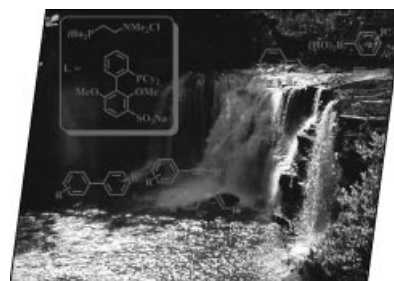


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COVER PICTURE

The cover picture shows Little River Falls in the Little River Canyon National Preserve in Northeastern Alabama. Water is the solvent of life, and increasingly, water is being applied as a solvent in organic synthesis. Shown going over the falls are typical substrates for palladium-catalyzed cross-coupling reactions and their products collected in the pool below the falls. New hydrophilic phosphane architectures, such as those shown, are discussed in the Microreview by K. H. Shaughnessy on p. 1827ff. These new classes of hydrophilic ligands provide palladium catalysts that can activate a wide variety of organohalide substrates under very mild conditions.



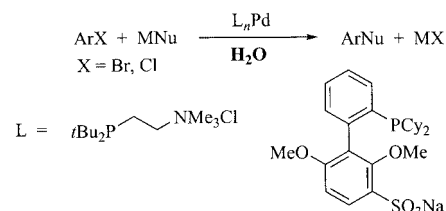
MICROREVIEW

Contents

1827 K. H. Shaughnessy*

Beyond TPPTS: New Approaches to the
 Development of Efficient Palladium-Catalyzed
 Aqueous-Phase Cross-Coupling Reactions

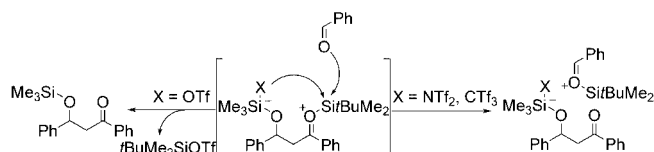
Keywords: Biphasic catalysis / Palladium / Cross-
 coupling / Green chemistry



1837 Y. Hiraiwa, K. Ishihara, H. Yamamoto*

Crucial Role of the Conjugate Base for Silyl Lewis Acid Induced Mukaiyama Aldol Reactions

Keywords: Mukaiyama aldol reaction / Reaction mechanism / Silyl Lewis acid / Conjugate base

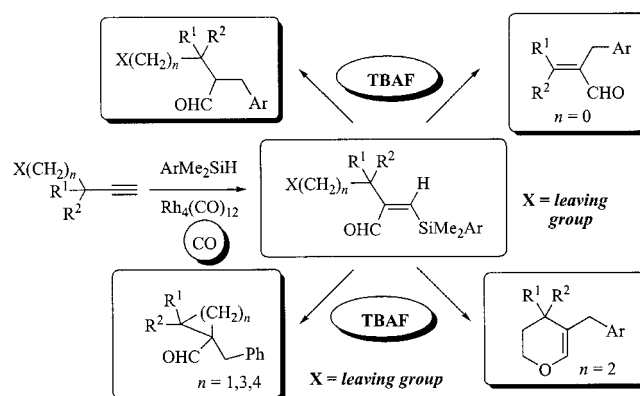


1845 L. A. Aronica, P. Raffa, G. Valentini, A. M. Caporusso, P. Salvadori*



Silylformylation – Fluoride-Assisted Aryl Migration of Acetylenic Derivatives in a Versatile Approach to the Synthesis of Polyfunctionalised Compounds

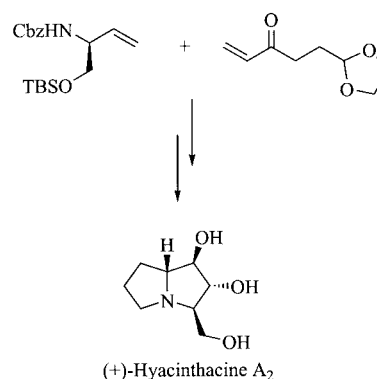
Keywords: Alkynes / Carbonylation / Rearrangement / Aldehydes



