MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

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

CV date	May 2023

Part A. PERSONAL INFORMATION

First name	ENRIQUE		
Family name	DIEZ		
Gender (*)	MALE	Birth date (dd/mm/yyyy)	07/06/1969
ID number	33507216-B		
e-mail	enrisa@usal.es	URL Web: https://lbt.usal.es/	
Open Researcher and Contributor ID (ORCID) (*)		https://orcid.org/0000-0001-7964-4148	
Researcher ID (WOS)		M-3691-2014	
Author ID (SCOPUS)		36820755400	

(*) Mandatory

A.1. Current position

Name of University/Institution	UNIVERSIDAD DE SALAMANCA			
Department	FISICA FUNDAMENTAL / FACULTAD DE CIENCIAS			
Address and Country	PLAZA DE LA MERCED S/N 37008 SALAMANCA			
Phone number	670581543	E-mail	enrisa@usal.es	
Current position	Full Professor		From	12/08/2019
Key words	Graphene and 2D materials; quantum point contacts; low-temperatures; quantum nanophysics, Quantum Hall effect, Semiconductors, nanostructures, Quantum Materials			

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
2009-2019	Associate Professor/Univ. Salamanca/Spain/Upgrade
2004-2008	Ramón y Cajal/ Univ. Salamanca /Spain/Upgrade
2001-2003	High-School Teacher (Technology)/MEC/Madrid/R&C
2000-2001	Postdoc CAM /Universidad Complutense/Civil servant HST
1999-2000	Postdoc/ Princeton University/ Princeton, NJ. USA
1994-1999	Ayudante/ Universidad Carlos III, Madrid, Spain
1991-1993	Research Technician/Univ. Autónoma de Madrid,Spain

A.3. Education

Degree/PhD	University	Year
MsSc. and BSc. Physics	Universidad Autónoma de Madrid	1993
Ph.D. Physics	Universidad Carlos III de Madrid	1997

Part B. CV SUMMARY

Enrique Diez, was born in Luzern (Switzerland) in 1969 and obtained his Ph.D. in Physics by University Carlos III of Madrid in 1997. He continued his postdoctoral studies with Prof. Daniel Tsui (Nobel Prize in Physics) in Princeton University with a MEC-Fulbright fellowship. He has been employed at the University of Salamanca since January 2004 under the program "Ramón y Cajal" (a national programme to reduce the loss of talent and improve the number of groups of excellence in Spain). From December 2010 as an Associate Professor and from August 2019 as Full Professor of our Sciences Faculty.

During the last ten years he has devoted great efforts to the installation of a new Clean Room facility designed for graphene based nanoelectronic devices. He also head the settle up of the first in Europe 100% Cryofree Low Temperatures Laboratory for magneto transport characterization (12 Teslas and 10 milikelvin). Nowadays, he leadership the Nanotechnology group (http://nanotech.usal.es/) registered as Unidad de Investigación Consolidada UIC 134, a Research Excellence Distinction issued by the Junta de Castilla y León. He also is the Head of the Fundamental Physics Department at Salamanca University. He has focused his research in the transport and electronic properties of quantum nanosystems particularly 2D systems in the extreme quantum limit (high magnetic fields and dilution temperatures). He is currently researching unconventional 2D materials including graphene heterostructures and topological insulators looking for unique physical properties bearing in mind their uses in novel optoelectronic devices for the generation and detection of sub-THz and THz radiation to be used in a wide range of applications (Communications, Healthcare, Security, Life Sciences). He focus now his research in broken symmetry nanomaterials (twisted 2D materials) and the use of quantum point contacts for reveal exotic quantum features as viscous flow and chiral electronics.
Web link to my research group: nanotech.usal.es

Part C. RELEVANT MERITS
C.1. Publications

V. Clericò, M. Amado and E. Diez. Electron Beam Lithography and its use on 2D materials. (Chapter 3 in book: Nanofabrication: Nanolithography techniques and their applications. Edited by J.M. de Teresa. IOP Publishing, Bristol, UK 2020. ISBN: 978-0-7503-2606-3). https://iopscience.iop.org/book/978-0-7503-2608-7

Selected Papers published in the last four years

1) Daniel Vaquero, Vito Clericò, Michael Schmitz, Juan Antonio Delgado-Notario, Adrian Martín-Ramos, Juan Salvador-Sánchez, Claudius S. A. Müller, Km Rubi, Kenji Watanabe, Takashi Taniguchi, Bernd Beschoten, Christoph Stampfer, **Enrique Diez**, Mikhail I. Katsnelson, Uli Zeitler, Steffen Wiedmann, Sergio Pezzini.
Phonon-mediated room-temperature quantum Hall transport in graphene.
Nature Communications **14**, 318 (2023)
DOI: https://doi.org/10.1038/s41467-023-35986-3 Impact Factor 17.7– Q1

