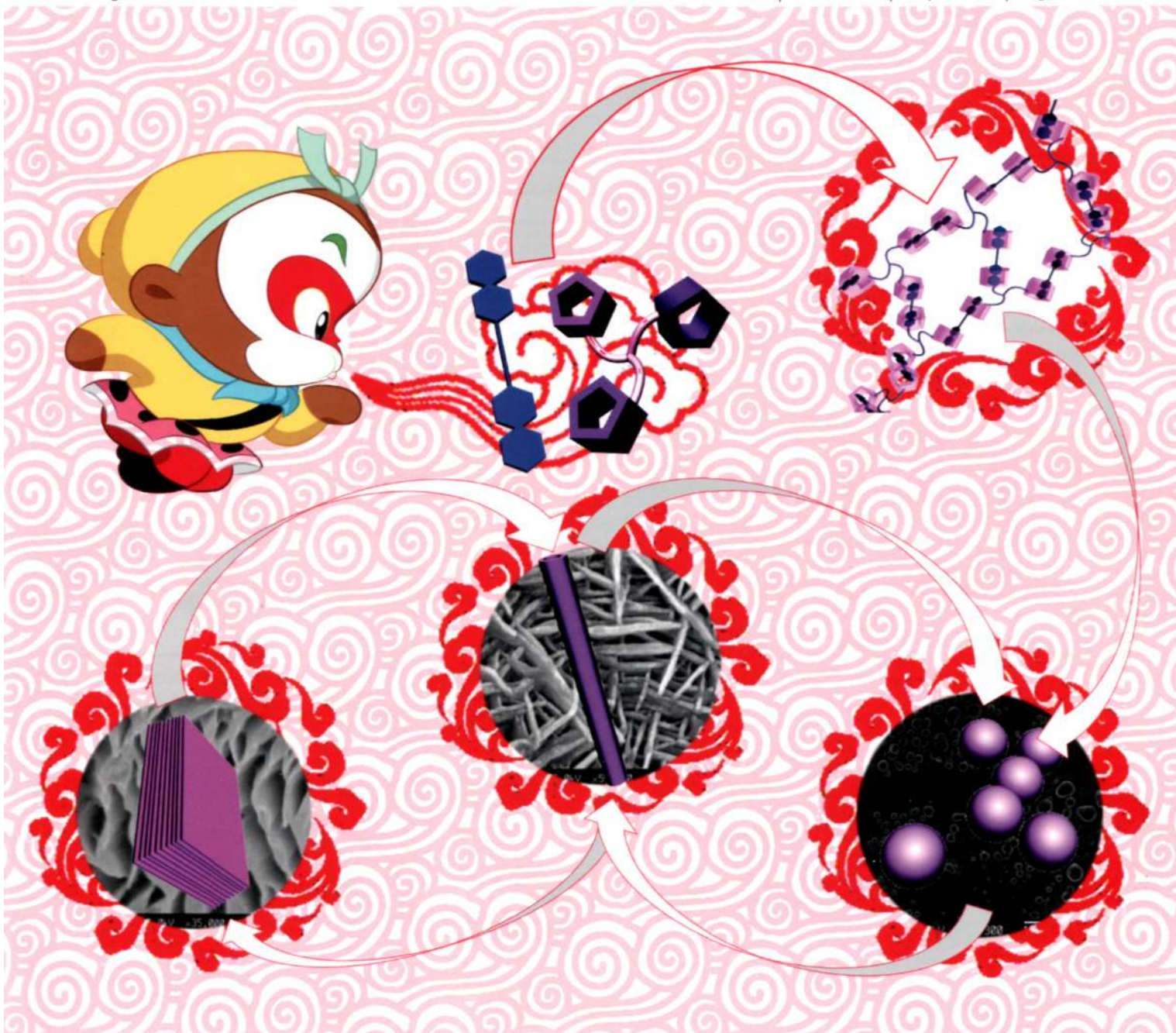


# Organic & Biomolecular Chemistry

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**COMMUNICATION**

Yanli Zhao *et al.*

Host-guest complexation driven dynamic supramolecular self-assembly



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# Organic & Biomolecular Chemistry

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## IN THIS ISSUE

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### Cover



### Cover

See Yanli Zhao *et al.*, pp. 2070–2074.

