# Organic & Biomolecular Chemistry

An international journal of synthetic, physical and biomolecular organic chemistry

**www.rsc.org/obc**

*RSC Publishing is a not-for-profit publisher and a division of the Royal Society of Chemistry. Any surplus made is used to support charitable activities aimed at advancing the chemical sciences. Full details are available from www.rsc.org*

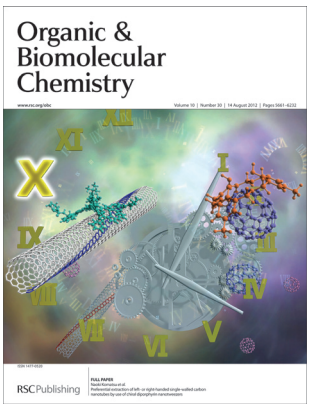

## IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 10(30) 5661–6232 (2012)


**Cover**
See Lawrence T. Scott *et al.*, pp. 5747–5749.

Cover design by Shawn Mertz.

Image reproduced by permission of Lawrence T. Scott from *Org. Biomol. Chem.*, 2012, **10**, 5747.




**Inside cover**
See Naoki Komatsu *et al.*, pp. 5830–5836.

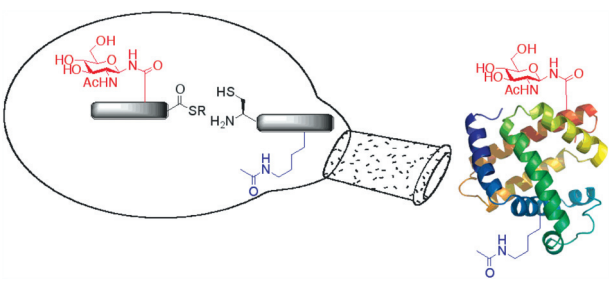
Image reproduced by permission of Naoki Komatsu from *Org. Biomol. Chem.*, 2012, **10**, 5830.

## EDITORIAL



## PERSPECTIVES





Organic & Biomolecular Chemistry (print: ISSN 1477-0520; electronic: ISSN 1477-0539) is published 48 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF. All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to RSC Distribution Services, c/o Portland Customer Services, Commerce Way, Colchester, Essex, UK CO2 8HP. Tel +44 (0)1206 226050; E-mail sales@rscdistribution.org

2012 Annual (print+electronic) subscription price: £3950; US$7373. 2012 Annual (electronic) subscription price: £3752; US$7004. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT. If you take an institutional subscription to any RSC journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip. Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank. Periodicals postage paid at Rahway, NJ, USA and at additional mailing offices. Airfreight and mailing in the USA by Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001, USA.

US Postmaster: send address changes to Organic & Biomolecular Chemistry (OBC) c/o Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001. All despatches outside the UK by Consolidated Airfreight.



# Organic & Biomolecular Chemistry

## An international journal of synthetic, physical and biomolecular organic chemistry

**www.rsc.org/obc**

*Organic & Biomolecular Chemistry* brings together molecular design, synthesis, structure, function and reactivity in one journal. It publishes fundamental work on synthetic, physical and biomolecular organic chemistry as well as all organic aspects of: chemical biology, medicinal chemistry, natural product chemistry, supramolecular chemistry, macromolecular chemistry, theoretical chemistry, and catalysis.

