

Organic & Biomolecular Chemistry

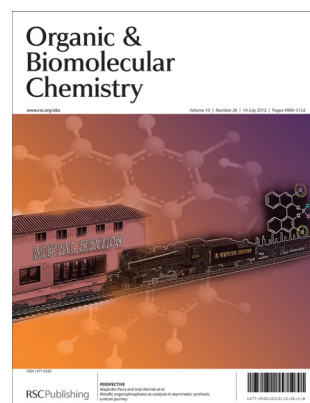
An international journal of synthetic, physical and biomolecular organic chemistry

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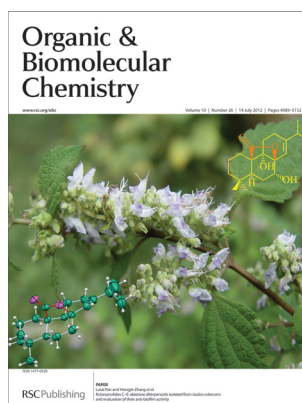
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Cover

See Alejandro Parra and José Alemán *et al.*, pp. 5001–5020.

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Inside cover

See Lutai Pan and Hongjie Zhang *et al.*, pp. 5039–5044.

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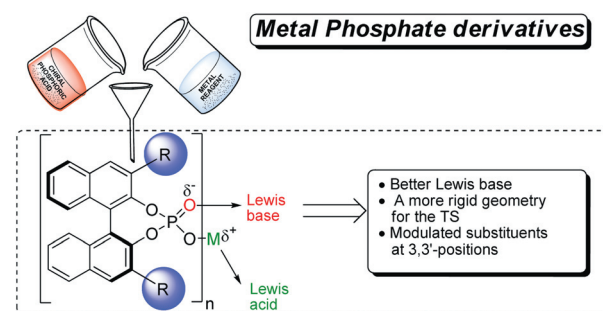
PERSPECTIVES

5001

Metallic organophosphates as catalysts in asymmetric synthesis: a return journey

Alejandro Parra,* Silvia Reboredo, Ana M. Martín Castro and José Alemán*

This perspective provides a general overview of the most relevant topics on the applications of chiral metallic organophosphates.

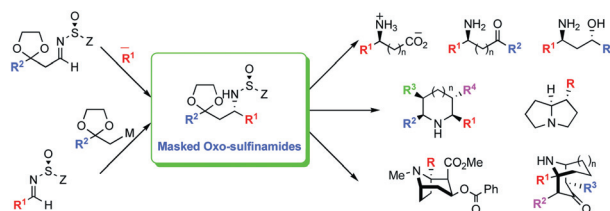


5021

Synthesis and applications of masked oxo-sulfonamides in asymmetric synthesis

Ramakrishna Edupuganti and Franklin A. Davis*

Masked oxo-sulfonamides, protected amino carbonyl compounds, are valuable chiral building blocks for the asymmetric synthesis of functionalized nitrogen heterocycles.



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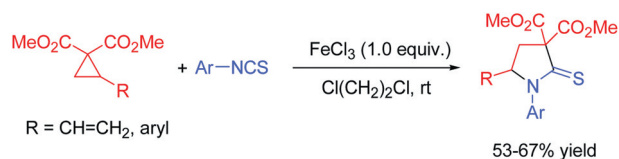
COMMUNICATIONS

5032

FeCl₃ promoted highly regioselective [3 + 2] cycloaddition of dimethyl 2-vinyl and aryl cyclopropane-1,1-dicarboxylates with aryl isothiocyanates

Huina Wang, Wei Yang, Hong Liu, Wei Wang* and Hao Li*

A FeCl₃ promoted [3 + 2]-annulation of dimethyl 2-vinyl and arylcyclopropane-1,1-dicarboxylate with aryl isothiocyanates has been developed to give pyrrolidine-2-thiones regioselectively.



5036

A multicomponent synthetic strategy for two-carbon-tethered 1,3-oxathiole-indole pairsJia-Yan Liu, Hao Zhang, Bao-Ming Feng, Bo Jiang,*
Shu-Liang Wang and Shu-Jiang Tu*

An efficient methodology for the multicomponent synthesis of new and highly functionalized heterocycles containing 1,3-oxathiole and indole units which are connected through an sp²-C₂ bridge has been developed.

