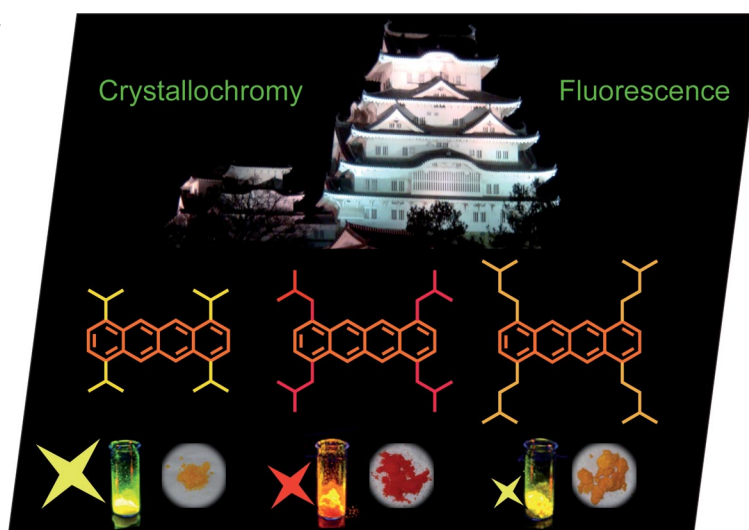


EurJOC is co-owned by 11 societies of ChemPubSoc Europe, a union of European chemical societies for the purpose of publishing high-quality science. All owners merged their national journals to form two leading chemistry journals, the *European Journal of Organic Chemistry* and the *European Journal of Inorganic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

Other ChemPubSoc Europe journals are *Chemistry – A European Journal*, *ChemBioChem*, *ChemPhysChem*, *ChemMedChem*, *ChemSusChem* and *ChemCatChem*.

COVER PICTURE

The cover picture shows 1,4,7,10-tetraisoalkyltetracenes in the solid state under UV light irradiation and under natural light. The photophysical properties exhibit crystallochromy ranging from yellow to red and different fluorescence quantum yields depending on the length of the alkyl side chain. The isopropyl derivative achieved the highest quantum yield ever reported among tetracenes. Details are discussed in the article by C. Kitamura et al. on p. 3033ff. The background of the cover picture is a night view of Himeji Castle, which is well known for its beauty and supposed resemblance to an egret (it was accorded UNESCO World Heritage Site status in 1993). The authors would like to thank Hiroko Kitamura for her help in designing the cover picture.



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MICROREVIEW

Metal-Assisted Organocatalysis

C. Zhong, X. Shi* 2999–3025

When Organocatalysis Meets Transition-Metal Catalysis

Keywords: Organocatalysis / Transition metals / Asymmetric catalysis / Transition-metal catalysis / Dual catalysis



The fast development of organocatalysis has significantly enriched the field of organic synthesis. Recent success in combining transition metal complexes with organocatalysis has led to the emergence of a promising new direction with potential discoveries of new reactivity patterns and novel synthetic strategies.

SHORT COMMUNICATION

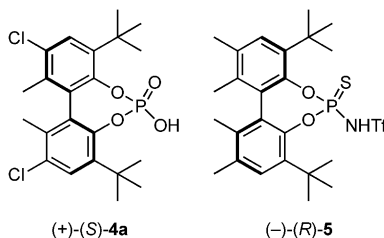
Phosphoric Acid Catalysts

E. G. Gutierrez, E. J. Moorhead,
E. H. Smith, V. Lin, L. K. G. Ackerman,
C. E. Knezevic, V. Sun, S. Grant,
A. G. Wenzel* 3027–3031



Electron-Withdrawing, Biphenyl-2,2'-diol-Based Compounds for Asymmetric Catalysis

Keywords: Organocatalysis / Asymmetric catalysis / Chiral resolution / Biaryls



Efficient synthetic routes to a chiral chloro-substituted biphenyl-2,2'-diyl hydrogen phosphate and a chiral *O,O*-biphenyl-2,2'-diyl phosphoramidothioate are described. The performance of these compounds as catalysts for the hydrophosphonylation of imines and the Friedel–Crafts alkylation of indole are reported.