## EDITORIAL BOARD

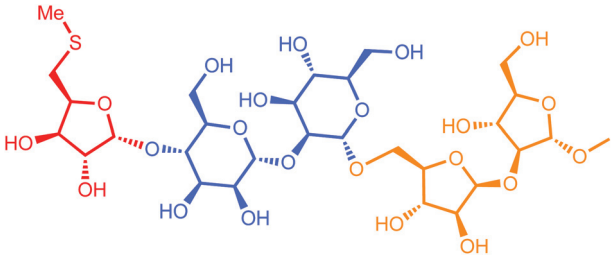


## ADVISORY BOARD

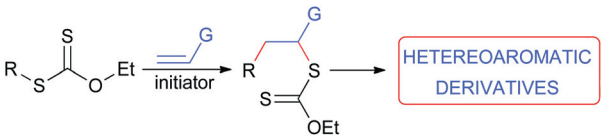


## INFORMATION FOR AUTHORS

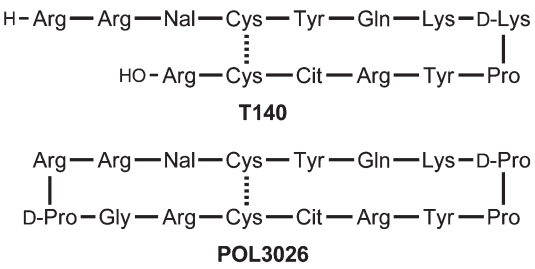
Full details on how to submit material for publication in Organic & Biomolecular Chemistry are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made *via* the journal's homepage: http://www.rsc.org/obc.



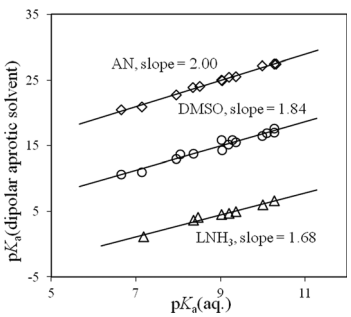




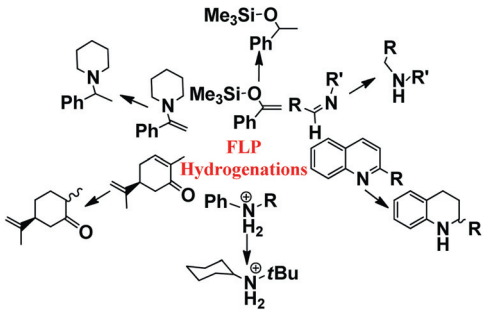





## PERSPECTIVES





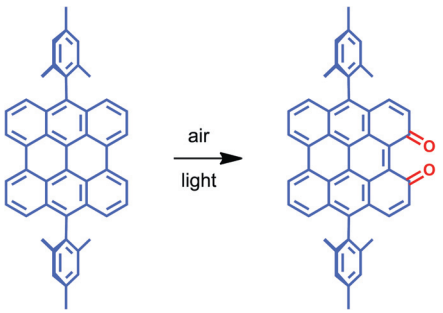

### "Frustrated Lewis pair" hydrogenations

Douglas W. Stephan

This perspective article discusses developments of metal-free hydrogenation catalysts derived from "frustrated Lewis pair" (FLP) systems.

## COMMUNICATIONS



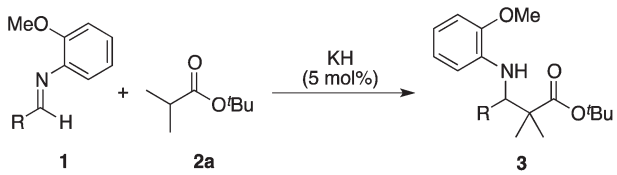



### Facile air-oxidation of large aromatic hydrocarbon bay regions to bay region quinones: predicted oxygen-sensitivity of hydrogen-terminated carbon nanotubes

Eric H. Fort and Lawrence T. Scott*

The ease with which dimesitylbisanthene oxidizes in air to the corresponding bay region quinone is seen as a warning that hydrogen-terminated carbon nanotubes having bay regions on their rims may be highly sensitive to air oxidation.