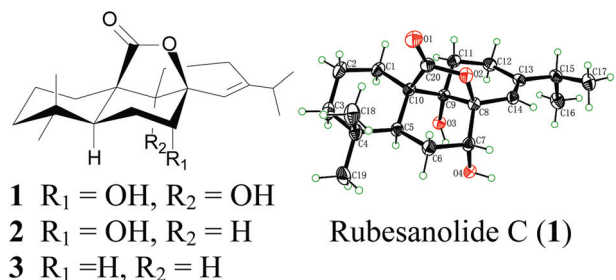


PAPERS

5039

Rubesanolides C–E: abietane diterpenoids isolated from *Isodon rubescens* and evaluation of their anti-biofilm activityJuan Zou, Lutai Pan,* Qiji Li, Jianxin Pu, Ping Yao, Min Zhu,
Jeffrey A. Banas, Hongjie Zhang* and Handong Sun

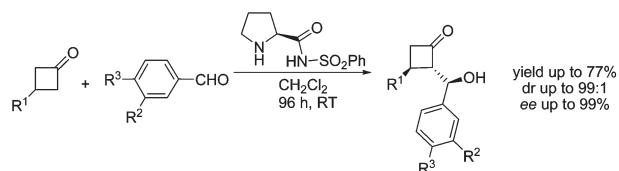
Rubesanolides C–E (**1–3**), abietane diterpenes containing a unique γ -lactone subgroup between C-8 and C-20, were identified from *Isodon rubescens*.



5045

Very high stereoselectivity in organocatalyzed desymmetrizing aldol reactions of 3-substituted cyclobutanonesDavid J. Aitken, Angela M. Bernard, Francesca Capitta,
Angelo Frongia,* Régis Guillot, Jean Ollivier,
Pier Paolo Piras,* Francesco Secci and Marco Spiga

N-Phenylsulfonyl (*S*)-proline catalyzes the direct aldol reaction of 3-substituted cyclobutanones and aryl aldehydes with excellent diastereoselectivity and enantioselectivity.



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Opening Lecturer

The IKCOC prize winner will deliver the opening lecture.

Plenary Lecturers

Tamio Hayashi (Kyoto Univ.)
Tobin J. Marks (Northwestern Univ.)
Paul Wender (Stanford Univ.)

Invited Lecturers

Session 1: Efficiency in Organic Synthesis

Varinder K. Aggarwal (Univ. Bristol)
Martin G. Banwell (Australian National Univ.)
Jeffrey W. Bode (ETH Zurich)
Marta Catellani (Univ. Parma)
Sukbok Chang (KAIST)
F. Dean Toste (Univ. California, Berkeley)

Session 2: Organic Synthesis for Materials Science

Eric V. Anslyn (Univ. Texas, Austin)
Shie-Ming Peng (National Taiwan Univ.)
John R. Reynolds (Univ. Florida)
Kazuo Takimiya (Hiroshima Univ.)
Jean-Marie Tarascon (Univ. Picardie Jules Verne)
Frank Wurthner (Univ. Wurzburg)

Session 3: Organic Synthesis for Life Science

Benjamin G. Davis (Univ. Oxford)
Philip Garner (Washington State Univ.)
Arun K. Ghosh (Purdue Univ.)
Stefan Matile (Univ. Geneva)
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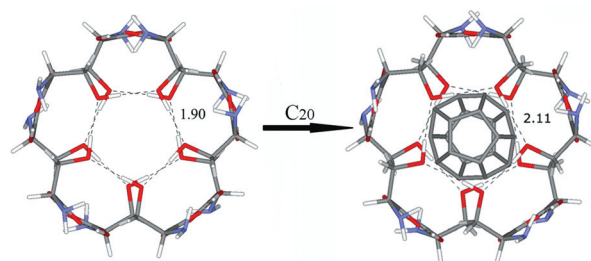
PAPERS

5049

Possible cage-like nanostructures formed by amino acids

Cui-hong Wang, Qi Wu, Wen-jie Fan, Rui-qin Zhang* and Zijing Lin*

The figure shows the cage-like nanostructure formed by serine decamers and its application in encapsulating a C₂₀ molecule. The cage-like nanostructure is expected to have important applications in drug delivery.

