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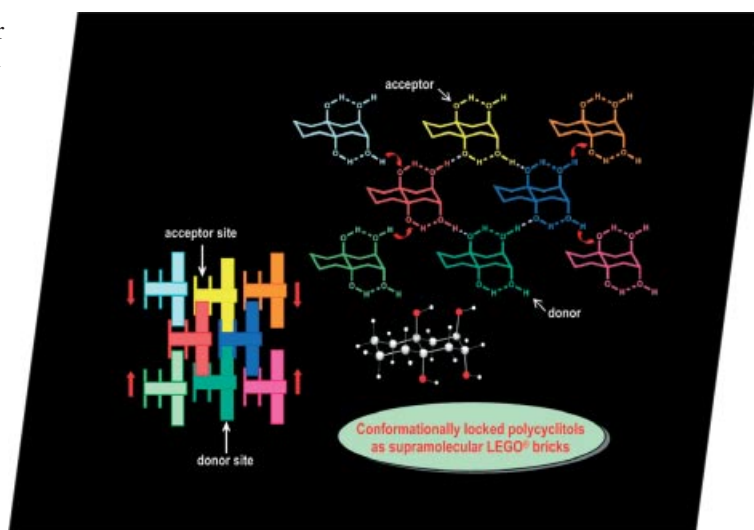


NETHERLANDS

The EUCHEM Soc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further EUCHEM Soc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows, schematically, the manner in which a conformationally locked polycyclitol can be thought of as a LEGO® brick in the supramolecular world. This analogy manifests during the self-assembling process by involvement of intermolecular H-bond donors and acceptors engendered in preordained positions through the rigid *trans*-decalin framework and intramolecular O–H···O hydrogen bonding between the 1,3-diaxial OH groups. Details are discussed in the article by G. Mehta et al. on p. 423 ff.



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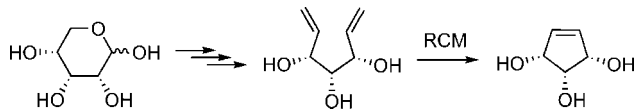
MICROREVIEW

Carbohydrate Carbocyclization

R. Madsen* 399–415

Synthetic Strategies for Converting Carbohydrates into Carbocycles by the Use of Olefin Metathesis

Keywords: Carbocycles / Carbohydrates / Metathesis / Olefination / Total synthesis



Recent advances in the use of RCM for converting carbohydrates into carbocycles are reviewed, including methods for the syn-

thesis of dienes, RCM reactions and application to natural product synthesis.

SHORT COMMUNICATIONS

1,10-Phenanthroline Chemistry

O. Moudam, F. Ajamaa, A. Ekouaga, H. Mamlouk, U. Hahn, M. Holler, R. Welter, J.-F. Nierengarten* 417–419



A New Synthetic Route for the Preparation of 1,10-Phenanthroline Derivatives

Keywords: 1,10-Phenanthroline / Organolithium reagents / Cleavage reactions / Heterocycles



Benzylated dihydrophenanthroline derivatives have been prepared to modify the chemical reactivity of the phenanthroline backbone.

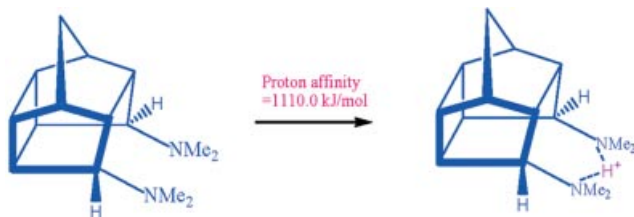
Proton Sponges

A. Singh, B. Ganguly* 420–422



DFT Studies toward the Design and Discovery of a Versatile Cage-Functionalized Proton Sponge