2) Jorge Quereda, Sruthi Kuriakose, Carmen Munuera , Federico J. Mompean , Abdullah M. Al-Enizi , Ayman Nafady , **Enrique Diez**, Riccardo Frisenda and Andres Castellanos-Gomez.
Scalable and low-cost fabrication of flexible WS2 photodetectors on polycarbonateby orbital Hall effect.
NJP Flexible Electronics **6**, 23 (2022).
DOI: https://doi.org/10.1038/s41528-022-00157-9 Impact Factor 13.02– Q1

3) J. A. Delgado-Notario, W. Knap, V. Clericò, J. Calvo-Gallego, T. Taniguchi, K. Watanabe, T. Otsuji, V.V. Popov , D.V. Fateev, **E. Diez,** J.E. Velazquez,and Y. M. Meziani.
Enhanced Terahertz Detection of Multigate Graphene Nanostructures
Nanophotonics **11**, 519 (2022).
DOI: https://doi.org/10.1515/nanoph-2021-0573 Impact Factor 8.85– Q1

4) D. Vaquero, V. Clericò, J. Salvador-Sánchez, E. Díaz, F. Domínguez-Adame, Leonor Chico,Y. M. Meziani. ***E. Diez*** *and J. Quereda.*
Fast response photogating in monolayer MoS2 phototransistors
Nanoscale 13, 16136 (2021)
DOI : https://doi.org/10.1039/D1NR03896F Impact Factor 7.70– Q1

5) C.H. Fuentevilla, J.D. Lejarreta, F. Domínguez-Adame and ***E. Diez***
Spin filtering induced by a magnetic insulator stripe on graphene
New Journal of Physics 23, 053029 (2021)
DOI: http://doi.org/10.1088/1367-2630/abfd00 Impact Factor: 3.786– Q1

6) D. Vaquero, V. Clericò, J. Salvador-Sánchez, A. Martín-Ramos, E. Díaz, F. Domínguez-Adame, Y. M. Meziani. ***E. Diez*** *and J. Quereda.*
Excitons, trions and Rydberg states in monolayer MoS_2 revealed by low-temperature photocurrent spectroscopy
Communications in Physics 3, 194 (2020)
DOI: https://doi.org/10.1038/s42005-020-00460-9 Impact Factor 4.68– Q1

7) J. A. Delgado-Notario, V. Clericò, ***E. Diez,*** *J.E. Velazquez, T. Taniguchi, K. Watanabe, T. Otsuji and Y. M. Meziani.*
Asymmetric dual-grating gates graphene FET for detection of terahertz radiations
APL Photonics 5, 066102 (2020)
DOI: https://doi.org/10.1063/5.0007249 Impact Factor 4.86– Q1

8) V. Clericò, J. A. Delgado-Notario, M. Saiz-Bretín, A. V. Malyshev, Y. M. Meziani, P. Hidalgo, B. Méndez, M. Amado, F. Domínguez-Adame and ***E. Diez***
Quantum nanoconstrictions fabricated by cryo-etching in encapsulated graphene
Scientific Reports 9, 13572 (2019)
DOI: https://doi.org/10.1038/s41598-019-50098-z Impact Factor 4.11– Q1

9) W. Yu, V. Clericò, C. Hernández-Fuentevilla, X. Shi, Y. Jiang, D. Saha, W.K. Lou et al.
Anomalously large resistance at the charge neutrality point in a zero-gap InAs/GaSb bilayer
New Journal of Physics 20, 053062 (2018)
DOI: http://doi.org/10.1088/1367-2630/aac595 Impact Factor: 3.786– Q1

10) E. Díaz, P. Albares, P.G. Estévez, J.M. Cerveró, C. Gaul, ***E. Diez*** *and F. Domínguez-Adame*
Spin dynamics in helical molecules with nonlinear interactions
New Journal of Physics 20, 043055 (2018)
DOI: http://doi.org/10.1088/1367-2630/aabb91 Impact Factor: 3.786– Q1

C.2. Congress (Organizational and Advisory roles at Conferences and Boards (last three years only)

- Co-Chair of the GEFES2023 (Salamanca, 1-3 February 2023) - https://gefes2023.es/
- Co-chair of the Nanolito Summer School: Basics and applications of Nanolithography (Salamanca 29-30 June, 2021) - https://lbt.usal.es/nanolito-2021/
- Co-chair of the 20th International Conference on Superlattices, Nanostructures and Nanodevices (ICSNN2018) (Madrid, 2018).
- Member of the Scientific Committee of the International Conference on Quantum Science and Technology at INL (Braga, 2019)
- Chair of the Semiconductor and Quantum Materials section of the CMD-EPS.
- Member of the Board División de Física de la Materia Condensada GEFES-RSEF

C.3. Research projects and grants (Only last three years) –

Role as Principal Investigator.

