



## The Combustion Institute

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## Dr. Eric L. Petersen

*2024 Candidate Profile: The Combustion Institute Board of Directors*

### Reasons for Nomination

I have been involved in the combustion community in a variety of ways since 1990—as a combustion engineer at Pratt & Whitney, a researcher in graduate school, a scientist at The Aerospace Corporation, and for the last 23 years as a professor. Throughout my career, The Combustion Institute has been the premiere organization in the field, and I have been a member since 1992.

Although the topics being studied within the community have continued to evolve over the years to meet and solve new challenges, several aspects have remained constant from my observations over this period. Such constants include the fact that combustion science has always been highly multidisciplinary and at the cutting edge of science and technology, and that our community has always produced leaders and innovators whose outreach extends beyond the specific combustion-related topics on which we are focused during any given decade.

As a researcher, I have attended a dozen CI-hosted International Symposia and have served the institute as a session chair multiple times, a colloquium co-chair 3 times, and a local section (U.S. Central States) board member since 2009. I look forward to further serving the community and the Institute as a CI board member.



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

## Current Positions:

- Professor and Holder of the Nelson-Jackson Chair, J. Mike Walker '66 Department of Mechanical Engineering, Texas A&M University, College Station, TX, USA (Prof. at TAMU since Jan., 2008)
- Director, TEES Turbomachinery Laboratory (since March, 2018)

## Education:

- Doctor of Philosophy, Mechanical Engineering, Stanford University (1998)
- Master of Science, Mechanical Engineering, University of Florida (1990)
- Bachelor of Science, Mechanical Engineering, University of Central Florida (1988)

## Selected Professional Honors, Awards, and Fellowships:

- Combustion Institute Fellow (2020)
- AIAA (American Institute of Aeronautics and Astronautics) Associate Fellow (2020)
- Nelson-Jackson Chair, J Mike Walker '66 Department of Mechanical Engineering, TAMU (2019)
- Dean of Engineering Excellence Award, TAMU (2019)
- TEES (Texas A&M Engineering Experiment Station) Senior Faculty Fellow, TAMU (2017)
- James J. Cain Graduate Teaching Award, TAMU (2015);
- Best Paper Award, X ISHPMIE (2014)
- TEES Faculty Fellow, TAMU (2011)
- ASME (American Society of Mechanical Engineers) Fellow (2010)
- Mercator Fellow, Germany, University of Duisburg-Essen (2017 – 2021)
- Current President of *Institute for Dynamics of Explosions and Reactive Systems* (IDERS)

## Scientific Records:

- Publications: **225** (published or in-press) articles in peer-reviewed international journals
- Researcher ID: **h-index: 47**; [Web of Science link](#)
- Google Scholar: **h-index: 59**; 15,000+ citations; i10-index: 198; [link to profile](#)

## Selected Publications:

- 1) M. Abulail, S. P. Cooper, M. G. Sandberg, E. L. Petersen, "Ignition of Various Lubricating Oil Compositions Using a Shock Tube," *J. Eng. Gas Turbines and Power*, 146, Mar., 2024, 031003.
- 2) C. M. Grégoire, O. Mathieu, E. L. Petersen, "High-Temperature Line Strengths with He- and Ar-Broadening Coefficients of the P(20) line in the 1← 0 band of Carbon Monoxide," 129, 2023, 187.
- 3) S. P. Cooper, P. Marshall, O. Mathieu, L. T. Pinzón, C. R. Mulvihill, P. Glarborg, E. L. Petersen, "Experimental and Modeling Study of Water Time Histories during H<sub>2</sub>S-N<sub>2</sub>O Combustion in a Shock Tube," *Proc. of The Combustion Institute*, 39, 2023, pp. 487-497.
- 4) S. A. Alturaifi, O. Mathieu, E. L. Petersen, "A Shock-Tube Study of NH<sub>3</sub> and NH<sub>3</sub>/H<sub>2</sub> Oxidation Using Laser Absorption of NH<sub>3</sub> and H<sub>2</sub>O," *Proc. of The Combustion Institute*, 39, 2023, pp. 233-241.
- 5) C. A. M. Dillier, E. D. Petersen, E. L. Petersen, "Isolating the Effects of Oxidizer Characteristics and Catalytic Additives on the High-Pressure Exponent Break of AP/HTPB-Composite Propellants," *Proc. of The Combustion Institute*, 38, 2021, pp. 4409-4416.

## Services to the Community:

- Colloquium Co-Chair for the International Symposium on Combustion (38<sup>th</sup>, 39<sup>th</sup>, 40<sup>th</sup> Symposia)
- Board Member of the U.S. Central States Section of The Combustion Institute since 2013
- Meeting Host, 13th U.S. National Combustion Meeting, College Station, TX, Mar. 19 – 22, 2023
- Program Co-Chair, 9th U.S. National Combustion Meeting, May 17-20, 2015, Cincinnati, OH
- Editorial Board Member, *Combustion and Flame* (2013 – 2018)
- Board Member and Officer, Inst. for the Dynamics of Explosions and Reactive Systems since 2009