VIP The following Communications have been judged by at least two referees to be "very important papers" and will be published online at www.angewandte.org soon:

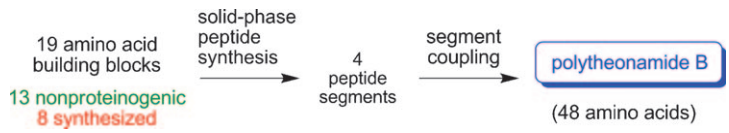
Author Profile

"My favorite subjects at school were natural sciences, history, music lessons, and the theatre group. The biggest challenge facing scientists is solving social challenges with the achievements of scientific knowledge …"
This and more about Roderich D. Süssmuth can be found on page 5032.

Books

Highlights

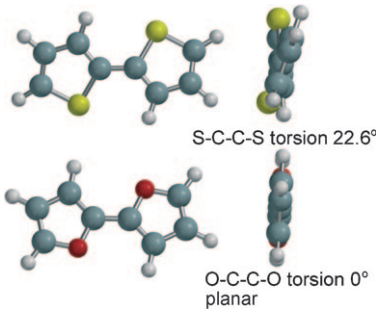
Natural Products



Beyond the ribosome: The highly cytotoxic 48 residue nonribosomal peptide polytheonamide B, proposed to act as an ion channel, was synthesized by the coupling of four building blocks. The assembly of these peptide segments required the synthesis of eight nonproteinogenic amino acids, including a unique sulfoxide. This first synthetic route towards polytheonamide B (see scheme) demonstrates the potential of state-of-the-art peptide chemistry.

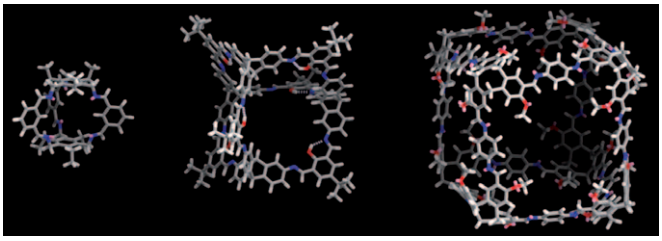
© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Contents



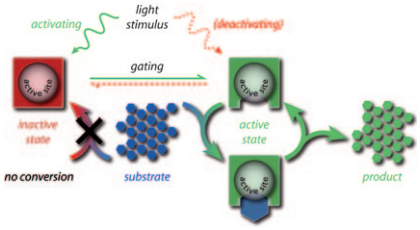
Be planar! The planar oligofurans (see picture, lower; C gray, H white, O red) are, despite a lack of solubilizing alkyl groups, quite soluble. They are also highly fluorescent and surprisingly stable, and might give the oligothiophenes (upper; S yellow) a run for their money when seeking applications in organic electronics.

Minireviews



Hole in one: Discrete organic molecules with defined cavities are accessible in one synthetic step by reversible reactions (e.g. Schiff base or boronic ester condensations). This Minireview highlights recent progress in the synthesis of organic cage compounds by dynamic covalent chemistry. The picture shows three cage molecules of various size, synthesized by [3+2], [6+4], and [8+12] imine condensation reactions.

Reviews

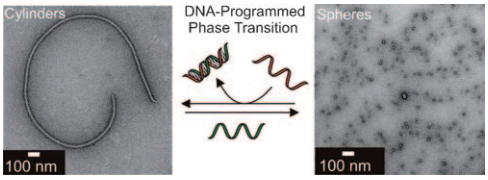


Plug-and-play catalysis: An active catalyst system enabled by switching on light allows a specific chemical transformation at well-defined location and time, thanks to the high spatial and temporal resolution of the initial light stimulus. Such artificial light-gated systems can be specifically designed for particular applications.

