

AUSTRALIAN JOURNAL OF CHEMISTRY

AN INTERNATIONAL JOURNAL FOR CHEMICAL SCIENCE

Volume 68 Number 1 2015

CONTENTS

Editorial

New Year Editorial 2015

C. Wentrup 1

RESEARCH FRONT: Fluorine Chemistry

Guest Editor: Luke Hunter

Foreword

Fluorine Chemistry

L. Hunter 3

Highlights

Bioisosteric Fluorine in the Clandestine Design of Synthetic Cannabinoids

S. M. Wilkinson, S. D. Banister, M. Kassiou 4

Biosynthetic Incorporation of Fluorinated Amino Acids into Peptides and Proteins

S. A. Fraser, C. J. Easton 9

Reviews

Fluoropolymers: Origin, Production, and Industrial and Commercial Applications

J. Gardiner 13

Probing the Mode of Neurotransmitter Binding to GABA Receptors Using Selectively Fluorinated GABA Analogues

N. Absalom, I. Yamamoto, D. O'Hagan, L. Hunter, M. Chebib 23

Full Papers

Effect of Modifying the Anion of an Ionic Liquid on the Outcome of an S_N2 Process

S. T. Keaveney, D. V. Francis, W. Cao, R. S. Haines, J. B. Harper 31

Trifluoromethylphenylcarbenes. Carbene–Carbene Interconversion on the Singlet Energy Surface and Rearrangement to Trifluorobenzocyclobutene, Trifluorostyrene, and Trifluoromethylfulvenallenes

R. J. Blanch, C. Wentrup 36

Investigation of *cis*- and *trans*-4-Fluoroproline as Enantioselective Catalysts in a Variety of Organic Transformations

D. Q. J. Yap, R. Cheerlavancha, R. Lowe, S. Wang, L. Hunter 44

Cooperative Conformational Regulation in *N*-Heterocyclic Fluorohydrins

A. R. Patel, F. Liu 50

Fluorous 1,2,3-Triazol-4-ylmethyl Amines and Amine Derivatives for Novel Surfactant Applications

D. V. Francis, J. B. Harper, R. W. Read 57

Communications

[^{18}F]Fluorination Optimisation and the Fully Automated Production of [^{18}F]MEL050 Using a Microfluidic System

L. Matesic, A. Kallinen, N. A. Wyatt, T. Q. Pham, I. Greguric, G. Pascali 69

Fluorovinyl Thioethers as Putative Steric and Electronic Thioester Enolate Mimetics: Chemoselective HF Addition to Acetylene Thioethers

D. Bello, R. A. Cormanich, D. O'Hagan 72

REGULAR PAPERS

Full Papers

Synthesis, Structures, and Properties of Four Novel Hg^{II} Complexes Based on Pyridine Acylamide Ligands

X.-M. Zhang, X.-F. Feng, J.-Q. Li, F. Luo 80

Evaluation of Antiradical Activity and Reducing Capacity of Synthesised Bispyridinium Dibromides Obtained by Quaternisation of 4-Pyridyl-1,4-dihydropyridines with Propargyl Bromide

M. Rucins, M. Gosteva, S. Belyakov, A. Sobolev, K. Pajuste, M. Plotniece, B. Cekavicus, D. Tirzite, A. Plotniece 86

Synthesis, Photo-physical and Electrochemical Properties of Dendrimers with (*S*)-BINOL Core and Benzothiazole Surface Unit

V. Kalpana, K. Rajavelu, P. Rajakumar 93

Characterization and Acidic Properties of AlMCM-41 Prepared by Conventional and Post-Synthesis Alumination

M. J. F. Costa, T. Chellappa, A. S. Araujo, V. M. Fonseca, V. J. Fernandes Jr, R. M. Nascimento, J. G. A. Pacheco 99

Dawson-type Polyoxometalate Covalently Linked to Naphthalene: Synthesis, Characterisation and Material Properties

J. Ni, Z. Zhou, L. Liu, S.-Z. Liu, F.-B. Li, G.-H. Li, Z.-L. Du 106

Three Zn^{II} Coordination Polymers Based on 1,2-Naphthalenedicarboxylate and Different 4,4'-Bipyridyl-like Bridging Co-ligands: Structural Regulation and Properties

M. Chen, Z.-W. Wang, H. Zhao, C.-S. Liu 113

Metal Ion-Driven Assembly of Two New Coordination Polymers Constructed by Asymmetric Tricarboxylate and Imidazole-Containing Ligands: Syntheses, Crystal Structures, and Luminescent Properties

W. Liu, X. Wang, M. Wu, B. Wang 121

Functionalisation of Imidazolin-2-imine to Corresponding Phosphinamine, Chalcogenide (O, S, Se, Te), and Borane Compounds

K. Naktode, S. Das Gupta, A. Kundu, S. K. Jana, H. Pada Nayek, B. S. Mallik, T. K. Panda 127

Microwave-Assisted Synthesis of Ruthenium(II) Complexes with Trimethylsilylacetylene as Inhibitors against the Migration of Breast Cancer Cells

Z. Zhang, Y.-J. Wang, Q. Wu, X.-H. Wu, F.-Q. Sun, B.-G. Wang, W.-J. Mei, S.-D. Chen **137**

Trichloroisocyanuric Acid/Triphenylphosphine-Mediated Synthesis of Benzimidazoles, Benzoxazoles, and Benzothiazoles

S. Rezazadeh, B. Akhlaghinia, N. Razavi **145**

A Highly Selective and Sensitive Chemosensor for Colorimetric and Fluorescent Detection of Al^{3+} and Living Cell Imaging

X.-B. Li, J.-Y. Chen, E.-J. Wang **156**

Communications

A Novel (3,4,9)-Connected 3D Metal–Organic Framework Based on the Non-Planar Tricarboxyl Tecton and Zn_5O_4 -Cluster SBU

Z.-W. Wang, H. Zhao, M. Chen, M. Hu **161**

Pd-Catalyzed Dehydrogenative Cross-Coupling of 1,4-Quinones with N,N' -Dialkyluracils

E. Kianmehr, M. R. Khalkhali, M. Rezaeefard, K. M. Khan, S. W. Ng **165**

Focus

Continuous Flow Synthesis of RAFT Block Copolymers

I. Martinez-Botella **170**