FERNANDO VEIGA LÓPEZ

Researcher; Hydrogen Flames; Fluid Mechanics; *Contratado doctor*

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EDUCATION

PhD in Fluid Mechanics

Universidad Carlos III de Madrid

February 2017 – June 2020 Leganés, Spain

Title: Flame propagation in narrow channels
Extraordinary Prize, International Doctorate
Extensive research on premixed flame propagation in narrow gaps. I focus on the study of flame instabilities and dynamics of innovative gaseous fuels, such as hydrogen

MSc in Aerospace Engineering

Technische Universiteit Delft

September 2014 – November 2016 Delft, The Netherlands

Specialization in Flight Performance and Aerospace Propulsion

BSc in Aerospace Engineering

Universidad Politécnica de Madrid

Septembre 2010 – July 2014 Madrid, Spain

Specialization in Aerospace Propulsion

PUBLICATIONS

Journal Articles

- Mejía-Botero, Cristian Camilo, Fernando Veiga-López, and Josué Melguizo-Gavilanes (2022). "Minimum tube diameters for detonation propagation in CH4/H2-air mixtures: implications for natural gas cooktop burners". In: *Preprint accepted to Journal of Loss Prevention of the Process Industry*.
- Rubio-Rubio, Mariano et al. (2022). "Suppression of thermoacoustic instabilities by flame-structure interaction". In: *Proceedings of the Combustion Institute*.
- Veiga-López, Fernando, Luiz M Faria, and Josué Melguizo-Gavilanes (2022). "Influence of chemistry on the steady solutions of hydrogen gaseous detonations with friction losses". In: *Combustion and Flame* 240, p. 112050.
- Weng, Zifeng et al. (2022). "Effect of ozone addition on curved detonations". In: *Preprint accepted to Combustion and Flame*.
- Yañez-Escanciano, Jorge, Mike Kuznetsov, and Fernando Veiga-López (2022). "On the velocity, size and temperature of gaseous dendritic flames". In: *Preprint accepted to Physics of Fluids*.
- Yanez, Jorge and Fernando Veiga-López (2021). "Theoretical analysis of the condensation of combustion products in thin gaseous layers". In: *Physics of Fluids* 33.8, p. 083601.
- Yañez-Escanciano, Jorge, Mike Kuznetsov, and Fernando Veiga-López (2021). "Characterization of unconventional hydrogen flame propagation in narrow gaps". In: *Physical Review E* 103, p. 033101.

SKILLS

Python | Matlab | Labview | Image Processing: *Fiji and others* | Arduino | LaTeX | Fortran | CATIA | Microsoft Office | ANSYS Fluent

High-speed photography | Experimental techniques | Teamwork | Quick learner

AWARDS

Extraordinary PhD Prize
Universidad Carlos III de Madrid

Milton Van Dyke APS/DFD Award 2018
Awarded video

Outstanding Student Presentation
The Central States Section of the Combustion Institute, 2018

LANGUAGES

Galizian (*Native*) ●●●●●

Spanish (*Native*) ●●●●●

English ●●●●●

Italian ●●●○○

French ●●●○○

Portuguese ●●○○○

German ●●○○○

CONFERENCES

Participated in 21 International Conferences
Check list here

- Veiga-López, Fernando, Mike Kuznetsov, et al. (2020). “Unexpected propagation of ultra-lean hydrogen flames in narrow gaps”. In: *Physical Review Letters (Editor’s Suggestion and high impact: 25+ reviews)* 124.17, p. 174501.
- Veiga-López, Fernando, Daniel Martınez-Ruiz, Mike Kuznetsov, et al. (2020). “Thermoacoustic analysis of lean premixed hydrogen flames in narrow vertical channels”. In: *Fuel* 278, p. 118212.
- Veiga-López, Fernando, Daniel Martınez-Ruiz, and Mario Sánchez-Sanz (2020). “La sigilosa combustión del hidrógeno”. In: *Investigación y Ciencia* noviembre 2020, pp. 14–17.
- Martínez-Ruiz, Daniel et al. (2019). “The role of conductive heat losses on the formation of isolated flame cells in Hele-Shaw chambers”. In: *Combustion and Flame* 209, pp. 187–199.
- Martınez-Ruiz, Daniel, Fernando Veiga-López, and Mario Sánchez-Sanz (2019). “Premixed-flame oscillations in narrow channels”. In: *Physical Review Fluids* 4.10, p. 100503.
- Veiga-López, Fernando, Daniel Martınez-Ruiz, Eduardo Fernández-Tarrazo, et al. (2019). “Experimental analysis of oscillatory premixed flames in a Hele-Shaw cell propagating towards a closed end”. In: *Combustion and Flame* 201, pp. 1–11.

PROFESSIONAL EXPERIENCE

Assistant professor

Universidad Carlos III de Madrid

February 2022 - Current position Leganés, Spain

- Postdoctoral researcher on fluid mechanics focused on the study of alternative fuel’s applications, combustion processes, two-phase flows, wildfires, etc.
- Professor (**200 hours**) for Fluid Mechanics related courses

Postdoctoral Researcher

CNRS

February 2021- February 2022 Poitiers, France

- Postdoctoral researcher on fluid mechanics focused on the study of hydrogen flames Deflagration-to-Detonation Transition (DDT) in narrow geometries

Postdoctoral Researcher

Universidad Carlos III de Madrid

June 2020 - February 2021 Leganés, Spain

- Postdoctoral researcher on fluid mechanics focused on the study of alternative fuel’s applications, combustion processes, two-phase flows, wildfires, etc.
- Professor (**76.5 hours**) for the Introduction to Fluid Mechanics course for the BSc in Aerospace Engineering

Predoctoral Researcher and Teaching Assistant

Universidad Carlos III de Madrid

February 2017 - June 2020 Leganés, Spain

- Predoctoral researcher focused on the study of premixed gaseous flames in microchannels
- Professor (**288 hours**) for the Fluid Mechanics course for several BSc and five BSc thesis tutor

COURSES

Fundamentals of Thermo-acoustics Instabilities

CERFACS

May 2019 Toulouse, France

Research Stay at KIT

Karlsruhe Institut für Technologie

May – August 2018 Karlsruhe, Germany

KAUST – Combustion Institute Summer School

King Abdullah University of Science and Technology

April 2018 Jedda, Saudi Arabia