

CV Date

16/06/2025

Part A. PERSONAL INFORMATION

First Name	Jorge Manuel		
Family Name	Souto Bartolomé		
Sex	Male	Date of Birth	18/07/1967
ID number Social Security, Passport	09311374P		
URL Web			
Email Address	jorge.souto@uva.es		
Open Researcher and Contributor ID (ORCID)	0000-0002-3676-1712		

A.1. Current position

Job Title	Profesor Titular de Universidad		
Starting date	1996		
Institution	Universidad de Valladolid		
Department / Centre	Física de la Materia Condensada, Cristalografía y Mineralogía / Escuela de Ingenierías Industriales		
Country		Phone Number	
Keywords	Physics		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
1996 - 1996	Profesor Titular de Universidad (Interino) / Universidad de Valladolid / Spain
1994 - 1996	Profesor Ayudante de Universidad / Universidad de Valladolid
1993 - 1994	Profesor Ayudante de Escuela Universitaria / Universidad de Valladolid
1992 - 1992	Becario del Programa Nacional de F.P.I. / Universidad de Valladolid

A.3. Education

Degree/Master/PhD	University / Country	Year
Materiales de Interés Tecnológico	Universidad de Valladolid	1993
Licenciado en Ciencias (Físicas)	Universidad de Valladolid	1990

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (n° x / n° y): position / total authors. If applicable, indicate the number of citations

- Scientific paper.** José Luis Pura; Jorge Souto. 2023. Optical and Electrical Properties of Low-Dimensional Crystalline Materials. Crystals. MDPI. 13-6, pp.cryst13060892-1-cryst13060892-2.
- Scientific paper.** Shabnam Dadgostar; José Luis Pura; Irene Mediavilla; Jorge Souto; Juan Jiménez. 2022. Catastrophic optical damage in 808 nm broad area laser diodes: a study of the dark line defect propagation. Optics Express. Optica Publishing Group. 30-23, pp.42624-42638. <https://doi.org/10.1364/OE.463313>

