

Part A. PERSONAL INFORMATION

CV date [REDACTED]

First and Family name	Javier Mateos López	[REDACTED]	[REDACTED]
Researcher codes	ORCID ID	0000-0003-4041-7145	
	SCOPUS Author ID	7101698999	
	WoS Researcher ID	A-6674-2008	

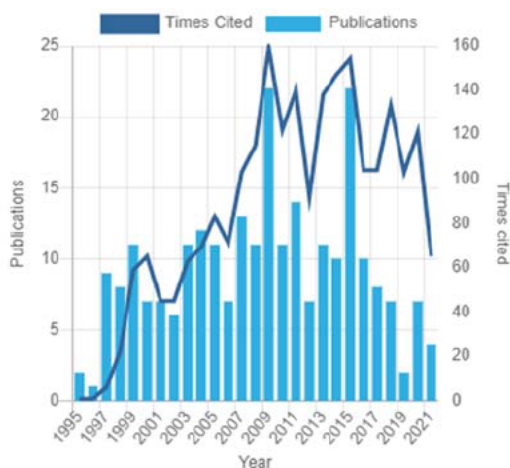
A.1. Current position

Name of University/Institution	University of Salamanca		
Department	Applied Physics		
Address and Country	Plaza de la Merced s/n, 37008 Salamanca, Spain		
Phone number	[REDACTED]	E-mail	javierm@usal.es
Current position	Catedrático de Universidad	From	28/02/2017
Key words	Semiconductor devices, Monte Carlo simulation, nanoelectronics, terahertz		

A.2. Education

PhD, Licensed, Graduate	University	Year
Degree in Physics	University of Salamanca	1993
PhD in Physics	University of Salamanca	1997

A.3. General indicators of quality of scientific production



Statistics are calculated based only on information which has been submitted to Publons. Read more about them here.

Publication metrics

WEB OF SCIENCE DOCUMENTS	TOTAL TIMES CITED	H-INDEX	AVERAGE CITATIONS PER DOCUMENT	AVERAGE CITATIONS PER YEAR
251	2330	25 [®]	9.3	86.3

Part B. CV SUMMARY

Javier Mateos ([REDACTED]), Full Professor in the Department of Applied Physics of the University of Salamanca (USAL) since February de 2017, is with the Research Group on High-Frequency Nanoelectronic Devices (nanoelec.usal.es) since 1993. He is author or co-author of more than 130 JCR papers (h-index=25), more than 100 contributions to conference proceedings with peer-review, 1 book chapter and is editor of 2 books. He presented more than 200 contributions (30 invited) in International conferences and has participated in more than 40 research projects (being IP of 14 of them) funded by diferent institutions, with a significant presence in international projects: 2 EU-funded projects (ROOTHZ within FP7 and NANO-TERA within FP3), 3 funded by NATO, 6 Acciones Integradas (4 with France and 2 with Italy) and several international Research networks (EUROSOL, Phantoms, GDR THz, GDRE, nanoICT). He was coordinator of the EU project ROOTHZ (2011-2013), aiming to the fabrication of emitters and detectors in the THz range with nanodevices based on narrow and wide bandgap semiconductors (www.roothz.eu). As a result of that project two patents were filed, whith him as co-inventor. He is Associate Editor of one of the most prestigious journals in the field of semiconductor devices, IEEE Transactions on Electron Devices, since 2016.



Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications

Y. Lechaux, I. Íñiguez-de-la-Torre, J. A. Novoa-López, O. García-Pérez, H. Sánchez-Martín, J. F. Millithaler, D. Vaquero, J. A. Delgado-Notario, V. Clericò, T. González and J. Mateos, “Comprehensive characterization of Gunn oscillations in In_{0.53}Ga_{0.47}As planar diodes,” *Semicond. Sci. and Tech.* 35, 115009 (2020)

E. Colomé, J. Mateos, T. González, and X. Oriols, “Noise and charge discreteness as ultimate limit for the THz operation of ultra-small electronic devices,” *Scientific Reports* 10, 15990 (2020)

B. Orfao, B. G. Vasallo, D. Moro-Melgar, S. Pérez, J. Mateos, and T. González, “Analysis of surface charge effects and edge fringing capacitance in planar GaAs and GaN Schottky barrier diodes,” *IEEE Transactions on Electron Devices* 67, pp. 3530-35635 (2020)

E. Pérez-Martín, T. González, D. Vaquero, H. Sánchez-Martín, C. Gaquière, V. J. Raposo, J. Mateos and I. Íñiguez-de-la-Torre, “Trap-related frequency dispersion of zero-bias microwave responsivity at low temperature in GaN-based self-switching diodes,” *Nanotechnology* 31, 405204 (2020)

H. Sánchez-Martín, J. Mateos, J. A. Novoa, J. A. Delgado-Notario, Y. M. Meziani, S. Pérez, H. Theveneau, G. Ducournau, C. Gaquière, T. González, I. Íñiguez-de-la-Torre, “Voltage controlled sub-THz detection with gated planar asymmetric nanochannels,” *Applied Physics Letters* 113, 043504 (2018).