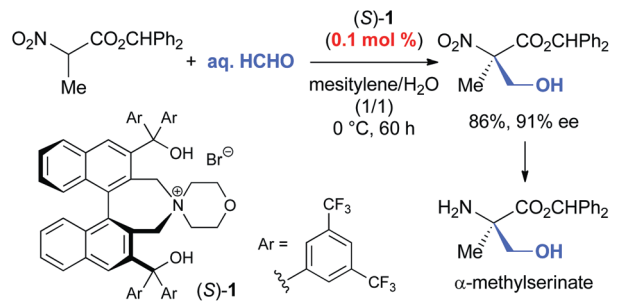



### Development of strong Brønsted base catalysis: catalytic direct-type Mannich reactions of non-activated esters *via* a product-base mechanism

Yasuhiro Yamashita, Hirotsugu Suzuki and Shū Kobayashi*

A catalytic Mannich reaction of a simple ester with no activating functionality at the α-position *via* a product-base mechanism was reported.





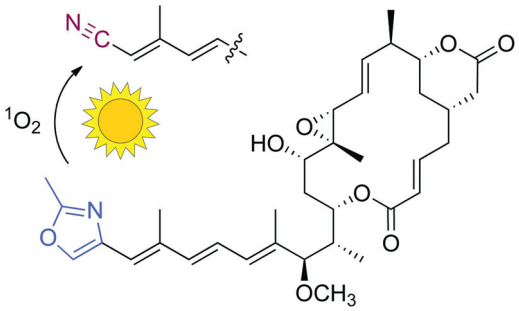

### The direct catalytic asymmetric aldol reaction of α-substituted nitroacetates with aqueous formaldehyde under base-free neutral phase-transfer conditions

Seiji Shirakawa, Kensuke Ota, Shogo J. Terao and Keiji Maruoka*

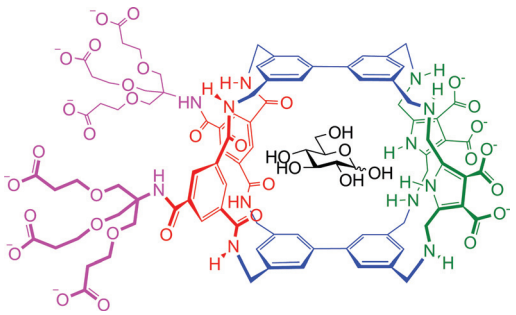
Enantioselective direct aldol reaction of α-substituted nitroacetates with aqueous formaldehyde has been achieved under base-free neutral phase-transfer conditions.



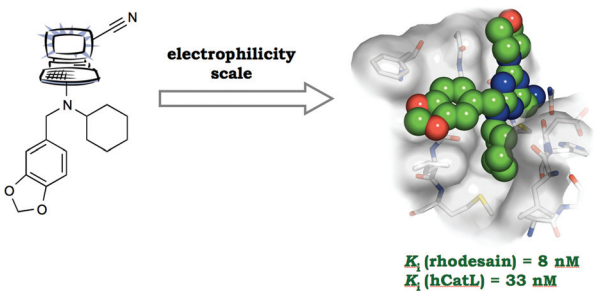
 



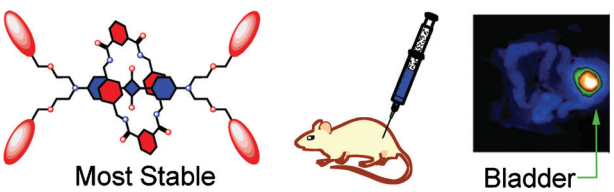


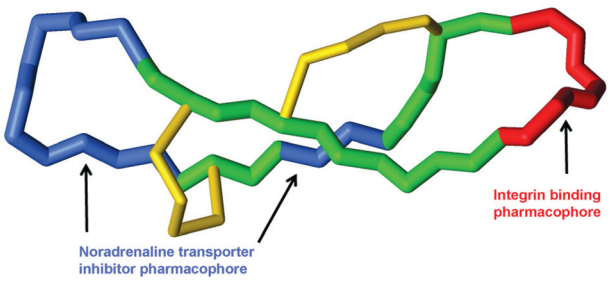




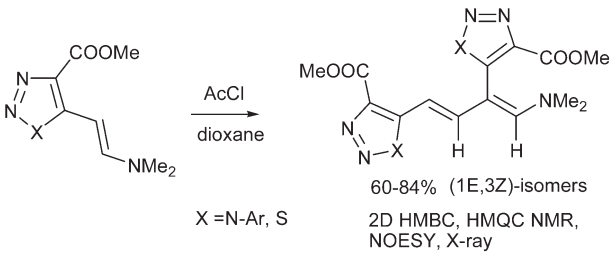


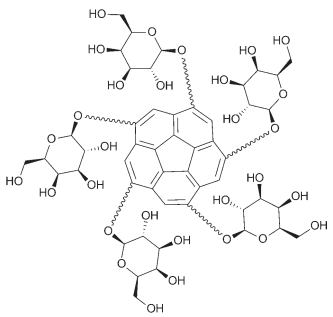
 



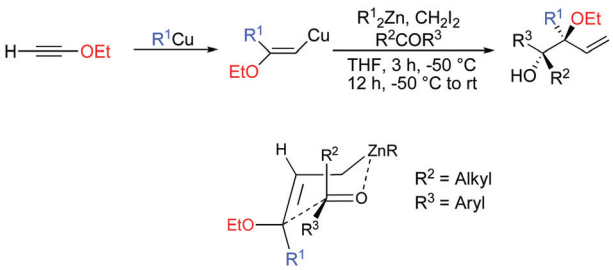


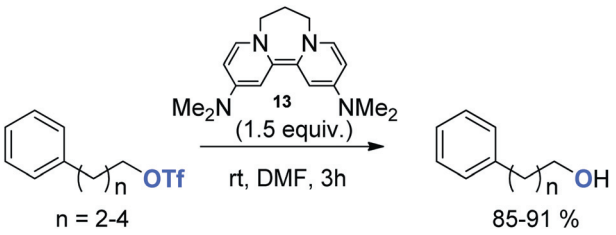






## 5807

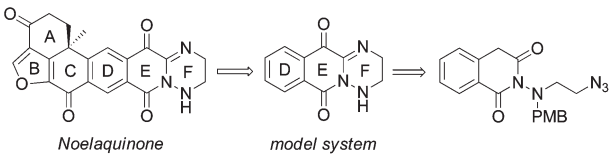



### Reactions of triflate esters and triflamides with an organic neutral super-electron-donor

Phillip I. Jolly, Nadia Fleary-Roberts, Steven O'Sullivan, Eswararao Doni, Shengze Zhou and John A. Murphy*

The bis-pyridinylidene **13** converts aliphatic and aryl triflate esters to the corresponding alcohols and phenols respectively, using DMF as solvent, generally in excellent yields.

## 5811

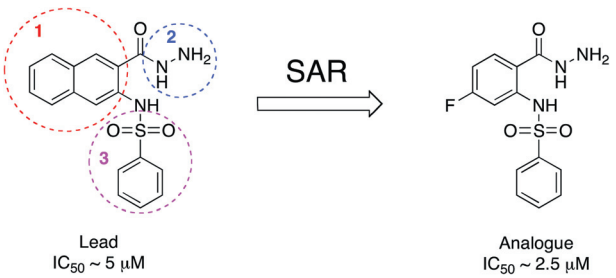



### Synthesis of 1,2,4-triazines and the triazinoisoquinolinedione DEF ring system of noelaquinone

Liming Cao, John P. Maciejewski, Stephan Elzner, David Amantini and Peter Wipf*

The intramolecular Staudinger-aza-Wittig reaction was used for the first preparation of the DEF ring system of noelaquinone.

## 5815

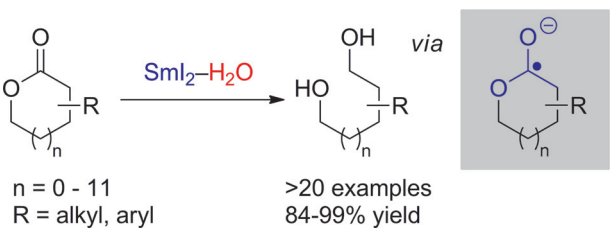



### Synthesis and structure–activity relationships of *o*-sulfonamido-arylhydrazides as inhibitors of LL-diaminopimelate aminotransferase (LL-DAP-AT)

Chenguang Fan and John C. Vederas*

The synthesis of a series of *o*-sulfonamido-arylhydrazides and their activity as inhibitors of LL-diaminopimelic acid aminotransferase are described.

## 5820




### A general electron transfer reduction of lactones using $SmI_2$–$H_2O$

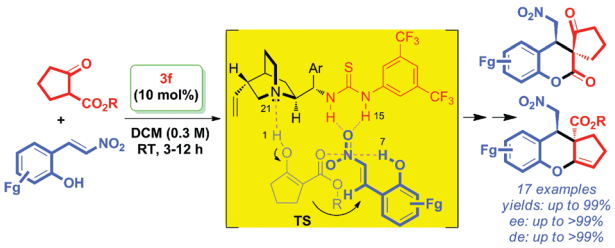
Michal Szostak, Karl D. Collins, Neal J. Fazakerley, Malcolm Spain and David J. Procter*

A selective method for the reduction of lactones of all ring sizes and topologies using $SmI_2$–$H_2O$ and a Lewis base is described.

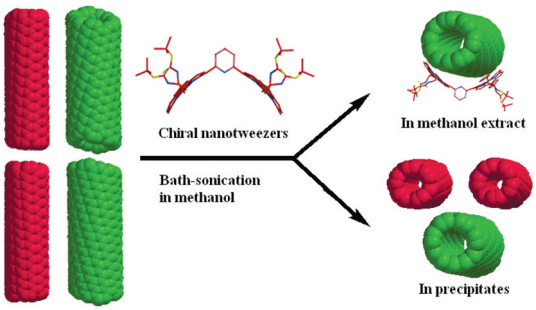
## COMMUNICATIONS



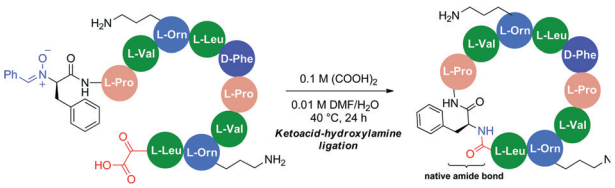



## PAPERS

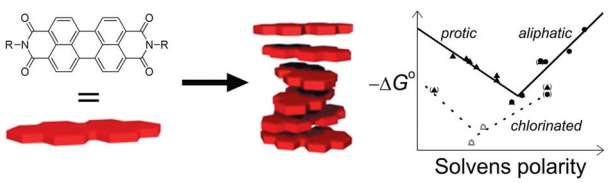








# High Impact Organic Chemistry

Covering all organic areas, including synthesis, supramolecular, natural products and organic materials

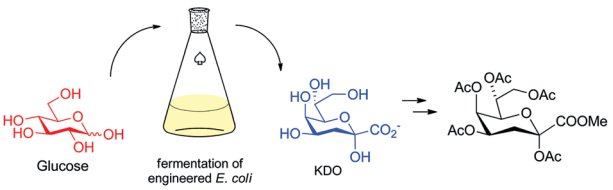

Scan the QR code, search and view the latest articles online

Organic Materials Physical Inorganic Nanoscience
Food Biological Environmental Analytical Energy
Catalysis Chemical Biology & Medicinal General Chemistry

