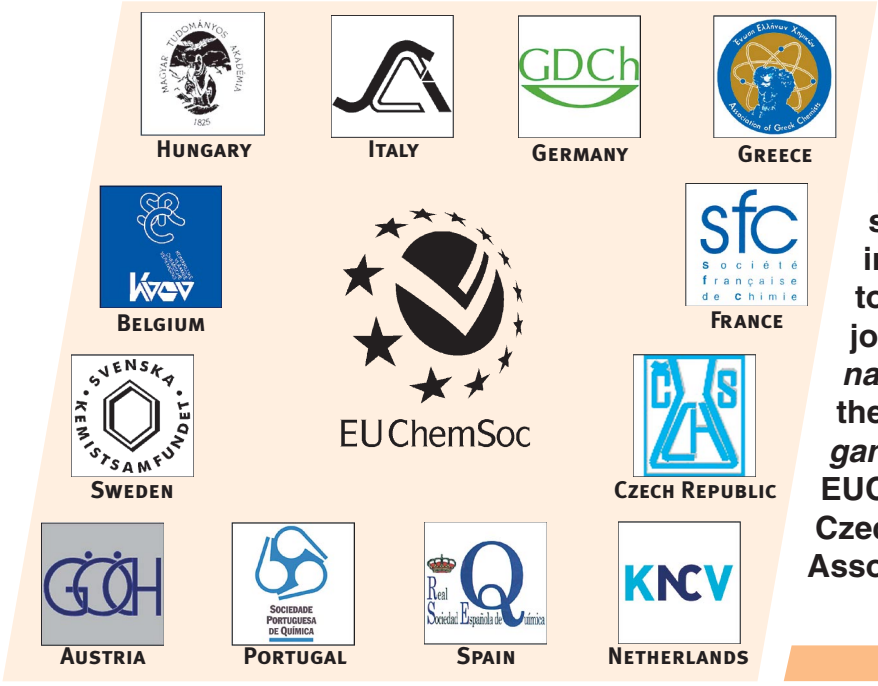
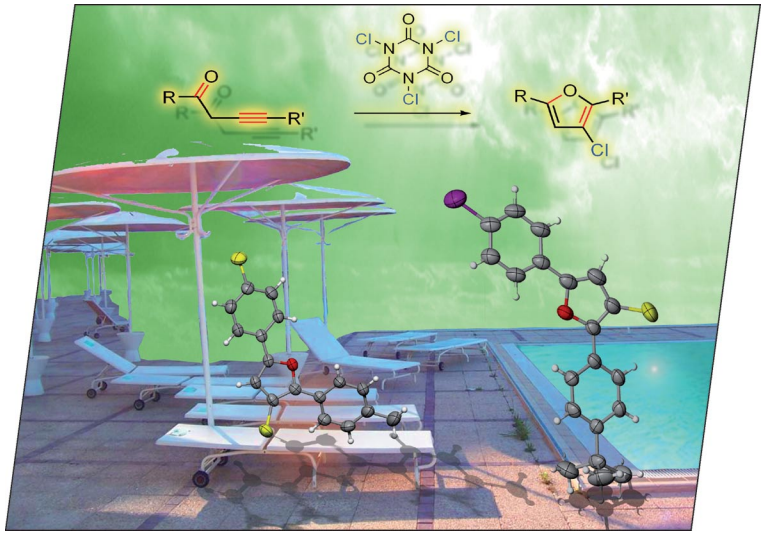


The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

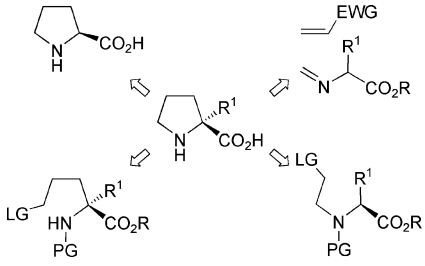
COVER PICTURE

The cover picture shows an artistic image related to the chlorocyclization reaction with the use of trichloro-*s*-triazinetrione, which is sold as a chemical for pools. This reagent is a source of electrophilic chlorine that triggers a tandem chlorination/cylization reaction that yields 3-chlorofurans or 5-chlorofuropyrimidine nucleosides. Details are discussed in the Short Communication by R. Dembinski et al. on p. 3449 ff. Cover art by Tomasz Sniady.



