Part A. Personal Information

DATE	sept-2023

Surname(s)	Naranjo Vega	
Forename	Fernando B.	
Social Security, Passport, ID number		
Sex	Male	
Age		
Researcher codes	WoS Researcher ID *(*)*	S-3400-2018
	SCOPUS Author ID*(*)*	7004908198
	Open Researcher and Contributor ID (ORCID)	0000-0002-2119-6749

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Full Professor	
UNESCO Code	3307.14	
Key Words	Optics, nitrides, sputtering, optoelectronic devices	
Name of the University/Institution	University of Alcalá	
	Department/Centre	Electronics Department
	Full Address	Madrid-Barcelona road, km 33,2. University Campus
	Email Address	Fernando.naranjo@uah.es
	Phone Number	918856917
Start date	[redacted]	

A.2. Education *(title, institution, date)*

Year	*University*	*Degree*	*Title*
		First degree	
[redacted]	*UCM*	*Masters (if appropriate)*	Masters Degree in Physics
[redacted]	*UPM*	*PhD*	Doctor in Physics

A.3. Indicators of Quality in Scientific Production *(See the instructions)*

[redacted]
Number of Thesis supervised: 6, 3 of them awarded with the Extraordinary prize.
Number of indexed publications (JCR): 72 with >1700 cites .
H-index (Thomson Reuters): 20
Publications in Q1 quartile: 31. (Q2:30, Q3:11, Q4:0).

Part B. Free Summary of CV *(Max. of 3.500 characters, including spaces)*

Fernando B. Naranjo Vega has a degree in Physics (specialty on Materials Physics) from the Complutense University of Madrid. In the same year of 1997 he began his scientific career with a 4-month introductory research stay at the Institute of Materials Science in Madrid, where he began his experience in the growth of thin films by sputtering.

He made his doctoral thesis in the Department of Electronic Engineering of the ETSIT of the Universidad Politécnica de Madrid, obtaining his PhD in Physical Sciences from the same University in 2003 with the qualification of Sobresaliente Cum Laude. During his PhD he focuses his research on the study, fabrication and characterization of electroluminescent diodes based on quantum nitride wells of group III. His contributions include the development of the first GaN/AlGaN heterounion ultraviolet LED on Silicon; as well as the first resonant cavity diode (RCLED) emitting green based on InGaN/GaN quantum wells, with applications

in high-speed optical communications. As a result of these and other relevant contributions, in 2005 he received the Extraordinary Prize for his Doctoral Thesis awarded by the UPM.
In January 2004 he joined the Department of Electronics of the University of Alcalá, where he is currently carrying out his teaching and research work. In May 2007 he obtained the National Qualification of University Associate Professor, being since October 2009 Associate Professor of University in the same department. In July 2018 he obtained the National Qualification of University Full Professor.

At the University of Alcalá he promotes the foundation of the Photonic Engineering Group of the University of Alcalá (GRIFO-UAH), of which he has been coordinator from Nov. 2014 to March 2018. His current research focuses on the design, fabrication and linear and non-linear characterization of Group III nitride layers and their application to photonic and optoelectronic devices, such as photoconductors, surface plasmon resonance sensors, solar cells and saturable absorbers. In relation with the last type of devices, with applications in mode-locked ultra-short lasers, the research has led to a patent extended to PCT in June 2017. Along these lines, he has been or currently is responsible of 3 infrastructure projects, 1 Spanish-French Integrated Action, 3 MINECO projects, 1 CAM project and 6 UAH projects. In addition, he has co-directed 6 doctoral theses and is currently co-directing 2 others. He is Coordinator of the University of Alcalá of the Master in Photonic Engineering, which is taught in collaboration with the Universidad Carlos III de Madrid (coordinating university) and the Universidad Politécnica de Madrid.

He is responsible of the sputtering system of GRIFO-UAH, in which metallic films and nitrides of group III are developed with the aforementioned applications. To date he has participated or is participating in 4 European projects, 1 with the ONR of the United States, 1 Spanish-French Integrated Action, 12 National projects (MINECO, Ministerio de Fomento, CICyT and MICINN), 3 CAM projects, 9 UAH projects, and 5 contracts with companies. He is the author or co-author of more than 75 publications in international journals (71 indexed in JCR), 3 book chapters and more than 100 contributions to international and national congresses (5 invited). His works have received more than 1700 citations, giving an Index H = 20 (source ISI web of knowledge, 2023).

