Date of the CVA	19/04/2021

Section A. PERSONAL DATA

Name and Surname	DANIEL ARAÚJO GAY		
DNI/NIE/Passport		Age	
Researcher's identification number	Researcher ID	V-3315-2019	
	Scopus Author ID		
	ORCID	0000-0001-7448-1474	

* Obligatorio

A.1. Current professional situation

Institution	Universidad de Cádiz		
Dpt. / Centre			
Address			
Phone		Email	
Professional category	Catedrático de universidad	Start date	2010
Keywords			

A.2. Academic education (Degrees, institutions, dates)

Bachelor/Master/PhD	University	Year
Qualification á Professeur des Universités (French validation to Catedrático de Universidad)	Ministére de l'Education et de la Recherche (France)	2004
Convalidación al título de Licenciado en ciencias Físicas	Ministerio de Educación y Ciencia	1995
Convalidación al título de Doctorado en ciencias Físicas	MINISTERIO DE EDUCACION Y CIENCIA	1995
Docteur és Sciences	Ecole Polytechnique Fédérale de Lausanne (EPFL, Switzerland)	1992
Dipôme de Physicien	Université de Lausanne (Switzerland)	1988

A.3. General quality indicators of scientific production

Number of six-years term of research: 5 (2018); number of thesis supervised the last ten years: 6, total number of thesis supervised: 9; Toal citation: 1077, citation/year (last 5): 66,2; Total publication Q1: 40.

Section B. SUMMARY OF THE CURRICULUM

Daniel Araujo has a degree in Physical Sciences from the "Université de Lausanne" in Switzerland (1987). After a year in "NESTEC RESEARCHE CENTER" (Lausanne) dedicated to interferometric holography for the dseign of milk cans, he made a doctoral thesis in the "Ecole Polytechnique Fédérale de Lausanne (EPFL)" on the study by catodoluminiscencia and TEM of quantum wells of semiconductors alloys III-V (1988-92). In 1992 he made his first postdoctoral stay at IBM Research laboratory in Rüschlikon (Zürich) with Dr. Heinrich Röhrer (Nobel Prize, 1986) and Santos Alvarado on semiconductor luminiescence III-V (GaAs/AlGaAs heterostructures by STM). In 1993, he joined the University of Cádiz (postdoc, European project BLES), where he obtained the title of Associate Professor (Profesor titular de Universidad) in 1999. In 2003, the CNRS invited him to a research stay in Grenoble and, in 2004, got the Full Professor positions at INSA-Lyon (Superior Engineering School). With this position, he bacame responsible for the Lyon CLYM Electronic Microscopy Center (includes the CNRS-Ecole Centrale de Lyon-Ecole Normale Superieure de Lyon-Claude Bernard-INSA-Lyon University) and also the MULTI-D characterization platform that includes all the facilities of the Rhône-Alpes region. In 2007, he rejoined the University of Cádi and obtained the category of Full Professor in 2009. He is author of more than 150 international publications. 5 patentst and more than 10 invited conferences in international congresses. He is an expert in electron

microscopy and, in particular, in the different modes of transmission electron microscopy and cathodoluminescence applied to the characterization of semiconductor materials, SiC and diamond. Since 2000 he has been dedicated to the study of SiC, and later on, of the diamond as semiconductor materials for the development of electronic devices. During this time, he has led several projects with plubic funding as well as contracts with various companies (EADS-CASA, AIRBUS, FEI, URANOS, ISOTOTÓN,...) in both, France and Spain. He is currently the local responsible of the H2020 GreenDiamond project (Enerty LCE) and two national projects (DiamMOS, Hi-Volt). He has been supervisor of 9 PhD dissertations, member of 16 PhD dissertation committees/juries andn is in the scientific committee and organization of various scientific events (EXMATECT, BIAMS, E-MRS diamond symposiums,...).

Section C. MOST RELEVANT MERITS (ordered by typology)

C.1. Publications

AC: Autor de correspondencia; (nº x / nº y): posición firma solicitante / total autores

1 **Scientific paper**. F. Lloret; D. Araújo; M.P. Alegre (AC); J.M. Gonzalez-Leal; M.P. Villar; D. Eon; E. Bustarret. (3/7). 2015. TEM study of defects versus growth orientations in heavily boron-doped diamond Physica Status Solidi a. 212-11, pp.2468--2473. ISSN 18626300.

