The Heron Island conferences started in 1991 with an international workshop funded by the Australian Government’s Department of Industry, Technology and Science and the US National Science Foundation. These conferences have now become a regular triennial event enjoying an excellent reputation for high level science, attracting international and national participants, and as such they have become an integral part of the Australian organic chemistry scene. This year, we deviated from the usual venue at Heron Island, holding the conference instead at Ayers Rock Resort in Australia’s red centre (Fig. 1). It was organised by Curt Wentrup and Craig. M. Williams (University of Queensland), and once again, an excellent group of scientists from all over the world attended (Fig. 2). We are pleased to provide a snapshot of some of the science presented in this issue of Aust. J. Chem.

John Maier and co-workers at the University of Basel, Switzerland, report on isotope and temperature effects on the electronic spectra of large carbonaceous molecular ions of interstellar relevance. Several interstellar diffuse infrared bands ascribed to \( C_{60} \) have been observed recently. Due to the large number of carbon atoms in \( C_{60} \), some of the IR bands may be due to the \( ^{13}C \) isotopes. The Maier group has now measured the electronic spectra of isotopologues of protonated coronene in the gas phase at vibrational and rotational temperatures between 5 and 120 K in a 22-pole ion trap. The results demonstrate that \( ^{13}C \) isotope shifts of spectral bands of large molecules in the interstellar medium need to be considered.

Mark York, Paul Savage, and co-workers at CSIRO Manufacturing, Melbourne, report a scalable, combined batch and flow synthesis of a bio-inspired, experimental UV-B absorber, a key step of the new synthesis of this UV-B absorber, a conjugated 3-acyltetrahydropyridine derivative. In this paper, we describe the photolysis of cyclopropaphenanthrenes as a means to generate carbenes by elimination of phenanthrene. Specifically, exo-1-(1a,9b-dihydro-1H-cyclopropa[l]phenanthren-1-yl)cyclopropan-1-ol and the corresponding cyclobutan-1-ol derivative produce (1-hydroxycyclopropyl)carbene and (1-hydroxycyclobutyl)carbene, respectively. The two carbenes rearrange to cyclobutanone, and cyclopentanone, respectively. This is attributed to ring expansion of the carbenes followed by tautomerisation of the resulting enols.
George Vamvounis (James Cook University, Townsville) and co-workers report an oil spill source identification using colorimetric detection. The colorimetric detection of polycyclic aromatic hydrocarbons (PAHs) was investigated for the quick and easy identification of likely oil spill offenders. Photochromic compounds were used to sense PAHs by varying their photoswitching capacity. To that end, three photochromes were designed and investigated. The response of PAH mixtures that mimic oil spills demonstrated the accuracy of this technology. It is concluded that this may be a viable technique for in situ oil identification.\[6\]

Craig Williams and colleagues at the University of Queensland report an investigation into 1,2,4-thiadazole-inspired cyclic peptide
mimics. Marine-derived cyclic peptides have cavitand architectures comparable with macrocyclic ligands. Lissoclinamide 5 and ascidacyclamide are two such cyclic peptides of interest for their metal ion complexation properties and biological activity. Now the stability and potential for copper(II) ion binding by lissoclinamide 5 mimics are evaluated computationally. One such mimic, 1,2,4-thiadiazole-lissoclinamide, was found to be likely to form a complex with a copper(II) ion.\(^7\)

Dominik Munz and collaborators (Universität Erlangen, Germany) describe carbon dioxide activation by a palladium terminal imido complex. The group recently reported a palladium(II) terminal imido (nitrene) complex featuring exceptional nucleophilicity at the nitrogen atom and a peculiar zwitterionic electronic structure with an anti-bonding HOMO. It is now shown that this nucleophilic complex reacts with CO\(_2\) to give a ring-strained four-membered palladium(II) carbamate complex. Remarkably, the same product is obtained in the reaction of the related bisamido complex. DFT calculations indicate that the addition of CO\(_2\) does not proceed via initial 1,2-addition across the Pd–N bond, but instead through nucleophilic attack by the imido (amido) nitrogen atom.\(^6\)

**Conflicts of Interest**

The author declares no conflicts of interest.

**References**