European Curriculum Vitae

CV Date (22nd April 2021)

Personal Information

Name(s) / Surname(s)	Xabier García Casas
Date of birth	6th January 1996
Nationality	Spanish
Telephone(s)	+34 609 25 44 75
e-mail(s)	xabiergarciacasas@gmail.com / xabier.garcia@icmse.csic.es

Scientific profile

Development of low dimensional nanomaterials, plasma and vacuum synthesis methods, surface patterning and modification, nanomaterials characterization, mechanical energy harvesters fabrication.

ORCID code	0000-0002-7165-3952
Scopus ID	57205624229

CV Summary

Qualified Ph.D student member of the Nanotechnology on Surfaces and Plasma Group focused on science and technology of novel low-dimensional nanomaterials to be implemented in environmental applications, energy harvesting systems and sensors, as well as the manufacturing and advance characterization of these devices. Familiar with several plasma and vacuum synthesis methods (PECVD, magnetron sputtering, vapor transport, etc.), surface treatments (laser micropatterning, surface chemical functionalization, surface charge trapping through plasma) and characterization techniques (SEM, EDXS, UV-vis-NIR Spectrosc., etc.). Author of and contributor to 3 published articles and as well as others currently in progress. Contributed to more than 5 papers in conferences and congresses. Participated in a national project as research assistant and currently participating in a European one. Degree Thesis awarded a national award. Highly interested in science dissemination activities.

Education and Training

Ph.D., Science and Technology of Novel Materials, University of Seville and Extremadura, Spain (Currently)
Doctoral thesis title: "3D Nanomaterials for the development of mechanical energy harvesting systems and nanogenerators"
Directors: Dr. Ana Borrás Martos and Dr. Ángel Barranco Quero

MSc., Science and Technology of Novel Materials, University of Seville, Spain (2020)
Master thesis title: "1D and 3D Nanomaterial Fabrication and Surface Modifation for Developing Piezoelectric and Triboelectric nanogenerators"
Directors: Dr. Ana Borrás Martos, Dr. Ángel Barranco Quero and Dr. Marcela Martínez Tejada

BSc., Materials Engineering, University of Seville, Spain (2019)
BSc., Physics, University of Seville, Spain (2019)
Specialty: Condensed Matter Physics
Degree thesis title: "*Analysis and Generation of Micrometrical Plasma powered by Triboelectric Generators".*
Directors: Dr. Ana Borrás Martos and Dr. José Cotrino Bautista.

Other training Remarkable courses, seminars and workshops	Cartuja Scientific Research Center, CIC Cartuja (CSIC ,US). Sevilla, Spain. 19th Oct to 22th Oct 2020 - 20h **Course: Elaboración de pósters científicos [Creation of scientific posters]** Organizing body: Spanish Research Council (CSIC) Online. 2nd to 3rd December 2020 – 10h **Course: "Standard and Alternative Lithographies"** Organizing body: Spanish ICTS network and Micronanofabs collaborating with the International Iberian Nanotechnology Laboratory (INL, Portugal) Nanoscience Cooperative Research Center, CIC nanoGUNE. San Sebastian, Spain. 12th to 14th Feb 2020 – 25h **Course: nanoGUNE winter school** Organizing body: CIC nanoGUNE National Accelerators Center, CNA (CSIC, US, JA). Spain. 8th Oct 2019 – 8h 30min **Technical seminar: *XXII Jornada Técnica de vacío – Espacio, vacío y aceleradores. Nueva aproximación al alto y ultra-alto vacío* [Space, vacuum and accelerators. A new approach to high and ultra-high vacuum]** Organizing body: Leybold Hispánica Institute of Materials Science of Seville, ICMS (CSIC, US). Spain. 25th Jun 2019 - 9h **Course: Last advances in Micro – Nanostructuration of Surfaces. Patterning and Structuration of Surfaces** Organizing body: Spanish Research Council (CSIC) and the Science and Technology of Surfaces Group (CyTeS) from the Spanish Society of Materials (SOCIEMAT) Institute of Materials Science of Seville, ICMS (CSIC – US). Spain. Jun 2020 – Jul 2020 - 10h **Training course: Scanning Electron Microscope (SEM) model Hitachi S4800 SEM-FEG: independent user** Laboratory Technician: Dr. Mª Carmen Jiménez de Haro.
Research Experience Present	**Research assistant**, Institute of Materials Science of Seville (C/ Américo Vespucio, 49, 41092 Seville – Spain) CSIC Project: 3DScavengers: Three-dimensional nanoscale design for the all-in-one solution to environmental multisource energy scavenging, ERC Starting Grant (Ref: ERC-StG-2019. ID: 851929)
Jun 2020 – Nov 2020	**Research assistant**, Institute of Materials Science of Seville (C/ Américo Vespucio, 49, 41092 Seville – Spain) CSIC Project: *Nueva matriz multisensora óptica reconfigurable para detección de contaminantes en el agua.* [Novel tunable optical multisensing array for detection of water pollutants]
Sep 2019 -Oct 2019	**Summer Internship**, Galician Institute of High Energy Physics (C/ Xoaquín Díaz de Rábago, s/n, 15782 Santiago de Compostela – Spain) USC Project: *Nuclear Physics from the Lab to Improve People's Health*