2 **Scientific paper**. Piñero-Charlo, José Carlos; Lloret-Vieira, Fernando; Alegre-Salguero, Maria De La Paz (AC); Villar Castro, Maria Del Pilar; Fiori, A.; Bustarret-, Etienne; Araújo-Gay, Daniel. (3/7). 2018. High resolution boron content profilometry at doping epitaxial diamond interfaces by CTEM Applied Surface Science. 461, pp.221-226. ISSN 0169-4332.

3 **Scientific paper**. D. Araújo; F. Lloret; G. Alba; M.P.; M.P. Villar. 2021. Dislocation generation mechanisms in heavily boron-doped diamond epilayers Applied Physics Letters. 118-052108.

4 **Scientific paper**. A. Jaggernauth; Ricardo M. Silva; Miguel A. Neto; et al; M.P. Alegre (AC); Rui F. Silva. (6/10). 2020. Interfacial Integrity enhancement of atomic layer deposited alumina on boron doped diamond by surface plasma functionalization Surface coatings Technology. ISSN 02578972.

5 **Scientific paper**. Lloret-Vieira, Fernando; Eon, D.; Bustarret-, Etienne; Fiori, A.; Araújo-Gay, Daniel. 2018. Boron doping proximity effects on dislocation generation during non-planar MPCVD homoepitaxial diamond growth 8-480, pp.1-7.

6 **Scientific paper**. Gutiérrez-Peinado, Marina; Lloret-Vieira, Fernando; Pham, Toan T.; Cañas, Jesús; Reyes, Daniel F.; Eon, David; Pernot, Julien; Araújo-Gay, Daniel. 2018. Control of the Alumina Microstructure to Reduce Gate Leaks in Diamond MOSFETs Nanomaterials. 8-584, pp.1-8.

7 **Scientific paper**. Gutiérrez-Peinado, Marina; Lloret-Vieira, Fernando; Jurczak, P.; Wu,, J.; Liu, H.y.; Araújo-Gay, Daniel. 2018. GaSb and GaSb/AlSb Superlattice Buffer Layers for High-Quality Photodiodes Grown on Commercial GaAs and Si Substrates Journal of Electronic Materials. 47-9, pp.5083-5089.

8 **Scientific paper**. Pham, T. T.; Gutiérrez-Peinado, Marina; Masante, C.; Rouger, N.; Eon, D.; Gheeraert, E.; Araújo-Gay, Daniel; Pernot, J.2018. High quality Al2O3/(100) oxygen-terminated diamond interface for MOSFETs fabrication Applied Physics Letters. 112, pp.102103.

9 **Scientific paper**. Piñero-Charlo, José Carlos; Lloret-Vieira, Fernando; Alegre-Salguero, Maria De La Paz; Villar Castro, Maria Del Pilar; Fiori, A.; Bustarret-, Etienne; Araújo-Gay, Daniel. 2018. High resolution boron content profilometry at ¿-doping epitaxial diamond interfaces by CTEM Applied Surface Science.

10 **Scientific paper**. Pham, T. T.; Piñero-Charlo, José Carlos; Maréchal, A.; et al; Pernot, J.2018. Impact of Nonhomoepitaxial Defects in Depleted Diamond MOS Capacitors 65, pp.5.

11 **Scientific paper**. Cuenca, Jerome Alexander; Hunter Thomas, Evan Lloyd; Mandal, Soumen; Morgan, David John; Lloret-Vieira, Fernando; Araújo-Gay, Daniel; Williams, Oliver Aneurin; Porch, Adrian. 2018. Microwave Permittivity of Trace sp2 Carbon Impurities in Sub-Micron Diamond Powders ACS Omega. 3, pp.2183-2192.

12 **Scientific paper**. Navas-Pineda, Francisco Javier; Araújo-Gay, Daniel; Piñero-Charlo, José Carlos; Sanchez-Coronilla, Antonio; Blanco, E.; Villar Castro, Maria Del Pilar; Alcántara-Puerto, Rodrigo. 2018. Oxygen termination of homoepitaxial diamond surface by ozone and chemical methods: A multi-technique study Applied Surface Science. 433, pp.408-418.

13 **Scientific paper**. Taguhi, Yeghoyan; Kassem, Alassaad; Sean R.c, Mcmitchell; Gutiérrez-Peinado, Marina; Souliere, Véronique; Araújo-Gay, Daniel; Ferro, Gabriel. 2018. Silicon (001) Heteroepitaxy on 3C-SiC(001)/Si(001) Seed Materials Science Forum. 924, pp.128-131.