FULL PAPERS

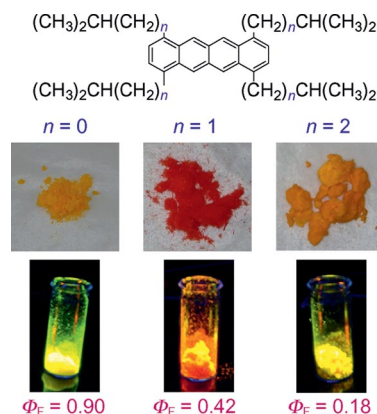
Oligoacenes

C. Kitamura,* H. Tsukuda,
A. Yoneda, T. Kawase, T. Kobayashi,
H. Naito 3033–3040



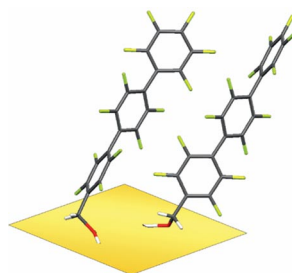
1,4,7,10-Tetraisoalkyltetracenes: Tuning of Solid-State Optical Properties and Fluorescence Quantum Yields by Peripheral Modulation

Keywords: Oligoacenes / Substituent effects / Crystallochromy / Fluorescence / Absorption



The solid-state absorption and fluorescence properties of tetracene aggregates have been tuned by the introduction of isoalkyl side-chains at peripheral positions. The X-ray crystal structures exhibit unique alkyl conformations, stacking patterns, and crystal packing. Aggregates with shorter-length isoalkyl groups showed very large fluorescence quantum yields.

Perfluoroterphenyls are promising n-semiconductors. By attaching short ω -mercaptoalkyl chains, the respective self-assembled monolayers could be deposited on gold. The first X-ray structure of a higher perfluoro-oligophenyl derivative shows counterhelical arrangements, suggesting that this conformation may also be adopted in the monolayers.

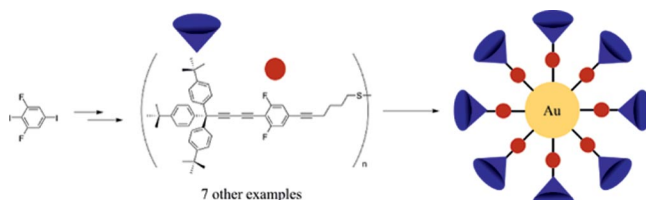


B. Schüpbach, M. Bolte, M. Zharnikov, A. Terfort* 3041–3048

Grafting Organic n-Semiconductors to Surfaces: (Perfluoro-*p*-terphenyl-4-yl)alk-anethiols

Keywords: Aromatic substitution / Helical structures / Monolayers / Nucleophilic substitution / Perfluoroarene / Self-assembly

Molecular Machine



Molecular rotors with thiol anchors and bulky trityl headgroups were synthesized and assembled on gold nanoparticles. The rotating part of the rotor (rotator) is a phenyl group with alkyne substituents in the 1-

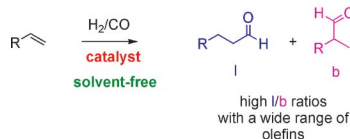
and 4-positions, providing a low rotation energy barrier. Fluorine atoms were introduced onto the rotator allowing rotation dynamics inside monolayers to be studied by solid-state ^{19}F NMR.

D. Thibault, M. Auger, J.-F. Morin* 3049–3067

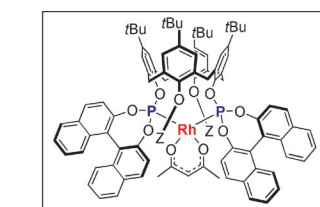
Synthesis of Fluorine-Containing Molecular Rotors and Their Assembly on Gold Nanoparticles

Keywords: Alkynes / Gold / Nanostructures / C-C coupling / Molecular machines

Solvent-Free Hydroformylation



Olefins can be hydroformylated efficiently under *solvent-free* conditions using rhodium complexes containing hemispherical diphosphites. In the hydroformylation of 1-



octene, one of the complexes led to a linear aldehyde selectivity of 97.9%, the corresponding TOF reaching 17290 mol(olefin)·mol(Rh) $^{-1}$ ·h $^{-1}$.