Jan 2018 – May 2018	**Degree Internship**, Institute of Materials Science of Seville (C/ Américo Vespucio, 49, 41092 Seville – Spain) US Project: *Tratamiento y procesado láser de materiales en forma de lámina delgada para su uso como electrodos en sistemas de plasma a presión atmosférica.* [Laser treatment and processing of thin film materials for their application as electrodes in atmospheric pressure plasma systems]
Scientific Publications Published papers	**Hydrophobic and Anti-Icing Behavior of UV-Laser-Treated Polyester Resin-Based Gelcoats.** Authors: R. Kozera, B. Przybyszewski, Z. D. Krawczyk, A. Boczkowska, B. Sztorch, R. E. Przekop, R. Barbucha, M. Tański, X. García-Casas, A. Borras. Journal: Processes 2020 Vol 8, 12, N. 1642, pp. 1-19. DOI: 10.3390/pr8121642 **3D core-multishell piezoelectric nanogenerators** Authors: A. N. Filippin, X. García-Casas, J. R. Sanchez-Valencia, M. Macias, V. Lopez-Flores, F. Frutos, A. Barranco, A. Borras. Journal: Nano Energy, 2019, 58, pp. 476-483. DOI: 10.1016/j.nanoen.2019.01.047 **Synthesis and Characterization of Three-Dimensional ITO Nanoelectrodes (Master Thesis Summary)** Authors: X. García Casas, A. Borrás, A. Barranco, L.M. Martinez-Tejada. Journal: Material-ES, (2021), 5(1), 1-4. MES-21-001.
Contributions to Conferences, Scientific Events and Seminars	**Plasma Nanoengineering for the Development of Hybrid Piezo and Tribonanogenerators** Authors: Ana Borras, Xabier García-Casas, Nicolás Filippin, Javier Castillo-Seoane, Francisco Aparicio, Ali Ghafarinejad, Jorge Budagoski, Carmen Lopez-Santos, Angel Barranco, Juan Ramon Sanchez-Valencia. Conference: MRS Spring meeting 2021 (Online) Contribution: Oral presentation Date: 17th – 23rd April 2021 **Plasma nanoengineering for the development of hybrid piezo and tribonanogenerators** Authors: Xabier García-Casas, Francisco Aparicio, Ali Ghafarinejad, Javier Castillo-Seoane, Carmen Lopez-Santos, Juan P. Espinós, José Cotrino, Juan Ramón Sanchez-Valencia, Ángel Barranco, Ana Borrás Conference: International Conference on Advances in Energy Harvesting Technology (Online) Contribution: Oral presentation Date: 18th – 20th March 2021 **One-reactor fabrication of supported 3D nanomaterials: first steps towards the all-in-one solution for the fabrication of self-powering systems and multisource energy scavengers.** Authors: A. N. Filippin, X. Garcia-Casas, J. Castillo-Seoane, J. R. Sanchez-Valencia, V. Lopez-Flores, M. C. López-Santos, J. Gil-Rostra, A. Barranco, A. Borras Conference: iPlasmaNano-X 2019. (Porec, Croatia) Contribution: Invited Oral Presentation Date: 15th – 20th September 2019

Nuclear Physics from the Lab to Improve People's Health
Conference: 45 Spanish Nuclear Society annual meeting
Contribution: Invited Workshop (Vigo, Spain)
Date: 23rd – 28th September 2019

Advances in the development of functional 1D and 3D nanostructures.
Authors: A. N. Filippin, J. R. Sanchez-Valencia, M. C. Lopez-Santos, V. Lopez-Flores, X. Garcia-Casas, J. Gil-Rostra, A. Barranco, A. Borras
Conference: iPlasmaNano-IX 2019. (New Buffalo, USA)
Contribution: Invited Oral Presentation
Date: 15th – 20th September 2019

Laser microscale surface patterning
Event: 2019 Nanotechnology on Surfaces and Plasma Group Workshop (Seville, Spain)
Contribution: Oral Presentation
Date: 19th December 2018

Awards and Honors

2020 Materials Science Master Thesis Award from the Spanish Society of Materials (SOCIEMAT) and the Federation of European Materials Societies (FEMS)

Runner-up award in the XVIII Arquímedes University Contest for the research work "Analysis and production of micrometrical plasma powered by triboelectric generators"

Extraordinary End-of-Degree Award for Double Degree in Physics and Materials Engineering 2018/2019 in the University of Seville

Languages

Mother Tongue(s)

Spanish

Other Language(s)
European level

English

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
B2+	Proficient user	B2+	Proficient user	B2+	Proficient user	B2+	Proficient user	B2+	Proficient user

French
B1

German
A2 (Self-assessment)