14 **Scientific paper**. Piñero-Charlo, José Carlos; Araújo-Gay, Daniel; Fiori, Alexandre; et al; Teraji, Tokuyuki. 2017. Atomic composition of WC/ and Zr/O-terminated diamond Schottky interfaces close to ideality Applied Surface Science. 395, pp.200-207.

15 **Scientific paper**. Piñero-Charlo, José Carlos; Villar Castro, Maria Del Pilar; Araújo-Gay, Daniel; Montserrat, J.; Antunez, B.; Godignon, P.2017. Impact of thermal treatments in crystalline reconstruction and electrical properties of diamond ohmic contacts created by boron ion implantation Physica Status Solidi A Applications and Materials. 214, pp.1700230.

16 **Scientific paper**. Lloret-Vieira, Fernando; Gutiérrez-Peinado, Marina; Araújo-Gay, Daniel; Eon, D.; Bustarret-, Etienne. 2017. MPCVD diamond lateral growth through micro terraces to reduce threading dislocations density Physica Status Solidi A Applications and Materials. 214, pp.1700242-1-1700242-5.

17 **Scientific paper**. Gutiérrez-Peinado, Marina; Araújo-Gay, Daniel; Jurczak, P.; Wu, J.; Liu, H.2017. Solid solution strengthening in GaSb/GaAs: A mode to reduce the TD density through Be-doping Applied Physics Letters. 110, pp.092103-1-092103-4.

18 **Scientific paper**. Piñero-Charlo, José Carlos; Araújo-Gay, Daniel; Pastore-, Carlo Enzo; Gutiérrez-Peinado, Marina; Frigeri, Cesare; Benali, A.; Leievre, J. F.; Gendry, M.2017. Twins and strain relaxation in zinc-blende GaAs nanowires grown on silicon Applied Surface Science. 395, pp.195-199.

19 **Scientific paper**. Lloret-Vieira, Fernando; Araújo-Gay, Daniel; Eon, David; Villar Castro, Maria Del Pilar; Gonzalez-Leal, Juan Maria; Bustarret-, Etienne. 2016. Influence of methane concentration on MPCVD overgrowth of 100-oriented etched diamond substrates Physica Status Solidi A Applications and Materials. 213-10, pp.2570-2574.

20 **Scientific paper**. Lloret-Vieira, Fernando; Fiori, Alexandre; Araújo-Gay, Daniel; Eon, David; Villar Castro, Maria Del Pilar; Bustarret-, Etienne. 2016. Stratigraphy of a diamond epitaxial three-dimensional overgrowth using doping superlattices Applied Physics Letters. 108, pp.181901-1-181901-5.

21 **Scientific paper**. Muret, P.; Traoré, A.; Marèchal, A.; Eon, D.; Pernot, J.; Piño, J. C.; Villar Castro, Maria Del Pilar; Araújo-Gay, Daniel. 2015. Potential barrier heights at metal on oxygen-terminated diamond interfaces Journal of applied physics. 118-20, pp.204505-1-204505-21.

22 **Scientific paper**. Lloret-Vieira, Fernando; Araújo-Gay, Daniel; Villar Castro, Maria Del Pilar; Liu, L.; Zekentes, K.2015. Si NWs conversion to Si-SiC core-shell NWs by MBE Materials Science Forum. 821-823, pp.965-969.

23 **Book chapter**. Araújo-Gay, Daniel; Penot, J.2018. Metal oxide semiconductor interface and transmission electron microscopy characterization Power electronic device applications of diamond semiconductors. pp.338-361.

C.2. Participation in R&D and Innovation projects

1 TEC2017-86347-C2-1-R, ARCHITECTURA 3D DE MOSFET ELABORADAS IN-SITU POR MPCVD PARA ELECTRONICA DE POTENCIA MINISTERIO DE ECONOMÍA, INDUSTRIA Y COMPETITIVIDAD. DANIEL ARAÚJO GAY. From 01/01/2018. 156.090 €.

2 ESP2017¿91820¿EXP, FIBRAS DE CARBONO RECUBIERTAS DE DIAMANTE, ¿LA NUEVA GENERACION DE COMPOSITES (CFRP Ministerio de Ciencia, Innovación y Universidades. From 26/09/2016.