- 3 **Scientific paper.** Javier Pinto; Suset Barroso-Solares; Jorge Souto; E. Rodríguez; Carlos Sanz-Mínguez; Angel Carmelo Prieto. 2022. Raman Spectroscopy Study of Ancient Vaccae (s. IV-I BC) Glass Beads found at the Necropolis of "Las Ruedas" (Padilla de Duero, Valladolid, Spain). Journal of Physics: Conference Series. Institute of Physics. 2204, pp.012009. <https://doi.org/10.1088/1742-6596/2204/1/012009>
- 4 **Scientific paper.** Jorge Souto; Javier Pinto; Angel Carmelo Prieto; Mercedes Barrera; Manuel Carlos Jiménez; Alma Salinas. 2022. Archaeometric Study of Pictorial Stratigraphies from a Togatus Roman Sculpture found in Salamanca (Spain). Zephyrus. Universidad de Salamanca. <https://doi.org/10.14201/zephyrus202188193207>
- 5 **Scientific paper.** S. Dadgostar; J. Souto; J. Jiménez. 2021. CL as a tool for device characterisation: the case of laser diode degradation. Nano Express. IOP. 2-1, pp.014001. <https://doi.org/10.1088/2632-959X/abdc3d>
- 6 **Scientific paper.** Pinto, J.; Prieto, A.C.; Coria-Noguera, J.C.; Sanz-Minguez, C.; Souto, J.2021. Investigating glass beads and the funerary rituals of ancient Vaccae culture (S. IV-I BC) by Raman spectroscopy. Journal of Raman Spectroscopy. 52-1, pp.170-185. <https://doi.org/10.1002/jrs.6049>
- 7 **Scientific paper.** J.L. Pura; J. Souto; J. Jiménez. 2020. Effect of thermal lensing and the micrometric degraded regions on the catastrophic optical damage process of high-power laser diodes. Optics Letters. Optical Society of America. 45-7, pp.1667-1670. <https://doi.org/10.1364/ol.389385>
- 8 **Scientific paper.** J. Souto; J.L. Pura; A. Torres; J. Jiménez. 2019. A comparative analysis of the catastrophic degradation of AlGaAs/GaAs and AlGaAs/InGaAs laser diodes: Role of the strained QWs. Proceedings of SPIE - The International Society for Optical Engineering. SPIE. 10900, pp.109000Q. <https://doi.org/10.1117/12.2507435>
- 9 **Scientific paper.** J. Souto; J.L. Pura; J. Jiménez. 2019. Microscopic degradation and failure processes in high-power diode lasers. Proceedings of the 2019 IEEE High Power Diode Lasers and Systems Conference, HPD 2019 - Co-located with Photonex 2019. IEEE. pp.13-14. <https://doi.org/10.1109/HPD48113.2019.8938678>
- 10 **Scientific paper.** J.L. Pura; J. Souto; P. Periwal; T. Baron; J. Jiménez. 2018. Electromagnetic Field Enhancement on Axially Heterostructured NWs: The Role of the Heterojunctions. Journal of Electronic Materials. Springer Nature. 47-9, pp.5072-5076. <https://doi.org/10.1007/s11664-018-6356-9>
- 11 **Scientific paper.** J.L. Pura; J. Anaya; J. Souto; et al; J. Jiménez. 2018. Electromagnetic field enhancement effects in group IV semiconductor nanowires. A Raman spectroscopy approach. Journal of Applied Physics. American Institute of Physics (AIP). 123-11, pp.114302. <https://doi.org/10.1063/1.5012987>
- 12 **Scientific paper.** J. Souto; J.L. Pura; J. Jiménez. 2018. Thermal and mechanical issues of high-power laser diode degradation. MRS Communications. Cambridge University Press. 8-3, pp.995-999. <https://doi.org/10.1557/mrc.2018.124>
- 13 **Scientific paper.** Jorge Souto; José Luis Pura; Juan Jiménez. 2017. Nanoscale effects on the thermal and mechanical properties of AlGaAs/GaAs quantum well laser diodes: influence on the catastrophic optical damage (COD). Journal of Physics D: Applied Physics. Institute of Physics (IOP). 50-23, pp.235101-1-235101-12. <https://doi.org/10.1088/1361-6463/aa6fbd>
- 14 **Scientific paper.** J. Souto; J.L. Pura; A. Torres. 2017. About the impact of the materials properties in the catastrophic degradation of high power GaAs based laser diodes. Proceedings of SPIE - The International Society for Optical Engineering. 10086, pp.10086P. <https://doi.org/10.1117/12.2251890>
- 15 **Scientific paper.** J. Souto; J.L. Pura. 2017. Materials issues for the catastrophic degradation of high power laser diodes. Proceedings of the 2017 High Power Diode Lasers and Systems Conference, HPD 2017 - Co-located with Photonex 2017. IEEE. pp.57-58. <https://doi.org/10.1109/HPD.2017.8261098>
- 16 **Scientific paper.** J. Souto; J.L. Pura; A. Torres; J. Jiménez. 2017. Thermomechanical degradation of single and multiple quantum well AlGaAs/GaAs laser diodes. Microelectronics Reliability. Elsevier. 76-77, pp.588-591. <https://doi.org/10.1016/j.microrel.2017.07.005>