1852 P. Dewi-Wülfig, S. Blechert*

Enantiospecific Synthesis of (+)-Hyacinthacine A₂

Keywords: Olefin cross metathesis / Dihydroxylation / Hydrogenation / Alkaloids / Natural products

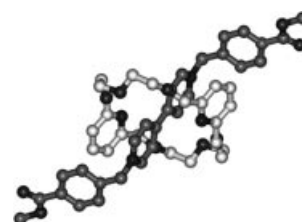


1857 A. B. Braunschweig, C. M. Ronconi, J.-Y. Han, F. Aricó, S. J. Cantrill, J. F. Stoddart,* S. I. Khan, A. J. P. White, D. J. Williams



Pseudorotaxanes and Rotaxanes Formed by Viologen Derivatives

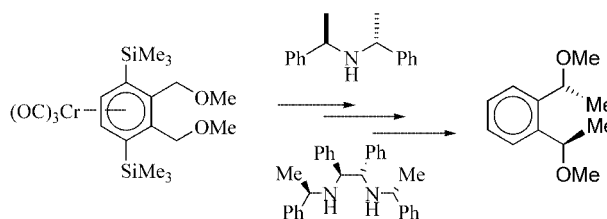
Keywords: [2]Rotaxanes / Isothermal titration microcalorimetry / Noncovalent interactions / Host–guest system / Nanotechnology



1867 M. P. Castaldi, S. E. Gibson,* A. J. P. White

Synthesis of An Enantioenriched C_2 -Symmetric Molecule by a Chiral-Base-Mediated Kinetic Resolution of an (Arene)tricarbonylchromium(0) Complex

Keywords: (Arene)tricarbonylchromium(0) complex / Asymmetric synthesis / C_2 Symmetry / Chiral base / Conformational control / Kinetic resolution

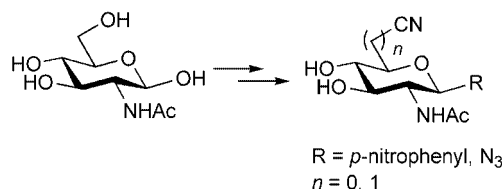


1876 A. T. Carmona, P. Fialová, V. Křen,* R. Ettrich, L. Martínková, A. J. Moreno-Vargas, C. González, I. Robina*



Cyanodeoxy-Glycosyl Derivatives as Substrates for Enzymatic Reactions

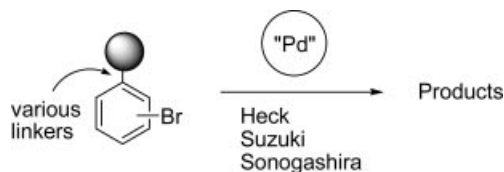
Keywords: Sugar nitriles / Azido-tetrazole tautomerism / Glycosidase / Inhibitors / Enzymes / Carbohydrates



1886 K. Knepper, S. Vanderheiden, S. Bräse*

Nitrogen Functionalities in Palladium-Catalyzed Reactions on Solid Supports: A Case Study

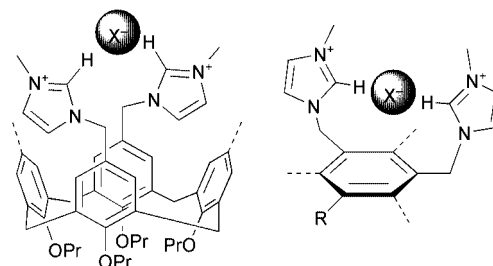
Keywords: Palladium-catalyzed cross-coupling reactions / Heck reaction / Suzuki reaction / Sonogashira reaction / Solid-phase chemistry / Triazenes / Amines



1899 T. Fahlbusch, M. Frank, J. Schatz,* H. Schmaderer

Influence of the Number and Geometry of Binding Sites on Host–Guest Affinity: Imidazolium-Substituted Receptor Molecules for Small Inorganic Anions

