

AUSTRALIAN JOURNAL OF
CHEMISTRY
AN INTERNATIONAL JOURNAL FOR CHEMICAL SCIENCE

Volume 68 Number 11 2015

CONTENTS

RESEARCH FRONT: International Year of Light 2015

Guest Editors: Curt Wentrup, Michael Oelgemöller and George Vamvounis

- International Year of Light and Light-Based Technologies
M. Oelgemöller, G. Vamvounis **1619**
- Photocatalysis with TiO₂ Applied to Organic Synthesis
N. Hoffmann **1621**
- 2-Aryl-1,3-dimethylbenzimidazolines as Effective Electron and Hydrogen Donors in Photoinduced Electron-Transfer Reactions
E. Hasegawa, S.-y. Takizawa **1640**
- Visible Light-Promoted Metal-Free Reduction of Organohalides by 2-Naphthyl or 2-Hydroxynaphthyl-Substituted 1,3-Dimethylbenzimidazolines
E. Hasegawa, K. Mori, S. Tsuji, K. Nemoto, T. Ohta, H. Iwamoto **1648**
- Microreactor-Mediated Benzylic Bromination in Concentrated Solar Radiation
Y. J. Kim, M. J. Jeong, J. E. Kim, I. In, C. P. Park **1653**
- A Facile Preparation of α -Aryl Carboxylic Acid via One-Flow Arndt-Eistert Synthesis
S. Fuse, Y. Otake, Y. Mifune, H. Tanaka **1657**
- Photodecarboxylative Benzylations of *N*-Methoxyphthalimide under Batch and Continuous-Flow Conditions
H. M. Pordanjani, C. Faderl, J. Wang, C. A. Motti, P. C. Junk, M. Oelgemöller **1662**
- Formation of Carbanions from Carboxylate Ions Bearing Electron-Withdrawing Groups via Photoinduced Decarboxylation: Addition of Generated Carbanions to Benzaldehyde
Y. Kumagai, T. Naoe, K. Nishikawa, K. Osaka, T. Morita, Y. Yoshimi **1668**
- Photoinduced Cycloadditions in the Diversity-Oriented Synthesis Toolbox: Increasing Complexity with Straightforward Post-Photochemical Modifications
W. J. Umstead, O. A. Mukhina, N. N. B. Kumar, A. G. Kutateladze **1672**
- Enantioselective Photochemical Rearrangements of Spirooxindole Epoxides Catalyzed by a Chiral Bifunctional Xanthone
M. M. Maturi, A. Pöthig, T. Bach **1682**
- Contrasting Behaviour of Exciplex Ensembles in the Diastereodifferentiating Paternò-Büchi Reaction of Chiral Cyanobenzoate with Naphthyl- and Phenylethenes on Direct or Charge-Transfer Excitation
K. Nagasaki, Y. Inoue, T. Mori **1693**
- Simultaneous Observation of Triplet and Singlet Cyclopentane-1,3-diyl Diradicals in the Intersystem Crossing Process
T. Mizuno, M. Abe, N. Ikeda **1700**
- Formation and Direct Detection of Non-Conjugated Triplet 1,2-Biradical from β,γ -Vinylarylketone
H. D. M. Sriyaratne, K. R. S. Thenna-Hewa, T. Scott, A. D. Gudmundsdottir **1707**
- Engineering Disorder at a Nanoscale: A Combined TEM and XAS Investigation of Amorphous versus Nanocrystalline Sodium Birnessite
R. K. Hocking, H. J. King, A. Hesson, S. A. Bonke, B. Johannessen, M. Fekete, L. Spiccia, S. L. Y. Chang **1715**
- Colorimetric Detection of Nitroaromatics Using Organic Photochromic Compounds
G. Vamvounis, N. Sandery **1723**
- New Red-Emitting Phosphor La₂Zr₃(MoO₄)₉:Eu³⁺ and the Influence of Host Absorption on its Luminescence Efficiency
F. Baur, T. Jüstel **1727**
- Photophysical Properties of Rare Earth Diclofenac Complexes in the Solid State
G. Kaup, M. M. Lezhnina, D. Meiners, P. C. Junk, U. H. Kynast **1735**
- Study of Vertical and Lateral Charge Transport Properties of DPP-Based Polymer/PC₆₁BM Films Using Space Charge Limited Current (SCLC) and Field Effect Transistor Methods and their Effects on Photovoltaic Characteristics
L. Murphy, B. Sun, W. Hong, H. Aziz, Y. Li **1741**
- Aryl-Substituted Boron Subphthalocyanines and their Application in Organic Photovoltaics
C. Bonnier, D. S. Josey, T. P. Bender **1750**
- Tuning the Light Absorption of Donor–Acceptor Conjugated Polymers: Effects of Side Chains and ‘Spacer’ Units in Thieno[3,4-*b*]pyrazine-Fluorene Copolymers
M. E. Mulholland, K. L. Konkol, T. E. Anderson, R. L. Schwiderski, S. C. Rasmussen **1759**
- Synthesis and Characterisation of High Fullerene Content Polymers and Their Use in Organic Photovoltaic Devices
S. M. Clark, J. A. Campbell, D. A. Lewis **1767**
- An Alternating Donor–Acceptor Conjugated Polymer Based on Benzodithiophene and [3,4-*c*]pyrrole-4,6-dione: Synthesis, Characterization, and Application in Photovoltaic Devices
E. Bicciochi, M. Haeussler, E. Rizzato, A. D. Scully, K. P. Ghiggino **1773**
- Perovskite Solar Cells Based on Nanocrystalline SnO₂ Material with Extremely Small Particle Sizes
H. Wang, M. Abu Sayeed, T. Wang **1783**