The dynamic supramolecular self-assembly formed by the complex between pillararene trimer and biviologen present in the manuscript, inspired by Monkey King's transformations, exhibits variable multidimensional morphologies upon concentration changes.

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### Inside cover



### Inside cover

See Debabrata Maity and T. Govindaraju *et al.*, pp. 2098–2104.

Image reproduced by permission of T. Govindaraju from *Org. Biomol. Chem.*, 2013, **11**, 2098.

## EDITORIAL

2058

### Nucleic acids: new life, new materials

Michael J. Gait, Makoto Komiyama, Nadrian C. Seeman, Oliver Seitz, Jason Micklefield and David R. Liu

Guest editors introduce this web collection highlighting recent achievements in nucleic acids research and applications in emerging areas. Featuring articles published in *ChemComm*, *OBC* and *RSC Advances*, the collection is dedicated to the memory of Professor Har Gobind Khorana (1922–2011) and Dr Daniel McGillivray Brown (1923–2012), acknowledging their legacy to the nucleic acids community.



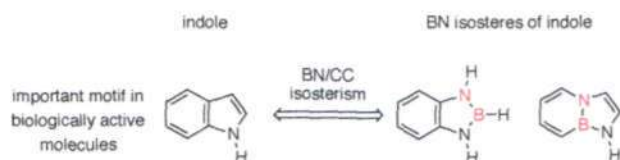
## PERSPECTIVE

2060

### BN isosteres of indole

Eric R. Abbey and Shih-Yuan Liu\*

BN/CC isosterism is an emerging strategy for expanding the structural diversity of indole-based compounds. This perspective presents an overview of the synthesis, functionalization, and properties of two BN indole isosteres.

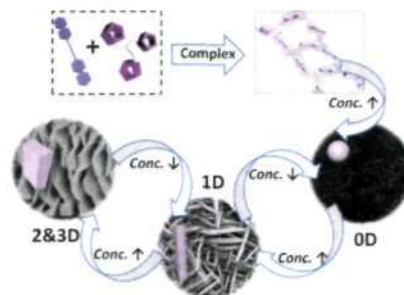


2070

### Host–guest complexation driven dynamic supramolecular self-assembly

Huacheng Zhang, Kim Truc Nguyen, Xing Ma, Hong Yan, Junfei Guo, Liangliang Zhu and Yanli Zhao\*

Host–guest complexation between pillararene trimer and biviologen was employed to fabricate dynamic supramolecular self-assemblies, exhibiting reversible multidimensional transformations upon concentration changes.

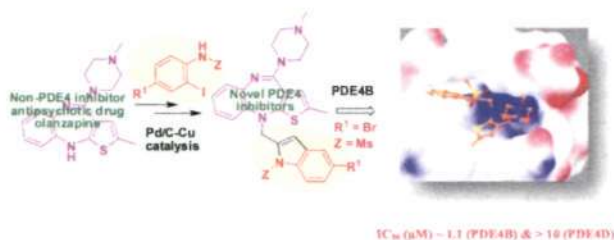


2075

### Novel *N*-indolylmethyl substituted olanzapine derivatives: their design, synthesis and evaluation as PDE4B inhibitors

Dhilli Rao Gorja, Soumita Mukherjee, Chandana Lakshmi T. Meda, Girdhar Singh Deora, K. Lalith Kumar, Ankit Jain, Girish H. Chaudhari, Keerthana S. Chennubhotla, Rakesh K. Banote, Pushkar Kulkarni, Kishore V. L. Parsa,\* K. Mukkanti and Manojit Pal\*

A new strategy for converting antipsychotic drug olanzapine into PDE4 inhibitors is described.

