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ChemComm

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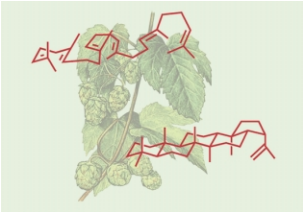
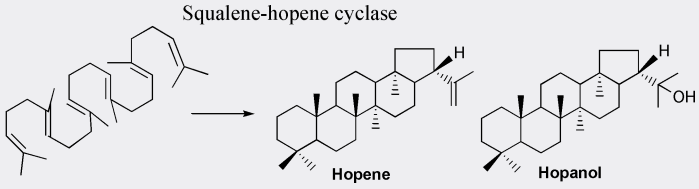


Cover
The structures of squalene and hopene against a background of hops.

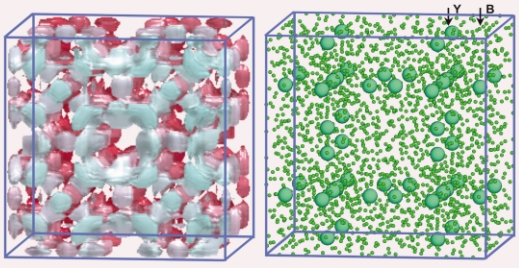
contents

FEATURE ARTICLE

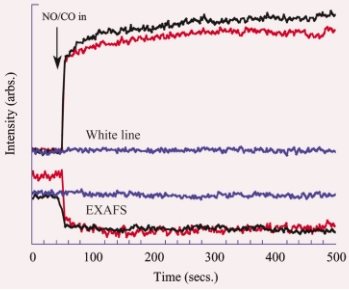


Rapid progress on the catalytic mechanism and substrate recognition by squalene–hopene cyclase, which has occurred only in the last several years, is reported. A series of site-directed mutation experiments and some squalene analogues have provided deep insight into the polycyclization mechanism and catalytic sites in conjunction with the information from X-ray crystal data.

COMMUNICATIONS

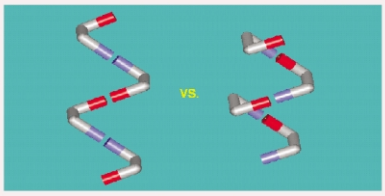


The three-dimensional potential map of a YB_{56} crystal with a size below 20 nm was obtained by inverse Fourier transformation of three-dimensional phases and amplitudes, this method is useful for three-dimensional structural analysis of nanocrystals.



Metal particles in a Rh/γ-Al_2O_3 catalyst of differing particle size are oxidised by NO/He within 5 seconds at 313 K; rapid, highly exothermic dissociative chemisorption of NO is the initial step.

306

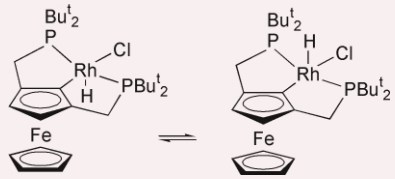


Helix *versus* zig-zag: control of supramolecular topology *via* carboxylic acid conformations in *ortho*-substituted phenyl amines

Jason E. Field and D. Venkataraman

Depending on the conformation of the carboxylic acids, bridged bis(benzoic acid) systems can potentially form three types of supramolecular motifs, including the helix. Through internal hydrogen bonding, this conformation, and thus the overall supramolecular structure, may be controlled.

308

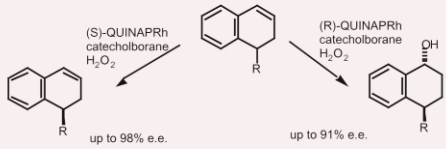


Synthesis and reactivity of a ferrocene-derived PCP-pincer ligand

Edward J. Farrington, Eloisa Martinez Viviente, B. Scott Williams, Gerard van Koten and John M. Brown

A ferrocene analogue of well-established pincer ligands shows two equilibrating diastereomers in its chlororhodium complex.

310

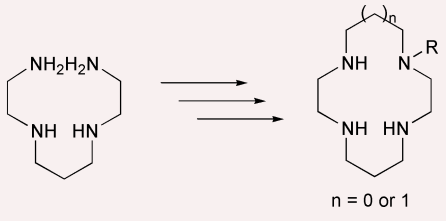


Efficient kinetic resolution in hydroboration of 1,2-dihydronaphthalenes

Kenji Maeda and John M. Brown

1-Substituted 1,2-dihydronaphthalenes undergo kinetic resolution during asymmetric hydroboration with Rh–QUINAP complexes.