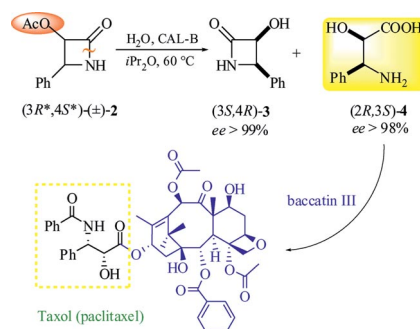
L. Monnereau, D. Sémeril,* D. Matt* 3068–3073

Solvent-Free Olefin Hydroformylation Using Hemispherical Diphosphites

Keywords: Calixarenes / Rhodium / Solvent-free hydroformylation / Diphosphite / Olefins

β -Amino Acids

Very efficient *Candida antarctica* lipase B-catalysed direct strategies are reported for the synthesis of (2*R*,3*S*)-3-amino-2-hydroxy-3-phenylpropionic acid [(2*R*,3*S*)-**4**], a key intermediate of the side-chain of Taxol[®].



E. Forró, F. Fülöp* 3074–3079

New Enzymatic Two-Step Cascade Reaction for the Preparation of a Key Intermediate for the Taxol Side-Chain

Keywords: Amino acids / Enzyme catalysis / Hydrolysis / Lactams / Anticancer agents / Taxol

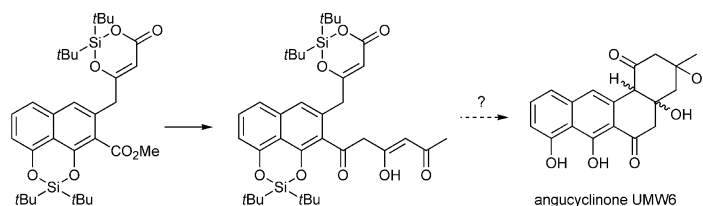
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Polyketide Synthesis

K. Krohn,* A. Vidal, H. T. Tran-Thien,
U. Flörke, A. Bechthold, G. Dujardin,
I. Green 3080–3092

Total Synthesis of Silyl-Protected Early Intermediates of Polyketide Biosynthesis

Keywords: Natural products / Biosynthesis / Total synthesis / Reactive intermediates / Antibiotics / Anthracycline precursor / Polyketides



To provide insight into the early decaketide antibiotic intermediates, a silyl-protected 2,3-bisalkyl-1,8-naphthol was prepared for feeding experiments. Through the use of silyl ethers as the protecting groups and

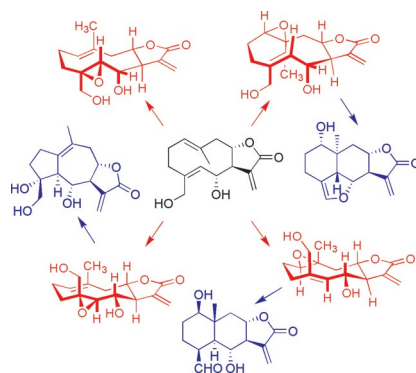
substituted 1,8-naphthalene diols as starting materials, the putative bicyclic early intermediate was constructed by sequential dianion reactions.

Cyclizations of Epoxygermacranolides

S. Rosselli, A. Maggio, R. A. Raccuglia,
M. Bruno* 3093–3101

Acid-Induced Rearrangement of Epoxygermacra-8,12-olides: Synthesis and Absolute Configuration of Guaiane and Eudesmane Derivatives from Artemisiifolin

Keywords: Synthetic methods / Terpenoids / Rearrangement / Cyclization / Natural products



The reactivity of 1,10-epoxy- and 4,5-epoxygermacra-8,12-olides under acid conditions was studied. The skeleton type of the cyclization products depends on the position and stereochemistry of the epoxide.

