

AUSTRALIAN JOURNAL OF
CHEMISTRY
AN INTERNATIONAL JOURNAL FOR CHEMICAL SCIENCE

Volume 63 Number 2 2010

CONTENTS

RESEARCH FRONT: Molecular Logic

Guest Editor: Alberto Credi

Foreword

The Research Front on Molecular Logic

A. Credi 145

Molecular Logic: Ways Forward

A. P. de Silva 146

Review

Digital Operations with Molecules – Advances, Challenges, and Perspectives

U. Pischel 148

Communication

Towards ‘Computer-on-a-Particle’ Devices: Optoelectronic 1:2 Demultiplexer Based on Nanostructured Cadmium Sulfide

A. Podborska, K. Szaciłowski 165

Full Papers

A Unimolecular Half-Subtractor Based on Effective Photoinduced Electron Transfer and Intramolecular Charge Transfer Processes of 1,8-Naphthalimide Derivative

B. Leng, H. Tian 169

Redox-Executed Logic Operations through the Reversible Voltammetric Response Characteristics of Electroactive Self-Assembled Monolayers

G. Periyasamy, R. D. Levine, F. Remacle 173

REGULAR PAPERS

Reviews

Electrochemistry of Redox Active Centres Encapsulated by Non-Covalent Methods

S. Gadge, E. K. Batchelor, A. E. Kaifer 184

Polymers with Sugar Buckets – The Attachment of Cyclodextrins onto Polymer Chains

F. Yhaya, A. M. Gregory, M. H. Stenzel 195

Full Papers

The Application of the Schmidt Reaction and Beckmann Rearrangement to the Synthesis of Bicyclic Lactams: Some Mechanistic Considerations

I. T. Crosby, J. K. Shin, B. Capuano 211

Convergent Solution Phase Synthesis of Chimeric Oligonucleotides by a 2+2 and 3+3 Phosphoramidite Strategy

C.-H. Chen, W.-Y. Chen, Y.-C. Chen, M.-J. Lee, C.-D. Huang, K. Chanda, C.-M. Sun 227

Ligand Exchange Processes on the Solvated Zinc Cation II.* $[Zn(H_2O)_4L]^{2+} \cdot 2H_2O$ with L = NH₃, NH₂(CH₃), NH(CH₃)₂, and N(CH₃)₃

B. M. Alzoubi, R. Puchta, R. van Eldik 236

Synthesis, Structure, and Selective Cytotoxicity of Organometallic Cp*Ru^{II} O-Alkyl-N-phenylcarbamate Sandwich Complexes

B. T. Loughrey, M. L. Williams, T. J. Carruthers, P. G. Parsons, P. C. Healy 245

A Fe(bipy)₂ Unit Fused to a Keggin Polyoxotungstate Anion

J. Xie, R. Gilbert-Wilson, B. Moubarak, K. S. Murray, A. G. Wedd 252

Synthesis and Characterization of New N-Alkylamino-3,5-diphenylpyrazole Ligands and Reactivity Toward Pd^{II} and Pt^{II}. Study of the *cis-trans* Isomerization

G. Aragay, J. Pons, V. Branchadell, J. García-Antón, X. Solans, M. Font-Bardia, J. Ros 257

The Effect of Ionic Charge on the Adsorption of Organic Dyes onto Titanate Nanotubes

D. V. Baykin, K. E. Redmond, B. P. Nias, A. N. Kulak, F. C. Walsh 270

Novel Hydroxy- and Methyl-Terminated Triaromatic Schiff Base Compounds: Synthesis and Mesogenic Properties

N. Senthilkumar, T. Narasimhaswamy, A. Raghavan 276

Crystal Structures, Topological Analyses, and Magnetic Properties of Manganese-Dihydroxyterephthalate Complexes

Q. Gao, F.-L. Jiang, M.-Y. Wu, Y.-G. Huang, W. Wei, Q.-F. Zhang, M.-C. Hong 286

UV-A and Simulated Sunlight Photo-activity of TiO₂ Nanoparticles Formed from Titanate Nanotubes

J. S. Church, K. Fincher, X. Wang 293

A Facile Strategy to Tune the Chiral Recognition Capabilities of Chiral Ionic Liquids by Changing Achiral Alkyl Chain

W. Yu, H. Zhang, L. Zhang, X. Zhou 299

Preparation of Azobenzenealkanethiols for Self-Assembled Monolayers with Photoswitchable Properties

S. Krakert, A. Terfort 303

Room Temperature Suzuki Reactions in Aqueous Media under Air by Palladium(II) Complexes with Pyrazole Derived Ligands

K. Xu, X.-Q. Hao, J.-F. Gong, M.-P. Song, Y.-J. Wu 315

Origin and Nature of Transmission Modes of Anomalous Effects of *meta*-Substituents on the ^{13}C Chemical Shift of the Carboxyl Carbon (δ_{CO}) of Benzoic Acid
S. K. S. Gupta, R. Prasad **321**

New Highly Selective Colorimetric and Fluorescent Chemodosimeters for Mercury Ion
C.-Y. Wu, C.-C. Lin, T.-M. Fu, C.-R. Yang, Y.-P. Yen **329**

Communication

Novel Acentric Organic Solids with Non-linear Optical and Ferroelectric Properties
Y.-T. Wang, G.-M. Tang, T.-D. Li, J.-C. Yu, Y.-Q. Wei, J.-B. Ling, X.-F. Long **336**