



The Combustion Institute

5001 Baum Boulevard, Suite 644

Pittsburgh, Pennsylvania 15213-1851 USA

Ph: (412) 687-1366

Office@CombustionInstitute.org

Fax: (412) 687-0340

CombustionInstitute.org

Ruud Eggels

2020 Candidate Profile: The Combustion Institute Board of Directors

Reasons for Nomination

Combustion processes and the associated combustion research will remain important in a sustainable CO₂ neutral society. Certain applications will have to rely on high power density renewable fuels. I have been active in combustion research for almost 30 years and joined Rolls-Royce more than 20 years ago. Within Rolls-Royce I am responsible for managing combustion methods development and related research projects within the combustion department. I have been working on the interface between academic research and industrial development within national and international projects. Fundamental research is and will be very important for enabling new combustion technologies. Challenging areas are the accurate and reliable prediction of NO_x, CO emissions and particulate matter (soot), sustainable fuels, heat transfer and thermo-acoustics.



My objectives on the board would be to improve the collaboration between universities, academic research partners and industry within combustion research, enhance the interaction between experimental and numerical research, work on the improvement of the public perspective of combustion and attract your researchers in combustion research.

For four years, I have been a member of the Board of Directors of the German Section of the Combustion Institute.

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

Curriculum Vitae - Ruud Eggels, Rolls-Royce Deutschland

Education

- 1991-1995 Ph.D. Research, Eindhoven University of Technology, faculty of Mechanical Engineering, The Netherlands.
- 1986-1991 Eindhoven University of Technology, faculty of Physics, The Netherlands.

Experience

- 2001-now Development Engineer/ CFD specialist at Rolls-Royce Deutschland, Germany
- 1997-2001 Combustion Research Engineer at Rolls-Royce Power Engineering plc (Ansty), United Kingdom
- 1996-1997 Manufacturing and Service engineer at ASM Lithography, Veldhoven, The Netherlands
- 1995-1996 Postdoc at the Eindhoven University of Technology, faculty of Mechanical Engineering.
- 1991-1995 Ph.D. research at Eindhoven University of Technology, faculty of Mechanical Engineering.
- 1990-1991 Graduation at Eindhoven University of Technology, faculty of Physics.

Recent publications

Eigentler, F., Eggels, R., Development and Application of a Reversible Pah Formation Model for Soot Prediction in Complex Fuel CFD Applications, GT2020-14692

Heeseok Koo, Ruud Eggels, M.S. Anand, Validation of a Moment-Based Soot Model on Benchmark and Production Aircraft Engine Combustors, AIAA-2019-2514

Asuri Mukundan, A., Ménard, T., Berlemont, A., Brändle de Motta, J.C., Eggels, R., Validation and Analysis of 3D DNS of planar pre-filming airblast atomization simulations. In Proceedings of ILASS Americas, 30th Annual Conference on Liquid Atomization and Spray Systems. May 12th-15th, Tempe, Arizona, USA, 2019

Steinbach, A., Eggels, R., Gerlinger, P., Aigner, M., Soot prediction in an aircraft combustor at realistic operation conditions, ASME TURBO EXPO 2018, G2018-75366

Eggels, R.L.G.M. The application of combustor LES within industry, Proceeding of the ERCOFTAC Workshop Direct and Large Eddy Simulation 10, Cyprus, 2015 (2016) (ERCOFTAC Series 2018)

Gessel, Maxim, Pfitzner, Michael, Eggels, Ruud, Development of an advanced automated knowledge-based combustor preliminary design process for low NOx combustion systems optimisation, ASME TURBO EXPO, GT2015-42328

Raynaud, Felix, Eggels, R.L.G.M., Staufer, Max, Sadiki, Amsini, Janicka, Johannes, Towards unsteady simulation of combustion-turbine interaction using an integrated approach, ASME TURBO EXPO, GT2015-42110

Anand, M.S., Eggels, R., Staufer, M., Zedda, M., Zhu, J., An advanced unstructured-grid finite volume design system for gas turbine combustor analysis, ASME Turbine India Conference, GTINDIA2014-3537.

Soworka, T., Gerendas, M., Eggels, R.L.G.M., Mastorakos, E., Numerical investigation of ignition performance of a lean burn combustor at sub- atmospheric conditions, ASME TURBO EXPO, GT2014-25644

Gupta, Ankur, Zhu, Jiang, Anand, M.S., Eggels, R.L.G.M., A flame-generated- manifold chemistry based transport PDF model for gas-turbine combustor simulations, 10.2514/6.2014-1028 Conference: 52nd Aerospace Sciences Meeting.

Recent Lectures

- Keynote lecture Combura 2019 Symposium, October 2019, Soesterberg, The Netherlands
- Keynote lecture 9th European combustion meeting, April 2019, Lisbon, Portugal
- 1st Australian Combustion Summer School, December 2018, Sydney