CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION *

First name	Javier		
Family name	Ballester		
Gender (*)	Male	Birth date (dd/mm/yyyy)	11/08/1963
Social Security, Passport, ID number			
e-mail	ballester@unizar.es	URL Web	https://i3a.unizar.es/
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-2863-4681		

(*) Mandatory

A.1. Current position

Position	Professor (Catedrático)		
Initial date	07/07/2008		
Institution	University of Zaragoza		
Department/Center	I3A	School of Engineering and Architect.	
Country	Spain	Teleph. number	+34976762153
Key words	Combustion, Fluid Mechanics, Experimental Methods		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
1987-1992	PhD Student / Univ. Zaragoza
1993 (6 months)	Postdoc Researcher / Massachusetts. Inst. of Technology
1992-1997	Researcher / CSIC
1996 (2.5 months)	Invited visiting researcher / Sandia National Labs.
1997-2008	Assoc. Professor / Univ. Zaragoza
2008-	Full Professor / Univ. Zaragoza

(Include all the necessary rows)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Industrial Engineer	Univ. Zaragoza / Spain	1987
PhD	Univ. Zaragoza / Spain	1992

(Include all the necessary rows)

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications *(see instructions)*

10 publications, representative of different research activities:

Muelas, Á., Remacha, P., Pina, A., Tizné, E., El-Kadmiri, S., Ruiz, A., ... & Ballester, J. (2022). Analysis of different ventilation strategies and CO2 distribution in a naturally ventilated classroom. *Atmospheric Environment*, *283*, 119176.

Remacha, P., Tizné, E., Pina, A., Barroso, J., Muelas, Á., & Ballester, J. (2025). Impact of hydrogen blending on the formation of flammable atmospheres in enclosed spaces due to gas leaks. *International Journal of Hydrogen Energy*.

Muelas, Á., Poonawala, T., & Ballester, J. (2025). Distinct evaporation and combustion behaviors of suspended and unsuspended nanodiesel droplets. *Combustion and Flame*, *275*, 114060.

Muelas, Á., Poonawala, T., & Ballester, J. (2025). Effect of additional heat transfer modes on measured evaporation and combustion rates of isolated hydrocarbon droplets. *Combustion and Flame*, *273*, 113956.

Poonawala, T., Muelas, Á., & Ballester, J. (2025). Comprehensive characterization of heavy fraction of tire pyrolysis oil and its blends with heavy oil: From liquid evaporation to coke combustion. *Proceedings of the Combustion Institute*, *41*, 105880.

Asrardel, M., Muelas, Á., Poonawala, T., & Ballester, J. (2024). Impact of heat transfer due to fiber conduction, radiation and convection on the interpretation of experiments with isolated droplets. *Combustion and Flame*, *263*, 113384.

Asrardel, M., Muelas, Á., & Ballester, J. (2024). A pseudocomponent-based approach for the formulation of evaporation surrogates of practical liquid fuels. *Combustion Science and Technology*, *196*(16), 3937-3968.

Muelas, Á., Remacha, P., & Ballester, J. (2019). Droplet combustion and sooting characteristics of UCO biodiesel, heating oil and their mixtures under realistic conditions. *Combustion and Flame*, *203*, 190-203.

Luciano, E., & Ballester, J. (2018). Analysis of the dynamic response of premixed flames through chemiluminescence cross-correlation maps. *Combustion and Flame*, *194*, 296-308.

Ballester, J., & García-Armingol, T. (2010). Diagnostic techniques for the monitoring and control of practical flames. *Progress in Energy and Combustion Science*, *36*(4), 375-411.

C.2. Congress, indicating the modality of their participation (invited conference, oral presentation, poster)
(Contributions representative of different research lines)

Zeb K., Muelas Á., Ballester J., Numerical modelling and experimental validation of laminar flame flashback in tube burners for H2-enriched methane-air combustion (Poster), 12th European Conference Meeting, Edimburgh, UK, April 2025

Poonawala T., Á. Muelas, J. Ballester, Comprehensive characterization of heavy fraction of tire pyrolysis oil and its blends with heavy oil: From liquid evaporation to coke combustion (Poster), 12th European Conference Meeting, Edimburgh, UK, April 2025

Muelas A, Aranda D, Ballester J, Design and evaluation of surrogate mixtures for diesel based on the isolated droplet configuration (Oral pres.), 39th Symposium (Intl.) on Combustion, Vancouver, August 2022

Luciano E, Oliva J, Sobrino A, Ballester J, A pseudo-active approach for the control of combustion instabilities (Oral pres.), 1st Spanish Fluid Mechanics Conf, Cádiz, June 2022

Ballester J, Advanced Methods for the Monitoring of Practical Combustion Equipment (Keynote lecture), 11th Mediterranean Combustion Symposium, Tenerife, June 2019

