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Tetrahedron

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## Contents

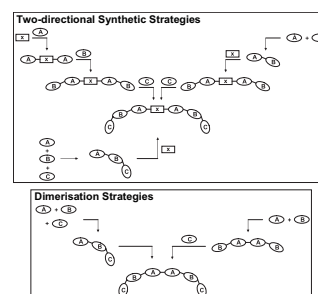
## REPORT

**Strategies for the synthesis of  $C_2$  symmetric natural products—a review**

pp 1487–1536

Marianna Vrettou, Andrew A. Gray, Alice R. E. Brewer and Anthony G. M. Barrett\*

Strategies employed in the synthesis of  $C_2$ -symmetric natural products are reviewed, focusing on the distinct strategies of two-directional synthesis and dimerization. The syntheses of 40 such natural products are discussed, with reference to over 270 relevant publications.

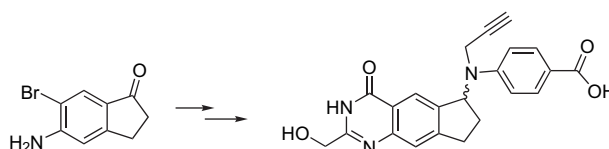


## ARTICLES

**Cyclopenta[g]quinazolinone-based inhibitors of thymidylate synthase targeting  $\alpha$ -folate receptor overexpressing tumours: synthetic approaches to 4-{*N*-[(6*RS*)-2-hydroxymethyl-4-oxo-3,4,7,8-tetrahydro-6*H*-cyclopenta[g]quinazolin-6-yl]-*N*-(prop-2-ynyl)amino}benzoic acid**

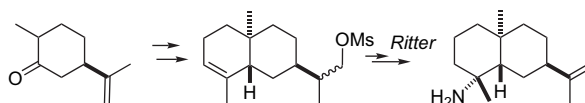
pp 1537–1543

Vassilios Bavetsias,\* Elisa A. Henderson and Edward McDonald

**Stereoselective synthesis of (–)-4-epiaxinyssamine**

pp 1544–1552

Leonardo Castellanos, Carmenza Duque, Jaime Rodríguez and Carlos Jiménez\*

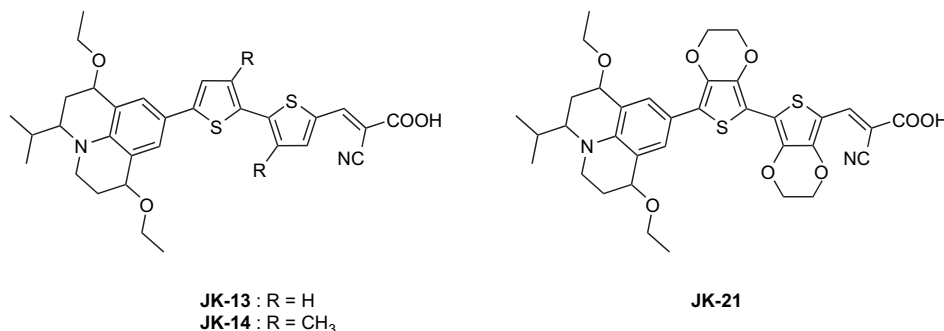


The first total synthesis of the unnatural (–)-4-epiaxinyssamine has been achieved using the Ritter reaction on a key olefinic intermediate. The influence of the steric effects on the stereochemistry of the product of the Ritter reaction is discussed.

**Synthesis of new julolidine dyes having bithiophene derivatives for solar cell**

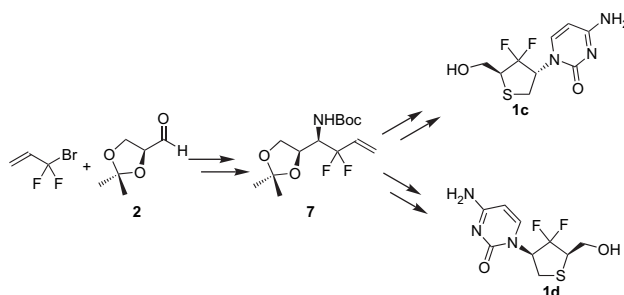
pp 1553–1559

Hyunbong Choi, Jae Kwan Lee, Kyu Ho Song, Kihyung Song, Sang Ook Kang\* and Jaejung Ko\*

