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Germany

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Belgium

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Sweden

Czech Republic

Austria

Portugal

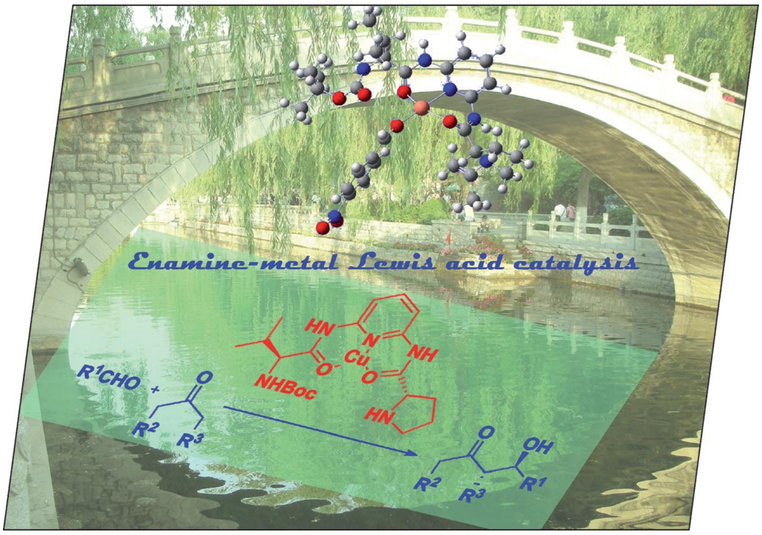
Spain

Netherlands

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 aldol reactions catalyzed by an enamine–metal Lewis acid bifunctional catalyst. The proposed transition state is also shown at the top. This bifunctional catalyst was developed by using a tridentate ligand to bring the Lewis acid and Lewis base in close proximity without quenching each other. The catalyst was found to catalyze aldol reactions in high activity and stereoselectivity. Details are discussed in the Short Communication by H. Wong et al. on p. 4581ff. The authors acknowledge Bo Wang for helping with the cover page design and Mike Novak for useful discussions.



CONTENTS

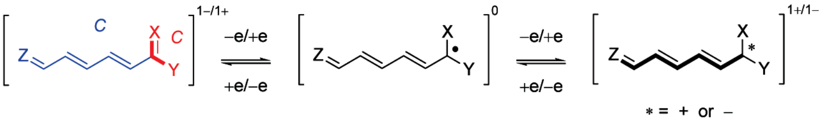
MICROREVIEW

Stabilized Electrochromics

S. Ito,* N. Morita **4567–4579**

Creation of Stabilized Electrochromic Materials by Taking Advantage of Azulene Skeletons

Keywords: Cyanines / Cations / Redox chemistry / Electrochemistry / Liquid crystals



Combinations of cyanine and/or violene substructures enable the design of stabilized electrochromic materials, including polyelectrochromic materials. Novel structural motifs based on utilization of the ability of the azulene skeleton to stabilize ionic states are demonstrated in several examples.

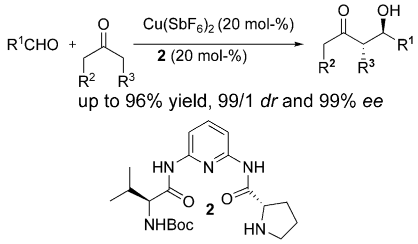
SHORT COMMUNICATIONS

Bifunctional Catalysts

Z. Xu, P. Daka, I. Budik, H. Wang,*
F.-Q. Bai, H.-X. Zhang **4581–4585**

Enamine–Metal Lewis Acid Bifunctional Catalysis: Application to Direct Asymmetric Aldol Reaction of Ketones

Keywords: Organocatalysis / Aldol reactions / Lewis acids / Lewis bases / Amino acids / Tridendate ligands



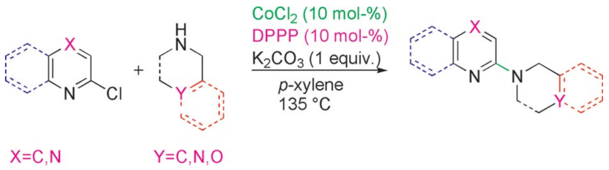
The direct asymmetric aldol reactions of ketones were catalyzed by metal Lewis acid/Lewis base bifunctional catalysts derived from proline in high yields with good to excellent stereoselectivity.