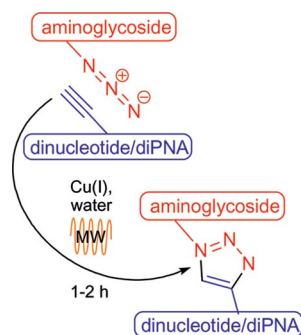
Aminoglycoside Antibiotics

J. Alguacil, S. Defaus, A. Claudio,
A. Trapote, M. Masides,
J. Robles* 3102–3109



A Straightforward Preparation of Aminoglycoside–Dinucleotide and –diPNA Conjugates via Click Ligation Assisted by Microwaves

Keywords: Nucleic acids / Carbohydrates / Aminoglycosides / Antibiotics / Cycloaddition / Microwave chemistry



Here, we report on an alternative procedure to prepare aminoglycoside–dinucleotide and –diPNA conjugates which combines copper-catalyzed Huisgen azide-alkyne cycloaddition with microwave irradiation (MW).

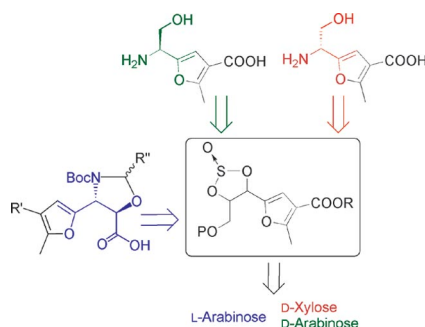
Furyl Amino Acids

L. Molina, E. Moreno-Clavijo,
A. J. Moreno-Vargas,* A. T. Carmona,
I. Robina* 3110–3119



New Methodology for the Stereoselective Synthesis of α -Furfurylamines from Sugars: Application to the Synthesis of Furyl Amino Acids and 3-Furylisoserines

Keywords: Heterocycles / Carbohydrates / Peptidomimetics / Amino acids



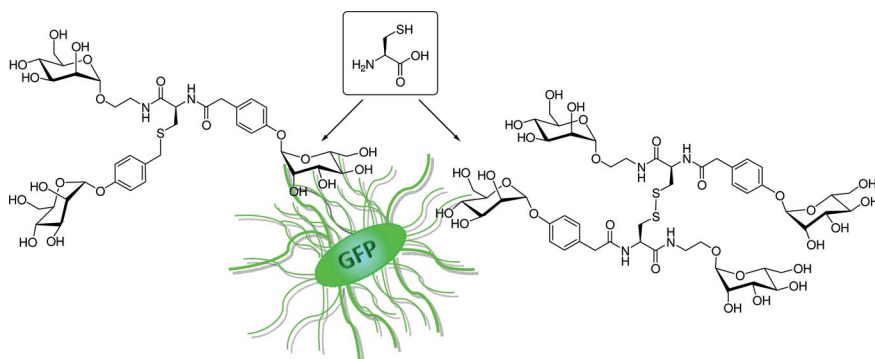
A new methodology for the stereoselective synthesis of α -furfurylamines from sugars is reported. The methodology was applied to the synthesis of new furyl amino acids, as rigid dipeptide isosteres, and to the synthesis of new 3-furylisoserines, as analogues of the taxoid C-13 side chain.

Cysteine-Based Cluster Glycosides

A. Schierholt, M. Hartmann,
K. Schwekendiek,
T. K. Lindhorst* 3120–3128

Cysteine-Based Mannoside Glycoclusters:
Synthetic Routes and Antiadhesive Properties

Keywords: Glycoclusters / Cysteine scaffold / Glycopeptides / Cell adhesion / Type 1 fimbriae



Cysteine was used as orthogonal scaffold molecule for the synthesis of structurally varied glycoclusters. The obtained products

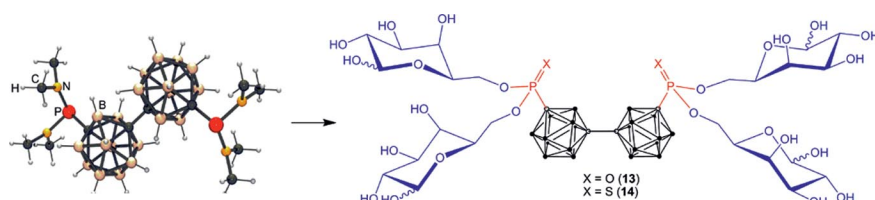
were evaluated as inhibitors of type 1 fimbriae mediated bacterial adhesion.