**Synthesis of a series of novel 2',3'-dideoxy-6',6'-difluoro-3'-thionucleosides**

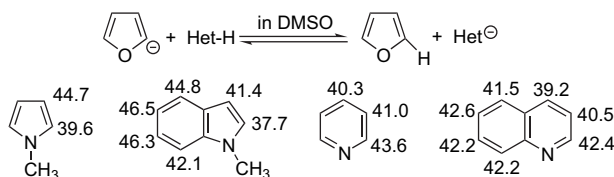
pp 1560–1567

Xuyi Yue, Yun-Yun Wu and Feng-Ling Qing\*

**What are the pK<sub>a</sub> values of C–H bonds in aromatic heterocyclic compounds in DMSO?**

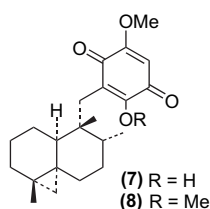
pp 1568–1576

Kuang Shen, Yao Fu,\* Jia-Ning Li, Lei Liu and Qing-Xiang Guo\*

**Dactylosporgiaquinone, a new meroterpenoid from the Australian marine sponge *Dactylosporgia* n. sp.**

pp 1577–1582

Aroon Jankam, Michael J. Somerville, John N. A. Hooper, Douglas J. Brecknell, Apichart Suksamrarn and Mary J. Garson\*

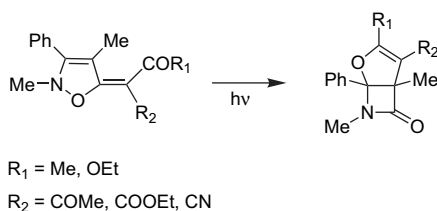


The structure and stereochemistry of sesquiterpene quinones including dactylosporgiaquinone (7) have been deduced by 2D NMR spectroscopic analysis and molecular modelling.

**Photoreaction of some 5-alkylidene-2,5-dihydroisoxazoles: facile construction of novel unclassical  $\beta$ -lactam containing heterocycles**

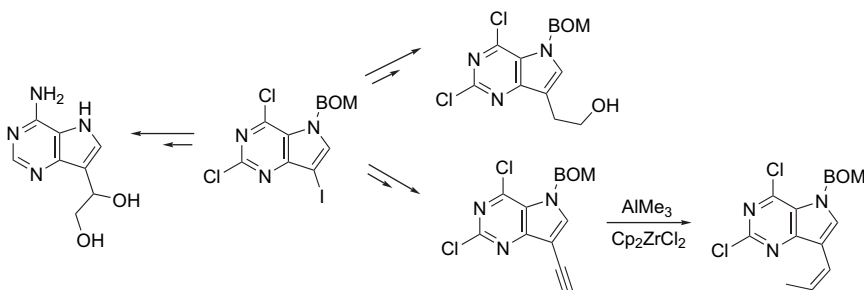
pp 1583–1588

Donato Donati, Stefania Fusi,\* Fabio Ponticelli, Riccardo Rossi Paccani and Mauro F. A. Adamo

**C-Functionalization of 9-deazapurines by cross-coupling reactions**

pp 1589–1601

Vítězslav Bambuch, Miroslav Otmar,\* Radek Pohl, Milena Masojídková and Antonín Holý

**Synthesis and properties of *N*-carbazole end-capped conjugated molecules**

pp 1602–1609

Vinich Promarak\* and Somsak Ruchirawat

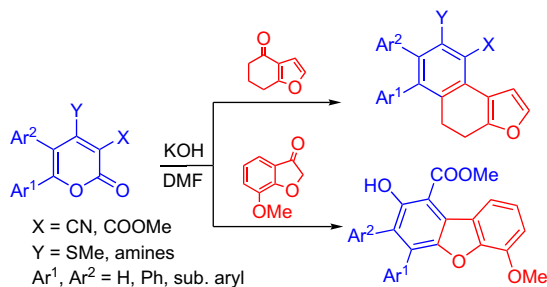


A series of *N*-carbazole end-capped  $\pi$ -conjugated bithiophenyl derivatives were synthesized and their optical, thermal, and electrochemical properties were investigated.