For the USA and Canada:
ANGEWANDTE CHEMIE International Edition (ISSN 1433-7851) is published weekly by Wiley-VCH, PO Box 191161, 69451 Weinheim, Germany. Air freight and mailing in the USA by Publications Expediting Inc., 200 Meacham Ave., Elmont, NY 11003. Periodicals postage paid at Jamaica, NY 11431. US POSTMASTER: send address changes to *Angewandte Chemie*, Journal Customer Services, John Wiley & Sons Inc., 350 Main St., Malden, MA 02148-5020. Annual subscription price for institutions: US$ 9442/8583 (valid for print and electronic / print or electronic delivery); for individuals who are personal members of a national chemical society prices are available on request. Postage and handling charges included. All prices are subject to local VAT/sales tax.

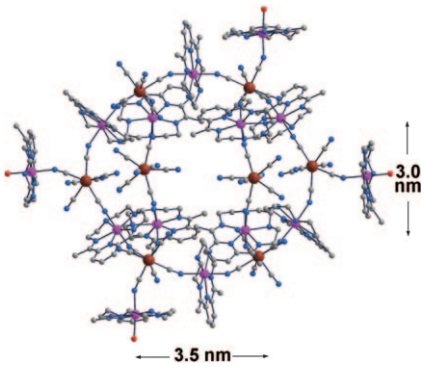
© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Communications



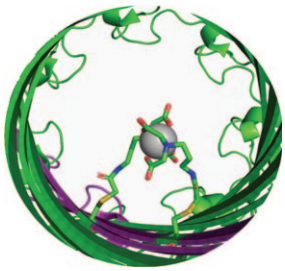
DNA Nanotechnology

Getting in shape: DNA-brush copolymer amphiphiles assemble into micelles with morphologies determined by selective interactions that allow manipulation of the magnitude of steric and electrostatic repulsions in the micelle shells. Cylinder-to-sphere phase transitions occur when an input DNA sequence is added to the micelles (see picture).



Magnetic Properties

I'll take the high road: An anionic nanosize docosanuclear $\{Mo_8Mn_{14}\}$ cluster based on the $[Mo(CN)_7]^{4-}$ unit was synthesized and fully characterized by X-ray and magnetic studies. This molecule (see picture; Mo red, Mn purple, C gray, N blue) is the first discrete compound based on $[Mo(CN)_7]^{4-}$ and contains the most paramagnetic centers (22) and the largest ground state spin value ($S = 31$) for a cyanide-bridged cluster.



Metal–Ion Chelation

A double hug: Two half-chelating ligands were covalently attached within the lumen of a protein nanopore (see picture). By electrical recording, the formation of fully chelated Zn^{2+} ions was monitored at the single-molecule level, thus revealing the rate constants for the eight major steps in the process.

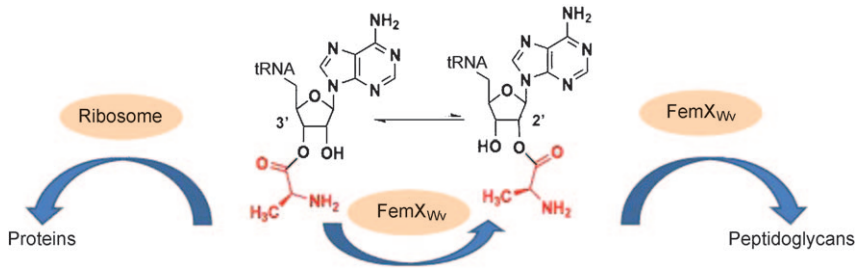
Biomimetic Chemistry

Runaway reactivity: A manganese(V)–oxo porphyrinoid complex displays an unprecedented increase in reaction rate for a hydrogen-atom abstraction upon addition of anionic axial ligands ($X = F^-$ and CN^-; see scheme). Density functional theory calculations are in excellent agreement with experiment, and provide insight into the origins of these remarkable axial ligand effects.

