated (pp. 253–265). Photo courtesy of Miquel Pontes (http://marenostrum.org)

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contents

FEATURE ARTICLE

COMMUNICATIONS

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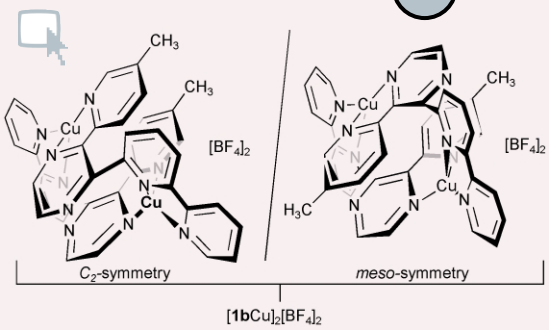
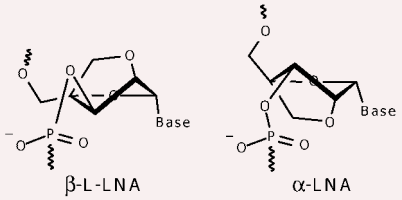


In flagrante metallo-cyclophane self-assembly?

Peter J. Cragg, Fenton R. Heirtzler,* Mark J. Howard, Ivan Prokes and Thomas Weyhermüller

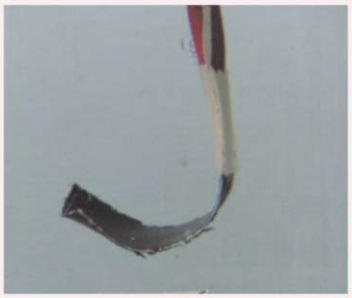
The dimeric self-assembly of an alkyl-substituted pyrazine–pyridine hybrid ligand with copper(I) initially affords its sterically congested, C_2-symmetric stereoisomer, which then undergoes partial isomerisation to a dynamic mixture containing the less crowded *meso*-configured diastereomer.



Parallel nucleic acid recognition by the LNA (locked nucleic acid) stereoisomers β-L-LNA and α-D-LNA; studies in the mirror image world

Nanna K. Christensen, Torsten Bryld, Mads D. Sørensen, Khalil Arar, Jesper Wengel and Poul Nielsen*

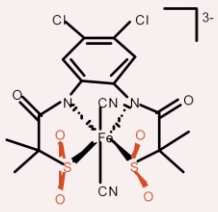
Two stereoisomers of LNA are evaluated in the mirror-image world by the study of LNA and α-L-LNA and their L-DNA and L-RNA complements. Both β-L-LNA and α-D-LNA display high-affinity parallel stranded RNA-recognition.



Artificial muscle: movement and position control

T. F. Otero* and M. T. Cortes

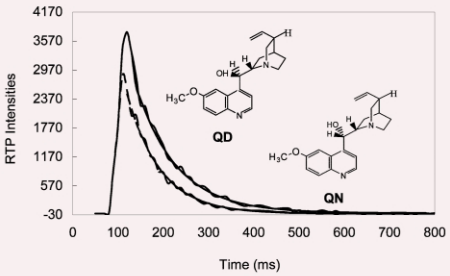
All polymeric artificial muscle shows bending under absolute control of the applied current. The position of this device can be controlled by the consumed charge, the speed and movement direction by the magnitude and direction of the current. This device does not show relaxation when the electrical energy is switched off.



Oxygenation of thiolates to *S*-bonded sulfinate in an iron(III) complex related to nitrile hydratase

Erwan Galardon, Michel Giorgi and Isabelle Artaud*

A new mimic of iron nitrile hydratase containing two sulfinato groups *trans* to two carboxamido nitrogens has been prepared by air oxidation of the corresponding dithiolato complex $[Fe(N_2S_2)Cl]^{2-}$ in the presence of CN^-.



