

RACI Congress Adelaide

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The September issue of *Aust. J. Chem.* contains a selection of papers authored by speakers at the National Congress of the Royal Australian Chemical Institute held in Adelaide, 7–12 December 2014, which integrated all areas of chemistry under one roof in the Adelaide Convention Centre.

Neil Vasdev and Steven Liang (Massachusetts General Hospital and Harvard Medical School) present an account on a new avenue to synthesize radiotracers aimed at the eventual ability to radiolabel just about any substance for medicinal purposes.^[1]

Rainer Koch (University of Oldenburg, Germany), H.-J. Wollweber (University of Marburg, Germany), and the present author (The University of Queensland) report on the synthesis of α -oxo oximes of isoxazolones, pyrazolones, and 1,2,3-triazolone and the elucidation of stereochemical preferences.^[2]

Toshihide Horikawa (Tokushima University, Japan), Duong Do (The University of Queensland), and their colleagues describe their research on the adsorption of water and methanol on highly graphitized carbon black and activated carbon fibre.^[3]

John Gladysz and co-workers (Texas A&M University) report on the syntheses of three series of trigonal bipyramidal *trans*-bis(phosphine) complexes, which can potentially undergo three-fold intramolecular ring closing metatheses to yield gyroscope-like complexes.^[4]

Frédéric Paul, Jean-François Halet, and their co-workers (Université de Rennes 1, France) report a theoretical analysis of electronic structures and optical properties of a series of phenylalkynyl iron complexes, $\text{Fe}(\text{dppe})(\eta^5\text{-C}_5\text{Me}_5)$. Unexpected hypsochromic shifts of the lower energy absorption bands upon carbon chain lengthening were observed.^[5]

Bradley Smith et al. (University of Notre Dame, Indiana, USA) report enhanced squaraine rotaxane endoperoxide chemiluminescence in acidic alcohols. The squaraine rotaxane endoperoxides are storable chemiluminescent compounds that undergo a clean cycloreversion reaction, releasing singlet oxygen and emitting near-infrared light when warmed to body temperature. Acidic alcohols such as hexafluoroisopropanol greatly increase the chemiluminescence, which takes place from a squaraine excited state. Interlocked rotaxanes are necessary for the effect.^[6]

Philip E. Thompson (Monash Institute of Pharmaceutical Sciences) and co-workers applied click chemistry to produce linear and cyclic peptide conjugates derived from Fmoc-propargyloxyprolines. The conjugates can retain the binding affinity and/or binding conformation of the parent peptide.^[7]

Frances Separovic (The University of Melbourne) and her co-workers describe C-terminal modifications with hydrazide and alcohol functions that extend the antibacterial activity of a proline-rich peptide towards other Gram-negative species.

Furthermore, the new analogues did not show cytotoxicity towards mammalian cells.^[8]

Jianbo Wang and co-workers at Peking University, China, report Rh^I-catalyzed cross-coupling of diazoesters with arylstannanes as a first Stille-type coupling using diazo compounds. The reaction is operationally simple, can be carried out under mild conditions, and provides an alternative approach to the synthesis of α -aryl esters.^[9]

Richard O'Hair (The University of Melbourne) et al. report that decarboxylation takes precedence over loss of acetonitrile in silver propiolate complexes of the type $[\text{CH}_3\text{C}\equiv\text{CCO}_2\text{Ag}_2(\text{CH}_3\text{CN})_n]^+$ ($n = 1$ or 2).^[10]

Massimiliano Massi and Mark Ogden (Curtin University, Perth), Evan Moore (The University of Queensland), and co-workers have prepared a one-dimensional Eu^{3+} coordination polymer bearing α -nitrile-substituted β -diketonate and 1,10-phenanthroline ligands, which exhibit red emission in the solid state. The sensitization process from the β -diketonate to the Eu^{3+} is thought to occur via an antenna effect.^[11]

Aleksey Vasilev (University of Sofia, Bulgaria), Katharina Landfester (Max Planck Institute for Polymer Research, Mainz, Germany), and their co-workers report their work on assembling new two-in-one merocyanine chromophores with a 1,8-naphthalimide core by using the NO_2 function as a leaving group in $\text{S}_{\text{N}}\text{-Ar}$ reactions, thus overcoming limitations of the conventional use of halogenide leaving groups.^[12]

Timothy Long et al. (Virginia Tech, USA) have synthesized a biocompatible, biodegradable, and 3D-printable polyester [poly(tri(ethylene glycol) adipate) dimethacrylate] suitable for building vascularized soft-tissue scaffolding. The polyester exhibited highly efficient photocuring, hydrolyzability, and 3D printability in a custom micro-stereolithography system. The photocured polyester film demonstrated significantly improved cell attachment and viability.^[13]

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