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

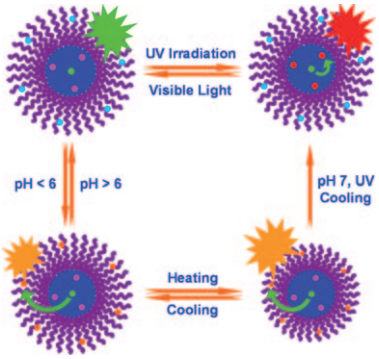
Contents

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim



Aminoacyl-tRNA Mimics

Natural selection: Replacement of the 3′-OH group of Ala-$tRNA^{Ala}$ with 3′-H affected $FemX_{Wv}$-catalyzed aminoacyl transfer from the 2′-position, but not substrate binding. The ability of $FemX_{Wv}$ to bind and transacylate the 3′-O-Ala isomer initially formed by alanyl-tRNA synthetase (AlaRS) may be crucial for efficient competition with the ribosome (see scheme).

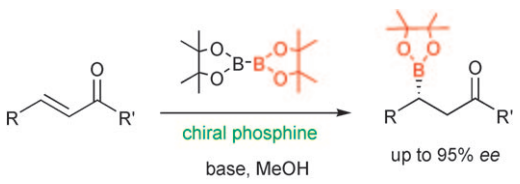


Luminescent Probes

Micellar traffic lights: The title FRET system (FRET = fluorescence resonance energy transfer) consists of one type of donor dye and two types of acceptor dyes. On/off fluorescence switching of the latter two dyes can be controlled by pH changes and light, respectively. This novel type of multicolor luminescent polymeric assembly can act as a ratiometric probe for pH and temperature with tunable sensitivity.

Water Wires

Pore design: Nanoporous steroidal crystals can be engineered for a range of channel properties. For example, the walls may be coated with aromatic groups to mimic the interior of carbon nanotubes (CNTs). The pores in these structures are occupied by "water wires", as proposed for water in CNTs themselves.



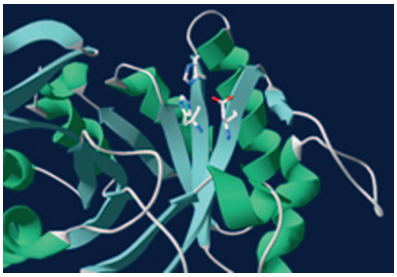
Organocatalysis

Enantiomerically enriched secondary organoboronates containing β-carbonyl functional groups have been prepared using an unprecedented organocatalytic system (see scheme). The use of chiral tertiary phosphorus compounds induced *ee* values of up to 95% in the absence of transition metals.

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

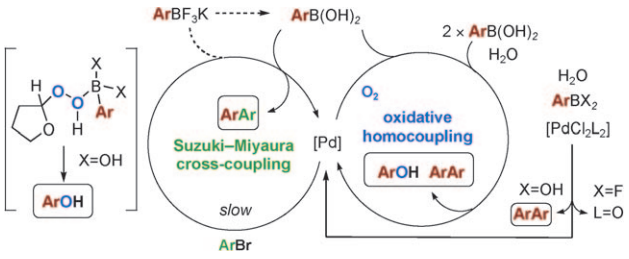
Contents

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim



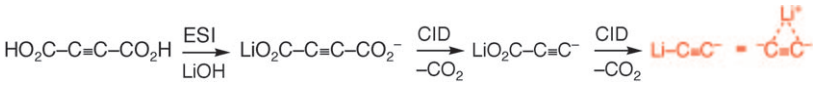
Guided by nature: A designed binding site comprising the His/His/Asp motif for Cu^{II} complexation has been constructed in a robust protein by site-specific mutagenesis (see picture). The artificial metalloenzyme catalyzes an enantioselective Diels–Alder reaction.

Artificial Metalloenzymes



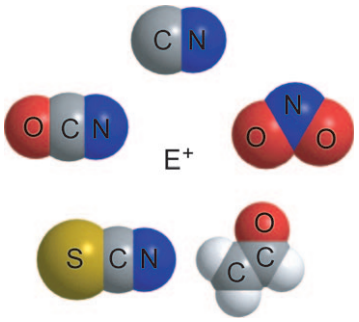
Undercover agents: The biaryl coupling of an aryltrifluoroborate with an aryl bromide involves in situ hydrolysis of the boron reagent. The hydrolysis products are key components in ensuring that the reaction proceeds with high efficiency and avoids the extensive generation of undesired phenolic and homocoupling side products.