Keywords: Basicity / Cage compounds / DFT calculations / Design

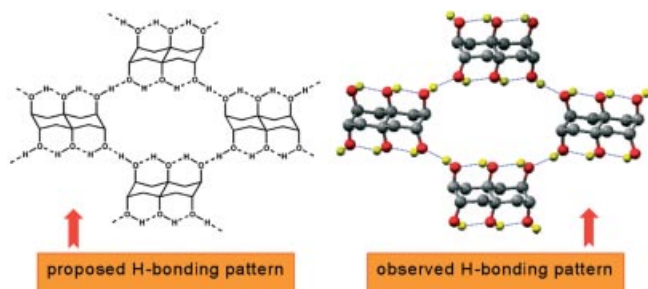


Superduper: According to DFT calculations, pentacyclo[5.4.0.0^{2,6}.0^{3,10}.0^{5,9}]-undecane (PCU) derivatives have been predicted as superorganic bases. The new mo-

lecular framework (PCU) is versatile in terms of anchoring different functional groups to achieve high basicities in both the gas and solvent phases.

FULL PAPERS

Crystal Engineering



That conformational locking of hydroxyl groups in polyols lends enhanced predictability to the molecular packing of such molecules in the solid state has been revealed through a comparison between the

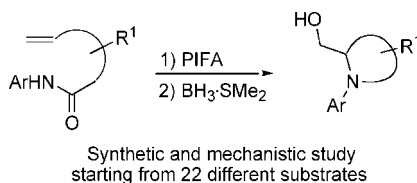
qualitatively proposed models of supramolecular aggregation and experimentally observed crystal structures in three polycyclitols, which have been specially crafted on a rigid *trans*-decalin backbone.

G. Mehta,* S. Sen,
S. S. Ramesh 423–436

Crystal Structures of Conformationally Locked Cyclitols: An Analysis of Hydrogen-Bonded Architectures and their Implications in Crystal Engineering

Keywords: Crystal engineering / Conformational locking / Cyclitols / Fused-ring systems / Hydrogen bonds

The intramolecular amidation reaction of a series of *N*-aryl-substituted unsaturated amides mediated by the hypervalent iodine reagent PIFA is studied. The cyclization process takes place with simultaneous generation of a hydroxy group at the terminal position of the original double bond.



Intramolecular C–N Bond Formation

I. Tellitu,* A. Urrejola, S. Serna, I. Moreno,
M. T. Herrero, E. Domínguez,*
R. SanMartín, A. Correa 437–444

On the Phenyliodine(III)-Bis(trifluoroacetate)-Mediated Olefin Amidohydroxylation Reaction

Keywords: Hypervalent iodine / Pyrrolidines / *N*-Acylnitrenium / PIFA / Cyclization

The Diels–Alder adduct of a steroidal 14,16-diene and nitroethylene can be reduced with TiCl_3 to give an oxazine, whereas its treatment with Lewis acids leads to a derivative of the cyclic hydroxamic acid. The 16 α -nitro cycloadduct suffers a weak-base-induced cleavage of the C(16)–C(17) bond, releasing the nitrile oxide intermediate, which can be trapped by a dipolarophile or reduced with triphenylphosphane.



Bridgehead Cleavage Reactions

A. V. Baranovsky,* D. A. Bolibrukh,
J. R. Bull 445–454

Synthesis of 3-Methoxy-16 α -nitro-14,17-ethenoestra-1,3,5(10)-trien-17 β -yl Acetate and Fragmentation-Mediated Pathways to 14 β ,15 β -Fused *N*-Heterocycles and 14 β -Functionalised Alkyl Derivatives

Keywords: Steroids / Nitrogen heterocycles / Cycloaddition / Cleavage reactions / Sigma-tropic rearrangement