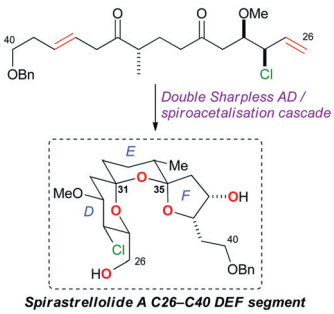
RSC Publishing

www.rsc.org/OrganicPort

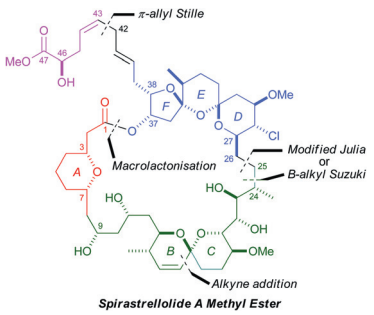
Registered Charity Number 207890



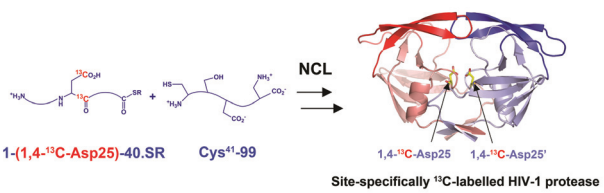


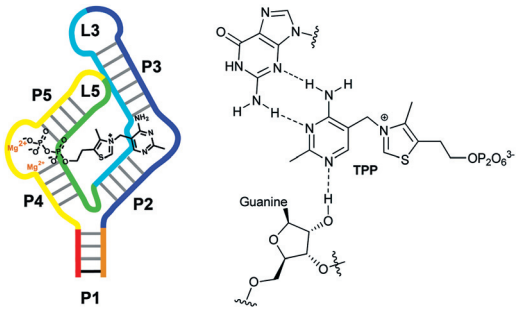


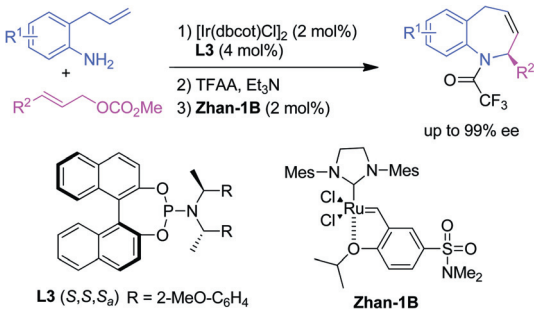


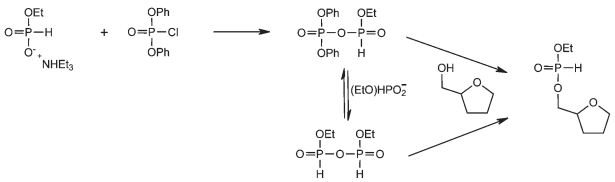
 



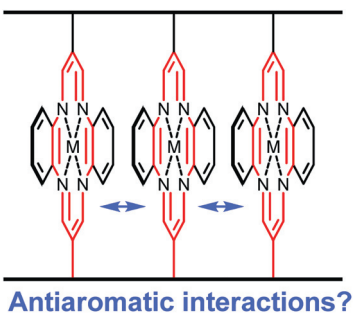


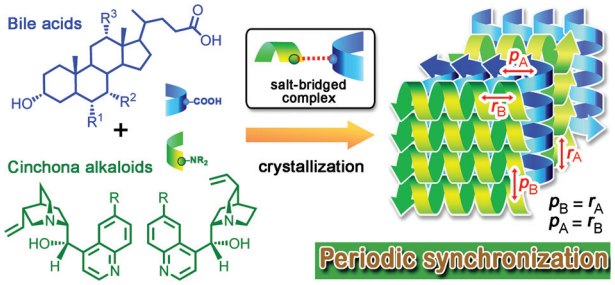


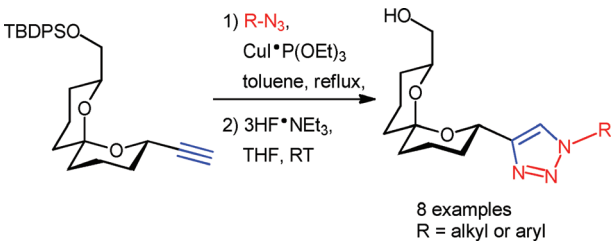


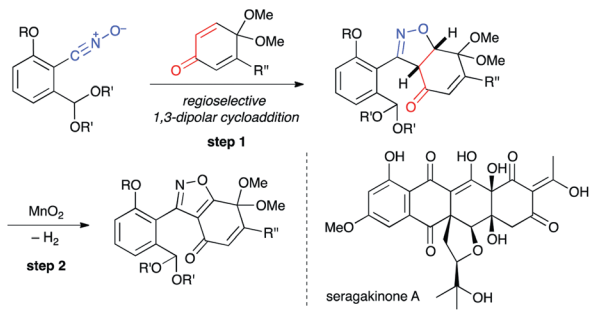
 



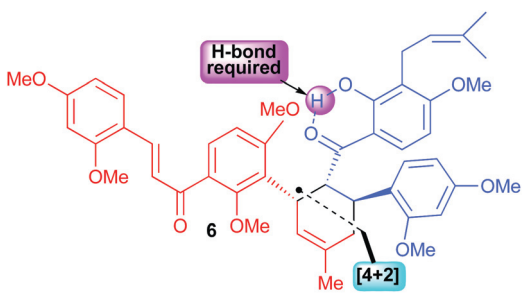


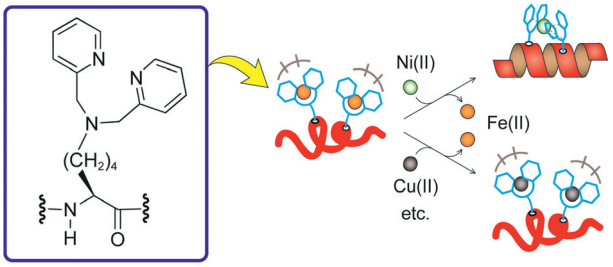


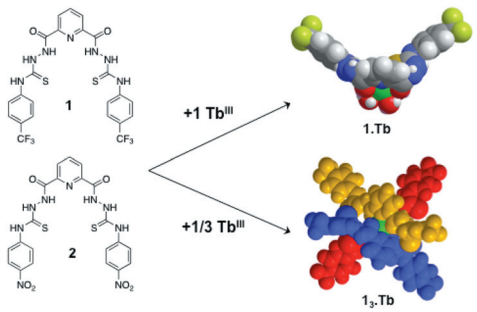


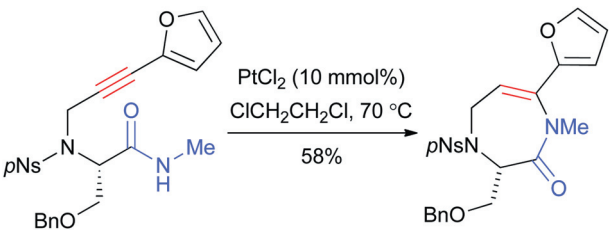
 



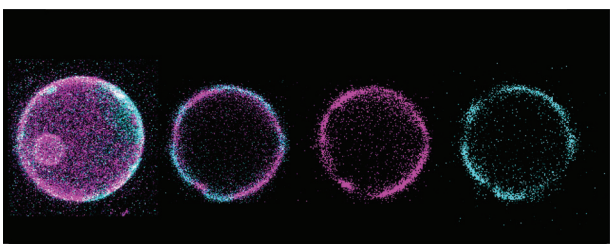


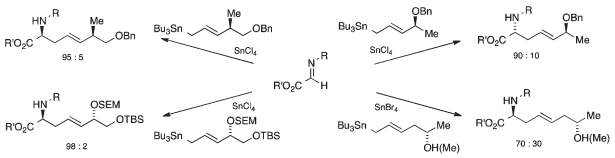


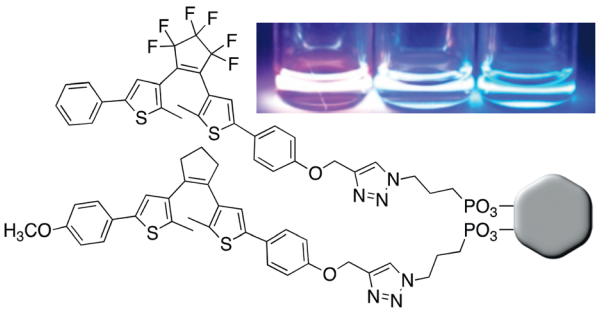