Reaction Mechanisms



No solvent, no complications! The lithium acetylide ion, which is the monolithium salt of the carbide ion, was prepared in the gas phase (see scheme; CID = collision-induced dissociation, ESI = electrospray ionization). Its reactivity and energetics are reported along with high-level computational results.

Gas-Phase Synthesis



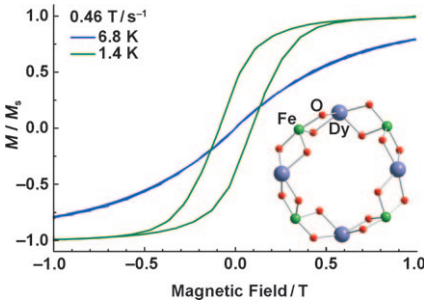
A better approach to ambident reactivity: The principle of hard and soft acids and bases (HSAB) cannot rationalize the reactivities of even the prototypical ambident nucleophiles shown in the picture. Marcus theory, which describes activation energies by a combination of intrinsic and thermodynamic terms, is a superior alternative.

Ambident Nucleophiles

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

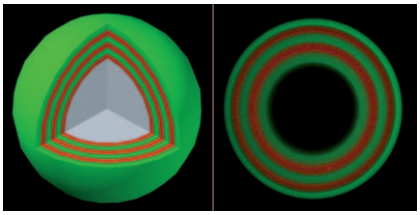
Contents

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim



Ferromagnetic interactions in an Fe_4Dy_4 single-molecule magnet were studied using a combination of magnetic susceptibility measurements (see diagram; inset: cluster core) and ^{57}Fe Mössbauer spectroscopy.

Ferromagnetic Materials



Encoding by encapsulation: A polymeric shell fabrication approach combines biomolecule encapsulation with encoding. Striated polymeric shells, fabricated through an inwards diffusion of poly(allylamine) into the matrices of agarose microbeads, serves to encapsulate the biomolecules within the microcapsule. Encoding is performed through the color and/or thickness permutation of the striated polymeric shells (see picture).

Encoded Capsules

Supporting information is available on www.angewandte.org (see article for access details).

A video clip is available as Supporting Information on www.angewandte.org (see article for access details).

Sources

Product and Company Directory

You can start the entry for your company in "Sources" in any issue of *Angewandte Chemie*.

If you would like more information, please do not hesitate to contact us.

Wiley-VCH Verlag – Advertising Department
Tel.: 0 62 01 - 60 65 65
Fax: 0 62 01 - 60 65 50
E-Mail: MSchulz@wiley-vch.de

Service

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Corrigendum

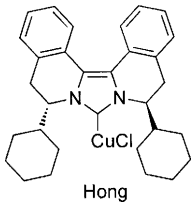
Copper-Free Asymmetric Allylic Alkylation with Grignard Reagents

O. Jackowski, A. Alexakis* — **3346–3350**

Angew. Chem. Int. Ed. **2010**, *49*

DOI 10.1002/anie.201000577

In this Communication (DOI: 10.1002/anie.201000577), the ligand of Hong in Figure 1 was erroneously drawn. The correct structure is shown here.

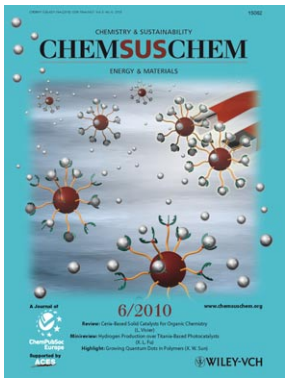


Hong

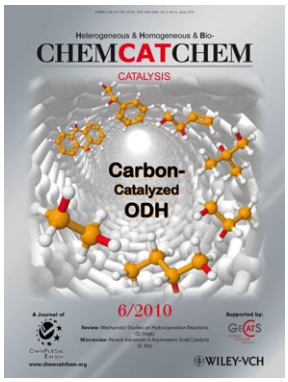
Check out these journals:

www.chemasianj.org

www.chemmedchem.org



www.chemsuschem.org



www.chemcatchem.org

© 2010 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim