

## **2022 Australia-New Zealand Section of The Combustion Institute Report**

Section Website: <http://www.anz-combustioninstitute.org>

Section Chair: Assaad Masri

Section officers and board members with titles:

- Officers
  - Professor A.R. Masri, University of Sydney, Chair
  - Professor G.J. Nathan, University of Adelaide, Deputy Chair
  - Professor E. Hawkes, University of New South Wales, Honorary Treasurer
  - A/Professor Yi Yang, University of Melbourne, Honorary Secretary
- Board Members
  - Professor A.R. Masri, University of Sydney, Chair
  - Professor G.J. Nathan, University of Adelaide, Deputy Chair
  - Professor E. Hawkes, University of New South Wales, Honorary Treasurer
  - A/Professor Yi Yang, University of Melbourne, Honorary Secretary
  - Dr Fatemeh Salehi, Macquarie University
  - Professor D.K. Zhang, University of Western Australia
  - Professor A. Klimenko, University of Queensland, co-opted member
  - Professor Dan Zhao, University of Canterbury, NZ, co-opted member

Members of the section:

Active Members	60
Non-Student Members	34
Student Members	26

Has the section revised its by-laws since 2020?

- No

Section meetings and workshops since 2018:

- Section Meetings
  - 23 November 2021
- Workshops
  - 2021 Australian Combustion Symposium held on 21-24 November 2021, Toowoomba, Queensland has adopted the theme of “Combustion for Decarbonization”. Professor Hideaki Kobayashi has set the scene in the Bilger Lecture discussing the gradual penetration of hydrogen and ammonia in combustion systems both in Japan and internationally. The topic of using hydrogen in Australian industries was covered in the keynote presentation delivered by Professor Graham Nathan (University of Adelaide), while the fundamental aspects of ammonia oxidation were reviewed by Professor Peter Lindstedt (Imperial College). The topic of realistic kinetic mechanisms was continued by Professor Mani Sarathy (King Abdullah University), while analysis of turbulent reacting flows was covered in the keynote address of Professor Andreas Kronenburg (University of Stuttgart), who examined modelling particle distributions under these conditions.
    - The remaining papers for most of the first day have reinforced the message testifying to the depth of this research in Australia. It is notable that this conference has set a precedent in being the first ever Australian Combustion Symposium to be delivered in hybrid mode. As Chairman of the ANZ-Section and

on behalf of all our membership and delegates, I would like to thank the local organizing committee in Queensland for their tireless work and dedication in making the 2021 Australian Combustion Symposium an outstanding success. In particular, our thanks go to: Prof. Alex Klimenko (UQ), A/Prof Andrew Wandel (USQ) and Dr Yuanshen Lu (UQ).

Other activities:

- Established in 2020 in recognition of Professor Robert Bilger's seminal contributions to combustion science. The award recognizes outstanding early career researchers who are active members of the Australia and New Zealand Section of the Combustion Institute (ANZ-CI) and who have made a significant contribution to advance their field of research, which should fall under the broad umbrella of fundamental or applied combustion or combustion-related fields. One Award will be made once every two years only if a sufficiently strong application is received. The awardee will receive AUD\$500 and the presentation of the Award will take place at the biennial Australian Combustion Symposia. The Award is jointly sponsored by a bequest from Professor Bilger and from the Australia and New Zealand Section of the Combustion Institute (ANZ-CI).
  - Four deserving applications were received in the inaugural round of the Bilger ECR. The Award Committee has selected Dr. Fatemeh Salehi from Macquarie University as winner of the first Bilger Award. Congratulations to Fatemeh.

Awards given by section:

The Best Student Paper Prizes valued at \$200 each were awarded to:

- Mr J. Sandra (The University of Queensland)
  - Title: Hydrogen Boundary Layer Combustion with Multi-Porthole Injector Arrays
  - Authors: J. Sandral, T. Vanyai, A. Veeraragavan and V. Wheatley
- D.B. Proud (The University of Adelaide)
  - Title: Dilute spray flames of ethanol and n-heptane in the transition to mild combustion
  - Authors: D. B. Proud, M. J. Evans, P. R. Medwell and Q. N. Chan
- Matthew du Preez (University of Southern Queensland)
  - Title: A Method for Solving Two-Stream Mixing using the Generalised Binomial-Langevin Multiple Mapping Conditioning Model
  - Authors: Matthew du Preez, Andrew P. Wandel, and R. Peter Lindstedt

The Terry Wall Best Student Paper Award valued at \$800 for "the best paper on solid fuel combustion":

- Not Awarded

Special achievements attained by section members:

- Fellowship of the Combustion Institute
  - 2020 Class of Fellows
    - Michael John Brear, University of Melbourne, Australia for his fundamental and applied contributions to reciprocating engine and gas turbine research
  - 2019 Class of Fellows
    - Bassam B Dally, University of Adelaide for innovative contributions to the understanding of turbulent reacting flows, soot formation and MILD combustion

- Bogdan (Bodzio) Dlugogorski, Edith Cowan University for ground breaking advances in the understanding of ignition of spontaneous fires, pollutant formation in combustion processes, and fire mitigation
- Hongwei Wu, Curtin University for innovative research in inorganic matter transformation and particulate matter emission during the combustion of fossil and alternative fuels

Does your Section plan to organize the international Combustion Institute Summer School (CI-SS)?

- No

If you selected "Yes", which year will it be carried out?

- N/A

Other information you may want to report:

- N/A