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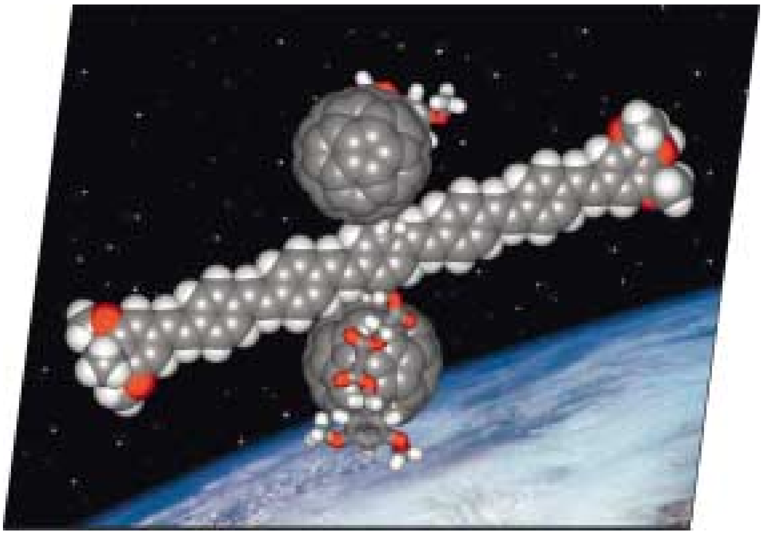
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows a satellite-shaped C_{60}–oligophenylenevinylene (OPV) conjugate. This compound has been prepared starting from a fullerene carboxylic acid derivative and an OPV heptamer bearing two alcohol functions. Electrochemical investigations revealed that the fist reduction of this hybrid compound is centered on the fullerene subunits, whereas the oxidation is centered on the OPV rod. Details are discussed in the article by J.-F. Nierengarten et al. on p. 3627ff.



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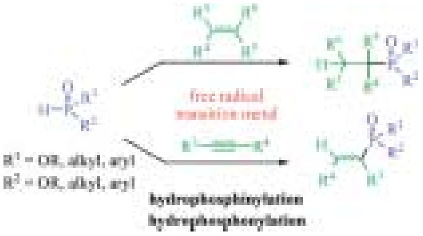
MICROREVIEW

P–C Bond Formation

L. Coudray, J.-L. Montchamp* ... 3601–3613

Recent Developments in the Addition of Phosphinylidene-Containing Compounds to Unactivated Unsaturated Hydrocarbons: Phosphorus–Carbon Bond Formation by Hydrophosphinylation and Related Processes

Keywords: Hydrophosphinylation / Phosphaalkenes / Phosphanes / Phosphorus / Phosphonates / Phosphinates



Hydrophosphinylation and hydrophosphonylation reactions with $R^1R^2P(O)H$ and alkenes or alkynes under free-radical or transition-metal catalysis are reviewed.

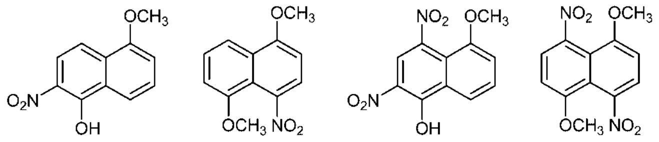
SHORT COMMUNICATIONS

Natural Products

K. Krohn,* S. F. Kouam,
S. Cludius-Brandt, S. Draeger,
B. Schulz 3615–3618

Bioactive Nitronaphthalenes from an Endophytic Fungus, *Coniothyrium* sp., and Their Chemical Synthesis

Keywords: Fungal metabolites / Nitronaphthalenes / *Coniothyrium* sp. / Bioactivity