Keywords: Supramolecular chemistry / Calixarenes / Receptors / Host–guest systems / Inorganic anions

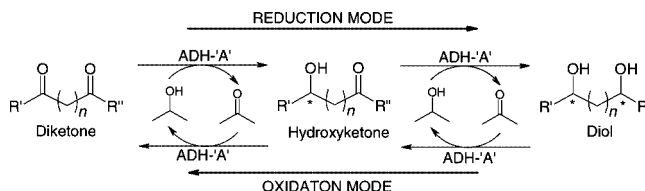


1904 K. Edegger, W. Stampfer, B. Seisser, K. Faber, S. F. Mayer, R. Oehrlein, A. Hafner, W. Kroutil*



Regio- and Stereoselective Reduction of Diketones and Oxidation of Diols by Biocatalytic Hydrogen Transfer

Keywords: Biotransformations / Oxidation / Reduction / Hydrogen transfer / Diketones

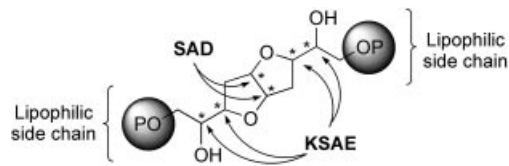


1910 F. R. Pinacho Crisóstomo, J. M. Padrón,*
T. Martín,* J. Villar, V. S. Martín*



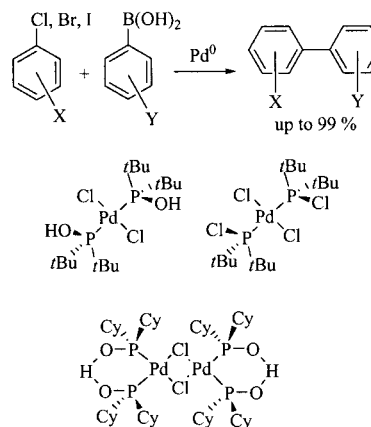
A Short and Efficient Enantiomeric Synthesis of Antitumor Fused Tetrahydrofurans

Keywords: Antitumor agents / Cyclic ethers / Asymmetric synthesis / Structure–activity relationships



1917 C. Wolf,* K. Ekoue-Kovi

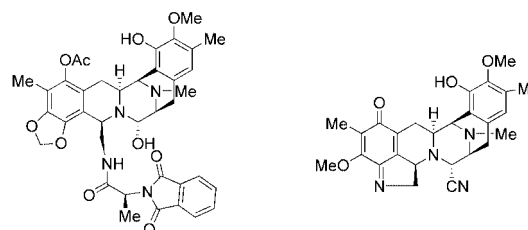
Palladium-Catalyzed Suzuki–Miyaura Cross-Coupling Using Phosphinous Acids and Di-alkyl(chloro)phosphane Ligands



Keywords: Cross-coupling / Palladium / Homogeneous catalysis / Biaryls

1926 P. A. Ceballos, M. Pérez, C. Cuevas,
A. Francesch, I. Manzanares,
A. M. Echavarren*

Synthesis of Ecteinasidin 743 Analogues from Cyanosafracin B: Isolation of a Kinetically Stable Quinoneimine Tautomer of a 5-Hydroxyindole

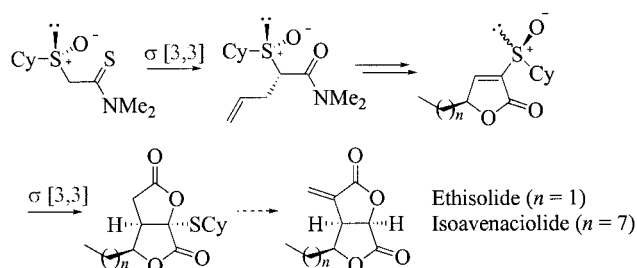


Keywords: Quinones / Indoles / Tautomerism / Antitumor agents / Natural products

1934 V. Blot, V. Reboul,* P. Metzner*

Studies Directed towards the Enantioselective Synthesis of Ethisolide and Isoavenaciolide