Alteration of room temperature phosphorescence lifetimes of quinine and quinidine by chiral additives

Yanli Wei, Wing-Hong Chan, Albert W. M. Lee and Carmen W. Huie*

The observation of room temperature phosphorescence lifetime differences between quinine (QN) and quinidine (QD) and the ability to alter these differences based on the addition of chiral counter-ions or surfactants are reported.

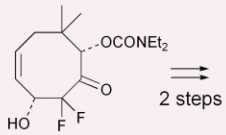
Microwave-accelerated synthesis of lengthy and defect-free poly(*m*-phenyleneethynylene)s *via* AB′ and A_2 + BB′ polycondensation routes

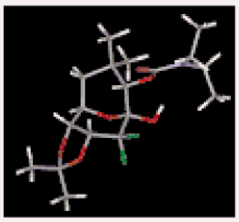
Anzar Khan and Stefan Hecht*

Lengthy and defect-free poly(*m*-phenyleneethynylene)s can be prepared *via* ¡a novel polycondensation protocol involving an *in-situ* activation/coupling scheme in combination with microwave-acceleration.

Towards conformationally-locked difluorosugar analogues: an unexpected sense of dihydroxylation

John Fawcett, Gerry A. Griffiths, Jonathan M. Percy,* Stéphane Pintat, Clive A. Smith, Neil S. Spencer and Emi Uneyama

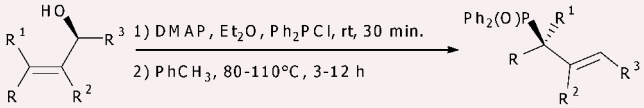




Stereoselective dihydroxylation of a difluorinated cyclooctenone leads to a stable bicyclic hemiacetal *via* transannular collapse. Molecular topology plays an intriguing role in determining the outcome of this transformation, and related ones.

Stereoselective [2,3] sigmatropic rearrangement of acyclic allylic phosphinites

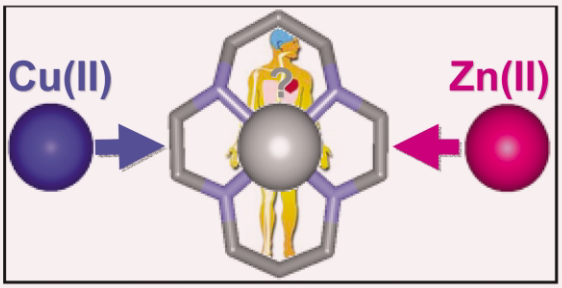
Frédéric Liron and Paul Knochel*



The [2,3] sigmatropic rearrangement of acyclic allylic phosphinites was found to proceed with high stereo- and enantioselectivity, allowing the preparation of chiral allylic phosphine oxides and aminophosphine oxides.

Anti-viral cyclam macrocycles : rapid zinc uptake at physiological pH

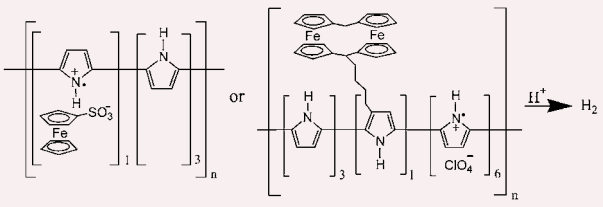
Stephen J. Paisey and Peter J. Sadler*



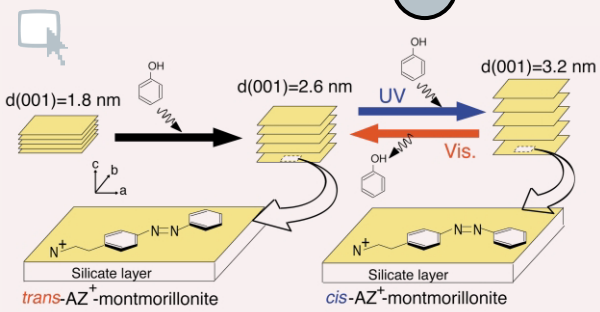
Zn(II) binds to cyclam rapidly at micromolar concentrations and physiological pH, and retards uptake of Cu(II).