**One-pot regioselective synthesis of dihydronaphthofurans and dibenzofurans**

pp 1610–1616

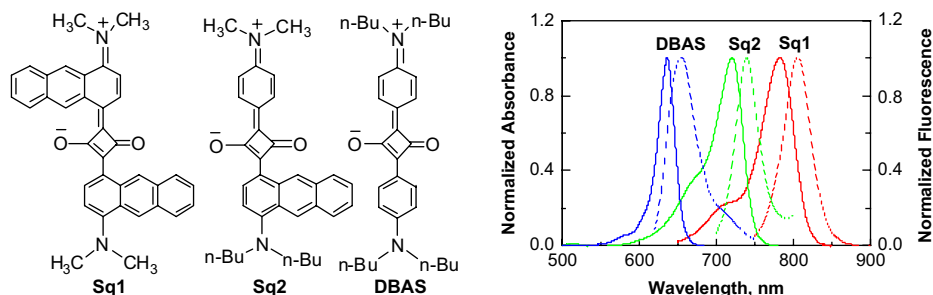
Manish Dixit, Resmi Raghunandan, Brijesh Kumar, P. R. Maulik and Atul Goel\*



### Design and synthesis of squaraine based near infrared fluorescent probes

pp 1617–1623

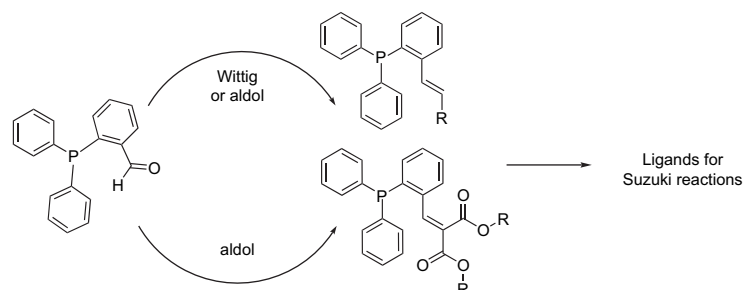
M. C. Basheer, U. Santhosh, S. Alex, K. George Thomas, Cherumuttathu H. Suresh and Suresh Das\*



### P-alkene bidentate ligands: an unusual ligand effect in Pd-catalysed Suzuki reactions

pp 1624–1629

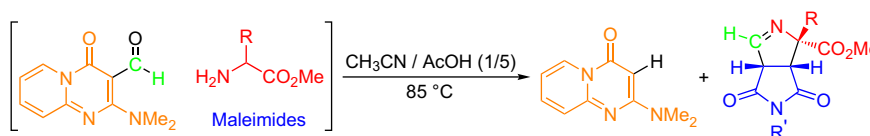
D. Bradley G. Williams\* and Megan L. Shaw



### Generation of functionalized azomethine ylides and their application to stereoselective heterocycle synthesis: an equivalent process of C-unsubstituted nitrile ylide cycloaddition reaction

pp 1630–1643

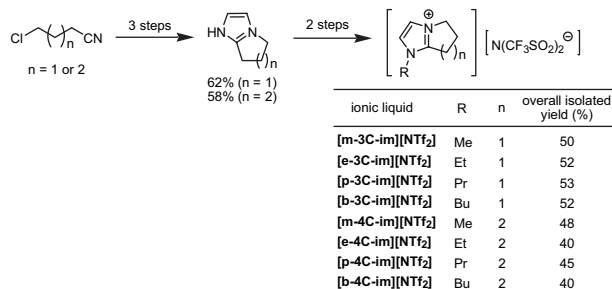
Keisuke Kawashima, Akikazu Kakehi and Michihiko Noguchi\*



### Bicyclic imidazolium-based ionic liquids: synthesis and characterization

pp 1644–1653

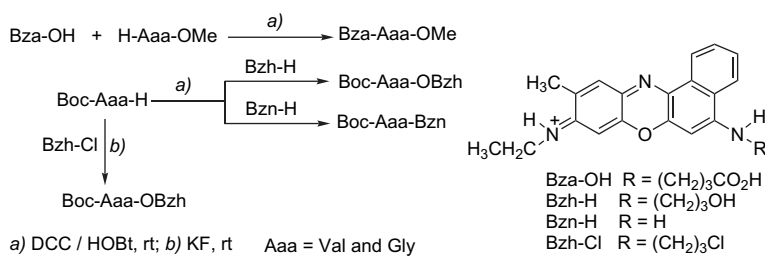
Huang-Chuan Kan, Ming-Chung Tseng and Yen-Ho Chu\*



**Functionalised benzo[*a*]phenoxazine dyes as long-wavelength fluorescent probes for amino acids**

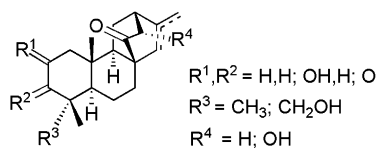
pp 1654–1663

Vânia H. J. Frade, Paulo J. G. Coutinho, João C. V. P. Moura and M. Sameiro T. Gonçalves\*

