



## The Combustion Institute

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## Henry Curran

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

### Reasons for Nomination

My principal expertise lies in the generation of detailed chemical kinetic models to describe fuel pyrolysis and oxidation; I am Priority Research Area Leader for Energy and Director of the [Combustion Chemistry Centre](#) at NUI Galway. I have been a member of the Combustion Institute since 1992 and I have served on the editorial boards of *Combustion and Flame* (2009–2014), the *Proceedings of the Combustion Institute* (2008–2018), *Progress in Energy and Combustion Science* (2015–present) and *Combustion Theory and Modeling* (2019–present). I have also served as a member of the Silver Medal Selection Committee and as a member and vice-Chair of the Fellow of the Combustion Institute Selection Committee. I was a Member of the Organizing Committee of the 37<sup>th</sup> International Symposium on Combustion in Dublin in 2018. I served on the Gold Medal Nomination Committee in 2016. I have acted as the Colloquium Chair for Chemical Kinetics at the 35<sup>th</sup> International Symposium and as a member of the committee at the 32<sup>nd</sup> Symposium. I know many of the current member of the board, and I intend to contribute effectively to issues of importance to us all, particularly in promoting more sustainable combustion options. I welcome the opportunity to participate in steering the direction of the Combustion Institute in the coming five years.



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

Henry J. Curran (DSc, PhD, BSc, MRIA, FRSC, FICI, MIEI)  
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### **Education (National University of Ireland, Galway)**

DSc (by research) October 2011; PhD Chemistry December 1994; BSc October 1990

### **Service to Professional Societies and University**

#### • **Combustion Institute**

Member of the Silver Medal Selection Committee of the Combustion Institute 2019.

Vice-chair of “Fellow of the Combustion Institute” Selection Committee 2019–2020, Chair 2020–2021.

Member of “Fellow of the Combustion Institute” Selection Committee 2018–2019.

Member Organizing Committee 37<sup>th</sup> Intl. Symposium on Combustion Dublin, Ireland July 29<sup>th</sup> – August 3<sup>rd</sup>, 2018.

Gold medal committee member: 36<sup>th</sup> International Symposium on Combustion, Seoul, Korea, 2016.

Colloquium Chair: Chemical Kinetics at the 35<sup>th</sup> Intl. Symposium on Combustion (2013–2014).

Colloquium Co-Chair: Chemical Kinetics at the 32<sup>nd</sup> Intl. Symposium on Combustion (2007–2008).

Session Chair at the 31<sup>st</sup>, 32<sup>nd</sup>, 34<sup>th</sup>, 35<sup>th</sup> and 36<sup>th</sup> International Symposia on Combustion.

#### • **Journal Editorial Board Member**

Combustion and Flame (2009–2014), Proceedings of the Combustion Institute (2008–2018), Progress in Energy and Combustion Science (2015–present), Combustion Theory and Modeling (2019–present).

#### • **Journal Paper Review Service**

Journal of Physical Chemistry, Chemical Physics Letters, Physical Chemistry Chemical Physics, International Journal Chemical Kinetics, Combustion and Flame, Combustion Science and Technology, Journal of Engineering for Gas Turbines and Power, International Journal Thermophysics, Fuel, Combustion Theory and Modelling, Energy and Fuels, International Journal of Hydrogen Energy, Proceedings of the Combustion Institute, Society Automotive Engineers, Combustion Theory and Modelling, Zeitschrift für Physikalische Chemie.

#### • **Examining Theses and Habilitation à Diriger de Recherches**

Masters and PhD Princeton University, PhD Lund University, Sweden, Masters’ Marquette University, USA, PhD Politecnico di Milano, Italy, PhD Imperial College London, England, PhD University of Melbourne, Australia, PhD RWTH Aachen University, PhD Cambridge University, PhD KAUST, Saudi Arabia. Habilitation à Diriger de Recherches: Dr. Guillaume Vanhove, Université de Lille (July 2015), Dr. Alan Kéronmès (2018).

#### • **External Post-Graduate Teaching**

15 lectures at Princeton University Combustion Summer School, USA, 17–24<sup>th</sup> June **2016**, 24–28 June **2019**.

15 lectures at Tsinghua University Combustion Summer School, Beijing, China, 13–17<sup>th</sup> July **2015**, 16–20 July **2018**.

Organized ECCO-MATE Chemical Kinetics Summer School (9 Hours of lectures) NUI Galway, 25–27 May **2015**.

6 Hours of lectures at COST Summer School, Politecnico di Milano, Italy, 8–10 July **2013**.

9 Hours of lectures at Combustion Institute Summer School, Lund, Sweden, 19–23 August **2013**.

15 Hours of lectures at National Defense Academy, Yokosuka, Japan, 19–29 November **2013**.

### **Honours and Awards**

• **Plenary Lecture** 37<sup>th</sup> International Symposium on Combustion, Dublin, Ireland, August 1, **2018**.

• **Boyle-Higgins Gold Medal and Lecture Award**, Institute of Chemistry of Ireland, April 27, **2017**.

• *Named by Clarivate Analytics: top 1% of cited researchers worldwide* every year since first published in 2014.

• *Japan Society for the Promotion of Science Invitation Fellowship for Research in Japan (Short-term) July 2016*.

• **Member of the Royal Irish Academy** 16 March 2015.

• **Inaugural NUI Galway President’s Award for Research Excellence (June 2014)**.

• **Top Two Most Cited Papers in Combustion and Flame**: “A Comprehensive Modelling Study of *n*-Heptane Oxidation”, *Combustion and Flame*, 114:149–177 (1998) H.J. Curran, P. Gaffuri, W.J. Pitz, C.K. Westbrook and “A Comprehensive Modelling Study of *iso*-Octane Oxidation”, *Combustion and Flame*, 129:253–280 (2002) H.J. Curran, P. Gaffuri, W.J. Pitz, C.K. Westbrook.

• **Best Paper: ASME Turbo Expo 2008** 2008-GT-51344 “Ignition and Flame Speed Kinetics of Two Natural Gas Blends with High Levels of Heavier Hydrocarbons”, presented at ASME Turbo Exposition, Orlando, Florida, June 2009.

• **High Impact Paper Award** July 2011 for “Rate Constant Estimation for C<sub>1</sub>–C<sub>4</sub> Alkyl and Alkoxy Radical Decomposition”, *International Journal of Chemical Kinetics* 38 (2006) 250–275 by H.J. Curran.