H. Sánchez-Martín, S. Sánchez-Martín, I. Íñiguez-de-la-Torre, S. Pérez, J. A. Novoa, G. Ducournau, B. Grimbert, C. Gaquière, T. González and J. Mateos, “GaN nanodiode arrays with improved design for zero-bias sub-THz detection,” *Semicond. Sci. and Tech.* 33, 095016 (2018).

D. Moro-Melgar, A. Maestrini, J. Treuttel, L. Gatilova, T. González, B. G. Vasallo, and J. Mateos, “Monte Carlo Study of 2-D Capacitance Fringing Effects in GaAs Planar Schottky Diodes,” *IEEE Transactions on Electron Devices* 63, pp. 3900-3907 (2016)

S. García, I. Íñiguez-de-la-Torre, O. García-Pérez, J. Mateos, T. González, P. Sangaré, C. Gaquière and S. Pérez, “Self-consistent electro-thermal simulations of AlGaIn/GaN diodes by means of Monte Carlo method,” *Semicond. Sci. and Tech.* 30, 035001 (2015)

J. Mateos, H. Rodilla, B. G. Vasallo and T. González (**Invited paper**), “Monte Carlo modelling of noise in advanced III-V HEMTs,” *J. Comp. Elec.* 14, pp. 72-86 (2015)

J. Schlee, J. Mateos, I. Íñiguez-de-la-Torre, N. Wadefalk, P. A. Nilsson, J. Grahn and A. J. Minnich, “Phonon black-body radiation limit for heat dissipation in electronics,” *Nature Materials* 14, 187-192 (2015)

C.2. Research projects

Title: Simulación y caracterización de efectos electrotérmicos en dispositivos de subterahercios para comunicaciones de alta velocidad (SA254P18)

Funding institution: Junta de Castilla y León (Consejería de Educación)

Years: 2019-2021 Budget: 120.000 €

Principal investigator: [REDACTED]

Title: Technologies of GaN diodes for generation and detection of subterahertz waves (TEC2017-83910-R)

Funding institution: MINECO – Agencia Estatal de Investigación

Years: 2018-2020 Budget: 160.930 €

Principal investigator: [REDACTED]

Title: Emisores y detectores de terahercios basados en nanodiodos semiconductores para comunicaciones e imagen médica y de seguridad (SA022U16)

Funding institution: Junta de Castilla y León (Consejería de Educación)

Years: 2016-2018 Budget: 119.999 €

Principal investigator: [REDACTED]

Title: Narrow and wide bandgap nanoelectronics for improved efficiency in RF and THz applications (TEC2013-41640-R)

Funding institution: MINECO - Dirección General de Investigación

Years: 2014-2017 Budget: 126.324 €

Principal investigator: [REDACTED] (USAL)



Title: Estudio de efectos térmicos en dispositivos de RF. Modelado y caracterización experimental (SA052U13)

Funding institution: Junta de Castilla y León (Consejería de Educación)

Years: 2013-2016 Budget: 34.980 €

Principal investigator : [REDACTED] (USAL)

Title: ICP for dry etching of nanomaterials (UNSA13-3E-2691)

Funding institution: MINECO (grants for infrastructures and scientific-technical equipment)

Years: 2015 Budget: 582.374,63 €

Principal investigator: [REDACTED]

Title: Nanodispositivos semiconductores para la emisión y detección de radiación de THz a temperatura ambiente (SA183A12-1)

Funding institution: [REDACTED] (Consejería de Educación)

Years: 2012-2013 Budget: 29.900 €

Principal investigator : [REDACTED] (USAL)

Title: Advanced diodes and transistors for generation, detection and processing of millimeter and submillimeter signals (TEC2010-15413)

Funding institution: Ministerio de Ciencia e Innovación - Dirección General de Investigación

Years: 2011-2013 Budget: 160.204 €

Principal investigator : [REDACTED] (USAL)

Title: Semiconductor nanodevices for room temperature THz emission and detection (FP7-243845)

Funding institution: European Commission

Partners: Universidad de Salamanca - IEMN, Université des Sciences et Technologies de Lille (France) - The University of Manchester (UK) - Chalmers University of Technology (Sweden)

Years: 2010-2013 Budget: 1.567.109 € (376.372 € for USAL)

Coordinator: [REDACTED]

C.3. Contracts, technological or transfer merits

Title: Monte Carlo simulations and delivery of designs for the fabrication of devices within the GaNGUN project: optimization of the devices (Art. 83)

Funding institution: Institut d'Electronique de Microelectronique et Nanotechnologies (IEMN), Lille, France

Years: 2019-2020 Budget: 10.000 € [REDACTED]

Title: Monte Carlo simulations and delivery of designs for the fabrication of devices within the GaNGUN project: definition of the first technological process (Art. 83)

Funding institution: Institut d'Electronique de Microelectronique et Nanotechnologies (IEMN), Lille, France

Years: 2019-2020 Budget: 10.000 € [REDACTED]

Title: Development of a Monte Carlo Simulator of the transport of ions through a biological membrane (Art. 83)

Funding institution: Institut de recherche sur les composants logiciels et materiels pour l'information et la communication avancee (IRCICA), Lille, France

Years: 2014-2015 Budget: 4.091 € [REDACTED]

C.4. Patents

Device and method for mixing electromagnetic waves with frequencies up to the THz range

L. Varani, P. Nouvel, A. Penot, J. Mateos, J. Grahn, C. Gaquiere, A. Song, and J. Torres

Type: European Patent (EP12306383.6) Date: 8 November 2012

Device and method for direct demodulation of signals with carrier frequencies up to the THz range, L. Thome, L. Varani P. Nouvel, A. Song, C. Daher, S. Blin, J. Grahn, J. Torres, J. Mateos, and C. Gaquiere,

Type: European Patent (EP12306382.8) Date: 8 November 2012

C.5 Research Stays

Title: Simulación y fabricación de emisores de THz con diodos Gunn planares de GaN para telecomunicaciones de gran ancho de banda (PRX19/00131).

Research stay of 4 months (Oct. 2019-Jan. 2020) at the Nanyang Technological University, NTU (Singapur) funded by *Ministerio de Ciencia, Innovacion y Universidades*.



C.6 PhD Supevision

Title: Conception et Optimisation de la Tête haute Fréquence d'un Recepteur Hétérodyne à 1.2 THz pour l'Instrument JUICE-SWI

PhD Student: [REDACTED], Université Pierre et Marie Curie, Laboratoire d'Etudes du Rayonnement et de la Matière en Astrophysique et Atmosphères (LERMA), Obs. de Paris
Supervisor: [REDACTED] Co-director: Javier Mateos Date: 6 September 2017

Title: Estudio de HEMTs basados en semiconductores de gap estrecho. Desde los materiales al dispositivo (with European Mention)

PhD Student: [REDACTED], Universidad de Salamanca
Supervisor: Javier Mateos López Date: September 2010

C.7 Posdoctoral researcher supervision

Researcher: [REDACTED] Term: May 2019 – present
Funding institution: Junta de Castilla y León, project SA254P18 and USAL

Researcher: [REDACTED] Term: November 2016 – present
Funding institution: Junta de Castilla y León, project SA022U16 and USAL

Researcher: [REDACTED] Term: November 2015 – March 2016
Funding institution: MINECO, project TEC2013-41640-R

Researcher: [REDACTED] Term: November 2013 – October 2015
Funding institution: Junta de Castilla y León and Fondo Social Europeo

Researcher: [REDACTED] Term: January 2012 – June 2013
Funding institution: EU-project ROOTHZ

C.8 Editorial comitees of Scientific Journals

Associate editor of the IEEE Transactions on Electron Devices (since January 2016)

C.9 Miembro de comités internacionales

Member of the International Program Committee (ICNF 2013, Montpellier, France).

Co-organizer of the workshop series *Terahertz Technologies -from Devices to Diverse Systems* included in the European Microwave week (2011 in Manchester, 2012 in Amsterdam, 2013 in Nurnberg, 2014 in Rome, 2015 in Paris, 2016 in London, 2017 in Nurnberg, 2018 in Madrid and 2019 in París)

Member of the Organizing Committee de la *19th International Conference on Electron Dynamics in Semiconductors, Optoelectronics and Nanostructures* (EDISON'19), 2015, Salamanca.

Local organizer and member of the International Program Committee of the *EMN Meeting on Terahertz* 2016. 14-18 May 2016, San Sebastián.

Scientific secretary and member of the Organizing Committee of the *12th Spanish Conference on Electron Devices (CDE 2018)*. 14-16 November 2018, Salamanca.

C.10 Review-evaluation tasks

Reviewer for the journals: IEEE Trans. Elec. Dev., IEEE Electron Dev. Lett., IEEE Trans. Microw. Theory and Tech., IEEE Trans. on Terahertz Sci. and Tech., IEE Elec. Lett., J. App. Phys., App. Phys. Lett., Solid State Electronics, Semicond. Sci. Tech., J. Phys.: Condensed Matter, J. Phys. D: Applied Physics, Nanotechnology, Fluctuations and Noise Letters, Microel. Eng., Phys. Stat. Solidi - Rapid Research Letters, ETRI Journal, Optics Comm..

Project evaluator for the European Comission, ANEP (Spain), ANR (France), UEFISCDI (Romania) and A*STAR (Singapore).