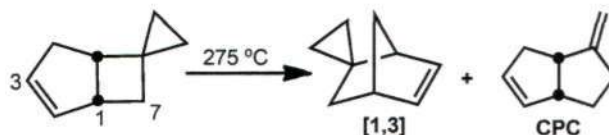


2080

### A vinylcyclobutane substrate designed as a cyclopropylcarbiny radical probe

Phyllis A. Leber,\* Ryan M. Bell, Carlton W. Christie and Joseph A. Mohrbacher III

The vinylcyclobutane bicyclo[3.2.0]hept-2-ene with a spirocyclopropane appended to C6 undergoes [1,3] migration as the dominant thermal process, but also affords a minor amount of a CPC rearrangement product.

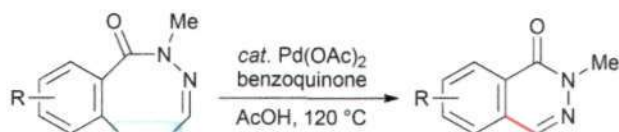


2084

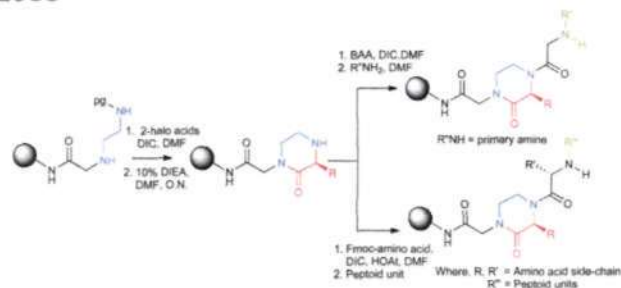
### Synthesis of phthalazinones via palladium(II)-catalysed intramolecular oxidative C–H/C–H cross-coupling of *N*'-methylenebenzohydrazides

Takanori Matsuda,\* Yuki Tomaru and Yoshiya Matsuda

Phthalazin-1(2*H*)-ones have been prepared through the palladium(II)-catalysed intramolecular oxidative C–H/C–H cross-coupling of *N*'-methylenebenzohydrazides.



2088

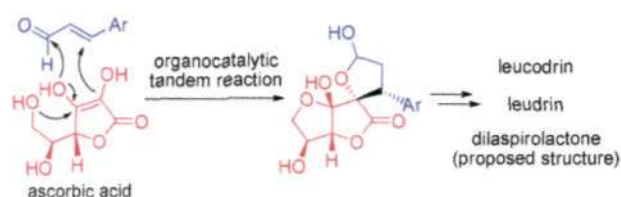


### Synthesis of libraries of peptidomimetic compounds containing a 2-oxopiperazine unit in the main chain

Sujit Suwal and Thomas Kodadek\*

Efficient solid-phase chemistry for the synthesis of combinatorial libraries of oligomers containing 2-oxopiperazine units in the main chain is reported.

2093



### Organocatalytic 1,4-conjugate addition of ascorbic acid to $\alpha,\beta$ -unsaturated aldehydes: bio-inspired total syntheses of leucodrin, leudrin and proposed structure of dilaspirolactone

Zhaofeng Wang, Kun Zhao, Junkai Fu, Junlin Zhang, Weiyu Yin and Yefeng Tang\*

The organocatalytic conjugate addition of ascorbic acid to  $\alpha,\beta$ -unsaturated aldehyde is developed, which paves the way to the total synthesis of several ascorbylated natural products.

PAPERS

2098

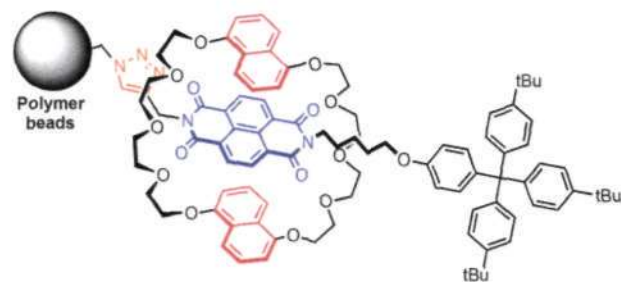


### A turn-on NIR fluorescence and colourimetric cyanine probe for monitoring the thiol content in serum and the glutathione reductase assisted glutathione redox process

Debabrata Maity and T. Govindaraju\*

We report a novel reaction-based thiol selective turn-on near-infrared (NIR) fluorescence and colourimetric dinitrobenzenesulfonyl-cyanine (DNBSCy) probe.