Part C. Relevant accomplishments
C.1. Publications

Google scholar profile: https://scholar.google.com/citations?user=0w6-VfgAAAAJ&hl=en

1. A Núñez-Cascajero, R Blasco, S Valdueza-Felip, D Montero, J Olea, FB Naranjo, High quality Al0. 37In0. 63N layers grown at low temperature (< 300° C) by radio-frequency sputtering Mat. Sci. in Semiconductor Processing 100, 8 (2019). Q1
2. A Núñez-Cascajero, S Valdueza-Felip, R Blasco, M de la Mata, SI Molina, M González-Herráez, E Monroy, FB Naranjo "Quality improvement of AlInN/p-Si heterojunctions with AlN buffer layer deposited by RF-sputtering". *J. of Alloys and Comp*. 769, 824 (2018). Q1.
3. R. Blasco, A. Núñez-Cascajero, M. Jiménez-Rodríguez, D. Montero, L. Grenet, J. Olea, F. B Naranjo, S. Valdueza Felip. "Influence of the AlInN Thickness on the Photovoltaic Characteristics of AlInN on Si Solar Cells Deposited by RF Sputtering". *Phys. Stat. Solidi A*, 1800494 (2018). Q2.
4. M. Jimenez-Rodriguez, L. Monteagudo-Lerma, E. Monroy, M. González-Herráez, F.B. Naranjo, "Widely power-tunable polarization independent ultrafast mode-locked fiber laser using bulk InN as saturable absorber" Optics Express 25 (5) 5366-5375 (2017). Q1.
5. A. Núñez-Cascajero, S.Valdueza-Felip, L. Monteagudo-Lerma, E Monroy, E Taylor-Shaw, RW Martin, Miguel González-Herráez, FB Naranjo, "In-rich Al x In1− x N grown by RF-sputtering on sapphire: from closely-packed columnar to high-surface quality compact layers", *J. Phys D.: Appl. Phys*. 50, 6 (2016) Q2.
6. A. Núñez-Cascajero, Ó. Estéban, J.A. Méndez, M. González-Herráez, F.B. Naranjo, "Infrared SPR sensing with III-nitride dielectric layers", Sensors and Actuators B: Chemical, 223, 768 (2016). Q1
7. L. Monteagudo-Lerma, F.B. Naranjo, M. Jiménez-Rodríguez, P.A. Postigo, E. Barrios, P. Corredera, M. González-Herráez, "InN-based optical waveguides developed by RF

sputtering for all-optical applications at 1.55 μm." *IEEE Photonics Technology Letters,* 27, 1857, (2015). Q2

8. S. Fernández, A Bollero, FB Naranjo, O de Abril, JJ Gandía, "Optimization of ZnO: Al based back reflectors for applications in thin film flexible solar cells", Vacuum, 99, 56 (2014) Q1
9. O. Esteban, F.B. Naranjo, N. Díaz-Herrera, S. Valdueza-Felip, M.-C. Navarrete, A. González-Cano "High-sensitive SPR sensing with Indium Nitride as a dielectric overlay of optical fibers" *Sensors and Actuators B.* 158, 372-376 (2011). Q1
10. S. Fernández, F. B. Naranjo "Optimization of aluminum-doped zinc oxide films deposited at low temperature by radio-frequency sputtering on flexible substrates for solar cell applications" *Solar Energy Materials and Solar Cells* 94, 157- 163 (2010). Q1

C.2. Research Projects and Grants

1. NERA (Nitruros del grupo III para aplicaciones energéticas), Ministerio de Ciencia, Innovación y Universidades. RTI2018-101037-B-I00 (01/01/2019-31-12-2021), 77.682 € Researcher IP: Dr.Fernando B. Naranjo Vega y Dr. Sirona Valdueza Felip
2. SINFOTON2-CM (Sensores e Instrumentación en Tecnologías Fotónicas, 2), Comunidad de Madrid ref. P2018/NMT-4326 (01/01/2014 – 31/12/2018), 102.000,00 €. Researcher. IP: Óscar Esteban Martínez
3. ANOMALOS (Mitigating noise impairments in nonlinear optical fiber systems), MINECO, ref: TEC2015-71127-C2-2-R (01/01/2016-31/12/2018) 155.364 €. Researcher IP: Fernando B. Naranjo Vega and Miguel González Herráez.
4. FASTCOMM (Aplicación del láser femtocomb al estudio de estructuras semiconductoras para comunicaciones ópticas) MICINN, ref: TEC2009-14423-C02-02. (01/01/2010-31/12/2012) 119.427 €. REsearcher IP: Fernando B. Naranjo Vega
5. SINFOTON-CM (Sensores e Instrumentación en Tecnologías Fotónicas), Comunidad de Madrid ref. S2013/MIT-2790 (01/01/2014 – 31/12/2018), 92.504,00 €. Researcher. IP: Fernando B. Naranjo Vega
6. SOLARSEN (Desarrollo de AlInN mediante sputtering para aplicaciones fotovoltaicas y sensoriales de bajo coste), Universidad de Alcalá, Ref. CCG2014/EXP-051. (15/12/2014-14/12/2015), 5.000 € Researcher. IP: Fernando B. Naranjo Vega
7. ALInNano (Desarrollo de sensores basados en nanostructuras de AlInN depositadas mediante sputtering), Universidad de Alcalá, Ref: CCG2015/EXP-014 (15/12/2015-14/12/2016), 4.600 € Researcher IP: Fernando B. Naranjo Vega