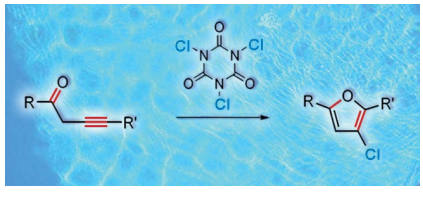
CONTENTS

MICROREVIEW

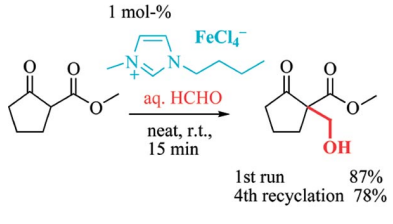


This review describes available methods for the diastereoselective and asymmetric synthesis of quaternary prolines. The focus is on the preparation of α-functionalized prolines with the pyrrolidine moiety not embedded in a polycyclic frame. The diverse synthetic approaches are classified according to the bond that is formed to complete the quaternary skeleton.

SHORT COMMUNICATIONS



2,5-Disubstituted 3-chlorofurans are accessed in high yields by 5-*endo-dig* chlorocyclization of 1,4-disubstituted alk-3-yn-1-ones (propargylic ketones) with the use of trichloro-*s*-triazinetrione (trichloroisocyanuric acid). In a similar manner, chlorocyclization of 5-alkynyl-2′-deoxyuridines produces 5-chlorofuropyrimidine nucleosides.

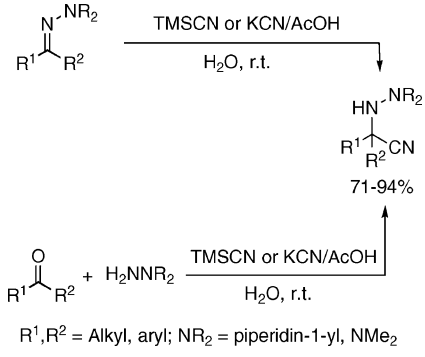


The iron-containing ionic liquid butylmethylimidazolium tetrachloroferrate (bmim-$FeCl_4$) proved to be an efficient and recyclable catalyst for the hydroxymethylation of β-keto esters using aqueous formaldehyde and a low catalyst loading of up to 0.1 mol-% without co-solvents or additional surfactants.

Strecker Reaction

Keywords: Synthetic methods / Hydrazones / Nucleophilic addition / Water / Hydrazino nitriles

In spite of their poor electrophilic character, aldehyde and ketone *N*,*N*-dialkylhydrazones react with hydrogen cyanide under extremely mild conditions: room temperature, pure water, and absence of any catalysts or additives. This high reactivity can be explained as a result of the activation of HCN by the dialkylamino lone pair, driving the addition of cyanide to the neighbor C=N bond.



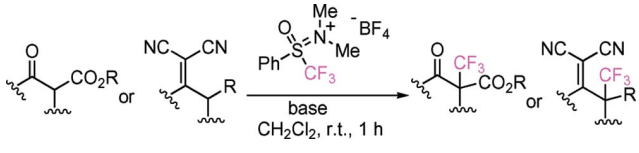
Peptidyl Olefins

Keywords: Asymmetric synthesis / Enzymes / Olefination / Stereocontrol / Peptidomimetics

Optically active γ-hydroxy sulfones to be assembled into peptidyl olefins by the Julia–Kocienski reaction were prepared. Lipase-catalyzed hydrolysis of prochiral diesters introduced optical activity. The sequence of the subsequent chemical reactions, either protection–hydrolysis–functionalization or functionalization–hydrolysis–protection, determined the absolute stereochemistry of the product.

Trifluoromethylation

Keywords: Fluorine / Trifluoromethylation / Electrophilic / Sulfur / C–C bond formation



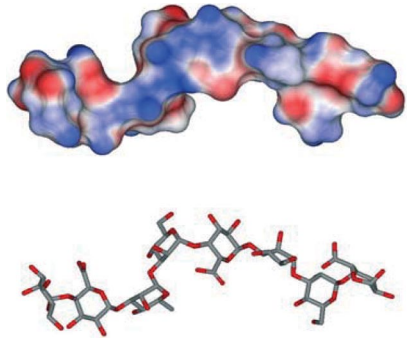
A novel reagent for the electrophilic trifluoromethylation of carbon nucleophiles is described. The reagent was designed as a trifluorinated version of a Johnson-type methyl-transfer reagent.

FULL PAPERS

Flexibility in Saccharides

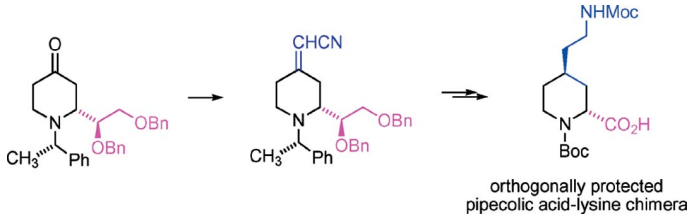
Keywords: Conformation analysis / NMR spectroscopy / Molecular dynamics / Lipopolysaccharides / Antigens

The O-antigen of the major lipopolysaccharide from *S. fredii* SMH12 displays distinct flexibility around the different glycosidic linkages. NMR spectroscopic measurements unequivocally show that the proton pairs of the different pyranose moieties possess different rotational effective correlation times. Molecular dynamic calculations are in agreement with the NMR spectroscopic data.



CONTENTS

Asymmetric Synthesis

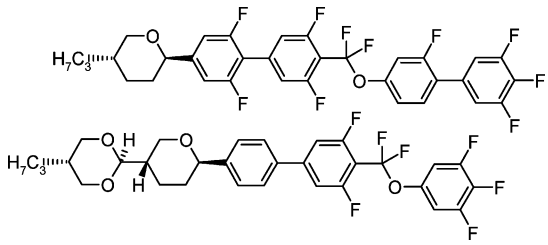


orthogonally protected pipecolic acid-lysine chimera

Keywords: Amino acids / Asymmetric synthesis / Lysine / Piperidines / Stereoselectivity

The asymmetric synthesis of a novel, orthogonally protected pipecolic acid–lysine chimera in an enantiomerically pure form is reported.

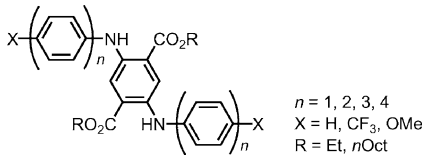
Fluorinated Liquid Crystals



Keywords: Liquid crystals / Oxygen heterocycles / Density functional calculations / Mesogens / Iminoenolates / Chirality

Highly fluorinated liquid crystals with unprecedented polarity were obtained by introducing a tetrahydropyran moiety into their mesogenic core structure. The new materials exhibit an unusually favourable combination of mesophase properties, excellent solubility and low rotational viscosity, which renders them highly attractive for application in fast-switching active matrix LCDs.

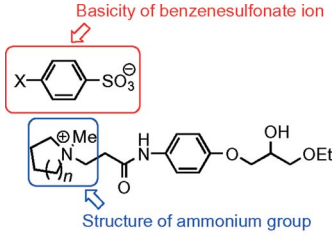
Fluorescent Materials



Keywords: Enamines / Cross coupling / Fluorescence / Oligophenylenes / Oxidation / Terephthalates

2,5-Diaminoterephthalates with *N*-biphenylyl, *N*-terphenylyl and *N*-quaterphenylyl moieties possess fluorescence properties and have been prepared in two steps by oxidative aminolysis of succinyl succinates with aniline derivatives followed by Suzuki cross-coupling reactions.

Preferential Enrichment

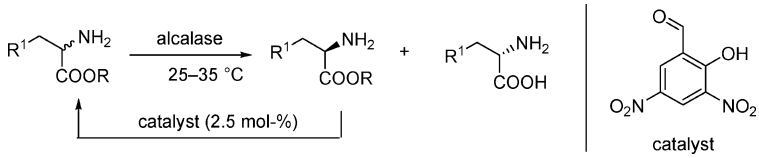


(±)-**1a**, X=Cl, *n* = 1 (±)-**2a**, X=Cl, *n* = 2
(±)-**1b**, X=Br, *n* = 1 (±)-**2b**, X=Br, *n* = 2
(±)-**1c**, X=I, *n* = 1 (±)-**2c**, X=I, *n* = 2
(±)-**1d**, X=Me, *n* = 1 (±)-**2d**, X=Me, *n* = 2

Keywords: Chiral resolution / Polymorphism / Symmetry breaking / Chirality

A series of new compounds (±)-**1** and (±)-**2** were prepared, and their preferential enrichment experiment was performed. As a result, (±)-**1a–c** showed preferential enrichment, whereas (±)-**1d** and (±)-**2a–d** failed to show this phenomenon. These experimental results and each mode of polymorphic transition occurring during crystallization are reported.

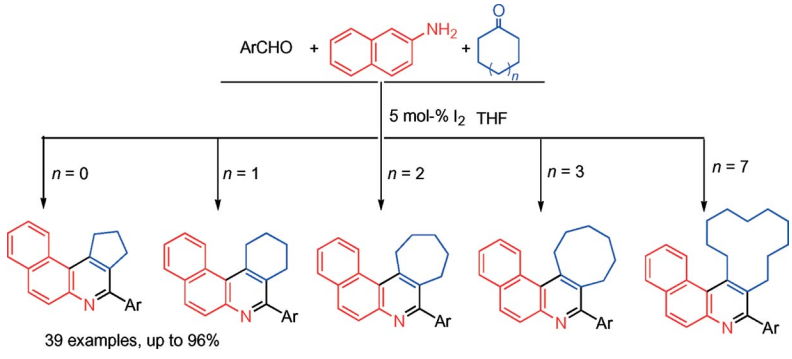
Dynamic Kinetic Resolution



Keywords: Kinetic resolution / Biocatalysis / Enzymes / Racemization / Amino acids

The combination of salicylaldehyde-catalyzed racemization with lipase-catalyzed ester hydrolysis allows dynamic kinetic resolution of various α-amino acid esters to access α-amino acids in high yield and optical purity.

Three-Component Reactions

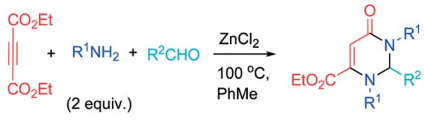


Keywords: Benzo[*f*]quinoline / Benzo[*a*]phenanthridine / Iodine / Cycloketone / Multicomponent reactions / Heterocycles

A mild, efficient, and general method for the synthesis of benzo[*f*]quinoline and benzo[*a*]phenanthridine derivatives by a three-component reaction of arenecarbaldehyde, naphthalen-2-amine, and cyclic ketone using iodine as catalyst is described.

Multi-Component Reaction

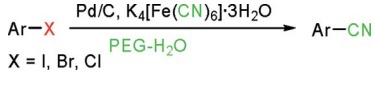
A novel and convenient one-pot multicomponent reaction leading to polyfunctional tetrahydropyrimidine analogues is disclosed. During this domino reaction four C–N bonds are formed in one step. The yields are moderate-to-good. The products are interesting nitrogen heterocycles containing α- and β-amino acid blocks.



Keywords: Lewis acids catalysis / Multicomponent reactions / One-pot synthesis / Tetrahydropyrimidine / Heterocycles

Aryl Cyanides

An environmentally friendly Pd/C–PEG–H_2O system was developed for the cyanation of aryl halides under microwave irradiation. A wide range of substrates were demonstrated to undergo the reaction sequence. There is no phosphorus- or nitrogen-containing ligand or solvent involved, and this reaction can be carried out without the protection of an inert atmosphere.

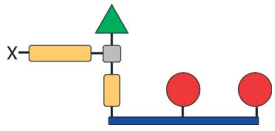


Keywords: Palladium / Cyanides / Water chemistry / Microwaves / Sustainable chemistry

CONTENTS

Tripodal Scaffolds on Solid Support

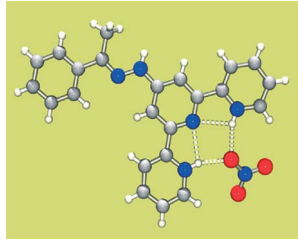
A versatile synthetic approach is described for the functionalization of tripodal scaffold molecules on solid support. Intrinsic problems related to the attachment of tripodal scaffolds to a resin are discussed and solutions are provided.



Keywords: Tripodal structures / Multivalency / Solid-phase synthesis / Scaffold molecules / Oligopeptides

Terpyridine Chemistry

Four 4′-hydrazone derivatives of 2,2′:6′,2″-terpyridine with differing *N*- and *C*-substitution in the R′NN=CRPh unit are reported; protonation studies and solution behaviour of the products are complemented by crystal structures of the neutral compounds and their mono- and diprotonated derivatives.



Keywords: Hydrazone / Protonation / Rotamers / 2,2′:6′,2″-Terpyridine

* 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 19 were published online on June 18, 2008

