

Europass Curriculum Vitae



Personal information

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 Nationality Spanish
 Date of birth 20th March 1987
 Gender Female

Occupational field

Battery R&D Scientist
 Lead researcher and test engineer at Imperial College London on Innovate UK project BATMAN.

Education and training

Dates	From December 2013 to February 2018
Title of qualification	PhD – Chemistry – “Sorption properties in lightweight hydrogen storage materials for portable power applications”
Principal subjects/occupational skills covered	Low-Carbon Energy Technologies, Hydrogen and Fuel Cell Technologies, Hydrogen Safety, Hydrogen Storage, Material Science, Inorganic Chemistry, Surface Chemistry, Heterogeneous Catalysis, Nanotechnology, Inorganic Materials Design, Analytical Techniques, Material Characterisation, Laboratory Field Work, Mass Spectrometry, Volumetric and Gravimetric Methods, Powder X-Ray/Neutron Diffraction, Small Angle X-Ray Scattering, Scanning Electron Microscopy, Thermal methods, Accuracy and Experimental Errors.
Name and type of organisation providing education and training	School of Chemistry, College of Science and Engineering, University of Glasgow (UK)
Dates	From September 2009 to June 2010
Title of qualification	Chemical Engineering (Erasmus programme)
Principal subjects/occupational skills covered	Renewable Energy, Applied Biotechnology, Homogeneous and Heterogeneous Catalysis, Environmental Science and Management, Project Management, Applied Mathematics Optimization, Inorganic Chemical Industrial Processes, Major Technological Hazards in Industrial Activity
Name and type of organisation providing education and training	École Polytechnique de Louvain, Université Catholique de Louvain (Belgium)
Dates	From September 2005 to September 2010
Title of qualification	Chemical Engineering
Principal subjects/occupational skills covered	<p>First cycle / Bachelor level (3 years): Physics, Linear Algebra, Statistics, Chemistry, Fundamentals of Computer Science, Fundamentals of Material Science and Technology, Mechanics of Fluid and Heat Transmission, Elasticity and Resistance of Materials, Electrical Engineering, Applied Thermodynamics and Chemical Kinetics, Basic Operations in Chemical Engineering, Calculation of Chemical Processes.</p> <p>Second cycle / Master level (2 years): Dynamics and Control of Chemical Processes, Mechanical Design of Equipment for Chemical Industry, Industrial Economics and Organisation, Chemical Reactor Engineering, Advanced Calculations in Chemical Engineering, Engineering Design and Management of Chemical Processes, Product Design, Materials Science and Chemical Transformations, Organisation and Management of Projects in Chemical Industry, Environmental Technology.</p> <p>Training courses in laboratory: Chemical Engineering Laboratory Techniques, Supervised Project: “Ionic Exchange Solid-Liquid”.</p>
Name and type of organisation providing education and training	School of Industrial Engineering and Telecommunications, University of Cantabria (Spain)