A. Muelas, P. Remacha, A. Pina, J. Barroso, A. Sobrino, D. Aranda, N. Bayarri, C. Estévez, J. Ballester, Combustion of crude glycerol and its blends with acetals (Oral pres.), 11th Mediterranean Combustion Symposium, Tenerife, June 2019

Muelas A, Remacha P, Ballester J, Combustion characteristics of isolated free-falling droplets of Jet A blended with butanol and ethanol (Oral pres.), Paper GT2018-76841, ASME Turbo Expo, Oslo, June 2018

Luciano E, Ballester J, Use of flame transfer function to predict combustor unstable modes (Oral Pres.), 24th International Congress on Sound and Vibration, London, July 2017

C.3. Research projects, indicating your personal contribution. In the case of young researchers, indicate lines of research for which they have been responsible.

Challenges for efficient, clean and safe combustion of hydrogen/natural gas blends (CH2ECS); Funded by: Min. Ciencia e Innovación, PID2022-140620OB-I00, Role: Principal Investigator – Duration: 1/9/2023 – 31/8/2026

Analysis and optimization of evaporation and combustion processes for residual and non-conventional liquid fuels; Funded by: Min. Ciencia e Innovación, PID2019-109747RB-I00, Role: Principal Investigator - Duration: 1/6/2020 – 31/5/2023

Flexibility and agility of combined cycles based on advanced simulation, instrumentation and optimization tools (FLAGSHIP); Funded by: Min. Ciencia e Innovación, RTC2019-007012-3
Role: Principal Investigator - Duration: 1/9/2020 – 31/8/2023

Testing methodologies and optimization of liquid fuel combustion: Development and application of low-CO2 technologies for clean energy generation (LetsDropC); Funded by: Ministerio de Educación y Ciencia, ENE2016-76436-R
Role: Principal Investigator - Duration: 30/12/2016 – 29/12/2019

Preparation and qualification of new biofuels: Integration of value chains and circular economy in the biodiesel industry; Funded by: Min. Economía, Industria y Competitividad, RTC-2016-4618-3
Role: PI of subproject LIFTEC/UZ - Duration: 01/10/2016 – 31/03/2018

Clean and efficient combustion of syngas for energy generation (SYNERG); Funded by: Ministerio de Ciencia e Innovación, ENE2010-15445
Role: Principal Investigator - Duration: 01/01/2011 – 31/10/2014

Sustainable Combustion Research (SCORE); Funded by: Min. de Ciencia e Innovación, CSD2010-00011 (PI: César Dopazo)
Role: Responsible of experimental combustion activities at LIFTEC/UZ
Duration: 01/01/2011 – 31/12/2016

Limit cycles of thermo-acoustic oscillations in gas turbine combustors (LIMOUSINE)
Funded by: European Union, FP7-214905-2
Role: PI of subproject UZ/LIFTEC - Duration: 01/010/2008 – 30/09/2012

Development of high-efficiency CFB technology to provide flexible air/oxy operation for a power plant with CCS (FLEXIBURN); Funded by: European Union, FP7 Grant Agr. 239188
Role: Co-PI of subproject UZ/LIFTEC - Duration: 09/2009 – 02/2013

Intelligent control and optimisation of power station boilers firing pulverised coal and coal/biomass blends – SMARTBURN; Funded by: European Union, RFCR-CT-2008-00009
Role: PI of subproject UZ/LIFTEC - Duration: 01/07/2008 – 30/06/2011

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any.

Selected contracts, last 5 years (Total: >90 contracts with companies and administrations; 5 patents).

Innovative Extraction Systems, Funded by: BSH Electrodomésticos España S.A.
Role: Principal Investigator - Duration: Jan 2024 – Jan 2026

Development of support and supervision tools for combined cycles and green hydrogen plants, Funded by: Iberdrola Generación Térmica.
Role: Principal Investigator – Duration: Dec 2024 – Dec 2027

Evaluation of the combustion behavior of hydrogen/natural gas blends, Funded by: Nedgia S.A. Role: Principal Investigator - Duration: May 2022 – May 2023

Study of performance and external flow in venting cooktops, Funded by: BSH Electrodomésticos España S.A.
Role: Principal Investigator - Duration: Jan 2020 – Dec 2022

Fugitive methane emissions from the natural gas distribution network. Development of testing method and measurement of leak rates, Funded by: SEDIGAS
Role: Principal Investigator – Duration (2 phases): May 2018-April 2019 + Feb 2021-Oct 2022

Evaluation of combustion systems. Project REDEMIS, Funded by: Iberdrola Generación,
Role: Principal Investigator - Duration: Feb 2019 – Jun 2022