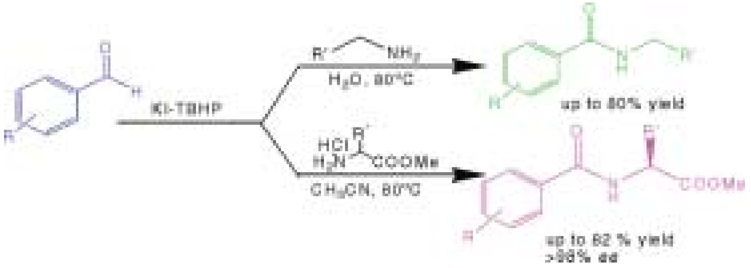
For the first time, nitronaphthalenes have been isolated from a natural source, an endophytic fungus *Coniothyrium* sp. Two metabolites are members of the extremely rare naturally occurring family of dinitro compounds. Their structures were confirmed by chemical synthesis. The nitronaphthols showed considerable antibacterial, antifungal, and antialgal properties.

Oxidative Amidation

K. R. Reddy,* C. U. Maheswari,
M. Venkateshwar,
M. L. Kantam 3619–3622

Oxidative Amidation of Aldehydes and Alcohols with Primary Amines Catalyzed by KI-TBHP

Keywords: Oxidative amidation / Aldehydes / Alcohols / Primary amines / Potassium iodide



Oxidative amidation of aldehydes and alcohols with amines to give the corresponding amides in excellent yields and *ee* values over 98% is achieved by using a catalytic amount of KI in combination with TBHP as the external oxidant. This method avoids the use of expensive and/or air-sensitive reagents.

Multicomponent Reactions

H.-H. Li, D.-J. Dong,
S.-K. Tian* 3623–3626

Three-Component Synthesis of Amine Derivatives Using Benzylic and Allylic Alcohols as *N*-Alkylating Agents in the Absence of External Catalysts and Additives

A novel by-product-catalyzed three-component synthesis of amine derivatives from readily available benzylic and allylic alcohols, acyl chlorides (chloroformates or sulfonyl chlorides), and hexamethyldisilazane (HMDS) has been developed. By-product TMSCl and its decomposition into HCl are responsible for promoting the three-component reaction.

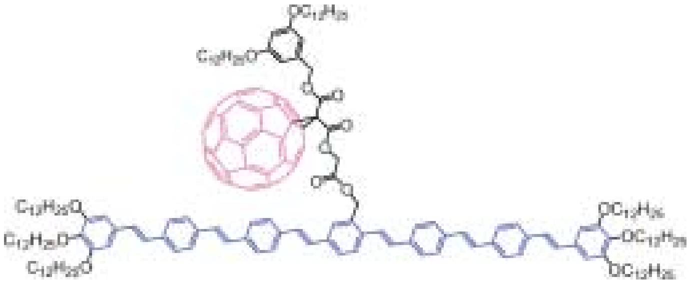
Keywords: Multicomponent reactions / *N*-Alkylation / Alcohols / Amine derivatives / Catalyst-free reactions

FULL PAPERS

π-Conjugated Oligomer/C_{60} Hybrids

A. Gégout, M. Holler,
T. M. Figueira-Duarte,
J.-F. Nierengarten* 3627–3634

Synthesis of Oligophenylenevinylene Heptamers Substituted with Fullerene Moieties



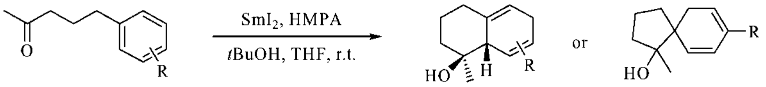
Oligophenylenevinylene (OPV) derivatives substituted with one or two fullerene subunits have been prepared starting from a fullerene carboxylic acid derivative and OPV heptamers bearing one or two alcohol functions.

Keywords: Conjugated systems / Fullerene / Oligophenylenevinylene

Ketyl–Aryl Coupling

U. K. Wefelscheid, M. Berndt,
H.-U. Reißig* 3635–3646

Samarium Diiodide Mediated Ketyl–Aryl Coupling Reactions – Influence of Substituents and Trapping Experiments



SmI_2-mediated cyclizations of a series of γ-aryl ketones with different substituents have been investigated. The ketyl–aryl cyclizations stereoselectively gave hexahydronaphthalines or in a few cases spiro compounds. The influence of substituents and the mechanism involved are discussed. Regioselective trapping of the carbanionic intermediates with electrophiles led to products of synthetic interest.