Work experience

Dates	From April 2018 until present
Occupation or position held	Postdoctoral Research Associate - "BATMAN: Battery Thermal Management and Diagnostics for Heavy Duty Applications"
Main activities and responsibilities	My main responsibility was managing the technical activities of "BATMAN" at Imperial College London (ICL), a 2.8 million £ project funded by Innovate UK under the Faraday Challenge. These activities included: Development of advanced battery thermal management systems, identifying new approaches for testing and evaluating different thermal management strategies and their effect on degradation. Development in-operando diagnostic techniques to monitor lithium-ion cell degradation. Parametrisation and validation of battery models. Collaboration with system and design engineers in industry to apply novel thermal breakthrough advances in the design of battery packs. Collaboration with modellers and control engineers in industry to implement in-operando diagnostic techniques into battery management systems for parameter estimation and advanced adaptive control. Involved in two external consultancies with Petronas Lubricants International and BP. Led collaboration on battery fire safety between the Electrochemical Science and Engineering group and the Hazlab group at ICL.
Name and address of employer	Imperial College London, Mechanical Engineering, Mechanics of Materials Division, Electrochemical Science and Engineering Research Group. Exhibition Road, SW7 2AZ - London (United Kingdom)
Type of business or sector	Electrochemical Science and Engineering.
Dates	From December 2013 to November 2016
Occupation or position held	Scientific / Technical Project Officer (Grantholder Category 20) - "2013-PTT-F-20-000-1799: Measurement of Thermodynamics properties of advanced hydrogen storage materials: accuracy and experimental errors"
Main activities and responsibilities	My main responsibility was managing and performing the technical activities for several European research projects on solid-state hydrogen storage materials. These activities included: Accurate determination of hydrogen sorption properties and storage characteristics of novel materials: hydrogen capacity as function of temperature and pressure, thermodynamics aspects such as enthalpies and entropies of reactions, kinetics, as well as engineering properties related to long term material stability and resistance to impurities. Performance of experimental techniques such as volumetric sorption analysis, Thermal Desorption Spectroscopy (TDS) and Differential Scanning Calorimetry (DSC) complemented by other analytical techniques like X-Ray Diffraction (XRD), Neutron Diffraction (ND), Small Angle X-Ray Scattering (SAXS) or Scanning Electron Microscopy (SEM) for better understanding the relationship between applied set of parameters and hydrogen uptake behaviour of material. Particular attention dedicated to repeatability and reproducibility of the measurement of the assessed material properties and to the investigation of the errors influencing the measurements.
Name and address of employer	European Commission: DG Joint Research Centre (JRC), EU Science Hub, Energy Storage Unit. Westerduinweg 3, 1755 LE - Petten (The Netherlands)
Type of business or sector	Performance Assessment of Hydrogen Storage Technologies.
Dates	From September 2012 to August 2013
Occupation or position held	Traineeship – "Project 2012-IET-1: Definition of boundary conditions and key parameters for high quality hydrogen sorption measurements".
Main activities and responsibilities	Sample preparation, hydrogenation and gas sorption measurements (Pressure-Composition Isotherms, DSC, TDS), microstructural analysis studies (SEM), data elaboration on the influence of experimental parameters and conditions in quality of sorption parameters measurements, assessment of thermodynamic quantities (Enthalpy of formation, Activation Energy), elaboration of reports on hydrogen solid-state storage materials.
Name and address of employer	European Commission: DG Joint Research Centre (JRC), EU Science Hub, Institute for Energy and Transport, Clean Energy Unit. Westerduinweg 3, 1755 LE - Petten (The Netherlands)
Type of business or sector	Hydrogen Safety for Storage and Transport.
Dates	From January 2012 to August 2012
Occupation or position held	Project Engineer
Main activities and responsibilities	Energy systems project management (heat, electrical and telecommunication facilities design) and energy audits development for several clients ranging from municipalities and regional governments to private companies.
Name and address of employer	ITM Global – Industrial park "Mies de Molladar", D3, 39311, Cartes, Spain.
Type of business or sector	Information and communication technology, software, security and engineering services.
Dates	From July 2008 to January 2009 / From September 2010 to January 2011 / From January 2011 to January 2012/
Occupation or position held	Engineer (internship) / Junior Project Engineer / Project Engineer
Main activities and responsibilities	My main tasks included: design of energy facilities, engineering project management (micro-cogeneration, solar thermal and solar photovoltaic energy facilities, fuel cells, natural gas heating and electrical facilities), control system programming, course content design on renewable energies (wind energy, bioclimatic architecture, thermal solar energy, and solar photovoltaic energy), patent drafting, security plans development, budgeting.
Name and address of employer	Dener Ingeniería S.L. – Grupo Codelse, Industrial park "Tanos-Viérnoles", Parcela B4, 39300 Torrelavega, Spain
Type of business or sector	Renewable energies research and development / Engineering consulting services.

Personal skills and competences

Mother tongue
Other language(s)
Self-assessment
European level (*)

Spanish

English
French
Dutch

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user	C1	Proficient user
B2	Proficient user	B2	Proficient user	B2	Independent user	B2	Independent user	B2	Independent user
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user

(*) *Common European Framework of Reference for Languages*

Level C1 (CEF) Certificate in Advance English issued from University of Cambridge.

