

Organic & Biomolecular Chemistry

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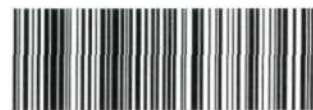
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PAPER

Alessandro Volonterio *et al.*

Multi-component synthesis of peptide–sugar conjugates



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Organic & Biomolecular Chemistry

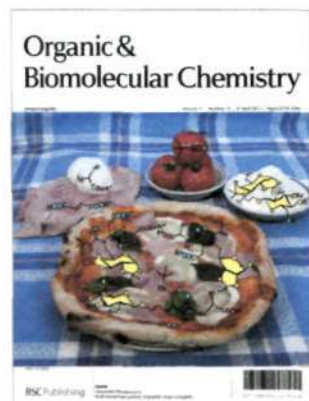
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IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 11(15) 2379–2544 (2013)



Cover

See Alessandro Volonterio *et al.*, pp. 2421–2444.

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Inside cover

See Claudia Caltagirone *et al.*, pp. 2445–2451.

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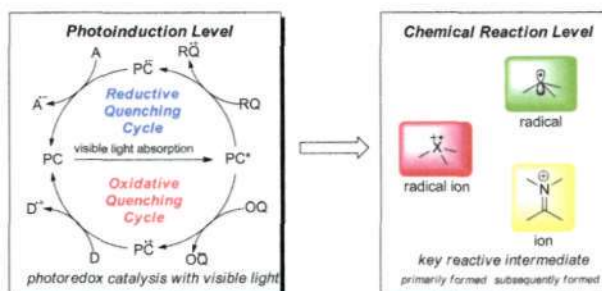
PERSPECTIVE

2387

Synthetic applications of photoredox catalysis with visible light

Yumeng Xi, Hong Yi and Aiwon Lei*

This review summarizes recent research progress in novel methodology development and application to organic synthesis of visible-light mediated photoredox catalysis.



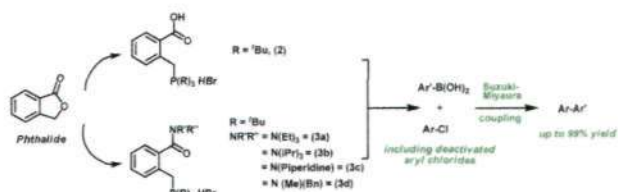
COMMUNICATIONS

2404

Phthalide: a direct building-block towards P,O and P,N hemilabile ligands. Application in the palladium-catalysed Suzuki–Miyaura cross-coupling of aryl chlorides

James McNulty* and Kunal Keskar

Phthalide serves as an economical building block for the rapid assembly of useful P,O- and P,N-type hemilabile ligands.

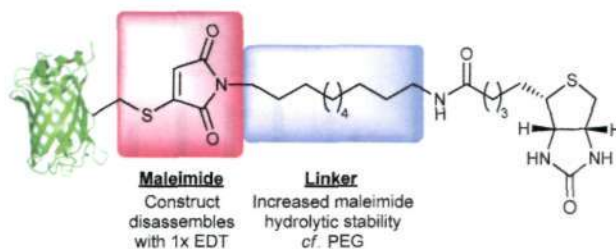


2408

Reversible protein affinity-labelling using bromomaleimide-based reagents

Ramiz I. Nathani, Vijay Chudasama, Chris P. Ryan, Paul R. Moody, Rachel E. Morgan, Richard J. Fitzmaurice, Mark E. B. Smith, James R. Baker and Stephen Caddick*

A mild and highly efficient, reversible protein biotinylation method using a hydrolytically stable linker and mild disassembly conditions is described.

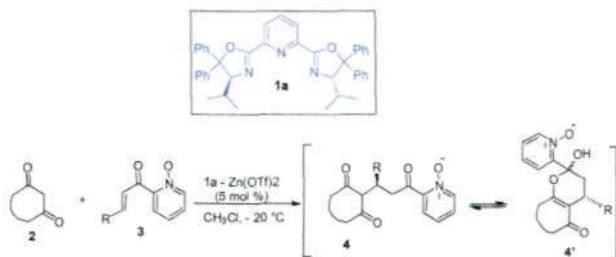


2412

Enantioselective synthesis of 3,4-dihydropyran derivatives via a Michael addition reaction catalysed by chiral pybox-diph-Zn(II) complex

Sumit K. Ray, Subhrajit Rout and Vinod K. Singh*

An enantioselective Michael addition of cyclic 1,3-dicarbonyls to 2-enoylpyridine *N*-oxides catalyzed by a chiral pybox-diph-Zn(II) complex has been developed. The corresponding Michael adducts have been obtained in high yields with up to >99% ee. The Michael adduct has been transformed to 2,4-disubstituted hexahydroquinoline.