Keywords: Samarium diiodide / Ketyl coupling / Cyclizations / Radical reactions / Substituent effects

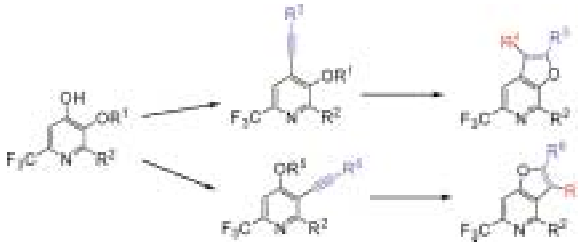
CONTENTS

Modular Furo-pyridine Synthesis

T. Lechel, J. Dash, I. Brüdgam, H.-U. Reißig* 3647–3655

Novel Furo-pyridine Derivatives via Sonogashira Reactions of Functionalized Pyridines

Keywords: Pyridines / Allenes / Palladium catalysis / Furo-pyridines / Fluorescence



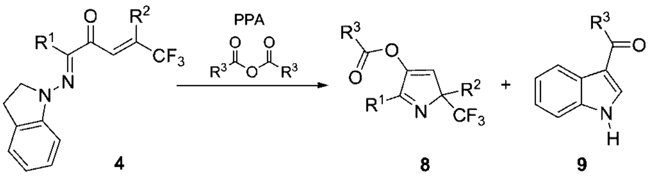
A series of 4-pyridyl nonaflates was coupled with alkynes to efficiently provide new 4-alkynyl-substituted pyridines. Apt conditions were developed for their conversion into furo[2,3-*c*]pyridines. 3-Pyridyl nonaflates offer access to regioisomeric furo[3,2-*c*]pyridines. An alternative cyclization method employing iodine monochloride furnishes iodinated furo-pyridines which can undergo a second Pd-catalyzed step. Some of the newly prepared compounds are fluorescent and show strong Stokes shifts.

2*H*-Pyrroles

N. Ghavtadze, R. Fröhlich, E.-U. Würthwein* 3656–3667

2*H*-Pyrrole Derivatives from an Aza-Nazarov Reaction Cascade Involving Indole as the Neutral Leaving Group

Keywords: Aza compounds / Cyclization / Pyrroles / Quantum chemical calculations / Cations / Nazarov reactions



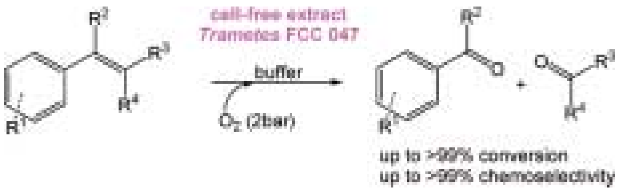
The formation of indoles as very unusual leaving groups facilitates the aza-Nazarov reactions of 1-azapenta-1,4-dien-3-ones **4**. Upon treatment with polyphosphoric acid/anhydride mixtures, novel trifluoromethyl-substituted 2*H*-pyrrole derivatives **8** were formed and isolated from compounds **4**, which extends the scope of the classical Nazarov cyclization reaction considerably.

Biocatalytic Alkene Cleavage

M. Lara, F. G. Mutti, S. M. Glueck, W. Kroutil* 3668–3672

Biocatalytic Cleavage of Alkenes with O_2 and *Trametes hirsuta* G FCC 047

Keywords: *Trametes hirsuta* / Alkenes / “Green” chemistry / Oxidation / Biocatalysis



A cell-free extract of the wood-degrading fungus *Trametes hirsuta* FCC 047 has been applied for the oxidative alkene cleavage of substrates possessing a C=C bond adjacent to an aromatic ring. O_2 was employed oxidant in aqueous buffer. Up to 96 reactions could be performed in parallel at 2 bar O_2 in special laboratory equipment. A broad spectrum of aryl-alkenes was converted with up to >99% chemoselectivity.