A readily-prepared electrocatalytic coating that is more active than platinum for hydrogen generation in 1 M strong acid

Jun Chen, Junhua Huang, Gerhard F. Swiegers,* Chee O. Too and Gordon G. Wallace*



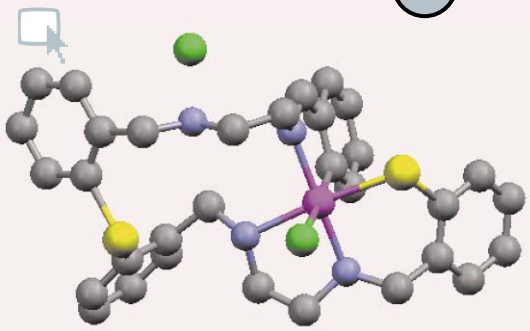
Coating of a platinum electrode with conducting polypyrrole containing ferrocene sulfonate as counter-ion induces a 0.27 V anodic shift for hydrogen gas evolution in 1 M strong acids and a 7-fold amplification in hydrogen production when poised at −0.44 V.



Photocontrol of the adsorption behavior of phenol for an azobenzene-montmorillonite intercalation compound

Tomohiko Okada,* Yusuke Watanabea and Makoto Ogawa*

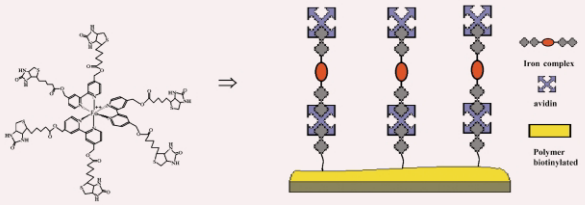
Phenol was intercalated into *p*-(ω-dimethylhydroxyethyl-ammonioethoxy)azobenzene (AZ^+)–montmorillonite intercalation compound by UV irradiation and was deintercalated by subsequent visible light irradiation.



Contrasting coordination behaviour of 22-membered chalcogenaaza (Se, Te) macrocylces towards Pd(II) and Pt(II): Isolation and structural characterization of the first metallamacrocyle with a C–Pt–Se linkage

Snigdha Panda, Harkesh B. Singh* and Ray J. Butcher

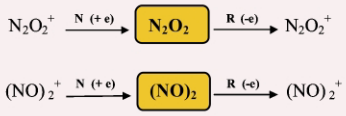
The synthesis and crystal structure of a novel 23-membered Pt(IV) metallamacrocyclic complex with a C–Pt–Se linkage is reported.



A new biotinylated tris bipyridinyl iron(II) complex as redox biotin-bridge for the construction of supramolecular biosensing architectures

Naoufel Haddour, Chantal Gondran and Serge Cosnier*

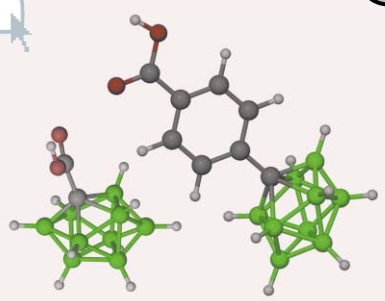
A new tris(bipyridyl)iron(II) complex bearing six 3 D oriented biotin groups has been designed and applied to the anchoring of multilayered avidin structures on an electrode surface.



Discovery of two high-energy N_2O_2 isomers

Giulia de Petris,* Fulvio Cacace* and Anna Troiani

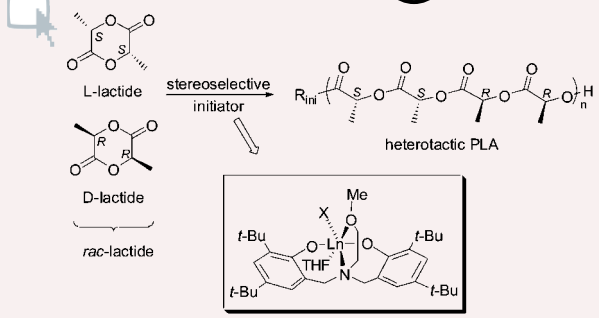
Two N_2O_2 isomers containing N_2/O_2 and NO/NO subunits, respectively, were detected by neutralization-reionization mass spectrometry (NRMS) as metastable species with lifetimes exceeding 1 μs.