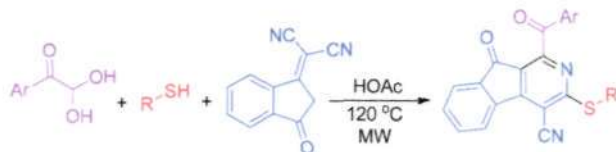


2417

A novel three-component [5 + 1] heterocyclization leading to 2-azafluorenone synthesis and its polyfunctionalizations

Ying Li, Wei Fan, Hai-Wei Xu, Bo Jiang,*
Shu-Liang Wang and Shu-Jiang Tu*

An efficient methodology for the synthesis of new and highly functionalized 2-azafluorenones via a three-component domino reaction involving C1-aryl acylation, C3-thiolation, and C4-cyanation has been developed.



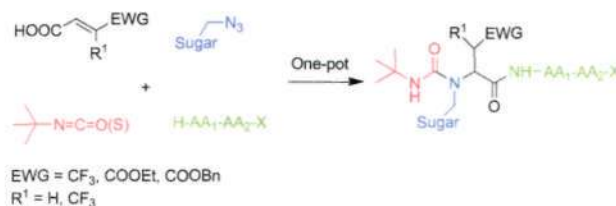
PAPERS

2421

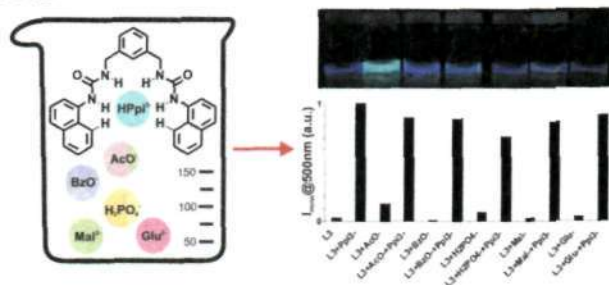
Multi-component synthesis of peptide-sugar conjugates

Maria Cristina Bellucci, Giancarlo Terraneo and Alessandro Volonterio*

The synthesis of libraries of different glyco-peptide conjugates incorporating a hexafluorovaline or an aspartic acid alkyl ester residue has been accomplished, in high yields and very mild conditions, through a novel, multi-component, domino, sequential process involving readily accessible starting materials.



2445

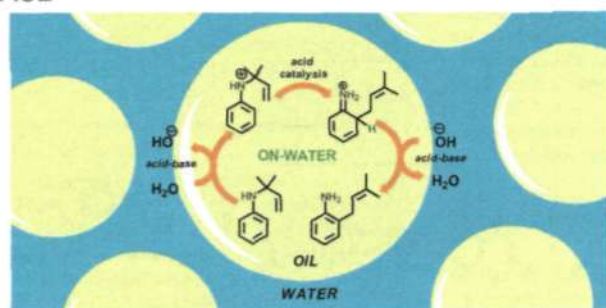


A new family of bis-ureidic receptors for pyrophosphate optical sensing

Claudia Caltagirone,* Carla Bazzicalupi, Francesco Isaia, Mark E. Light, Vito Lippolis, Riccardo Montis, Sergio Murgia, Martina Olivari and Giacomo Picci

A new family of bis-ureidic receptors shows a remarkable affinity for HPp_i^{3-} and works as optical sensors for this anion.

2452

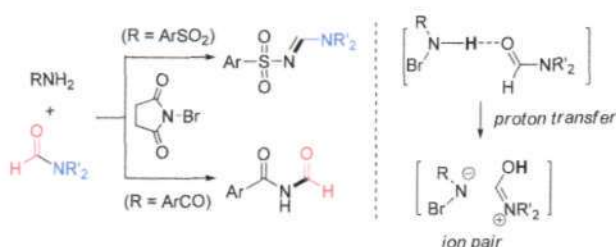


Revitalizing the aromatic aza-Claisen rearrangement: implications for the mechanism of 'on-water' catalysis

Kaitlin D. Beare and Christopher S. P. McErlean*

The on-water catalyzed aromatic aza-Claisen rearrangement of reverse *N*-prenylated naphthylamines and anilines is reported.

2460

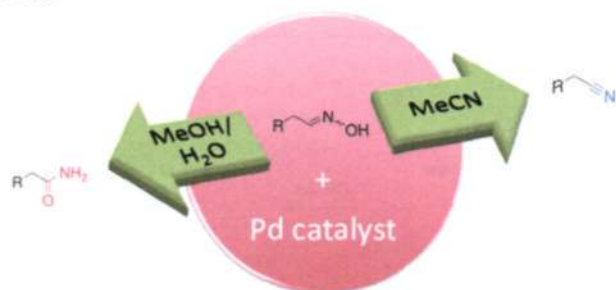


Otherwise inert reaction of sulfonamides/ carboxamides with formamides via proton transfer-enhanced reactivity

Zaihai Niu, Shaoxia Lin, Zhiyong Dong, Hao Sun, Fushun Liang* and Jingping Zhang*

NBS-mediated addition-elimination reaction of sulfonamides/carboxamides and formamides afforded *N*-sulfonylamidines and *N*-formylarylamides, respectively, depending on the different mechanism of elimination.