- 17 **Scientific paper.** J. Souto; V. Gutiérrez-Vicente; A. C. Prieto. 2016. Raman analysis of Gothic wall paintings in the apse of the Santiago Apóstol church in Alcazarén. *Journal of Cultural Heritage*. Elsevier Masson France. 22, pp.1061-1065. ISSN 1296-2074. <https://doi.org/10.1016/j.culher.2016.06.005>
- 18 **Scientific paper.** J. L. Pura; J. Anaya; J. Souto; A. C. Prieto; A. Rodríguez; T. Rodríguez; J. Jiménez. 2016. Local electric field enhancement at the heterojunction of Si/SiGe axially heterostructured nanowires under laser illumination. *Nanotechnology*. IOP Publishing. 27-45, pp.455709 (7 pages). ISSN 0957-4484. <https://doi.org/10.1088/0957-4484/27/45/455709>
- 19 **Scientific paper.** J. Souto; J. L. Pura; A. Torres; J. Jiménez; M. Bettati; F. J. Laruelle. 2016. Catastrophic optical damage of high power InGaAs/AlGaAs laser diodes. *Microelectronics Reliability*. Elsevier. 64, pp.627-630. ISSN 0026-2714. <https://doi.org/10.1016/j.microrel.2016.07.038>
- 20 **Scientific paper.** J. Souto; J. L. Pura; A. Torres; J. Jiménez; M. Bettati; F. J. Laruelle. 2016. Sequential Description of the Catastrophic Optical Damage of High Power Laser Diodes. *Proc. SPIE 9733, High-Power Diode Laser Technology and Applications XIV*. SPIE. pp.973306-1-973306-6. ISBN 9781628419689. <https://doi.org/10.1117/12.2212953>
- 21 **Scientific paper.** J. Souto; J. L. Pura; J. Jiménez. 2016. About the physical meaning of the critical temperature for catastrophic optical damage in high power quantum well laser diodes. *Laser Physics Letters*. IOP Publishing. 13-2, pp.025005 (6 pages). ISSN 1612-2011. <https://doi.org/10.1088/1612-2011/13/2/025005>
- 22 **Scientific paper.** J. Souto; J. L. Pura; M. Rodríguez; J. Anaya; A. Torres; J. Jiménez. 2015. Mechanisms driving the catastrophic optical damage in high power laser diodes. *Proc. SPIE 9348, High-Power Diode Laser Technology and Applications XIII*. SPIE. pp.9348O-1-9348O-7. ISBN 9781628414387. <https://doi.org/10.1117/12.2079464>
- 23 **Scientific paper.** Juan Jiménez; Juan Anaya; Jorge Souto. 2014. Role of thermal stresses in degradation of high power laser diodes. *Transactions of Nanjing University of Aeronautics and Astronautics*. Nanjing Hangkong Hangtian Daxue. 31-2, pp.186-190.
- 24 **Scientific paper.** J. Anaya; A. Torres; A. Martín-Martín; J. Souto; J. Jiménez; A. Rodríguez; T. Rodríguez. 2013. Study of the temperature distribution in Si nanowires under microscopic laser beam excitation. *Applied Physics A*. Springer. 113-1, pp.167-176. ISSN 0947-8396. <https://doi.org/10.1007/s00339-012-7509-y>
- 25 **Scientific paper.** V. Hortelano; J. Anaya; J. Souto; J. Jiménez; J. Perinet; ; F. Laruelle. 2013. Defect signatures in degraded high power laser diodes. *Microelectronics Reliability*. Elsevier. 53-9-11, pp.1501-1505. ISSN 0026-2714. <https://doi.org/10.1016/j.microrel.2013.07.071>
- 26 **Scientific paper.** A.C. Prieto; O. Martínez; J. Souto; M. Avella; A. Guedes. 2013. Study of a tabernacle with a remarkable architectural structure: In situ examination using Raman spectroscopy. *Journal of Raman Spectroscopy*. John Wiley and Sons, Ltd.. 44-8, pp.1156-1162. ISSN 0377-0486. <https://doi.org/10.1002/jrs.4346>
- 27 **Scientific paper.** J. Jiménez; J. Anaya; V. Hortelano; J. Souto; A. Martín Martín. 2013. Degradation signatures of high power laser diodes. *Proceedings of the 2013 Spanish Conference on Electron Devices CDE 2013*. IEEE. pp.309-312. ISSN 2163-4971, ISBN 978-1-4673-4666-5. <https://doi.org/10.1109/CDE.2013.6481404>
- 28 **Scientific paper.** Anaya, J.; Prieto, C.; Torres, A.; Martín-Martín, A.; Souto, J.; Jiménez, J.; Rodríguez, A.; Rodríguez, T. 2012. MicroRaman Spectroscopy of Si Nanowires: Influence of Size. *Materials Science Forum*. Trans Tech Publications. 725, pp.255-258. ISSN 1662-9752. <https://doi.org/10.4028/www.scientific.net/MSF.725.255>
- 29 **Scientific paper.** 2011. Raman spectrum of group IV nanowires: influence of temperature. *Materials Research Society Symposia Proceedings*. Materials Research Society. ISSN 0272-9172. <https://doi.org/10.1557/opl.2011.619>
- 30 **Review.** J. Souto; J.L. Pura; J. Jiménez. 2019. Thermomechanical issues of high power laser diode catastrophic optical damage. *Journal of Physics D: Applied Physics*. Institute of Physics Publishing (IOP). 52-34, pp.343002. <https://doi.org/10.1088/1361-6463/ab243f>