Cobalt Catalysis

G. Toma,* K. Fujita,
R. Yamaguchi* **4586–4588**

Cobalt-Catalyzed C–N Bond-Forming Reaction between N-Aromatic 2-Chlorides and Secondary Amines

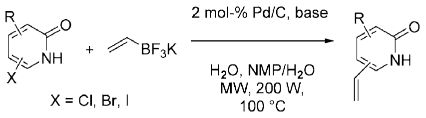
Keywords: Cobalt / Cross-coupling / C–N bond formation / Nitrogen heterocycles / Amines



A cobalt-catalyzed C–N bond-forming reaction where a variety of N-aromatic 2-chlorides were employed is reported. Use of potassium carbonate as base and DPPP as ligand gave the best results. The present reaction is the first Co-catalyzed C–N bond forming reaction involving N-aromatic 2-chlorides and secondary amines having a certain amount of versatility and functional group tolerance.

Mild Vinylation Method

The development of a novel, microwave-assisted, heterogeneous, palladium-catalyzed (Pd/C) vinylation of 2(1*H*)-pyridones using potassium vinyltrifluoroborate as vinyl donor in water or NMP/water is described. This protocol is applicable to various iodo and bromo 2(1*H*)-pyridones providing a methodology for the synthesis of various compounds derived from this ring system.



B. K. Singh, C. Cavalluzzo, M. De Maeyer, Z. Debyser, V. S. Parmar, E. Van der Eycken* **4589–4592**

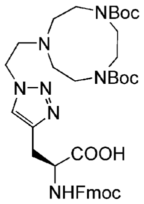
Microwave-Assisted Palladium-Catalyzed Heterogeneous Vinylation of 2(1*H*)-Pyridones

Keywords: Microwave chemistry / Heterogeneous catalysis / Nitrogen heterocycles / Natural products

FULL PAPERS

Metal-Binding Amino Acids

Two novel metal-chelating amino acid building blocks were synthesized and incorporated in peptides with DNA-binding potential. The new amino acids are designed to mimic the imidazole ring of histidine with a triazole moiety while providing a tridentate ligand system for additional metal binding.



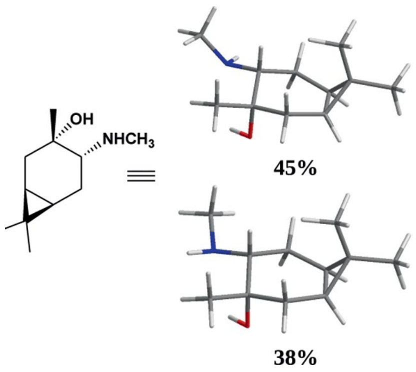
A. Nadler, C. Hain, U. Diederichsen* **4593–4599**

Histidine Analog Amino Acids Providing Metal-Binding Sites Derived from Bioinorganic Model Systems

Keywords: Amino acids / Metal binding / Coordination modes / Zinc finger / Click chemistry / Bioinorganic chemistry

Carene β-Amino Alcohols

Four recently reported carene β-amino alcohols are subject of careful conformational analysis and specific optical rotation calculations by using the TDDFT/B3LYP approximation with the aug-cc-pVDZ basis set. Despite their conformational flexibility and relatively small experimental specific rotations, we were able to theoretically confirm the absolute configuration of three of the studied systems.