2466



Conversion of aldoximes into nitriles and amides under mild conditions

Koujiro Tambara and G. Dan Pantoş*

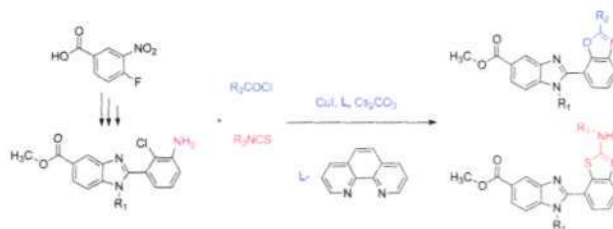
A series of $Pd(n)X_2$ salts were used as catalysts for the conversion of aldoximes into nitriles and amides.

2473

Multistep divergent synthesis of benzimidazole linked benzoxazole/benzothiazole via copper catalyzed domino annulation

Jen-Yu Liao, Manikandan Selvaraju, Chih-Hau Chen and Chung-Ming Sun*

The amphiphilic reactivity of benzimidazole linked 2-chloroaniline has been exploited under Ullmann-like conditions for the construction of privileged bis-heterocycles.

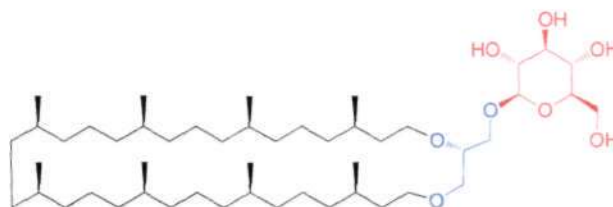


2482

Asymmetric synthesis of cyclo-archaeol and β -glucosyl cyclo-archaeol

Catalina Ferrer, Peter Fodran, Santiago Barroso, Robert Gibson, Ellen C. Hopmans, Jaap Sinninghe Damsté, Stefan Schouten* and Adriaan J. Minnaard*

An efficient asymmetric synthesis of cyclo-archaeol and β -glucosyl cyclo-archaeol is presented, and their occurrence in deep sea hydrothermal vents has been confirmed.



2493

A traceless aryl-triazene linker for DNA-directed chemistry

Christian Hejesen, Lars K. Petersen, Nils Jakob V. Hansen and Kurt V. Gothelf*

Organic building blocks are transferred from one DNA strand to another via traceless cleavage of a triazene-based linker.



2498

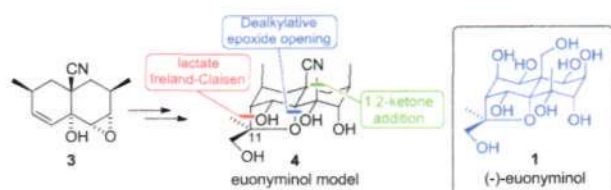
Total synthesis of (\pm)-sacidumlignans D and A through Ueno–Stork radical cyclization reaction

Jian-Jian Zhang, Chang-Song Yan, Yu Peng,* Zhen-Biao Luo, Xiao-Bo Xu and Ya-Wen Wang

Efficient synthesis of (\pm)-sacidumlignan D and A have been achieved via Ueno–Stork radical cyclization, and their chemical correlation was also established.



2514

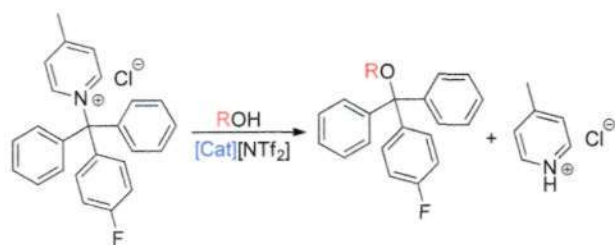


Towards the enantioselective synthesis of (-)-euonyminol – preparation of a fully functionalised lower-rim model

M. J. Webber, S. A. Warren, D. M. Grainger, M. Weston, S. Clark, S. J. Woodhead, L. Powell, S. Stokes, A. Alanine, J. P. Stonehouse, C. S. Frampton, A. J. P. White and A. C. Spivey*

A stereoselective synthesis of β -dihydroagarofuran **4** is described. The route features a lactate Ireland–Claisen rearrangement to establish the quaternary stereocentre at C11 and a dealkylative intramolecular epoxide-opening by the C11 methyl ether to close the tetrahydrofuran C-ring.

2534



Steric, hydrogen-bonding and structural heterogeneity effects on the nucleophilic substitution of *N*-(*p*-fluorophenyl-diphenylmethyl)-4-picolinium chloride in ionic liquids

Cameron C. Weber, Anthony F. Masters and Thomas Maschmeyer*

The interplay between nucleophile and ionic liquid solvent effects on the kinetics of a nucleophilic substitution reaction are reported.