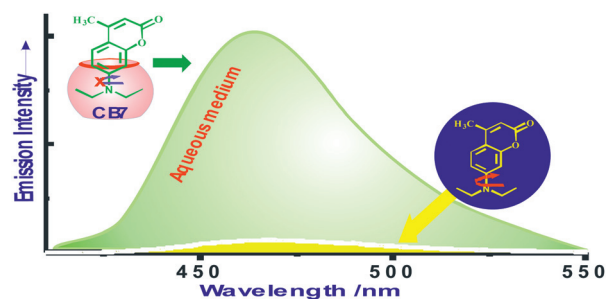


5055

Non-covalent interactions of coumarin dyes with cucurbit[7]uril macrocycle: modulation of ICT to TICT state conversion

Nilotpal Barooah, Jyotirmayee Mohanty, Haridas Pal and Achikanath C. Bhasikuttan*

Enhanced fluorescence yield and increased aqueous solubility of coumarin dyes on cucurbituril encapsulation as promising system for aqueous dye laser and cellular imaging.

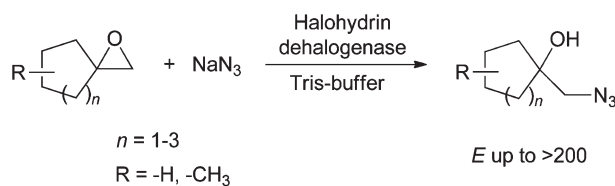


5063

Catalytic activity of halohydrin dehalogenases towards spiroepoxides

Maja Majerić Elenkov,* Ines Primožič, Tomica Hrenar, Ana Smolko, Irena Dokli, Branka Salopek-Sondi and Lixia Tang

High regioselectivities and moderate to high enantioselectivities were found in the azidolysis of spiroepoxides catalysed by halohydrin dehalogenases.

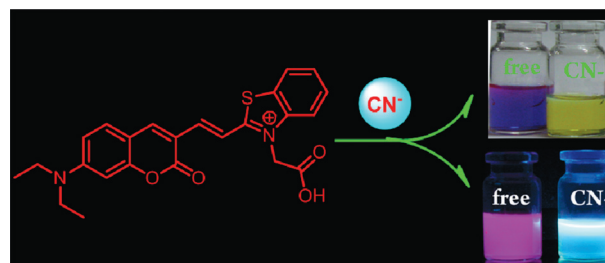


5073

A new ratiometric and colorimetric chemosensor for cyanide anion based on Coumarin–hemicyanine hybrid

Zhenghao Yang, Zhipeng Liu,* Yuncong Chen, Xiaoqing Wang, Weijiang He* and Yi Lu

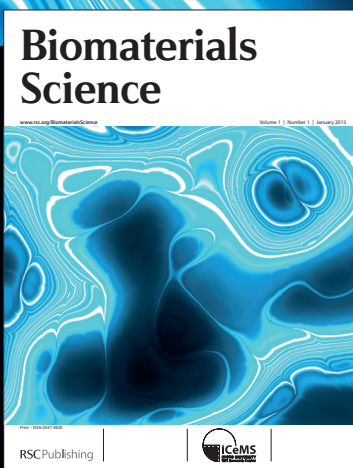
A new sensor (**Cou-BT**) based on the nucleophilic addition of cyanide anion to the benzothiolium group of a hybrid coumarin–hemicyanine dye has been developed.



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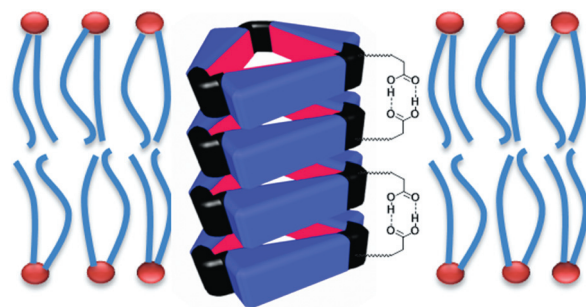
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5077

Hydrogen bond-assisted macrocyclic oligocholate transporters in lipid membranes

Lakmini Widanapathirana, Xueshu Li and Yan Zhao*

The carboxylic acid dimer interactions helped the amphiphilic oligocholate macrocycles stack into nanopores in lipid bilayer membranes.