2105



### 'Click' functionalised polymer resins: a new approach to the synthesis of surface attached bipyridinium and naphthalene diimide [2]rotaxanes

Hannah Wilson, Sean Byrne, Nick Bampos and Kathleen M. Mullen\*

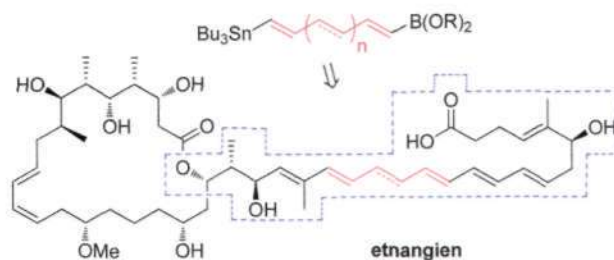
This paper describes the use of  $^1\text{H}$  High Resolution Magic Angle Spinning NMR to monitor the synthesis of a series of surface attached [2]rotaxanes.

2116

### Modular synthesis of polyene side chain analogues of the potent macrolide antibiotic etnangien by a flexible coupling strategy based on hetero-bis-metallated alkenes

Mario Altendorfer, Aruna Raja, Florenz Sasse, Herbert Irschik and Dirk Menche\*

Diverse hetero-bis-metallated alkenes enable a concise and modular access to polyene side chain analogues of the potent macrolide antibiotic etnangien.

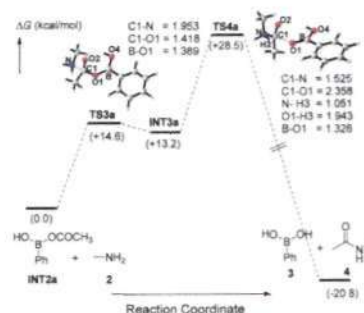


2140

### Mechanism of arylboronic acid-catalyzed amidation reaction between carboxylic acids and amines

Chen Wang, Hai-Zhu Yu, Yao Fu\* and Qing-Xiang Guo

Cleavage of the C–O bond of the tetracoordinate acyl boronate intermediate is found to be the rate-limiting step for the arylboronic acid-catalyzed amidation reaction between carboxylic acids and amines.

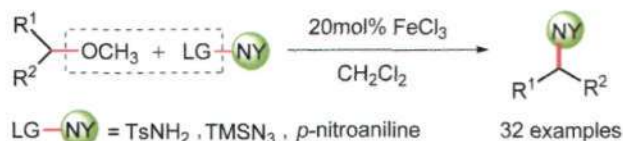


2147

### Iron-catalyzed *N*-alkylation using $\pi$ -activated ethers as electrophiles

Xiaohui Fan,\* Lin-An Fu, Na Li, Hao Lv, Xiao-Meng Cui and Yuan Qi

A practical and efficient method for the synthesis of diverse *N*-alkylation compounds was developed via an iron-catalyzed etheric  $C_{sp^3}$ -O cleavage strategy.

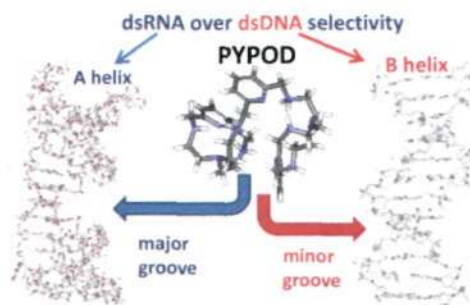


2154

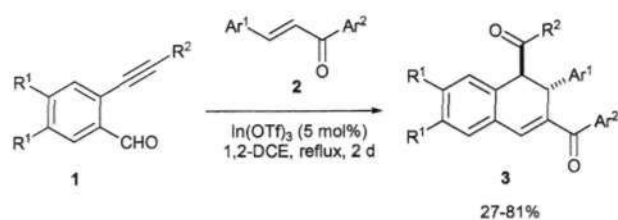
### The size of the aryl linker between two polyaza-cyclophane moieties controls the binding selectivity to ds-RNA vs. ds-DNA

Jorge González-García, Lidija Uzelac, Marijeta Kralj, José M. Llinares, Enrique García-España\* and Ivo Piantanida\*

Pyridine bis-polyaza scorpiand (PYPOD) revealed better RNA over DNA selectivity compared to phenanthroline analogue. Compound-dimers within DNA/RNA grooves give groove specific CD signals.