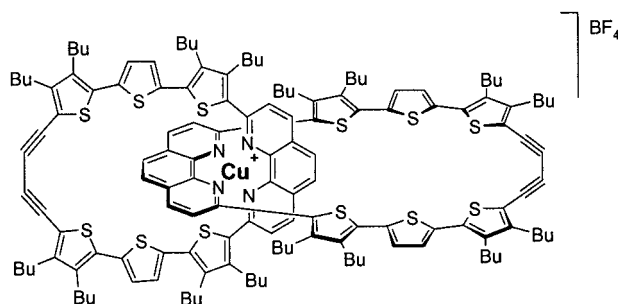
Keywords: (–)-Isoavenaciolide / (–)-Ethisolide / $\sigma[3,3]$ Rearrangement / Sulfoxides / Lactones



1940 M. Ammann, A. Rang, C. A. Schalley,
P. Bäuerle*

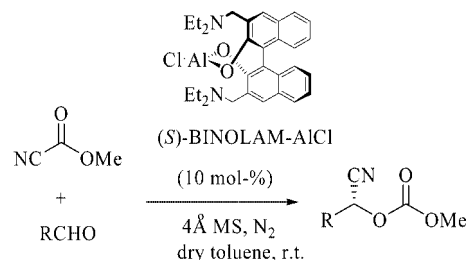
A Synthetic Approach Towards Interlocked π -Conjugated Macrocycles

Keywords: Catenates / Conjugated interlocked macrocycle / Mass spectrometry / Oligothiophene / Phenanthroline / Macrocycles

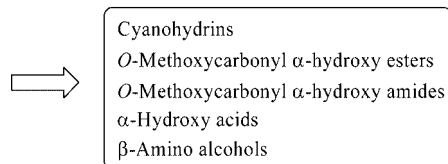


1949 A. Baeza, J. Casas, C. Nájera,*
J. M. Sansano, J. M. Saá*

Enantioselective Synthesis of *O*-Methoxycarbonyl Cyanohydrins: Chiral Building Blocks Generated by Bifunctional Catalysis with BINOLAM-AlCl



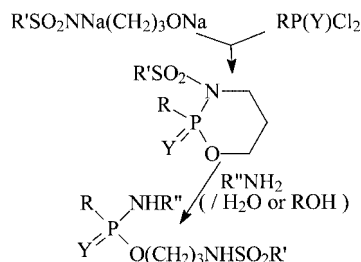
Keywords: Cyanohydrin derivatives / Bifunctional catalysis / Asymmetric synthesis / BINOLAM / Aluminium



1959 F. Dujols,* M. Mulliez

The Influence of Ring Size on the Selectivity of Phosphorus Heterocycle Aminolysis in the Presence of Water or Alcohols – Case of 2-Oxo- or 2-Thioxo-3-sulfonyl-1,3,2-oxazaphosphorinanes

Keywords: Amino alcohols / Sulfonamides / Phosphorus heterocycles / Phosphorylation / Chemoselectivity

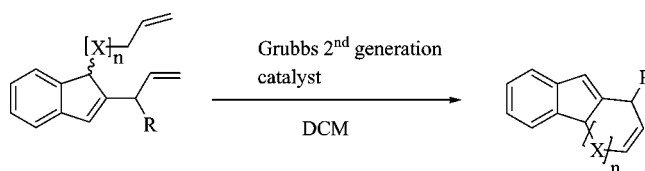


1965 S. Silver, R. Leino*



Synthesis of Fused-Ring Indenes by Ruthenium-Catalyzed Ring-Closing Metathesis

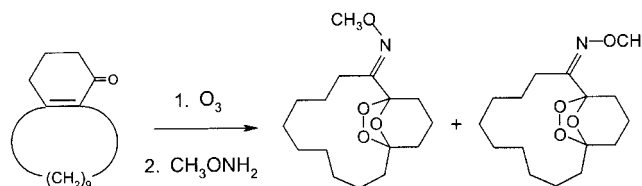
Keywords: Indene / Cyclopentadienyl / Metathesis / Ruthenium / Metallocenes