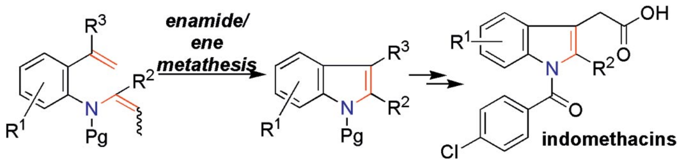


K. Z. Łączkowski, A. Baranowska* **4600–4605**

Conformational Analysis and Optical Rotation of Carene β-Amino Alcohols: A DFT Study

Keywords: Amino alcohols / Density functional calculations / Conformational analysis / Optical rotation

Heterocycles for NSAIDs



The metathesis of heteroatom-substituted olefins, where the newly formed double bond can undergo versatile chemical transformations, is a valuable process in organic synthesis. In this study, to obtain new insight into enamide/ene metathesis, we established a novel method for the synthesis of 2,3-substituted indoles, which are a key unit of many biologically active molecules such as indomethacins.

Y. Kasaya, K. Hoshi, Y. Terada, A. Nishida, S. Shuto,* M. Arisawa* **4606–4613**

Aromatic Enamide/Ene Metathesis toward Substituted Indoles and Its Application to the Synthesis of Indomethacins

Keywords: Heterocycles / Metathesis / Isomerization / Cyclization / Ruthenium / NSAID

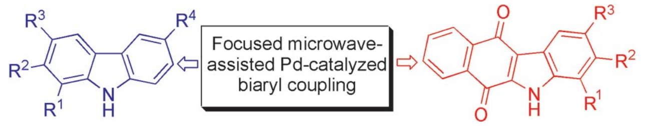
CONTENTS

Carbazole Synthesis

V. Sridharan, M. A. Martín,
J. C. Menéndez* 4614–4621

Acid-Free Synthesis of Carbazoles and Carbazolequinones by Intramolecular Pd-Catalyzed, Microwave-Assisted Oxidative Biaryl Coupling Reactions – Efficient Syntheses of Murrayafoline A, 2-Methoxy-3-methylcarbazole, and Glycozolidine

Keywords: C–H activation / Heterocycles / Natural products / Quinones / Biaryl coupling



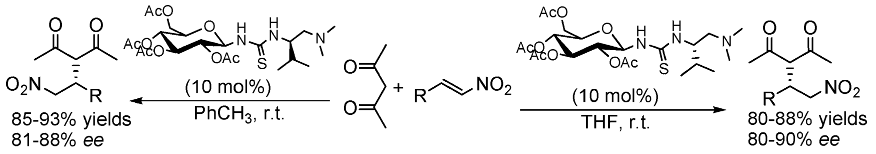
Focused microwave irradiation promotes the acid-free mild and efficient transformation of diarylamines into carbazoles through palladium-catalyzed oxidative biaryl coupling processes involving a double C–H bond activation. The scope of this protocol is demonstrated through the total synthesis of three carbazole natural products, and it is also applied to the synthesis of benzo[*b*]carbazolequinones.

Conjugate Addition Reactions

X. Pu, P. Li, F. Peng, X. Li, H. Zhang,
Z. Shao* 4622–4626

Asymmetric Conjugate Addition of Acetylacetone to Nitroolefins with Chiral Organocatalysts Derived from Both α-Amino Acids and Carbohydrates

Keywords: Amino acids / Asymmetric catalysis / Carbohydrates / Organocatalysis



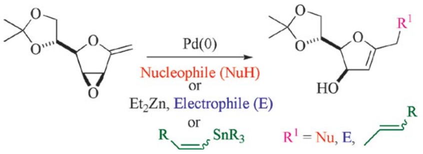
Both enantiomers of a product of conjugate addition of acetylacetone to various nitroolefins can be achieved in almost the same enantiomeric excess with the "matched" and "mismatched" chiral tertiary amine thioureas derived from both α-amino acids and carbohydrates.