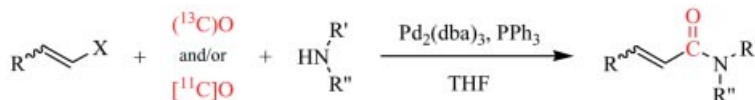
CONTENTS

Specifically Labelled Acrylamides

J. Eriksson, O. Åberg,
B. Långström* 455–461

Synthesis of [^{11}C]/[^{13}C]Acrylamides by Palladium-Mediated Carbonylation

Keywords: Carbonylation / Amides / Carbon monoxide / Isotopic labelling



Methods for synthesizing acrylamides labelled with ^{11}C (β^+ , $t_{1/2} = 20.4$ min) and ^{13}C in the carbonyl position are presented. Labelled acrylamides were obtained in high

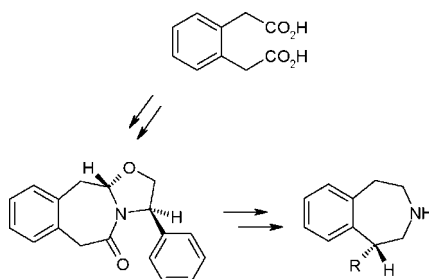
radiochemical yields and with high specific radioactivity by palladium-mediated carbonylative cross-coupling of vinyl halides and amines using [^{11}C]carbon monoxide.

Chiral Tetrahydro-3-benzazepines

U. Wirt, D. Schepmann,
B. Wünsch* 462–475

Asymmetric Synthesis of 1-Substituted Tetrahydro-3-benzazepines as NMDA Receptor Antagonists

Keywords: Asymmetric synthesis / Chiral auxiliary / Medicinal chemistry / 3-Benzazepines / NMDA Receptor antagonists / σ Receptor ligands / Structure affinity relationships



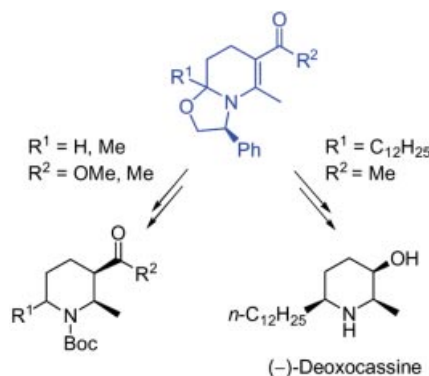
A novel asymmetric synthesis of enantiomerically pure tetrahydro-3-benzazepines with various substituents in position 1 is presented. Considerable enantioselective interaction with NMDA and σ receptors is observed in this substance class.

Diastereoselective Reduction

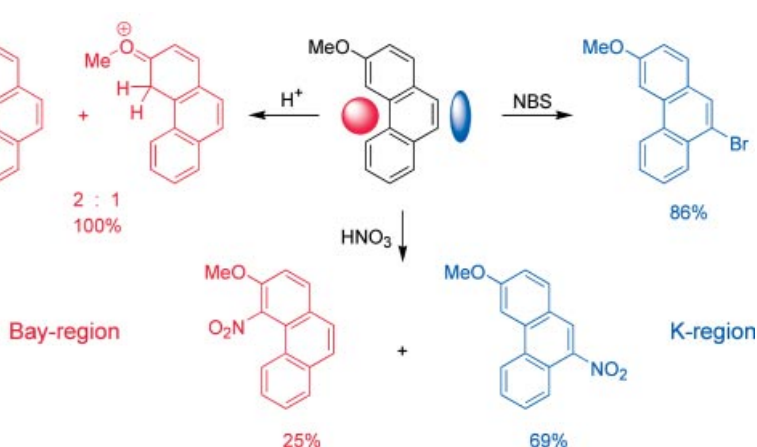
R. Noël, C. Vanucci-Bacqué,*
M.-C. Fargeau-Bellassoued,
G. Lhommet* 476–486

Diastereoselective Reduction of Bicyclic β -Enamino Carbonyl Piperidines – Application to the Total Synthesis of (–)-Deoxocassine.

Keywords: Reduction / Diastereoselectivity / Nitrogen heterocycles / (–)-Deoxocassine



The chemo- and diastereoselective reduction of chiral piperidine β -enamino esters and β -enamino ketones was studied and found to afford 2,3- or 2,3,6-substituted piperidines. This approach was successfully applied to the total synthesis of (–)-deoxocassine.