Polyhedral monocarbaborane chemistry. Carboxylic acid derivatives of the [*closo*-2-CB_9H_{10}]$^-$ anion

Andreas Franken, Colin A. Kilner and John D. Kennedy*

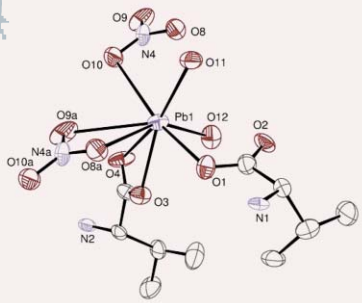
The new [*closo*-2-CB_9H_9-2-(COOH)]$^-$ and [*closo*-2-CB_9H_9-2-(C_6H_4-*para*-COOH)]$^-$ anions, obtained in overall 45–50% yield from $B_{10}H_{14}$, are potentially useful synthons for the further derivatisation of {*closo*-CB_9} monocarbaboranes.



Stereoselective ring-opening polymerization of racemic lactide using alkoxy-amino-bis(phenolate) group 3 metal complexes

Chen-Xin Cai, Abderramane Amgoune, Christian W. Lehmann and Jean-François Carpentier*

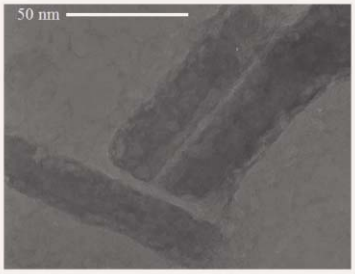
Alkyl- and amido-yttrium complexes of a non-chiral tetradentate alkoxy-amino-bis(phenolate) ligand initiate the fast and controlled polymerization of *rac*-lactide to give heterotactic-rich polylactic acid.



Definitive identification of lead(II)-amino acid adducts and the solid state structure of a lead–valine complex

Neil Burford,* Melanie D. Eelman, Wesley G. LeBlanc, T. Stanley Cameron and Katherine N. Robertson

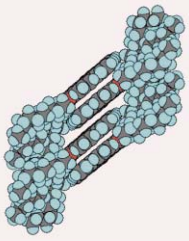
Electrospray ionization mass spectra of lead(II) nitrate–amino acid mixtures provide unequivocal identification of lead species with each of the essential amino acids and assignment of a valine complex has been supported with the first crystallographic characterization of a lead–amino acid complex.



Indium sulfide nanorods from single-source precursor

Mohammmad Afzaal, Mohammad A. Malik and Paul O'Brien*

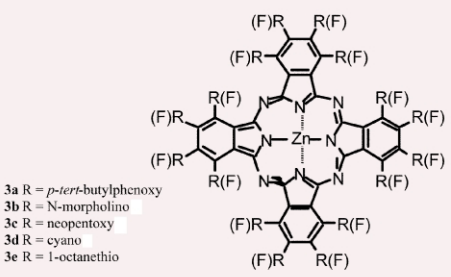
Thin films comprised of In_2S_3 nanorods have been prepared on glass substrates by metal-organic chemical vapour deposition [$Et_2In(S_2CNMe^nBu)$] without either template or catalyst.