1978 K. Griesbaum,* A. Frank, K. J. McCullough

syn- and *anti*-Isomers of a *O*-Methyloxime-Substituted Tricyclic Ozonide

Keywords: Ozonolysis / Bicyclic keto olefin / Tricyclic ozonide / *syn*- and *anti*-*O*-Methyloximes

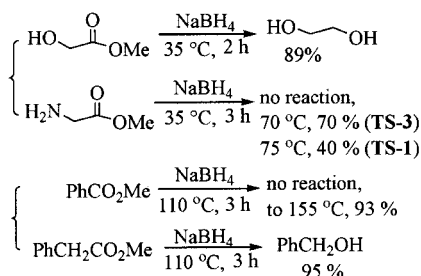


1981 L.-C. Li, J.-X. Jiang, J. Ren, Y. Ren,
C. U. Pittman Jr., H.-J. Zhu*



Unexpected Selectivity in Sodium Borohydride Reductions of α -Substituted Esters: Experimental and Theoretical Studies

Keywords: Borohydrides / Chemoselectivity / Density functional calculations / Esters / Reduction

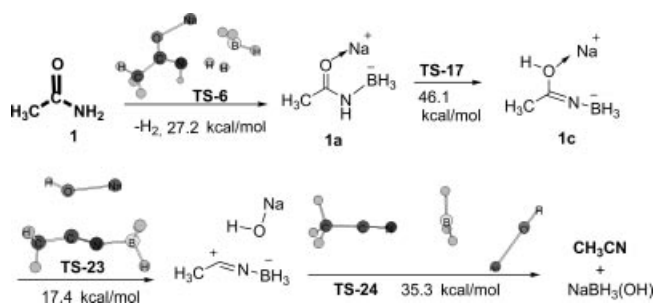


1991 J. Ren, L.-C. Li, J.-K. Liu, H.-J. Zhu,*
C. U. Pittman Jr.



Investigations of Different Chemoselectivities in Primary, Secondary and Tertiary Amide Reactions with Sodium Borohydride

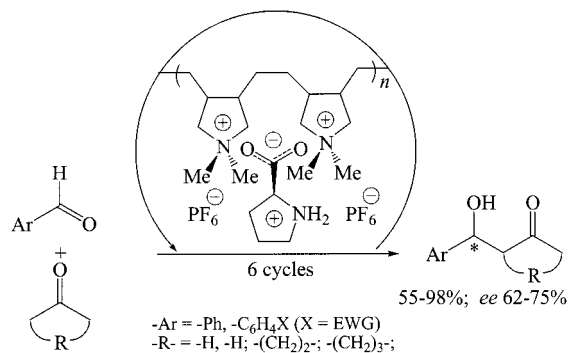
Keywords: Chemoselective reductions / Borohydride / Amides / B3LYP / Transition states



2000 A. S. Kucherenko, M. I. Struchkova,
S. G. Zlotin*

The (*S*)-Proline/Polyelectrolyte System: An Efficient, Heterogeneous, Reusable Catalyst for Direct Asymmetric Aldol Reactions

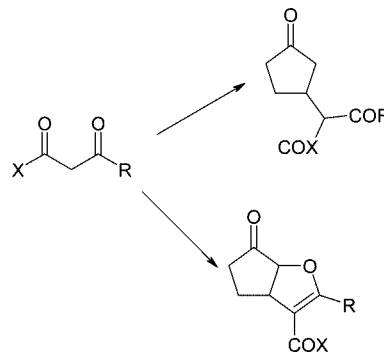
Keywords: Asymmetric aldol reactions / Organocatalysis / (*S*)-Proline / Polyelectrolytes / Heterogeneous catalysis



2005 A. Mekonnen, R. Carlson*

Lewis Acid Catalyzed Conjugate Addition and the Formation of Heterocycles using Michael Acceptors under Solvent-Free Conditions

Keywords: β -Dicarbonyl compounds / Dihydrofurans / Conjugate addition / Lewis acid catalysis / Dionato complexes



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