

CURRICULUM VITAE (CVA)

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

		CV date	11/05/2023
Part A. PERSONAL INFORMATION			
First name	Jesús Enrique		
Family name	Velázquez Pérez		
Gender (*)	Male	Birth date (dd/mm/yyyy)	30/03/1964
Social Security, Passport, ID number	10189802C		
e-mail	js@usal.es	URL Web: diarium.usal.es/js	
Open Research and Contributor ID (ORCID)(*)	0000-0002-6555-9871		

(*) Mandatory

A.1. Current position

Position	Profesor Titular de Universidad		
Initial date	16/11/1992		
Institution	Universidad de Salamanca		
Department/Center	Departamento de Física Aplicada		
Country	Spain	Teleph. number	0034699492846
Key words	Transistors, nanoelectronics, plasma waves, TeraHertz, TCAD, FinFET, Graphene, SiGe, noise, thermoelectrics		

A.2. Previous positions (research activity interruptions, art. 45.2.b)

Period	Position/Institution/Country/Interruption cause
1987-1990	Research Fellow - USAL – CNRS Institut d'Electronique Fondamentale University Paris XI (Orsay)
1990-1992	Prof Titular Interino - USAL

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciado en Física	USAL - Spain	1986
DEA – Master in Electronics	Université Paris XI (Orsay France)	1988
Doctor en Física	USAL - Spain	1990

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

Hindex=14 (WoS & Scopus)

J. E. Velázquez Pérez, Web of Science ResearcherID F-4241-2012, is a Profesor Titular de Universidad (PTU) in the Department of Applied Physics of the Universidad de Salamanca since 1992. Previously he was a fellow of the Spanish National Research Ministry within the National Program FPI (1987-1991) at the Institut d'Électronique Fondamentale, Université Paris XI CNRS in Orsay, France, where he worked in Monte Carlo simulation of high-speed devices. From 1990, after defending his Ph. D. Thesis, he was appointed interim PTU at USAL. Between 1998 and 2004 he was an invited researcher at the Department of Electrical and Electronic Engineering of the Imperial College London (UK) working on the development of Si-SiGe MODFETs with Si channel under strain for millimeter-wave applications. From 2010 he has established with Dr. Meziani, at this time a Fellow of prestigious Ramon y Cajal Spanish Program, the THz and Solar Cells Labs of the USAL (named as USAL NanoLab) where conducted experimental research in semiconductor devices for THz applications and investigation of third

generation solar cells. He and is one of the four founding members of the Clean Room of Nanotechnology of the University of Salamanca (USAL CRN).

He supervised more than 20 final year project for graduates and undergraduates students . He was supervisor of 3 Ph.D. students. He was a supervisor of Dr. Juan Delgado Notario who got his Ph.D with the highest score in February 2019 and with European mention. Dr. Notario was awarded the JSPS post-doc fellow in 2019 and now he is working with the Center for Terahertz Research and Applications (CENTERA) at Warsaw, Poland. He is actually supervisor of two Ph.D students (A. El Haj & Daniel Hernández Ramírez). He was tribunal member of four thesis in Spain.

He has an h-index of 14 according to WOS (<https://publons.com/researcher/1521606/yahya-moubarak-meziani/>) with around 2000 TTC. He is author and co-author of more than 90 scientific publications, 3 book chapters, and participated in more than 100 international conferences. He used to be a reviewer of different international journals. He is reviewer of the projects for the ANEP and UK EPSRC. He served as a supervisor of EU Research Project. He was a member of the Organizing Committee of the [EDISON'19](#), and the [CDE2018](#) helded in Salamanca, Spain.

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

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

C.1. Most important publications in books and journals with "peer review" and in conferences (*see instructions*).

Total of 18 papers in the last 10 years period. Here is a list of the 10 most relevant ones.

1. J. Calvo-Gallego, J. A. Delgado-Notario, O. V. Minin, El Hadj Abidi, M. Ferrando-Bataller, Kristel Fobelets, J. E. Velázquez-Pérez, I. V. Minin, Y. M. Meziani, Enhancing resolution of terahertz imaging systems below the diffraction limit, *Optics & Laser Technology*, 164, 2023, 109540, 2023
2. Delgado-Notario, J. A., Knap, W., Clericò, V., Salvador-Sánchez, J., Calvo-Gallego, J., Taniguchi, T., Watanabe, K., Otsuji, T., Popov, V. V., Fateev, D. V., Diez, E., Velázquez-Pérez, J. E., & Meziani, Y. M. (2022). Enhanced terahertz detection of multigate graphene nanostructures. *Nanophotonics*, 0(0). <https://doi.org/10.1515/NANOPH-2021-0573>
3. I. V. Minin, O. V. Minin, J. Salvador-Sánchez,..., and Y.M. Meziani (7/9) "Responsivity enhancement of a strained silicon field-effect transistor detector at 0.3 THz using the terajet effect," *Opt. Lett.*, vol. 46, no. 13, pp. 3061–3064, Jul. 2021.
4. J. A. Delgado-Notario, V. Clericò, E. Diez, J. E. Velázquez-Pérez, T. Taniguchi, K. Watanabe, T. Otsuji, and Y. M. Meziani "Asymmetric dual-grating gates graphene FET for detection of terahertz radiations," *APL Photonics*, vol. 5, no. 6, p. 66102, Jun. 2020.
5. J.A.Delgado-Notario, J.E.Velázquez-Pérez, Y.M.Meziani, K. Fobelets, Sub-THz Imaging Using Non-Resonant HEMT Detectors, *Sensors*, Vol 18, Issue 2, pp. 543, February, 2018. DOI: 10.3390/s18020543.
6. Lashkevych, I., Velázquez, J.E., Titov, O.Y., Gurevich, Y.G.Special Important Aspects of the Thomson Effect (2018) *Journal of Electronic Materials*, 47 (6), pp. 3189-3192, 2018.
7. Delgado-Notario, J.A., Javadi, E., Calvo-Gallego, J., Diez, E., Meziani, Y.M., Velázquez-Pérez, J.E., Fobelets, K., Sub-THz Response of Strained-Silicon MODFETs, *Physica Status Solidi (A) Applications and Materials Science*, 215 (4), 2018.
8. O.Yu. Titov, J.E. Velázquez-Pérez, and Yu. G. Gurevich, Mechanisms of the thermal electromotive force, heating and cooling in semiconductor structures, *International Journal of Thermal Sciences*, vol. 92, pp. 44-49, 2015. DOI: 10.1016/j.ijthermalsci.2015.01.023
9. Y.M. Meziani, E. Garcia-Garcia, J.E. Velazquez-Perez, D. Coquillat, N. Dyakonov, W. Knap, I. Grigelionis, K. Fobelets Terahertz Imaging Using Strained-Si MODFETs as Sensors *Solid-State Electronics*, vol. 83, pp 113-117 (2013)

10. Kristel Fobelets, Jaime Calvo Gallego and J. Enrique Velazquez-Perez, Impact of the gate scaling on the analog performance of s-Si CMOS devices, Semicond. Sci and Technol., 26, 095030, 2011

Book chapters:

J.A. Delgado-Notario, V. Clerico, K. Fobelets, J. E. Velázquez-Pérez and Y. M. Meziani, Room-Temperature Terahertz Detection and Imaging by Using Strained-Silicon MODFETs. Book title: Design, Simulation and Construction of Field Effect Transistors, Chapter 4, pp. 53-71, July 2018., DOI: 10.5772/intechopen.76290, ISBN: 978-1-78923-417-6, Editor: D. Vikraman and H.S. Kim

Y.M. Meziani, E. Garcia, E. Velazquez, E. Diez, J. Calvo, K. Fobelets and W. Knap "Detection of Terahertz Radiation from Submicron Plasma Waves Transistors" Book title: Bolometers, ISBN 979-953-307-348-3, Editor: Dr. Unil Perera (2012).

C.2. Congress. About 30 international conferences, 6 by invitation. Here are shown 2 of them

1. Y.M. Meziani, et al. 'Terahertz detection using graphene based asymmetric dual grating gates FET' **Invited** at the International Congress on Graphene, 2D Materials and Applications, 30th September - 04th October 2019, Sochi Olympic Park, Sochi, Russia
2. Y.M. Meziani et al. 'Encapsulated graphene devices for the terahertz technology' **Invited** at 9th Russia-Japan-USA-Europe Symposium on Fundamental & Applied Problems of Terahertz Devices & Technologies (RJUSE TeraTech-2021), November 1-4, 2021, Sendai, Japan.

C.3. Projects or research lines in which you have participated.