312

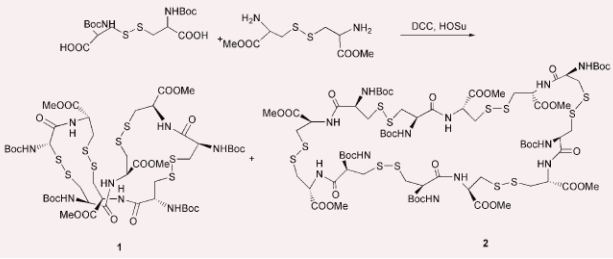


An organic template approach for the synthesis of selectively functionalised tetraazacycloalkanes

Frédéric Boschetti, Franck Denat, Enrique Espinosa and Roger Guilard

Selectively functionalised tetraazacycloalkanes are obtained from the open-chain tetraamine by using a bisaminal moiety acting both as a template agent and as a N-protecting group.

314

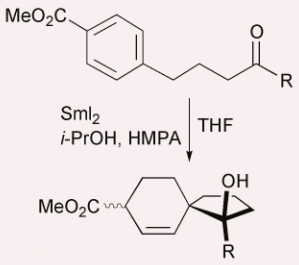


Unusual cyclo-tetra and hexa peptidation of bis-boc-cystine with cystine-di-OMe: one step preparation of the novel 32- and 48-membered cyclotetracystine and cyclohexacystine

S. Ranganathan, K. M. Muraleedharan, M. Vairamani, A. C. Kunwar and A. Ravi Sankar

The unprecedented formation of 32- and 48-membered macrocycles that inscribe 4 and 6 cystine units, in the peptidation of bis-Boc-cystine with cystine-di-OMe is reported.

316

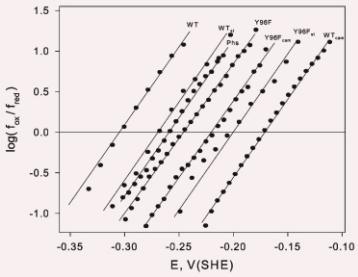


The first samarium(II)-mediated stereoselective spirocyclization onto an aromatic ring

Hiroaki Ohno, Shin-ichiro Maeda, Mitsuaki Okumura, Ryutaro Wakayama and Tetsuaki Tanaka

The first samarium(II)-mediated spirocyclisation onto an aromatic ring was achieved by the reaction of methyl 4-(4-oxoalkyl)benzoates with SmI_2 in the presence of *i*-PrOH and HMPA.

318

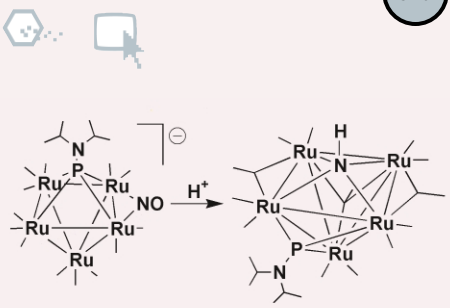


Redox control of the P450cam catalytic cycle: effects of Y96F active site mutation and binding of a non-natural substrate

Vytas Reipa, Martin P. Mayhew, Marcia J. Holden and Vincent L. Vilker

Nernst plots of purified cytochrome P450cam and Y96F mutant with and without camphor or styrene as substrates.

320

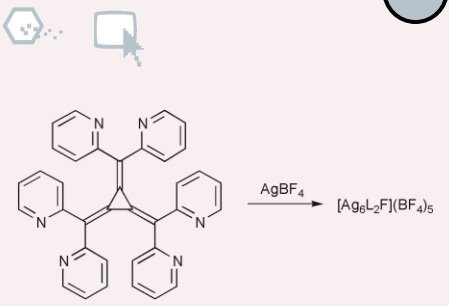


Mixed nitrosyl/phosphinidene and nitrene/phosphinidene clusters of ruthenium

Ludmila Scoles, Brian T. Sterenberg, Konstantin A. Udachin and Arthur J. Carty

Reaction of $[Ru_5(CO)_{15}(\mu_4\text{-}PNPr^i_2)]$ with $[PPN][NO_2]$ led to the cluster complex $[PPN][Ru_5(CO)_{13}(\mu\text{-}NO)(\mu_4\text{-}PNPr^i_2)]$ which is transformed into the novel cluster $[Ru_5(CO)_{10}(\mu\text{-}CO)_2(\mu_3\text{-}CO)(\mu_4\text{-}NH)(\mu_3\text{-}PNPr^i_2)]$ *via* treatment with triflic acid.

322

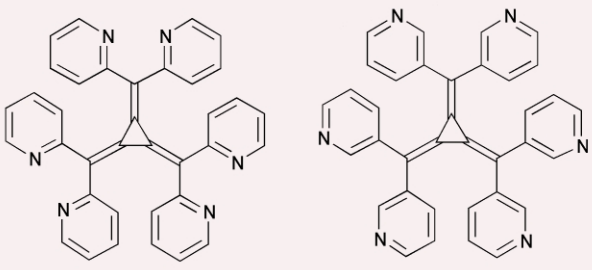


Hexa(2-pyridyl)[3]radialene: self-assembly of a hexanuclear silver array

Peter J. Steel and Christopher J. Sumby

Reaction of the new ligand hexa(2-pyridyl)[3]radialene with silver tetrafluoroborate results in the formation of a M_6L_2 cage with an encapsulated μ_3-fluorido anion.

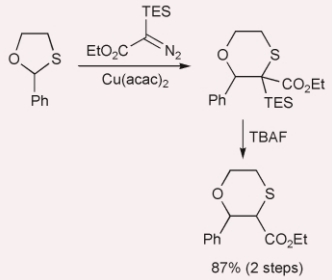
324



Hexakis(2-pyridyl)- and hexakis(3-pyridyl)[3]radialene: novel, water-soluble [3]radialenes with potential utility for supramolecular chemistry

Kouzou Matsumoto, Yukako Harada, Takeshi Kawase and Masaji Oda

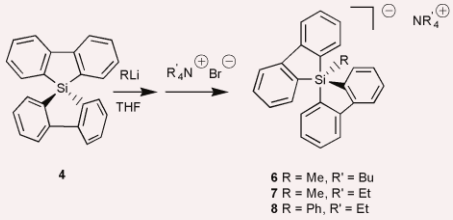
These radialenes, the first members of radialenes having azine groups, are stable, moderately electron poor radialenes showing the corresponding anion radicals and dianions upon both electrochemical and alkali metal reduction.



A ring expansion reaction of 1,3-oxathiolanes

Maria Ioannou, Michael J. Porter and Fabienne Saez

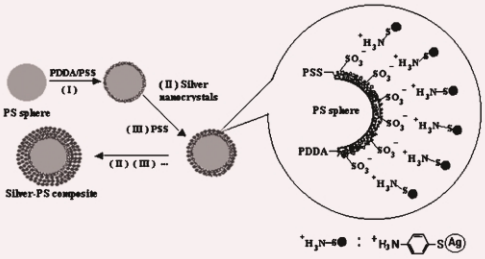
The carbene-mediated ring expansion of 1,3-oxathiolanes proceeds efficiently provided a silylated diazo compound is used. Subsequent removal of the silyl group can be achieved in high yield by fluoride treatment.



Tetraalkylammonium pentaorganosilicates: the first highly stable silicates with five hydrocarbon ligands

Sirik Deerenberg, Marius Schakel, Adrianus H. J. F. de Keijzer, Mirko Kranenburg, Martin Lutz, Anthony L. Spek and Koop Lammertsma

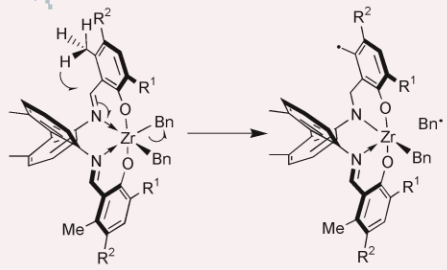
Several tetraalkylammonium pentaorganosilicates, derived from 9,9-spirobi(9*H*,9-silafluorene) were prepared from the corresponding lithium silicates and isolated and characterized as storable high melting solids.



Fabrication of compact silver nanoshells on polystyrene spheres through electrostatic attraction

A. G. Dong, Y. J. Wang, Y. Tang, N. Ren, W. L. Yang and Z. Gao

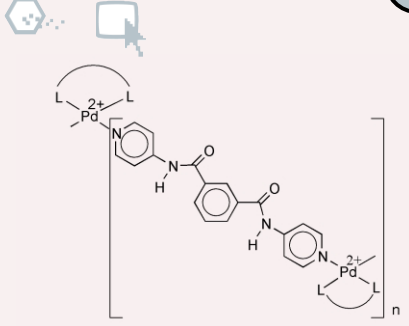
Nanoshells composed of close-packed silver nanocrystals have been fabricated on PS spheres *via* direct electrostatic adsorption at appropriate pH; the thickness and roughness of the shell can be readily controlled through a layer-by-layer technique.



Problems and solutions for alkene polymerisation catalysts incorporating Schiff-bases; migratory insertion and radical mechanisms of catalyst deactivation

Paul D. Knight, Adam J. Clarke, Brian S. Kimberley, Richard A. Jackson and Peter Scott

Steric blocking of an intramolecular 1,2-migratory insertion reaction of a zirconium salicylaldiminato complex leads to a long-lived catalyst for ethene polymerisation, but promotes a new radical catalyst decomposition mechanism in certain instances.



Crosslinking a palladium(II) polymer gives a laminated sheet structure

Zengquan Qin, Michael C. Jennings and Richard J. Puddephatt

Chains of a zigzag coordination polymer containing bis(pyridyl) bridging groups between palladium(II) centres can be arranged to give a laminated sheet structure by a biomimetic approach in which hydrogen bonding involving amide groups is the key feature.

Contents lists in advance of publication are available on the web via www.rsc.org/chemcomm – or take advantage of our free e-mail alerting service (www.rsc.org/ej_alert) to receive notification each time a new list becomes available.

Supplementary crystallographic data are available: see article for further information.

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