**Diastereoselective synthesis of antiqorin and related polyoxygenated atisene-type diterpenes**

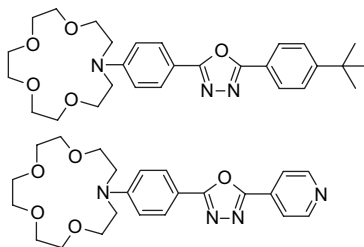
pp 1664–1679

Antonio Abad,\* Consuelo Agulló, Ana C. Cuñat, Ignacio de Alfonso Marzal, Antonio Gris, Ismael Navarro and Carmen Ramírez de Arellano

The synthesis of several natural and non-natural polyoxygenated atisane diterpenoids from (*S*)-carvone is described.**New ICT probes: synthesis and photophysical studies of *N*-phenylaza-15-crown-5 aryl/heteroaryl oxadiazoles under acidic condition and in the presence of selected metal ions**

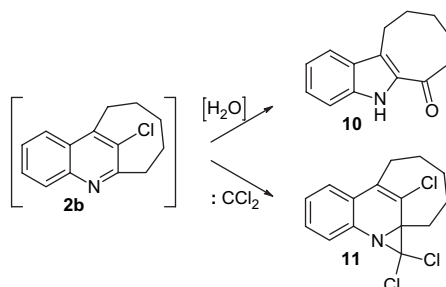
pp 1680–1688

Sabir H. Mashraqui,\* Subramanian Sundaram and A. C. Bhasikuttan

The ICT probes function as potentially sensitive Ca<sup>2+</sup> chemosensors in the presence of interfering cations. Optical spectral perturbations and stability constants reveal the binding interaction in the order Ca<sup>2+</sup> > Ba<sup>2+</sup> >> Li<sup>+</sup> > Na<sup>+</sup> > K<sup>+</sup> > Mg<sup>2+</sup>.**Trapping of the highly strained [5](2,4)quinolinophane system**

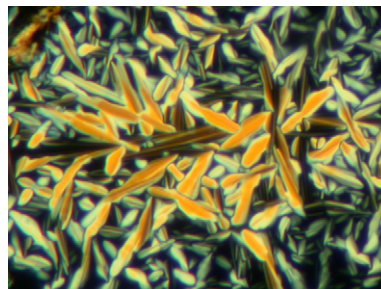
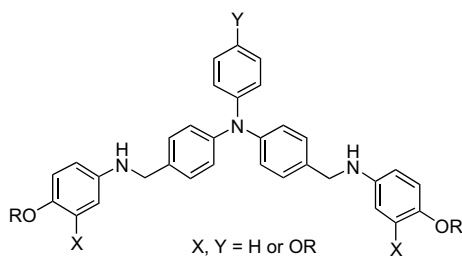
pp 1689–1694

Maurice J. van Eis,\* Martin Lutz, Anthony L. Spek, Willem H. de Wolf and Friedrich Bickelhaupt



**New star-shaped triarylaminines: synthesis, mesomorphic behavior, and photophysical properties**  
 Yueh-Ju Wang, Hwo-Shuenn Sheu and Chung K. Lai\*

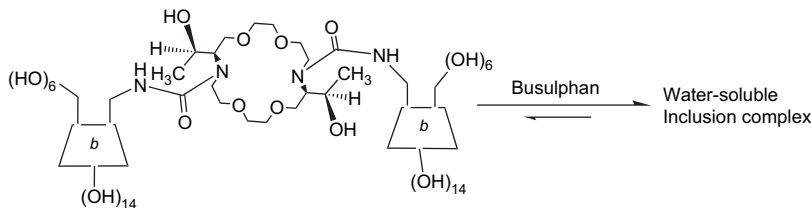
pp 1695–1705



**Synthesis and inclusion ability of a bis- $\beta$ -cyclodextrin pseudo-cryptand towards Busulfan anticancer agent**

pp 1706–1714

Stéphane Menuel, Jean-Pierre Joly, Blandine Courcot, Josias Elysée, Nour-Eddine Ghermani and Alain Marsura\*



\*Corresponding author

Supplementary data available via ScienceDirect

**COVER**

The water-solubilisation of the highly lipophilic anticancer agent Busulfan was achieved by inclusion into a tailor-made receptor. This  $C_2$ -symmetric pseudo-cryptand was synthesized from L-threonine using the efficient phosphine imide strategy developed in our laboratory. *Tetrahedron* **2007**, *63*, 1706–1714.

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