Partially stripped insulated nanowires: a lightly substituted hexa-*peri*-hexabenzocoronene-based columnar liquid crystal

Zhaohui Wang, Mark D. Watson, Jishan Wu and Klaus Müllen*

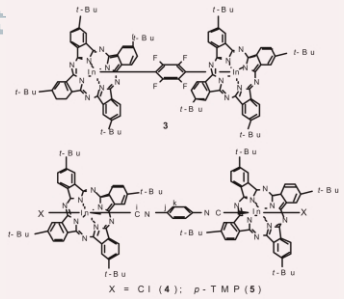
Despite carrying only three alkyl chains at a single peripheral focal area, a new hexa-*peri*-hexabenzocoronene derivative forms stable columnar liquid crystalline mesophases and is easily processable from solution or from the melt, the latter due to a practically accessible isotropization temperature.



Polysubstituted phthalocyanines by nucleophilic substitution reactions on hexadecafluorophthalocyanines

Clifford C. Leznoff* and José L. Sosa-Sanchez

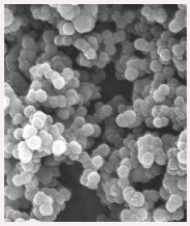
Nucleophilic substitution reactions on hexadecafluorophthalocyaninato zinc(II) with a variety of O, N, C, and S nucleophiles led to narrowly defined mixtures of polysubstituted phthalocyanines.



Excited state properties of monomeric and dimeric axially bridged indium phthalocyanines upon UV–Vis laser irradiation

Yu Chen, Danilo Dini, Michael Hanack,* Mamoru Fujitsuka and Osamu Ito

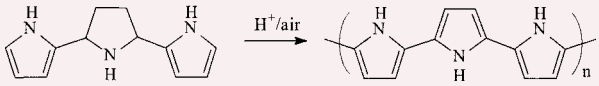
Defined photoexcited states in the dimeric indium phthalocyanines **3 - 5** can be formed *via* irradiation at both off-resonance as well as resonant frequencies in the UV-Visible range. Linear and nonlinear optical properties of **3 - 5** were determined and the optical limiting effect was analyzed in terms of structural modifications.



A chemical route from PTFE to amorphous carbon nanospheres in supercritical water

Xiaogang Yang, Cun Li, Wei Wang, Baojun Yang, Shuyuan Zhang and Yitai Qian*

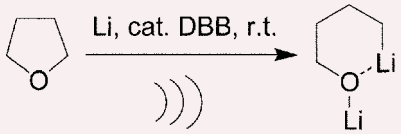
Poly(tetrafluoroethylene) can be decomposed into amorphous carbon nanospheres *via* supercritical water treatment in an autoclave at 550 °C, which may be applied to deal with other halogenous polymer wastes.



Formation of polypyrrole from 2,5-bis(2-pyrrolyl)pyrrolidine

Arnd Garsuch, Rita R. Sattler and Peter G. Pickup*

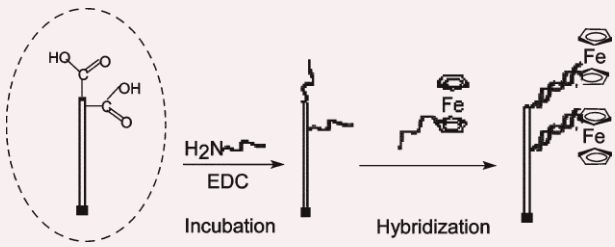
2,5-Bis(2-pyrrolyl)pyrrolidine has been found to spontaneously polymerize under acidic conditions in the presence of air to produce fully aromatic polypyrrole.



Unexpected cleavage of tetrahydrofuran by catalytic reductive lithiation

Stéphane Streiff, Nigel Ribeiro and Laurent Désaubry*

DBB, an electron transporter, can open THF at room temperature under sonication without any Lewis acid activation. This feature was successfully exploited in the straightforward synthesis of bis-silanes.



Aligned carbon nanotube–DNA electrochemical sensors

Pingang He and Liming Dai*

Single-strand DNA chains were chemically grafted onto aligned carbon nanotube electrodes, leading to novel aligned carbon nanotube–DNA sensors of a high sensitivity and selectivity for probing complementary DNA and target DNA chains of specific sequences.

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