Title: Transistores FET basados en Si y materiales 2d avanzados para tecnología super-Terahercios (PID2021-126483OB-I00)

Fund donor: Ministerio de ciencia e Innovación & FEDER

Period: 2022 - 2024 **Budget granted:** 108.000 € **Principal Investigator:** Y. Meziani, J.E. Velazquez

Title: Sistema de fuentes de radiación electromagnética en el rango de 0.6 a 5.0 THz

Fund donor: CONSEJERÍA DE EDUCACIÓN Y CULTURA DE LA JUNTA DE CASTILLA Y LEÓN

Period: 2020 - 2021 **Budget granted:** 398.622 € **Principal Investigator:** Y. Meziani

Title: Ampliación de la Sala Blanca para un sistema de deposición física de vapor (PVD) multi-oblea y con control del ángulo del eje de rotación, EQC2021-006919-P

Fund donor: MICINN

Period: 2021 - 2022 **Budget granted:** 745.872 € **Principal Investigator:** E. Diez

Title: Desarrollo de nuevos sensores ópticos y de nuevas técnicas de caracterización en los espectros visible y de Terahercios SA121P2

Fund donor: CONSEJERÍA DE EDUCACIÓN Y CULTURA DE LA JUNTA DE CASTILLA Y LEÓN

Period: 2021 - 2023 **Budget granted:** 264.000 € **Principal Investigator:** Yahya Meziani

Title: NUEVA GENERACION DE TRANSISTORES FET PARA TECNOLOGIA DE THZ - RTI2018-097180-B-I00

Fund donor: Ministerio De Economía Y Competitividad

Period: 2019 -2022 **Budget granted:** 118.701 € **Principal Investigator:** Jesús Enrique Velázquez Pérez – Yhaya Meziani

Title: Tecnologías basadas en materiales híbridos avanzados: Grafeno, Materiales 2D y Aislantes topológicos - SA256P18

Fund donor: CONSEJERÍA DE EDUCACIÓN Y CULTURA DE LA JUNTA DE CASTILLA Y LEÓN

Period: 2019 - 2021 **Budget granted:** 120.000 € **Principal Investigator:** Yahya Meziani

Title: Simulación y desarrollo de dispositivos semiconductores para aplicaciones en THz

Fund donor: Ministerio De Economía Y Competitividad

Period: 01/02/2013 - 31/12/2015 **Budget granted:** 106.821 € **Principal Investigator:** Jesús Enrique Velázquez Pérez

Title: ICP Para Ataque Seco de Nanomateriales (UNSA13-3E-2691)
Fund donor: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD
Period: 2015 **Budget granted:** 582.374 € **Principal Investigator:** Enrique Diez

Title: Espectrómetro de Micro-Raman para la Universidad de Salamanca (UNSA13-3E-2302)
Fund donor: MINISTERIO DE ECONOMIA Y COMPETITIVIDAD
Period: 2015 **Budget granted:** 582.374 € **Principal Investigator:** Enrique Diez

Title: Reconfigurable nanowires for thermal rectification
Fund donor: Lloyd's ICON
Period: 2016 - 2019 **Budget granted:** 50.000 £ **Principal Investigator:** Kristel Fobelets (Imperial College)

Title: Desarrollo de sensores de THz para aplicaciones de imagen y seguridad (TEC2015-65477-R)
Fund donor: Ministerio De Economía Y Competitividad
Period: 01/01/2016 - 30/09/2019 **Budget granted:** 139.029, € **Principal Investigator:** Jesús Enrique Velázquez Pérez

Title: Simulación y desarrollo de dispositivos semiconductores para aplicaciones en THz
Fund donor: Ministerio De Economía Y Competitividad
Period: 01/02/2013 - 31/12/2015 **Budget granted:** 106.821 € **Principal Investigator:** Jesús Enrique Velázquez Pérez

Title: FETs nanométricos basados en Si: Funcionamiento en muy altas frecuencias y aspectos térmicos
Fund donor: MICINN, TEC2008-02281
Period: 01/01/2009 - 30/06/2012 **Budget granted:** 127 897 € **Principal Investigator:** Jesús Enrique Velázquez Pérez

Title: Sala Blanca de Nanotecnología de la Universidad de Salamanca
Fund donor: MICINN (Programa INNPLANTA PCT-420000-2010-008)
Period: 2010-2012 **Budget granted:** 670.000 € **Principal Investigator:** Enrique Diez

Title: Estudio teórico de los efectos termoeléctricos en nano-dispositivos (FR2009-0030)
Fund donor: MICINN Acciones Integradas - Francia
Period: 2010-2012 **Budget granted:** 12.000 € **Principal Investigator:** Jesús Enrique Velázquez Pérez

C.4. Participation in technology/knowledge transfer activities and exploitation of results.

Sistema de inspección de células solares usando tecnología de Terahercios (Art. 83), GRUPO UNISOLAR, S.A. (SOLIKER), 16/02/2011- 15/10/2012, Funding: 12,000 Euros, IP: Y.M. Meziani

Investigación y desarrollo de nuevas tecnologías de generación de energía basadas en células fotovoltaicas de lámina delgada (ATON), Contract art. 83 with GRUPO UNISOLAR, S.A. (SOLIKER), Proyecto ATON-CDTI-CEN2009/1009, 01/09/2009-31/12/2012, Funding: 60,000 euros, IP Diez