

Gas Absorption

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CO₂ Fixation and Transformation by a Dinuclear Copper Cryptate under Acidic Conditions

Chem. Asian J.

DOI: 10.1002/asia.200700042

A crypt for carbon: There exists a dinuclear copper cryptate that can take up atmospheric CO₂ in weakly acidic media. The resulting μ -O₂COH-bridged complex (shown) can be converted into carbonate monoesters in alcohol. The mechanisms of these processes are suggested based on the results of X-ray analysis, solution studies, and DFT calculations.



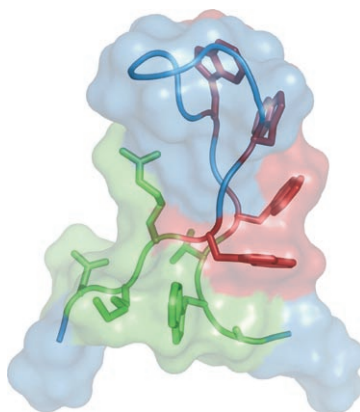
FRET-Based Screening

Z. Cheng, M. Miskolzie, R. E. Campbell*

In Vivo Screening Identifies a Highly Folded β -Hairpin Peptide with a Structured Extension

ChemBioChem

DOI: 10.1002/cbic.200600565



Like finding a hairpin in the haystack.

We have used an in vivo FRET-based screening method to identify highly folded β -hairpin peptides in large libraries. An NMR structure reveals that a cross-strand cation- π interaction helps stabilize the most highly folded β -hairpin.

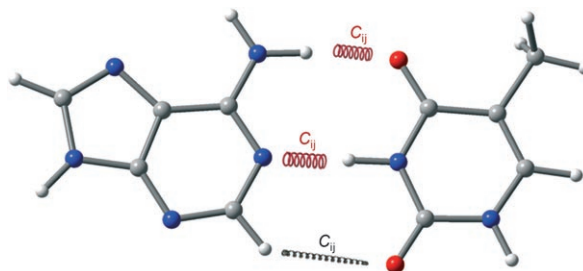
Bond Theory

K. Brandhorst, J. Grunenberg*

Characterizing Chemical Bond Strengths Using Generalized Compliance Constants

ChemPhysChem

DOI: 10.1002/cphc.200700038



How strong is it? The determination of bond strength is a nontrivial task with often controversial results. In this viewpoint, the authors make a case for the utilization of generalized compliance

constants as valid bond-strength descriptors for the comparison of next-neighbor interactions in covalent bonds and for noncovalent interactions such as hydrogen bonds and agostic interactions.

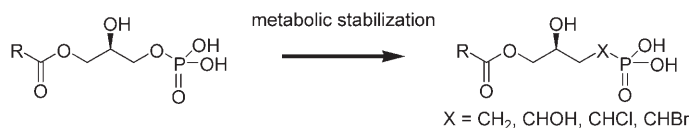
Receptor Ligands

G. Jiang, Y. Xu, Y. Fujiwara, T. Tsukahara, R. Tsukahara, J. Gajewiak, G. Tigyi, G. D. Prestwich*

α -Substituted Phosphonate Analogues of Lysophosphatidic Acid (LPA) Selectively Inhibit Production and Action of LPA

ChemMedChem

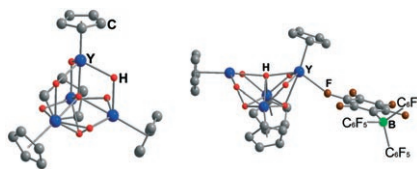
DOI: 10.1002/cmdc.200600280



Metabolically stabilized: We present the total synthesis and pharmacological characterization of α -substituted phosphonate analogues of LPA. The compounds include isoform-selective

agonists and antagonists for the LPA GPCRs, and also include potent inhibitors of lysophospholipase D, a key enzyme involved in LPA biosynthesis.

The synthesis, structures, and novel reactions of a series of neutral (left) and cationic (right) polyhydrido rare earth metal complexes are reviewed.



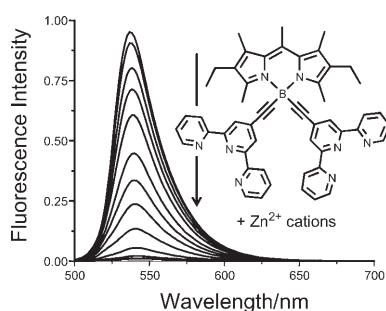
Rare Earth Metal Polyhydrides

Z. Hou,* M. Nishiura, T. Shima

Synthesis and Reactions of Polynuclear Polyhydrido Rare Earth Metal Complexes Containing “(C₅Me₄SiMe₃)LnH₂” Units: A New Frontier in Rare Earth Metal Hydride Chemistry

Eur. J. Inorg. Chem.

DOI: 10.1002/ejic.200700085



Equipping bodipy dyes with terpyridine (terpy) units leads to two distinct types of self-assembled structures: In the presence of zinc(II) cations, the terpy units facilitate formation of the corresponding dinuclear complexes. In certain solvents, those dyes bearing B-ethynylpyrene residues assemble into π -stacked structures that fluoresce at longer wavelength.

Dye Photochemistry

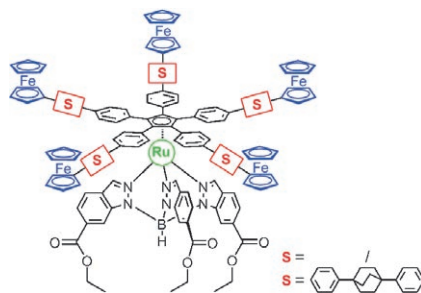
A. Harriman,* L. J. Mallon, B. Stewart, G. Ulrich, R. Ziessel*

Boron Dipyrromethene Dyes Bearing Ancillary 2,2':6',2''-Terpyridine Coordination Sites

Eur. J. Org. Chem.

DOI: 10.1002/ejoc.200700190

The insulating role of 1,4-disubstituted bicyclo[2,2,2]octane has been examined in a theoretical study on bis-ferrocenyl model compounds. Two prototypes of electron-fuelled molecular motors have been synthesized, incorporating either conjugated or insulating spacers between the central core and the ferrocene terminal electroactive groups (see figure).



Molecular Motors

G. Vives, A. Gonzalez, J. Jaud, J.-P. Launay, G. Rapenne*

Synthesis of Molecular Motors Incorporating *para*-Phenylene-Conjugated or Bicyclo[2,2,2]octane-Insulated Electroactive Groups

Chem. Eur. J.

DOI: 10.1002/chem.200700223



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