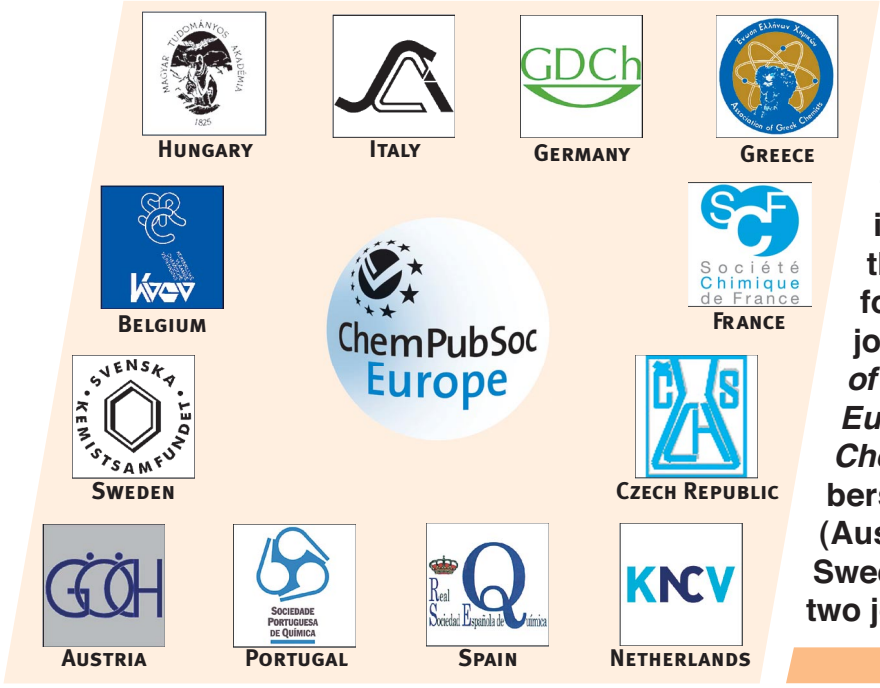
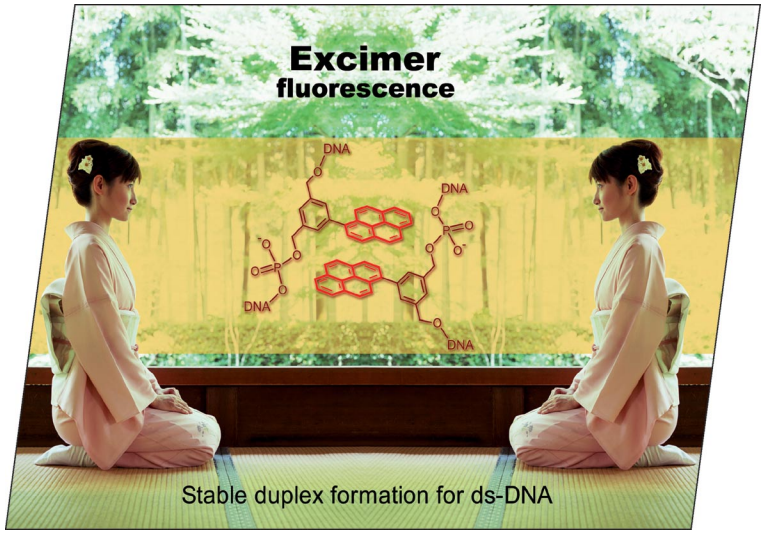


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows a DNA duplex containing a biaryl unit, which is made up of benzene and pyrene moieties; an excimer is formed between the biaryl units, which results in the formation of a duplex. In the article by Y. Ueno et al. on p. 4763ff the synthesis of the monomer units and oligonucleotides containing the biaryl units and the thermal stabilities of the duplexes, as well as their absorption and fluorescence properties, are discussed. The authors would like to thank Yoichiro Kato for his help in designing the cover picture.

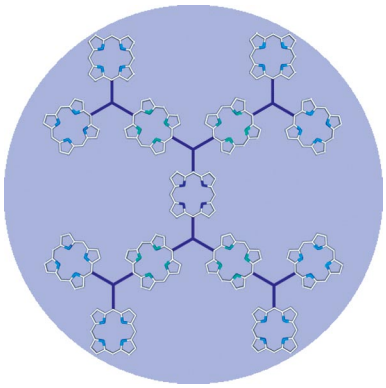


CONTENTS

MICROREVIEW

Porphyrin Dendrimers

Keywords: Dendrimers / Porphyrins / Synthetic methods / Biomimetic synthesis / Artificial photosynthesis

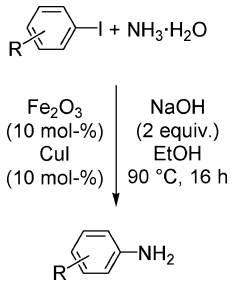


Porphyrins have been abundantly used as structural components of dendrimers, located variously at the interior cores, within the branching dendrons, at the exterior surfaces, or spread throughout complete dendritic frameworks. A comprehensive overview of the currently available structural diversity of porphyrin-containing dendrimers and the synthetic approaches applied to them is provided.

SHORT COMMUNICATIONS

Iron/Copper Cocatalysis

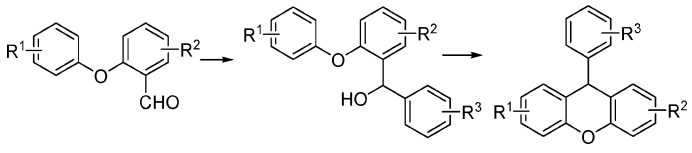
Keywords: Homogeneous catalysis / Iron / Copper / Amination / Green chemistry



An efficient, mild, and simple protocol for the direct amination of aryl iodides was accomplished by using a ligand-free, Fe_2O_3/CuI cocatalytic system in the presence of aqueous ammonia (5 equiv.) in ethanol at 90 °C under aerobic conditions.

Arylxanthene Synthesis

Keywords: Fused-ring systems / Oxygen heterocycles / Arenes / Synthetic methods

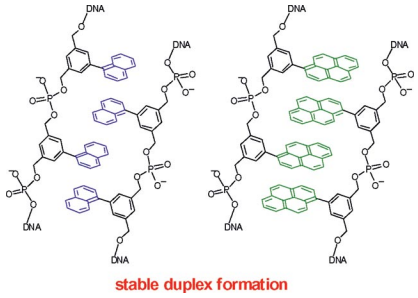


A facile and general three-step synthetic route towards unsymmetrical 9-arylxanthenes was developed. The reaction sequence involves nucleophilic substitution of 2-fluorobenzaldehydes with arenoxides, Grignard reaction of the resulting 2-arenoxybenzaldehydes with arylmagnesium bromides, followed by $FeCl_3$-catalyzed intramolecular diarylmethylation of the resulting carbinols.

FULL PAPERS

RNA Molecular Beacons

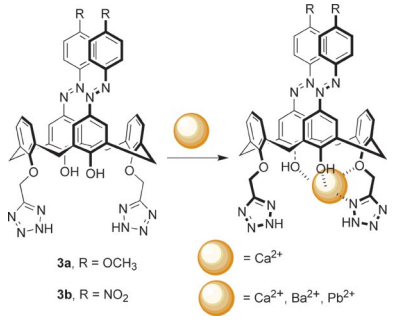
Oligonucleotides containing biaryl units composed of naphthalene and pyrene moieties were synthesized, and their properties were studied. It was revealed that incorporation of the biaryl units into the duplex structures enhanced their thermal and thermodynamic stabilities. Furthermore, biaryl units containing a pyrene moiety formed an excimer in the duplex.



Keywords: Biaryls / DNA / RNA recognition / Oligonucleotides / Fluorescent probes

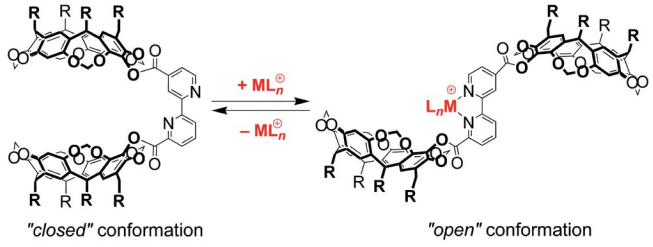
Host–Guest Chemistry

Calix[4]arene **3a** was a highly chromogenic sensor to Ca^{2+}, whereas **3b** showed color changes toward Ca^{2+}, Pb^{2+}, and Ba^{2+} (with decreasing K_a). These lower-rim oxymethyltetrazole-modified azocalix[4]arenes were synthesized by an $(n\text{-butyl})_2SnO$-mediated 1,3-dipolar cycloaddition of the corresponding oxyacetonitrile with $TMSN_3$.



Keywords: Cycloaddition / Inclusion compounds / Nitrogen heterocycles / Calixarenes / Ionophores

Conformational Switching

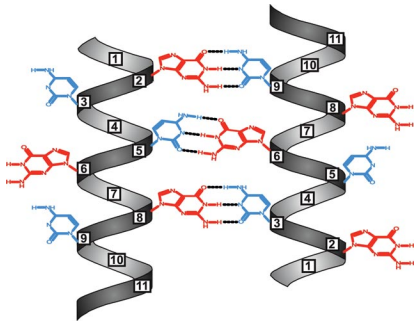


Four new 2,2′-bipyridines that carry resorcinarene moieties were prepared in a highly convergent manner. Upon coordination to suitable transition metal ions or their complexes, these compounds undergo conformational changes from "*open*" to "*closed*" forms or vice versa. Rhenium and monomeric copper(I) complexes proved to be strong effectors for this switching.

Keywords: Macrocycles / Calixarenes / Nitrogen heterocycles / Supramolecular chemistry / Allosteric receptors

Aggregation of β-Peptides

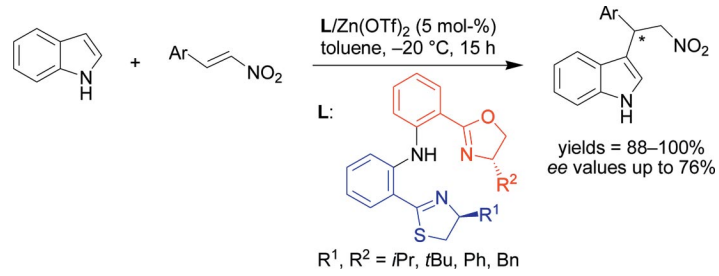
The decoration of β-peptide 14-helices with nucleobases allows 3D organization of helical secondary structures. Functionalization of two helical faces allows the generation of hydrogen-bonded helix-aggregation of exceptional stability.



Keywords: Aggregation / Peptides / Nucleobases / Helical structures / Structure elucidation / Self-assembly

CONTENTS

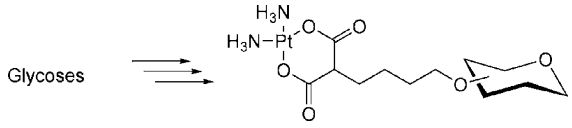
Asymmetric Catalysis



Keywords: Asymmetric synthesis / Enantioselectivity / Synthetic methods / Tridentate ligands / Zinc

Novel tridentate ligands possessing oxazoline and thiazoline rings were prepared in a high-yielding, convergent synthesis. One of the six ligands prepared was analyzed by X-ray crystallography and all six were applied to the zinc-catalyzed Friedel–Crafts alkylation of indole. Quantitative yields and enantiomeric excesses of up to 76 % were obtained.

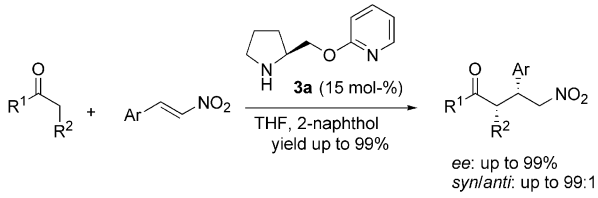
Sugar-Functionalized Pt Complexes



Keywords: Antitumor agents / Carbohydrates / Platinum / Sugar ethers / Sugar-functionalized complexes

According to well-known cytostatics, syntheses of carbohydrate-functionalized platinum complexes were developed. Starting with glucose and galactose, selective protection led to monohydroxy derivatives that could be etherified by ω-halo ethers. Further Finkelstein reaction and malonate synthesis gave precursor glycoconjugates which could be facily transformed into their diamino platinum complexes.