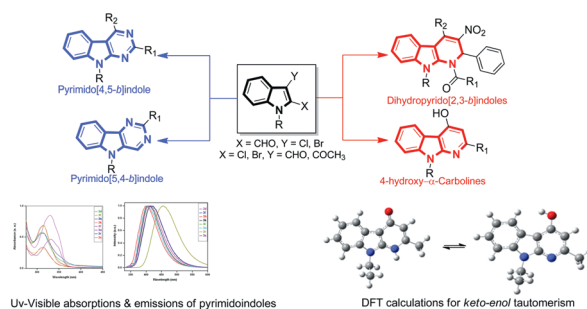


5084

Synthesis of pyrido[2,3-*b*]indoles and pyrimidoindoles via Pd-catalyzed amidation and cyclization

Arepalli Sateesh Kumar, P. V. Amulya Rao and Rajagopal Nagarajan*

Synthesis of pyrido[2,3-*b*]indoles and pyrimidoindoles via Pd-catalyzed amidation and cyclization.

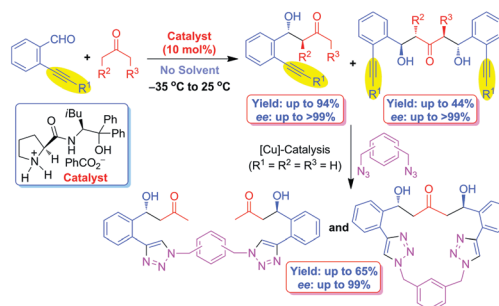


5094

Direct catalytic asymmetric synthesis of highly functionalized (2-ethynylphenyl)alcohols via Barbos–List aldol reaction: scope and synthetic applications

Dhevalapally B. Ramachary,* Rumpa Mondal and R. Madhavachary

A general approach to high-yielding asymmetric synthesis of (2-ethynylphenyl)alcohols as synthons in medicinal chemistry was achieved through Barbos–List aldol reaction on ketones with 2-alkynylbenzaldehydes in the presence of a catalytic amount of *trans*-4-OH-L-proline or L-prolinamide derivative.

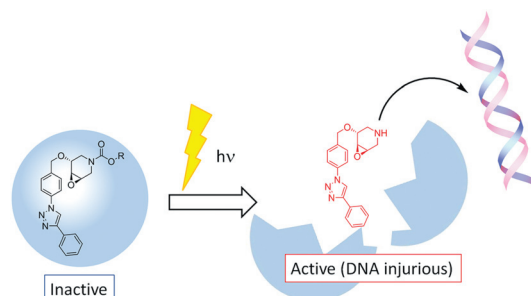


5102

Synthesis and evaluation of novel caged DNA alkylating agents bearing 3,4-epoxypiperidine structure

Yuji Kawada, Tetsuya Kodama, Kazuyuki Miyashita, Takeshi Imanishi and Satoshi Obika*

Novel caged DNA alkylating agents, 3,4-epoxypiperidine derivatives, showed various degrees of bioactivity depending on the photosensitivity of the protecting groups.



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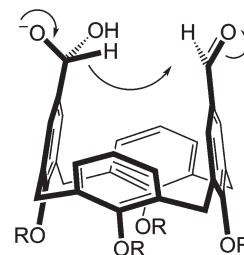
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5109

Highly efficient intramolecular Cannizzaro reaction between 1,3-distal formyl groups at the upper rim of a cone-calix[4]arene

Marzia Galli, José Augusto Berrocal, Stefano Di Stefano,*
Roberta Cacciapaglia, Luigi Mandolini, Laura Baldini,
Alessandro Casnati and Franco Ugozzoli

A very efficient intramolecular hydride transfer allows a facile desymmetrization of 1,3-distal diformylated calix[4]arenes.

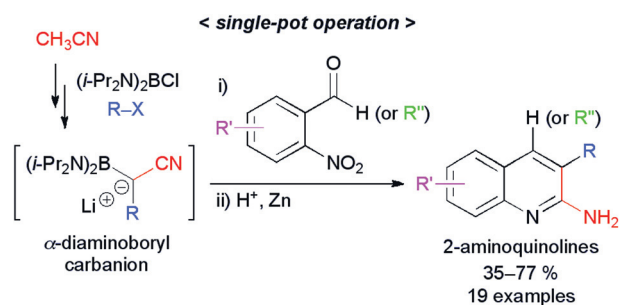


5113

One-pot synthesis of 2-aminoquinoline-based alkaloids from acetonitrile

Takashi Tomioka,* Yusuke Takahashi and Toshihide Maejima

α -Diaminoboryl carbanions, readily prepared from acetonitrile, stereoselectively convert 2-nitrobenzaldehydes into nitrophenyl (*Z*)-acrylonitriles. Subsequent reductive cyclization leads to a series of 2-aminoquinoline derivatives. The entire procedure is practically operated in a single flask.