C.3. Contracts

1. Desarrollo de nuevas técnicas y sistemas de información para la Rehabilitación sostenible de PAvimentos de carreteras (REPARA 2.0). Art. 83. 01/01/2016 – 30/09/2018. IP M. González-Herráez. 57000 €
2. "ELFOS" Fábrica Nacional de Moneda y Timbre, Real Casa de la Moneda (2010-2011). Researcher IP: Óscar Esteban Martínez. 2722,5 €+IVA.
3. "Medida de la distribución de temperatura en un transformador mediante fibra óptica. Fases A y B" (2009). Fundación para el Fomento de la Innovación Industrial. Researcher IP Miguel González Herráez. 33.800 €+IVA
4. "Desarrollo de láminas delgadas metálicas de interés para el nanomagnetismo mediante sputtering" (2009) CSIC. Researcher IP Miguel González Herráez. 6900 €+IVA

C.4. Patents and other IPR

C.5, Three most relevant PhD Thesis co-supervised by Fernando Naranjo

1. *Development of nitrides based on InN for sensor applications*. PhD: Arántzazu Núñez Cascajero. Junio 2017. Co-supervisor: Dr. Miguel González Herráez. Sobresaliente Cum Laude. Extraordinary Prize UAH.
2. *Development of III-nitride-based waveguides for application in all-optical integrated circuits at 1.55 μm*. PhD: Laura Monteagudo Lerma. Marzo 2015. Co-supervisor: Dr. Miguel González Herráez. Sobresaliente Cum Laude. Extraordinary Prize UAH.
3. *Nitride-based semiconductor nanostructures for applications in optical communications at 1.5 μm.* PhD: Sirona Valdueza Felip. Julio 2011. Co-supervisor: Dr. Miguel González Herráez. Sobresaliente cum Laude, Extraordinary Prize UAH.

C.5. Other merits

1. Director of 8 Bachelor Degrees Theses and 6 Master's Theses, among which it is worth mentioning

Sirona VALDUEZA FELIP, “Study of linear and non-linear optical properties of nitride-based nanostructures for optical signal processing applications” UAH, July 2008.

Arántzazu NÚÑEZ CASCAJERO, “Development of InN-based nitride compounds for sensor and photovoltaic applications”, Universidad Rey Juan Carlos I, July 2013.

Laura Monroy Lafuente, “Remote gas sensing applications of ultrafast lasers” Universidad Carlos III de Madrid, Universidad Politécnica de Madrid y Universidad de Alcalá, Sep. 2018

2. First Prize Concurso de Ideas de Empresa de Base Tecnológica, Empresa LaserNit. Marco Jiménez Rodríguez, Fernando Naranjo Vega. UAH 2017.
3. Member of the organizing committee and the scientific committee of the VIII Reunión Española de Optoelectónica held in Alcalá de Henares, España, from 10 to 12 July 2013. (OPTOEL 2013).
4. Member of the Scientific committee of the X Reunión Española de Optoelectrónica held in Santiago de Compostela, España, from 12 to 14 June 2017 (OPTOEL 2017)..
5. Member of the Technical program committee of the 5th Annual International Workshop on Materials Science and Ingineering (to be held on May 17-18, 2019, Changsha, China).
6. Reviewer of the Institut of Physics, IOP. Particularly JCR indexed journals: Journal of Physics D: Applied Physics; Measurements science and Technology; Semiconductor Science and Technology and Nanotechnology.
7. Project reviewer for ANEP since 2014.