Level B2 (CEF) Certificate in French issued from CLL Louvain-la-Neuve, Belgium.

Level B2 (CEF) Certificate in Dutch issued from Berlitz, Petten, The Netherlands.

Social skills and competences

- Team work experience gained collaborating with European industrial and academic partners; involved in several European and international research projects on energy storage.
- Excellent communication skills and good ability to adapt to multicultural environments gained through experiences as working for the European Commission DG JRC and Imperial College London, participating in project meetings and presenting results at international conferences/symposiums/schools: invited speaker at the 2017 Gordon Research Seminar on New Perspectives on Hydrogen-Metal Interactions and Applications in Easton MA (USA), participation in 2021 Advanced Automotive Battery Conference (Europe), International EV Batteries 2020 Conference (UK), 2019 Electrochemical Conference on Energy and the Environment (UK), Advanced Battery Power 2019 (DE), 15th International Symposium on Metal-Hydrogen Systems 2016 (CH), Hydrogen & Fuel Cell SUPERGEN Researchers Conference 2015 and 2016 (UK), E-MRS Fall Meeting 2015 (PL), 1st Chemistry in Energy Conference organised by Energy Sector of the Royal Society of Chemistry (UK), European Technical School on Hydrogen and Fuel Cells 2014 (GR).

Organisational skills and competences

- Great working capacity and sense of organisation (coordination of my PhD studies while working for a European Institution, European Commission DG JRC). Excellent ability to plan and manage situations.
- Leadership skills gained through supervision of teams in the implementation of several energy facilities, supervision of MEng and PhD students, leading a collaboration among the battery and the fire research groups at Imperial College London and leading BATMAN project also at Imperial; always enhancing the performance of others through encouragement, facilitating team synergies and achieving consensus.
- Extensive experience in project and team management gained through participation in European research projects and working in "Dener Ingeniería" and "ITM Global" energy facilities design projects.

Technical skills and competences

- Ability to apply concepts, methods, and state-of-the-art tools of mathematics, statistics, physical and life sciences, engineering sciences, experimental methods, and information technologies to analyse problems and to extract desired understanding and conclusions.
- Trained to think logically to recognize and understand problems, draw from multiple disciplines, formulate innovative approaches and ensure valid solutions.
- Capacity of evaluating and defending alternatives that satisfy established design criteria and constraints.
- Trained to think independently, cooperatively, and creatively to identify relevant existing ideas and generate solutions.
- Research and Innovation experience developed through PhD studies and working for European Commission DG JRC and Imperial College London. Involvement in technical lab activities, peer-review publications, presentations in international conferences and publication of technical reports for several European research projects for the Fuel Cell and Hydrogen Joint Undertaking (FCH JU) and for Innovate UK: Project 256653 "SSH2S" (Fuel Cell Coupled Solid State Hydrogen Storage Tank), Project 284522 "H2FC" (Integrating European Infrastructure to Support Science and Development of Hydrogen and Fuel Cell Technologies Towards European Strategy for Sustainable, Competitive and Secure Energy), Project 303447 "HYPER" (Integrated hydrogen power packs for portable and other autonomous applications), "Future Emerging Technology Flagship on Graphene" collaboration with Foundation of Bruno Kessler (FBK), Project 104180 "BATMAN" (Battery Thermal Management and Diagnostics for Heavy Duty Applications)
- Excellent writing skills gained through the preparation of scientific reports for European and international research projects and +10 scientific peer review publications.

Computer skills and competences

- Competent with most Microsoft Office programmes (Word, Excel, Power Point, Teams).
- Battery testing software programmes (Maccor software, Biologic software, Matlab)
- Knowledge of computer programming (Matlab, Visual Fortran and Fortran 95).
- Knowledge of Aspen Technology (Aspen Plus and Aspen Custom Modeler) – Chemical processes' simulation.
- Knowledge of AutoCAD, Solidworks and CYPE.
- Use of software for chemical processes calculation and optimization (Gams, Polymath, Origin).
- Knowledge of Powder Diffraction and Rietveld Refinement Software packages (GSAS, FullProf, and Topas).