C.2. Conferences and meetings

Jorge Souto. Response of a Sensor Based on Ytterbium Bisphthalocyanine Langmuir-Blodgett Films to Selected Herbicides. 2nd International Symposium on Advanced Materials and Nanostructures. Instituto de Física (Universidade de Sao Carlos) - Faculdade de Ciencias (Unesp, Presidente Prudente). 2007. Brazil. Participatory - invited/keynote talk.

C.3. Research projects and contracts

- 1 **Project.** PID2021-126046OB-C22, CARACTERIZACIÓN AVANZADA DE NANOESTRUCTURAS SEMICONDUCTORAS PARA DISPOSITIVOS DE COMPUTACIÓN CUÁNTICA. Ministerio de Ciencia e Innovación. Jorge Serrano Gutiérrez. (Universidad de Valladolid). 01/09/2022-31/08/2025. 124.872 €.
- 2 **Project.** TED2021-130786B-I00, HACIA LA OBTENCIÓN DE CÉLULAS SOLARES DE ALTO RENDIMIENTO: CARACTERIZACIÓN CON RESOLUCIÓN NANOMÉTRICA DE MATERIALES AVANZADOS. Ministerio de Ciencia e Innovación.. Jorge Serrano Gutiérrez. (Universidad de Valladolid). 01/12/2022-30/11/2024. 192.280 €.
- 3 **Project.** DESARROLLO DE SISTEMAS DE IMAGEN POR ELECTROLUMINISCENCIA PARA LA INSPECCIÓN Y MANTENIMIENTO DE PLANTAS SOLARES. Junta de Castilla y León. (Universidad de Valladolid). 11/07/2018-31/10/2021. 117.500 €.
- 4 **Project.** CARACTERIZACIÓN ELECTRICA Y LUMÍNICA DE SUSTRATOS Y CÉLULAS SOLARES PARA LA FABRICACIÓN DE MÓDULOS BIFACIALES DE SILICIO SOLAR. MINISTERIO DE ECONOMIA Y COMPETITIVIDAD. (Universidad de Valladolid). 01/01/2018-31/12/2020. 105.754 €.
- 5 **Project.** DISEÑO Y DESARROLLO DE UN SISTEMA DE IMAGEN POR FOTOLUMINISCENCIA PARA CALIFICACIÓN DE OBLEAS Y CÉLULAS SOLARES DE SI MULTICRISTALINO. Junta de Castilla y León. (Universidad de Valladolid). 01/01/2016-31/12/2018. 117.500 €.
- 6 **Project.** MICROSCOPIA ELECTRONICA DE TRANSMISION EN ARQUITECTURAS DE CELULAS SOLARES MULTIUNION PARA EFICIENCIAS SUPERIORES AL 50%. CORRELACION ENTRE PROPIEDADES FISICAS Y ESTRUCTURALES (TEC2014-54260-C3-2-P). Ministerio de Economía y Competitividad. Carmen Inés Ballesteros Pérez. (Universidad Carlos III de Madrid). 01/09/2015-31/12/2017. 83.611 €.
- 7 **Project.** NANOHILOS SEMICONDUCTORES PARA APLICACIONES FOTOVOLTAICAS Y DE CONVERSIÓN TERMOELÉCTRICA. Junta de Castilla y León. (Universidad de Valladolid). 28/10/2013-31/12/2016. 35.000 €.
- 8 **Project.** CRECIMIENTO Y CARACTERIZACIÓN DE HETEROESTRUCTURAS DE NANOHILOS DE SIGE: ASPECTOS ELÉCTRICOS Y TÉRMICOS (MAT2010-20441-C02-01). MINISTERIO DE EDUCACION Y CIENCIA. Juan Ignacio Jiménez López. (Universidad de Valladolid). 01/01/2011-31/12/2013. 60.500 €.