Glycal Transformations

A. M. Gómez,* A. Pedregosa, A. Barrio,
S. Valverde, J. C. López* 4627–4636

Synthesis of Furanosyl *C*-1 Glycals through Palladium-Catalyzed Reactions of a Furanosyl 2,3-Anhydro-*exo*-glycal

Keywords: Glycals / Carbohydrates / Electrophilic substitution / Nucleophilic substitution / Palladium / Umpolung



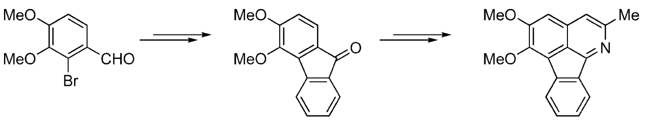
Palladium-catalyzed transformations of a furanose-derived epoxy-*exo*-glycal, available in four steps from D-mannose, led to highly functionalized C-1 glycals through a π-allyl palladium intermediate.

Alkaloid Synthesis

C. C. Silveira, E. L. Larghi, S. R. Mendes,
A. B. J. Bracca, F. Rinaldi,
T. S. Kaufman* 4637–4645

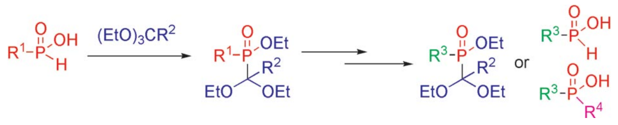
Electrocyclization-Mediated Approach to 2-Methyltriclisine, an Unnatural Analog of the Azafluoranthene Alkaloid Triclisine

Keywords: Synthesis design / Nitrogen heterocycles / Natural products / Alkaloids / Azafluoranthenes / Electrocyclization



The synthesis of an unnatural analog of the azafluoranthene alkaloid triclisine is reported. The synthesis was carried out in 10 steps and 21 % overall yield through the intermediacy of 3,4-dimethoxyfluoren-9-one and featured a final microwave-assisted electrocyclization reaction.

Temporary P-H Protection



Because numerous organic reactions are not compatible with the presence of a P–H bond, the temporary protection of the P–H bond of H-phosphinates was investigated. Our methods have expanded the scope of available *H*-phosphinate starting materials. Various applications of the protection strategy are presented.

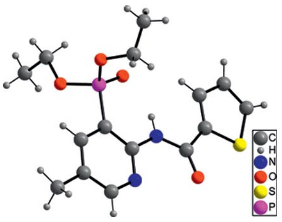
L. Coudray,
J.-L. Montchamp* 4646–4654

Temporary Protection of *H*-Phosphinic Acids as a Synthetic Strategy

Keywords: Phosphorus / Palladium / Metathesis / Cross-coupling / Synthetic methods

Phosphonylation Method

The synthesis of 2-amino- and 2-acylamido-pyridine-3-phosphonates and 2-amino-quinoxaline-3-phosphonates by PdCl$_2$-catalyzed coupling of the bromo precursors with triethyl phosphite is presented. The catalyst is formed in situ from PdCl$_2$ and the phosphonylation reagent itself.

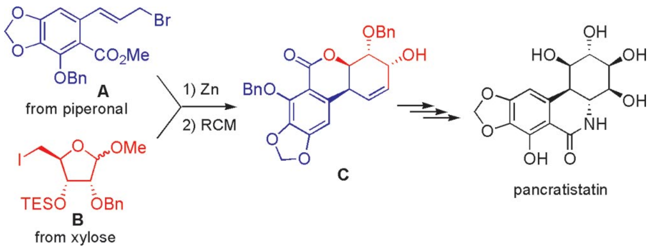


M. S. S. Adam, M. K. Kindermann,
M. Köckerling,
J. W. Heinicke* 4655–4665

Phosphonylation of 2-Amino- and 2-Amido-3-bromopyridines and 2-Amino-3-chloroquinoxalines with Triethyl Phosphite

Keywords: Cross-coupling / Palladium / Nitrogen heterocycles / Phosphorus / Phosphonylation

Natural Products



The antitumour agent pancratistatin is prepared in a total of 25 steps from piperonal and xylose. The key transformation is a zinc-mediated tandem reaction between allylic bromide **A** and iodofuranoside **B**. Subsequent ring-closing metathesis furnishes lactone **C**, which is then converted into the natural product.

