



**The Combustion Institute**

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**Evatt Hawkes**

*2020 Candidate Profile: The Combustion Institute Board of Directors*

**Reasons for Nomination**

I feel privileged to have a career in combustion research. It is such a wonderful topic that is both incredibly important to society and incredibly rich from an academic perspective. I strongly believe that combustion will retain this importance and interest.

Nonetheless, the Combustion Institute (CI) faces some challenges going forwards. Foremost is the growing perception that combustion-based energy is in decline, as renewables now offer a credible alternative in some applications. The second is a long-standing need to improve the connections to industry. Finally, while the CI has progressed in encouraging diversity and supporting the career development of early- and mid-career combustion researchers, more can be done. As a member of the Board I would initiate and support efforts to address these challenges, by a combination of improved outreach, engagement, and mechanisms to provide recognition.



For instance, in my role on the Board of the Australia and New Zealand section, I led submissions from the section advising the Australian government, enhanced membership by reaching out to fire and hypersonic combustion communities, served on the section's committee to identify and nominate CI Fellows, initiated in collaboration with the chair the establishment of an early-career prize for members of our section.

*See the next page for the candidate's curriculum vitae.*

**Positions**

2016-present: Professor, **The University of New South Wales, Sydney**  
2007-2015: Senior Lecturer, Associate Professor, **The University of New South Wales, Sydney**  
2002-2007: Basic Energy Sciences Postdoctoral Research Fellow, Combustion Research Facility, **Sandia**

**National Laboratories**

1996-2001: Packer Cambridge Australia Scholar, European Gas Turbines Research, **University of Cambridge**

**Education**

1996-2001: Ph.D., **University of Cambridge**  
(Packer Cambridge Australia Scholar & European Gas Turbines Research Student)  
1990-1995: B.Sc. (Hons) & B.Eng. (Hons), **University of Western Australia**

**Research Interests**

- Modelling of turbulent reacting flows, with DNS, LES and RANS
- Reciprocating and gas-turbine engine combustion, fires
- Solar thermochemical energy systems

**Selected Awards and Honours**

2018: Elected among the inaugural class of Fellows of the Combustion Institute (youngest by PhD year)  
2011: Australian Research Council Future Fellowship  
2008: David Warren Travelling Fellowship (ANZ Section of the CI)

**Contributions to the Combustion Institute (CI)**

- Board Member and Treasurer, Australia and New Zealand Section of the CI, 2011-present
- Associate Editor, Proceedings of the Combustion Institute, 2018-present
- Colloquium Co-chair, 38<sup>th</sup> International Symposium on Combustion, Turbulent Flames Colloquium, 2020
- Colloquium Co-chair, 36<sup>th</sup> International Symposium on Combustion, Turbulent Flames Colloquium, 2016
- Co-organiser, 1<sup>st</sup> Australian Combustion Summer School, Sydney, 2018
- Co-organiser, 11<sup>th</sup> Asia Pacific Conference on Combustion (ASPACC), Sydney, 2017; Technical Chair of Solid Fuels Colloquium; Spray, Supercritical and Droplet Combustion Colloquium
- Reviewer for Combust. Flame, Proc. Combust. Inst., since 2004
- Technical paper review committee, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup> ASPACC, 2011-present
- Technical paper review committee, Australian Combustion Symposia, 2007-present
- Member of the Combustion Institute, 2000-present

**Other Contributions to Combustion Research**

- Advisory Editor, Flow, Turbulence and Combustion, 2013-present
- Session organiser for comparisons between models and experiments in ignition and flame-structure, Engine Combustion Network Workshop 2011, 2012, 2015, 2017, 2020 (planned)
- Session organiser for DNS session at the TNF Workshop 2006, 2014, 2018 (combined PTF session)
- Reviewer for all good combustion and fluid mechanics journals, particularly: Flow, Turbulence and Combustion; Combustion Theory and Modelling; Combustion Science and Technology; Progress in Energy and Combustion Science, Journal of Fluid Mechanics; Physics of Fluids; SAE conferences and journals

**Publication & Citation Overview**

- 121 journal articles
- In CI journals:
  - 34 in Proceedings of the Combustion Institute
  - 30 in Combustion and Flame
  - Globally 29<sup>th</sup> amongst authors by number contributions to CI journals
- Scopus H-index 35, 4640 citations

**Recent Plenary Addresses**

1. **Hawkes, E.R.**, (2019), Unravelling engine combustion using large-scale computations, *12<sup>th</sup> Asia-Pacific Conference on Combustion*, 1-5 July, Fukuoka, Japan.
2. **Hawkes, E.R.**, (2019), Using DNS to advance transported probability density function models of turbulent combustion, *17<sup>th</sup> International Conference on Numerical Combustion*, May 6-8, Aachen, Germany.
3. **Hawkes, E.R.**, (2015), Petascale direct numerical simulations of laboratory flames, *2015 Australian Combustion Symposium*, 7-9 Dec., Melbourne, Australia.
4. **Hawkes, E.R.**, (2012), Petascale numerical simulations of combustion, *18<sup>th</sup> Australian Fluid Mechanics Conference*, 3-7 Dec., Launceston, Tasmania, Australia.