Solvent Effect in Sialylation

C. De Meo,* M. Farris, N. Ginder, B. Gulley, U. Priyadarshani, M. Woods 3673–3677

Solvent Effect in the Synthesis of Sialosyl α(2–6) Galactosides: Is Acetonitrile the only Choice?

Keywords: Sialylation / Solvent effect / Oxazolidinone / Glycoconjugates

Due to their biological activity, sialic acid bearing glycoconjugates are very attractive synthetic targets. The chemical synthesis of sialosides is often plagued by low yields (due to competitive elimination reactions) and relatively poor stereoselectivities (due to competitive formation of the unnatural β-anomer). In spite of an outstanding progress achieved in the past decades, sialylation reactions still require low temperatures (−40 to −78 °C) and the presence of nitrile solvents. Herein we report that it is possible to obtain high yields and stereoselectivities for the synthesis of α(2–6) galactosides using tetrahydrofuran solvent systems even at ambient temperature.

Stereoselectivity in Ugi-3CR

D-*lyxo*-Pyrroline is an intermediate in the tandem Staudinger/aza-Wittig/Ugi three-component reaction. In this study we explored the effect of Lewis acids on the 2,3-*cis*/*trans* diastereoselectivity of the final Ugi-3CR step with this cyclic imine. A diverse set of Lewis acids was evaluated in combination with varying reaction parameters and Ugi-3CR carboxylic acid/isocyanide components.

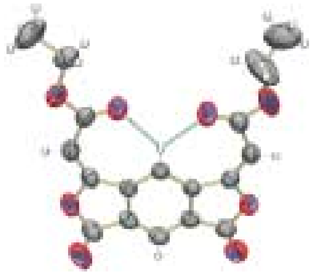
K. M. Bonger, T. Wennekes, D. V. Filippov, G. Lodder, G. A. van der Marel, H. S. Overkleeft* **3678–3688**

The Effect of Lewis Acids on the Stereochemistry in the Ugi Three-Component Reaction with D-*lyxo*-Pyrroline

Keywords: Multicomponent reactions / Diastereoselectivity / Indium(III) chloride / Imines / Nitrogen heterocycles

Hydrogen Bonding

NMR spectroscopy can reliably detect C–H···O hydrogen bonding in solution through tracking of the solvent-induced shifts of the ^{1}H chemical shifts and the one-bond C–H coupling constants. Quantum mechanical calculations on a series of model compounds gave hydrogen bond energy estimations of about 4 kcal mol^{-1} in the gas phase and 2.5 kcal mol^{-1} in DMSO solution.

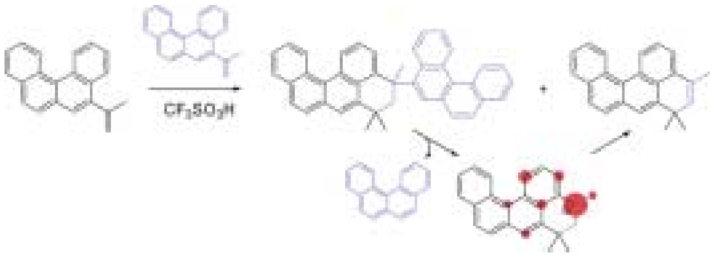


C. Niebel, V. Lokshin, M. Sigalov, P. Krief, V. Khodorkovsky* **3689–3699**

Intra- and Intermolecular C(sp^2)–H···O Hydrogen Bonds in a Series of Isobenzofuranone Derivatives: Manifestation and Energetics

Keywords: Hydrogen bonds / NMR spectroscopy / Density functional calculations

Polycyclic Aromatic Hydrocarbons



Novel PAH dimers and/or phenalenes were synthesized via the isopropenyl derivatives in simple one-pot reactions using triflic acid. Mechanistic aspects were probed via direct NMR study of the carbocation intermediates.