Boron-Rich Bis-Glycophosphonates

S. Stadlbauer, P. Lönnecke, P. Welzel,
E. Hey-Hawkins* 3129–3139

Bis-Carbaborane-Bridged Bis-Glycophosphonates as Boron-Rich Delivery Agents for BNCT

Keywords: Boron / Antitumor agents / Medicinal chemistry / Phosphorus / Cluster compounds



The synthesis and properties of boron-rich *meta*-bis-carbaborane-containing bis-galactosyl phosphonates are presented.

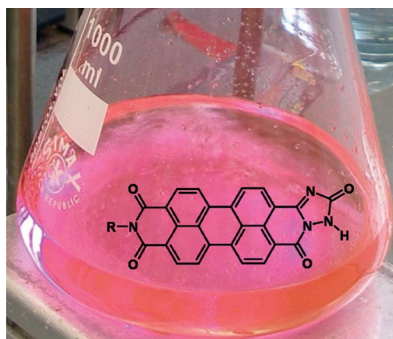
Red Fluorescence

H. Langhals,* T. Pust 3140–3145

Axially Extended Perylene Dyes

Keywords: Heterocycles / Fluorescence spectroscopy / Cycloaddition / Labelling / Schönberg reaction

Perylenecarboxylic anhydride imides were condensed with semicarbazide and thiosemicarbazide to obtain strongly red-fluorescent triazolinone and triazolinthione derivatives, respectively, suitable for nucleophilic labelling. A Schönberg reaction of the latter with diazoalkanes allowed the synthesis of spirothiiranes.



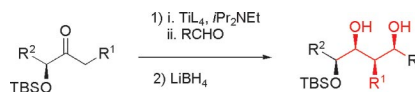
Highly Stereoselective Synthesis

J. Esteve, S. Matas, M. Pellicena,
J. Velasco, P. Romea,* F. Urpí,*
M. Font-Bardia 3146–3151

Highly Stereoselective Synthesis of *syn*-1,3-Diols through a Sequential Titanium-Mediated Aldol Reaction and LiBH₄ Reduction

Keywords: Stereoselective synthesis / Sequential transformation / Aldol reactions / Reduction / Chirality / Ketones

Up to three new stereocentres are created in a single operation based on a titanium-mediated aldol reaction from chiral α -*tert*-butyldimethylsilyloxy ketones followed by reduction of the resultant aldolates with LiBH₄.



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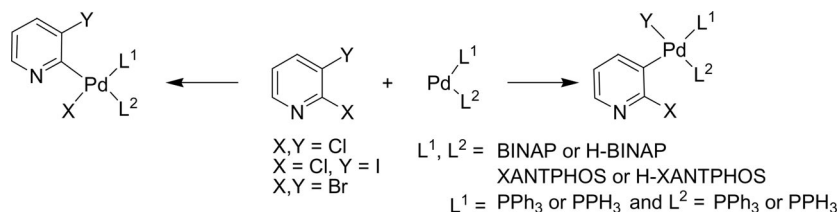
Oxidative Addition Reactions

W. A. Herrebout, N. Nagels, S. Verbeeck,
B. J. van der Veken,
B. U. W. Maes* 3152–3158



A DFT Study of Site-Selectivity in Oxidative Addition Reactions with Pd⁰ Complexes: The Effect of an Azine Nitrogen and the Use of Different Types of Halogen Atoms in the Substrate

Keywords: Oxidative addition / Palladium / Selectivity / Density functional calculations



The site-selectivity of Pd-catalyzed reactions of 2,3-dihalopyridines has been studied by computing the oxidative addition process. The DFT calculations involved the use of Pd(PPh₃)₂, Pd(BINAP) and Pd(XANTPHOS) as catalysts. The forma-

tion of pre-reactive complexes proved to be a very important factor in the determination of the activation energies. Care has to be taken when simplified catalyst systems are used for the simulation of the oxidative addition process.

CORRECTION

C. D. Thomas, J. P. McParland,
P. R. Hanson* 3159

Divalent and Multivalent Activation in Phosphate Triesters: A Versatile Method for the Synthesis of Advanced Polyol Syntheses

Keywords: Phosphate / Tether / Metathesis / Cuprates / Protecting groups

* Author to whom correspondence should be addressed.



Supporting information on the WWW (see article for access details).

If not otherwise indicated in the article, papers in issue 15 were published online on May 17, 2010