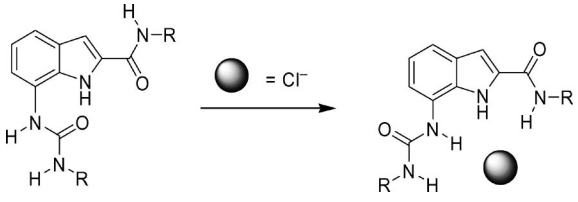
Asymmetric Catalysis



Keywords: Asymmetric catalysis / Michael addition / Alkenes / Organocatalysis / Pyrrolidine / Catalyst design

Simple chiral pyrrolidine–pyridine-based catalysts, available from commercially available starting materials, have been evaluated as catalysts for use in Michael addition reactions with nitro olefins. An exceptionally broad range of ketones (cyclic/acyclic/aromatic), an aldehyde, and a variety of nitro olefins are tolerated in this system.

Anion Recognition



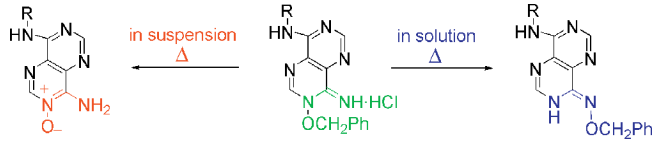
Keywords: Host–guest systems / Anion recognition / Nitrogen heterocycles / NMR spectroscopy / Conformational analysis

Less is more. 2-Carbamoyl-7-ureido-substituted indoles are good anion receptors possessing four H-donor units. Removal of the 2-carbamoyl hydrogen-bond donor site results in enhanced binding affinities due to an enforced unfavoured conformational change at the amide of the "bigger" receptor.

CONTENTS

N-Heterocyclic Chemistry

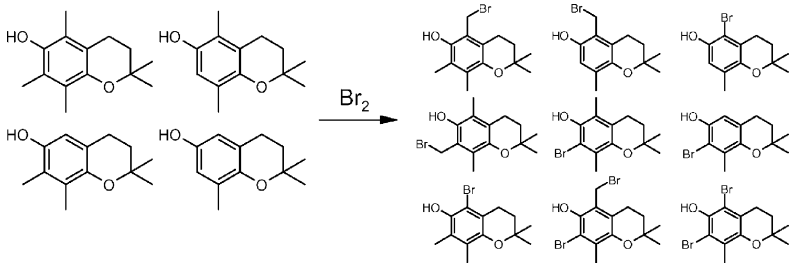
Keywords: Nitrogen heterocycles / Nitrones / Purines / Pyrimido[5,4-*d*]pyrimidines / Rearrangment / Cleavage reactions



This work describes the chemospecific conversion of the hydrochloride of pyrimido-[5,4-*d*]pyrimidin-4(3*H*)-one *O*-benzyloximes to pyrimido[5,4-*d*]pyrimidine 3-oxides and to a product generated by Dimroth rearrangement.

Tocopherol Chemistry

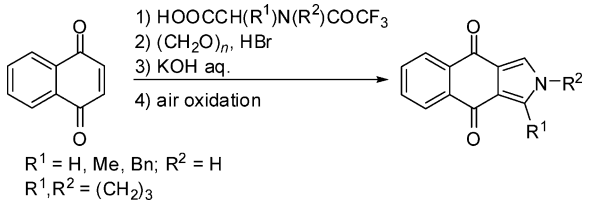
Keywords: Vitamin E / Tocopherols / Halogenation / Electrophilic substitution / Reactive intermediates / Kinetics / *o*-Quinone methide



Bromination mechanisms and products for all four tocopherols are compared.

Napthoquinone Functionalization

Keywords: Quinones / Radical reactions / Nitrogen heterocycles / Alkylation / Bromine



A simple radical decarboxylation procedure has been applied to α-amino acids to functionalize 1,4-naphthoquinones under Kochi–Anderson conditions. The alkylated naphthoquinones were converted after bromomethylation and *N*-deprotection into substituted benzo[*f*]isoindole-4,9-diones.

* 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 27 were published online on September 1, 2009