Novel carbocations were generated and substituted (nitrated and brominated) derivatives were synthesized from several A-ring

substituted phenanthrenes. NMR, X-ray analysis and a comparative DNA binding study are reported.

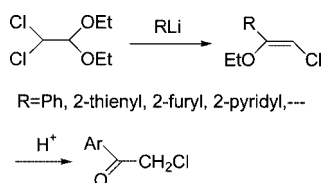
A-Ring Substituted Phenanthrenium Ions

C. Brulé, K. K. Laali,* T. Okazaki,
T. Musafia, W. M. Baird 487–497

Stable Ion and Electrophilic Substitution (Nitration and Bromination) Study of A-Ring Substituted Phenanthrenes: Novel Carbocations and Substituted Derivatives; NMR, X-ray Analysis, and Comparative DNA Binding

Keywords: Persistent carbocations / NMR spectroscopy / Nitration and bromination / X-ray analysis / Comparative DNA binding study

A simple and convenient preparative method for 1-aryl-2-chloro-1-ethoxyethenes is described.

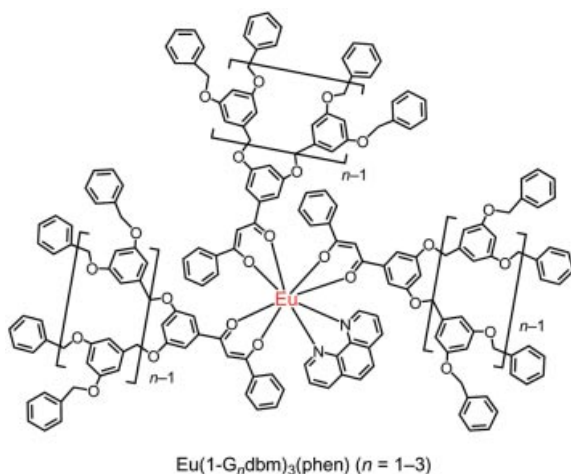


Prodrug for Alzheimer's Disease

M. Yoshimatsu,* M. Sakai,
E. Moriura 498–507

Novel Building Blocks: 1-Aryl-2-chloro-1-ethoxyethenes – Preparations and Transformations

Keywords: Thiophenes / Sulfur heterocycles / Alkenes / Aryllithiums / Alzheimer's disease



Two kinds of dendritic β -diketonato ligands which contain a dibenzoylmethane (dbm) core and poly(aryl ether) dendron,

have been synthesized by a convergent strategy, and applied to the synthesis of dendritic europium(III)-core complexes.

Europium(III)-Core Dendrimers

B.-L. Li, Z.-T. Liu, G.-J. Deng,
Q.-H. Fan* 508–516

The Synthesis of Dendritic β -Diketonato Ligands and Their Europium Complexes

Keywords: β -Diketonato ligands / Dendrimers / Europium / Luminescence

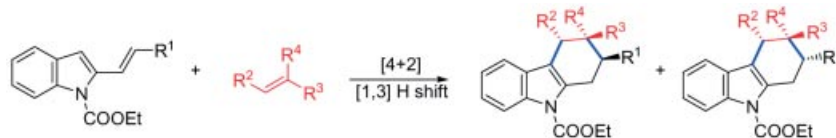
CONTENTS

Diastereoselective [4+2] Cycloadditions

G. Abbiati, V. Canevari, D. Facoetti,
E. Rossi* 517–525

Diels–Alder Reactions of 2-Vinylindoles
with Open-Chain C=C Dienophiles

Keywords: 2-Vinylindoles / Alkenes /
Cycloaddition / Nitrogen heterocycles /
Tetrahydrocarbazoles



The [4+2] cycloaddition reactions between [(E)-2-vinyl]-indole-1-carboxylic acid ethyl esters and open-chain C=C dienophiles

proceed with high regioselectivity giving rise to diastereoisomeric 3,4-disubstituted-1,2,3,4-tetrahydrocarbazoles.