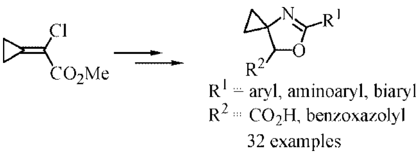
C. Brulé, F. Sultana, S. Hollenstein, T. Okazaki, K. K. Laali* **3700–3708**

Superacid-Catalyzed Dimerization/Cyclization of Isopropenyl-PAHs – Novel Pathways to PAH Dimers, Phenalenes and Their Stable Carbocations

Keywords: Polycyclic aromatic hydrocarbons / Wittig olefination / Superacids / Carbocations / Phenalenes

Spiro[cyclopropane-1,4′-oxazoline]s

4-Spirocyclopropanated methyl oxazolinecarboxylates, which are easily obtained from methyl 2-chloro-2-cyclopropylideneacetate and arenecarboxamides under basic conditions, can further be modified at the carboxylate group and at the appropriately substituted aryl moiety to provide a library of such heterocyclic compounds for biological testing.



S. Dalai, M. Es-Sayed, M. Nötzel, A. de Meijere* **3709–3713**

A Convenient Access to Variously Substituted Spiro[cyclopropane-1,4′-oxazoline]s

Keywords: Amides / Nitrogen heterocycles / Michael addition / Buchwald–Hartwig amination / Suzuki coupling / Cyclopropanes / Spiro compounds

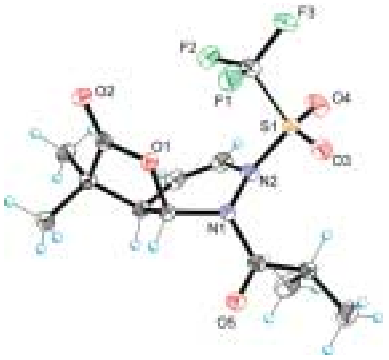
CONTENTS

Polycyclic Lactones

A. Garduno-Alva, Y. Xu,
N. Gualo-Soberanes, J. Lopez-Cortes,
H. Rudler,* A. Parlier,
M. C. Ortega-Alfaro, C. Alvarez-Toledano,
R. A. Toscano .... 3714−3723

Synthesis of New Polycyclic γ- and δ-Lactones upon Activation of, and Nucleophilic Additions to, Diazines: Influence of the Activating Agents

Keywords: Lactones / Azo compounds / Cyclization / Silyl enol ethers / Polycycles



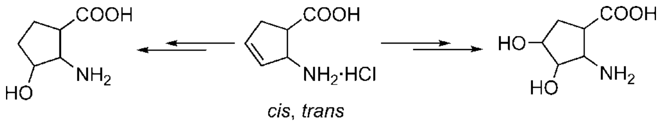
Whereas pyridine, pyrazine, quinoxaline and pyrimidine react with bis(trimethylsilyl)ketene acetals in the presence of both methyl chloroformate and triflic anhydride to give the same type of lactonization reactions, pyridazine appears to be peculiar, giving δ-lactones with the first activating agent and γ-lactones with the second one.

Hydroxy-Substituted Cispentacin

G. Benedek, M. Palkó, E. Wéber,
T. A. Martinek, E. Forró,
F. Fülöp* .... 3724−3730

💻 Efficient Synthesis of Hydroxy-Substituted Cispentacin Derivatives

Keywords: Amino acids / Hydroxycispentacin / Hydroxylation / Diastereoselectivity / Regioselectivity



New mono- and dihydroxy-substituted cispentacin derivatives have been prepared with functionalization of the olefinic bond of the *cis*-2-aminocyclopent-3-enecarboxylic acid. The enantiomers of these molecules were also prepared by the same pathway. The structures, stereochemistry and relative configurations of the synthesized compounds were proved by NMR spectroscopy.

IN MEMORIAM

G. Häfelinger* .... 3731−3746

💻 Eugen Müller (1905−1976)

Keywords: Reminiscences

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* Author to whom correspondence should be addressed.

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