2162



### Indium triflate-catalysed Diels–Alder reactions of isochromenylium cations with enones

Thangavel Selvi and Kannupal Srinivasan\*

Isochromenylium cations formed from o-alkynylbenzaldehydes act as ambident oxa-dienes and undergo rare Diels–Alder reactions with electron-deficient aryl enones in the presence of indium triflate to give 1,2-dihydronaphthalenes.

2168



### A three-component reaction of *C,N*-cyclic *N'*-acyl azomethine imines, isocyanides, and azide compounds: effective synthesis of 1,5-disubstituted tetrazoles with tetrahydroisoquinoline skeletons

Takahiro Soeta,\* Kaname Tamura, Shuhei Fujinami and Yutaka Ukaji\*

A multicomponent reaction of isocyanides and *C,N*-cyclic *N'*-acyl azomethine imines in the presence of  $\text{TMSCl}$  and  $\text{NaN}_3$  leads to tetrazole derivatives.

2175



cond. A =  $\text{LiX}$ ,  $\text{HOAc}$  or  $\text{EtCO}_2\text{H}$ , rt; cond. B =  $\text{Pd}(\text{OAc})_2$ ,  $\text{R}^3\text{B}(\text{OH})_2$ ,  $\text{Cs}_2\text{CO}_3$ , THF, 40 °C; cond. C =  $\text{Ni}(\text{PPh}_3)_2\text{Cl}_2$ ,  $\text{R}^4\text{MgX}$ , THF, rt–50 °C.

### An operationally simple approach to (*E*)- $\alpha$ -halo vinyl sulfides and their applications for accessing stereodefined trisubstituted alkenes

Zhaozhen Yang, Xiaoyi Chen, Wei Kong, Siyuan Xia, Renwei Zheng, Fang Luo and Gangguo Zhu\*

Described herein is an operationally simple approach to (*E*)- $\alpha$ -halo vinyl sulfides by a regio- and stereoselective hydrohalogenation of alkynyl thioethers, which enables a new entry to stereodefined trisubstituted alkenes featuring the stepwise cross-coupling reactions.

2186



### Pyrene-cored blue-light emitting [4]helicenes: synthesis, crystal structures, and photophysical properties

Jian-Yong Hu,\* Arjun Paudel, Nobuyuki Seto, Xing Feng, Masanao Era, Taisuke Matsumoto, Junji Tanaka, Mark R. J. Elsegood, Carl Redshaw and Takehiko Yamato\*

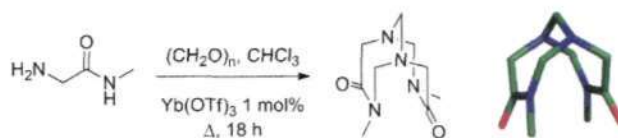
Two types of pyrene-cored blue-light emitting [4]helicenes are reported, in which two naphthalene rings of condensed pyrenes were constructed resulting in helical architectures.

2198

**Readily accessible chiral at nitrogen cage structures**

Julian H. Rowley, Sze Chak Yau, Benson M. Kariuki, Alan R. Kennedy and Nicholas C. O. Tomkinson\*

A series of conformationally rigid chiral at nitrogen cage structures are readily prepared.



2206

**Protein destabilisation by ruthenium(II) tris-bipyridine based protein-surface mimetics**

Andrew J. Wilson,\* James R. Ault, Maria H. Filby, Hazel I. A. Philips, Alison E. Ashcroft and Nicholas C. Fletcher

A ruthenium(II) tris-chelate perturbs the folding landscape of its target protein leading to lowered melting temperatures and accelerated proteolysis.