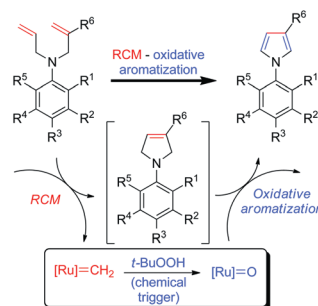


5119

Assisted tandem catalytic RCM-aromatization in the synthesis of pyrroles and furans

Bernd Schmidt,* Stefan Krehl and Eric Jablowski

Pyrroles and furans are available from diallyl amines and diallyl ethers, respectively, *via* an assisted tandem catalytic approach.

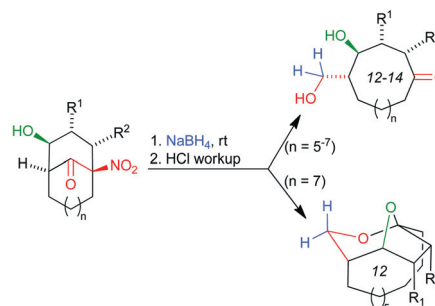


5131

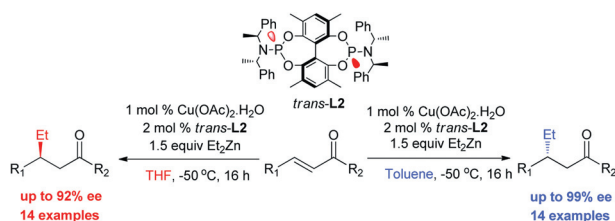
A one-pot sequence for the efficient synthesis of highly functionalized macrocarbocycles or bridged 2,8-dioxabicyclo[3.2.1]octanes from 1-nitrobicyclic compounds

Giorgio Giorgi, Pilar López-Alvarado and J. Carlos Menéndez*

Highly functionalized 12 to 14-membered carbocyclic ketones were prepared from 1-nitrobicyclo[*n*.3.1]alkane-(6 + *n*)ones *via* a retro-Dieckmann/aldehyde reduction/Nef sequence.



5137

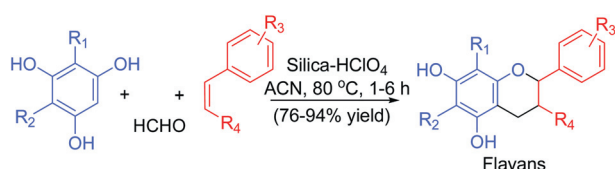


The effects of solvent on switchable stereoselectivity: copper-catalyzed asymmetric conjugate additions using D_2 -symmetric biphenyl phosphoramidite ligands

Han Yu, Fang Xie, Zhenni Ma, Yangang Liu and Wanbin Zhang*

A highly enantioselective copper-catalyzed conjugate addition of diethylzinc to acyclic aromatic enones was developed, which demonstrated that toluene and THF respectively as solvent can completely reverse the absolute configuration of the products.

5143



Tandem one-pot synthesis of flavans by recyclable silica- HClO_4 catalyzed Knoevenagel condensation and [4 + 2]-Diels-Alder cycloaddition

Sandip B. Bharate,* Ramesh Mudududdla, Jaideep B. Bharate, Narsaiah Battini, Satyanarayana Battula, Rammohan R. Yadav, Baldev Singh and Ram A. Vishwakarma*

An efficient tandem one-pot multi-component synthesis of flavans using a recyclable heterogeneous catalyst has been described.

Ion Specific Hofmeister Effects: Faraday Discussion 160

3 - 5 September 2012
Leeds Metropolitan University, UK

Themes

- Solvation of ions in the aqueous bulk and at interfaces
- Ion-ion interactions in water
- Interactions between ions and biomolecules (proteins, nucleic acids, membranes, etc.) in water.
- Specific Hofmeister effects of ions and osmolytes on protein association, precipitation, folding/unfolding, and activity

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