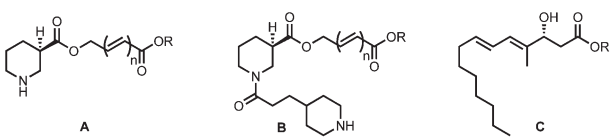
 



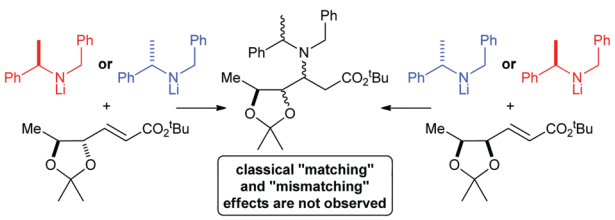




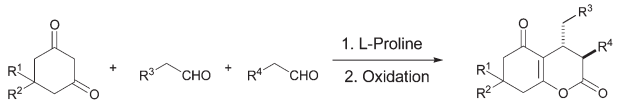








6201

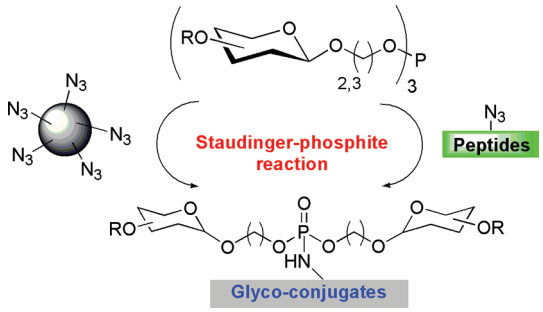



## Efficient proline and prolinol ether mediated 3-component synthesis of 3- and 3,4-substituted chromenone derivatives

Magnus Rueping,* Estíbaliz Merino and Michael Bolte

A highly efficient one-pot synthesis of valuable 3,4-substituted chromenone derivatives by the reaction of 1,3-diketones with aldehydes in the presence of L-proline was developed. Chiral 3-substituted chromenones are obtained with high enantioselectivities when a chiral diarylprolinol TMS-ether is applied in the reaction.

6211

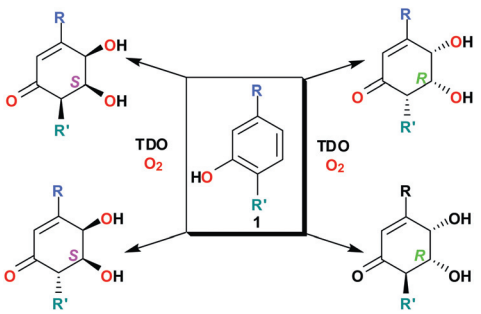



## Chemoselective Staudinger-phosphite reaction of symmetrical glycosyl-phosphites with azido-peptides and polygycerols

Verena Böhrsch, Thresen Mathew, Maximilian Zieringer, M. Robert J. Vallée, Lukas M. Artner, Jens Dernedde, Rainer Haag and Christian P. R. Hackenberger*

In this paper we present the synthesis of glyco-phosphoramidate conjugates as easily accessible analogs of glyco-phosphorous esters *via* the Staudinger-phosphite reaction.

6217




## Structure, stereochemistry and synthesis of enantiopure cyclohexenone *cis*-diol bacterial metabolites derived from phenols

Derek R. Boyd,* Narain D. Sharma, John F. Malone, Peter B. A. McIntyre, Paul J. Stevenson, Christopher C. R. Allen, Marcin Kwit and Jacek Gawronski*

Biotransformation of 3- and 2,5-substituted phenols yielded enantiopure cyclohexenone *cis*-diols; ECD spectroscopy, X-ray crystallography and stereochemical correlation was used to establish absolute configurations.