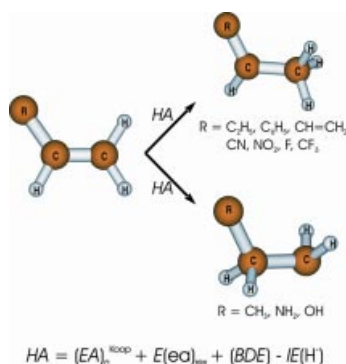
Where Does the H⁻ Go?

R. Vianello, N. Peran,
Z. B. Maksić* 526–539



Hydride Affinities of Substituted Alkenes:
Their Prediction by Density Functional
Calculations and Rationalisation by Tri-
adic Formula

Keywords: Hydride affinity / Nucleophilic
addition / Electron affinity / Substituent ef-
fects / Electrophilic propensity



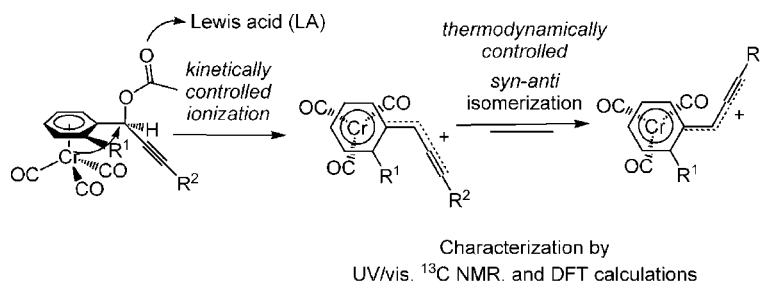
Triadic analysis provides simple rationali-
zation and a better insight into the substitu-
ent effects on the hydride affinity of ethenes.
The applied B3LYP/6-311+G(2df,p)//
B3LYP/6-31G(d) level of theory proved
useful and very accurate in reproducing ex-
perimentally determined hydride affinities.

Planar Chiral Cations

A. Netz, M. Drees, T. Strassner,*
T. J. J. Müller* 540–547

Planar Chiral (Arene)chromiumcarbonyl-
Substituted Propargyl Cations – A Spectro-
scopic and Computational Study

Keywords: Alkynes / Arene complexes /
DFT calculations / Cations / Chromium /
Spectroscopy



The *s-syn* isomers of planar chiral (ar-
ene)Cr(CO)₃-substituted propargyl cations
are structurally characterized by UV/Vis
and ¹³C NMR spectroscopy. Structure, in-

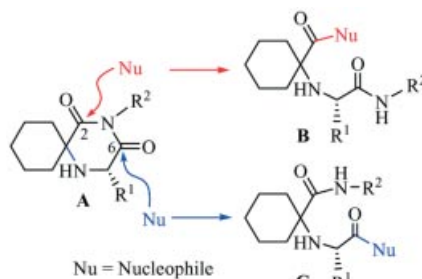
tramolecular C_{ipso}–C_α bond rotations and
substituent effects are rationalized by DFT
computations.

Potential Receptor Ligands

J. A. González-Vera, M. T. García-López,
R. Herranz* 548–554

Regioselective Base-Promoted Nucleophilic
Ring Opening of Spirocyclic 2,6-
Dioxopiperazines: Synthesis of *N*-(1-
Carboxycyclohexyl)amino Acid Derivatives

Keywords: Amino acids / Spiro compounds /
Imides / Piperazines / Nucleophilic addition



2,6-Dioxopiperazine-3-spirocyclohexanes
are easily and regioselectively opened by hy-
droxide or H₂O to give *N*-(1-carbamoylcyclo-
hexyl)amino acid derivatives.

If not otherwise indicated in the article, papers in issue 2 were published online on December 18, 2006