1. Title: Experimental study of tunable spin and valley degeneracy in broken-symmetry nanosystems. Funding Agency: Ministerio de Ciencia, innovación y Universidades **Ref:PID2019-108820RB-C22**. 01/06/2020 to 31/12/2023. 156.090 €.

2. Title Sistema de fuentes de radiación electromagnética en el rango de 0.6 a 5.0 THz. Funding Agency: Junta de Castilla y León
Ref: IR2020-1-USAL-04 01/12/2020 to 30/10/2021. 398.622 €.

3. Title: TECNOLOGÍAS BASADAS EN MATERIALES HÍBRIDOS AVANZADOS: GRAFENO, MATERIALES 2D Y AISLANTES TOPOLÓGICOS. Funding Agency: Junta de Castilla y León. **Ref: SA256P18** 23/11/2018 to 30/06/2021. 120.000€.
4. Title Sistema de caracterización de propiedades eléctricas de materiales
   Funding Agency: Junta de Castilla y León
   Ref: UIC134USAL03. 01/01/2019 to 30/10/2019. 406.822€.
5. Title: Fabricación y estudio de las propiedades de transporte de nanodispositivos basados en grafeno y materiales híbridos avanzados.
   Funding Agency: Ministerio de Economía y Competitividad.
   Ref:MAT2016-75955. 01/01/2016 to 31/12/2020. 60.500€.

C.4. Contracts, technological or transfer merits (Only last three years)

1. **Laser proton-boron fusión** *(Contract Art.83)*
   HB11, Sydney (Australia)-
   01/07/2022 to 31/12/2025 **330.000 €**

2. **Adaptación de patrón de tensión Josephson a criostato de ciclo cerrado**
   Centro Español de Metrología (CEM) - *(Contract Art.83)*
   01/07/2017 to 31/12/2019 - **22.000 €**

C5. Mentoring and Thesis supervised I have mentored 2 sabbatical professor, 5 postdoctoral researchers as well as many master and undergraduate students (several of them from abroad). I have supervised 4 PhD Thesis finished and other 2 PhD thesis are under development.

1) *Electronic structure and transport properties in graphene and other nanoscopic systems.*
   Mario Amado Montero, Universidad Complutense, 2011
   Premio Extraordinario de Doctorado. **10 JCR papers**.- https://www.educacion.es/teseo/mostrarRef.do?ref=338406
   Actual Position: PCD, USAL.

2) *Fabrication and characterization of graphene nanodevices.*
   Cayetano Sánchez-Fabrés Cobaleda. Universidad de Salamanca, 2014.
   7 JCR papers https://www.educacion.es/teseo/mostrarRef.do?ref=1087779
   Actual Position: Senior Project Manager, New Relic, Inc.

3) *Transmisión y Conductancia en dispositivos electrónicos basados en grafeno.*
   Cristina Hernández Fuentevilla, Universidad de Salamanca, 2020
   5 JCR papers https://www.educacion.gob.es/teseo/mostrarSeleccion.do
   Actual Position: PTU- USAL.

4) *Fabrication and characterization of Quantum Materials: Graphene heterostructures and Topological Insulators.*
   Vito Clericò. Universidad de Salamanca, 2020.
   6 JCR papers https://www.educacion.gob.es/teseo/mostrarRef.do?ref=1862094
   Actual Position: Clean-Room Director – USAL

5) *Opto-espintrónica en dispositivos híbridos bidimensionales.*
   Daniel Vaquero. Universidad de Salamanca. (Lectura prevista 2024)
   5 **JCR papers** https://lbt.usal.es/staff-member/daniel-vaquero-monte/
   Actual Position: Contrato predoctoral FPU – 3er año - Universidad de Salamanca

6) *Nanodispositivos basados en bicapas rotadas de materiales 2D.*
   Juan Salvador. Universidad de Salamanca. (Lectura prevista 2025)
   6 **JCR papers** https://lbt.usal.es/staff-member/juan-salvador-sanchez-2/
   Actual Position: Contrato predoctoral JCYL– 2º año- Universidad de Salamanca