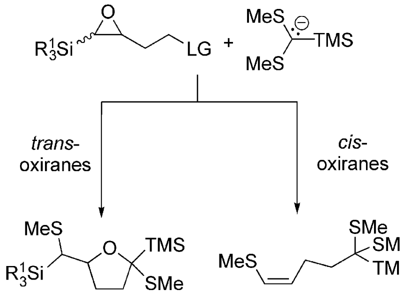
J. H. Dam, R. Madsen* 4666–4673

Convergent Synthesis of Pancratistatin from Piperonal and Xylose

Keywords: Allylation / Antitumour agents / Metathesis / Natural products / Total synthesis

Silyloxirane Ring Opening

Configuration is crucial: *cis*-silyloxiranes add a silylthioacetal anion to give substitution with a Peterson olefination, whereas *trans*-silyloxiranes add the silylthioacetal anion to give functionalized tetrahydrofurans.



J. Lange, E. Schaumann* 4674–4684

Configuration-Dependent Ring Opening of Silyloxiranes: Synthesis of Functionalized Alkenes or Tetrahydrofurans

Keywords: Carbanions / Carbenes / Silanes / Oxygen heterocycles

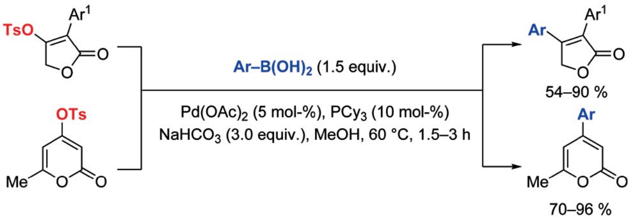
CONTENTS

Pd-Catalyzed Arylation

F. Bellina,* C. Marchetti,
R. Rossi* .... **4685−4690**

💻 An Economical Access to 3,4-Diaryl-2(5*H*)-furanones and 4-Aryl-6-methyl-2(2*H*)-pyranones by Pd-Catalyzed Suzuki-Type Arylation of 3-Aryl-4-tosyloxy-2(5*H*)-furanones and 6-Methyl-4-tosyloxy-2(2*H*)-pyranones, Respectively

Keywords: Synthetic methods / C−C coupling / Palladium / Cross-coupling / Heterocycles



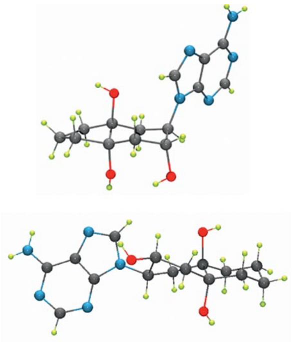
The $Pd(OAc)_2/PCy_3$-catalyzed arylation of 3-aryl-4-tosyloxy-2(5*H*)-furanones and 6-methyl-4-tosyloxy-2(2*H*)-pyranones with arylboronic acids in methanol at 60 °C in the presence of $NaHCO_3$ as the base provides 3,4-diaryl-2(5*H*)-furanones and 4-aryl-6-methyl-2(2*H*)-pyranones, respectively, in high yields.

Nucleoside Analogues

G. Mehta,* P. Talukdar, V. Pullepu,
S. Sen .... **4691−4698**

Conformationally Restricted Nucleocyclitols: a Study into their Conformational Preferences and Supramolecular Architecture in the Solid State

Keywords: Chirality / Structure elucidation / Solid-state structures / Hydrogen bonding / Supramolecular chemistry / Adenine



A general synthetic strategy, directed towards the rapid functionalization of the aromatic nucleus in indane and tetralin into “conformationally constrained” nucleocyclitols, is offered. As the first representatives of this hitherto unexplored class of nucleoside analogues, two adenine-derived, annulated nucleocyclitols were synthesized and their crystal structures studied. The self-assembly of the two nucleocyclitols occurs indivualistic.

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* Author to whom correspondence should be addressed.

💻 Supporting information on the WWW (see article for access details).