3 UNCA15-CE3256, Mejora de las prestaciones del ?Laboratorio de Preparación de Muestras para Microscopías (LPM)? de los Servicios Centrales de Investigación Científica y Tecnológica de la Universidad de Cádiz. Unión Europea. From 01/01/2016.

4 SEP-2010-039524, Green electronics with diamond power devices EUROPEAN UNION. DANIEL ARAÚJO GAY. From 01/05/2015. 220.000 €.
5 TEC 2014-54357-C2-2-R, Dispositivo de alto voltaje para electrónica de potencia verde: relación nanoestructura-función Estado español. DANIEL ARAÚJO GAY. From 01/01/2015. 150.645 €.
6 AT2014-005, ELABORACIÓN DE PROTOTIPOS Y PRUEBAS DE CONCEPTOS UNIVERSIDAD DE CÁDIZ - VICERRECTORADO DE INVESTIGACIÓN Y TRANSFERENCIA. DANIEL ARAÚJO GAY. From 17/07/2014. 2.000 €.
7 TEC2009-11399/TEC, DIAMANTE PARA DISPOSITIVOS DE POTENCIA. DANIEL ARAÚJO GAY. From 01/01/2010. 217.800 €.

C.3. Participation in R&D and Innovation contracts

1 CARACTERIZACION DE MATERIALES, DAÑO E IMPACTOS MEDIANTE ENSAYOS FISICOS, QUIMICOS Y DE MICROSCOPIA PARA INVESTIGACIONES EN MATERIALES Y PROTECCIONES ESTRUCTURALES FRENTE A IMPACTO. MARIA DEL PILAR VILLAR CASTRO. 01/03/2012-31/12/2012. 70.800 €.
2 PROYECTO DESAFIO. POLIMEROS AERONAUTICOS CON PROPIEDADES MECANICAS MEJORADAS MEDIANTE NANOESTRUCTURAS MARIA DEL PILAR VILLAR CASTRO. 01/01/2012-31/12/2014. 121.000 €.
3 ACUERDO DE COLABORACION PARA LA REALIZACION DEL PROYECTO DE INVESTIGACION CELCON 2011 ENTRE LA UNIVERSIDAD DE CADIZ Y LA EMPRESA ISOFOTON, S.A. MARINA GUTIÉRREZ PEINADO. 01/04/2011-31/03/2012. 51.920 €.
4 AUTOMATIZACION Y OPTIMIZACION DE PROCESOS DE CORTE Y TALADRADO DE MATERIALES COMPUESTOS POR LASER DANIEL ARAÚJO GAY. 01/04/2010-30/04/2012. 141.600 €.

C.4. Patents

1 Fernando Lloret; Daniel Araújo; Philippe Godignon; David Eon; Julienne Pernot; Etienne Bustarret. P201831162. Field Effect Transistors (MOSFET) Spain. 29/11/2018.
2 DANIEL ARAÚJO GAY; DERY TORRES URIONA. P 201500279 (0). Procedimiento para determinar la tenacidad intrínseca de polímeros 27/10/2016.
3 DANIEL ARAÚJO GAY; FRANCISCO MIGUEL MORALES SÁNCHEZ; SERGIO IGNACIO MOLINA RUBIO. SISTEMA DE CARBURIZACIÓN DE SILICIO
4 DANIEL ARAÚJO GAY; ANTONIO J. GARCÍA FUENTES; MARIA DEL PILAR VILLAR CASTRO; RAFAEL GARCIA ROJA; López-Gascón,Clarisa; Peña-,José Ignacio; Estepa-,Carlos; Díez-,Carlos. MÉTODO DE MECANIZADO LÁSER DE MATERIALES COMPUESTOS DE RESINA EPOXI REFORZADA CON FIBRAS DE CARBONO.
5 DANIEL ARAÚJO GAY; ANTONIO J. GARCÍA FUENTES; DAVID MÉNDEZ MARTÍN. CRIOSTATO DE HELIO LÍQUIDO
6 DERY TORRES URIONA; DANIEL ARAÚJO GAY. P201500364. Molde para la fabricación de probetas rectangulares de ancho variable de resinas epoxi RTM
7 FRANCISCO JAVIER NAVAS PINEDA; DANIEL ARAÚJO GAY; ANTONIO J. GARCÍA FUENTES; DAVID MÉNDEZ MARTÍN. SISTEMA DE CATODOLUMINISCENCIA PARA MICROSCOPIO ELECTRÓNICO DE BARRIDO