CV Date	18/09/2023

Part A. PERSONAL INFORMATION

First Name	Jimena		
Family Name	Olivares Roza		
Sex	Female	Date of Birth	
ID number Social Security, Passport			
URL Web			
Email Address	jimena.olivares@upm.es		
Open Researcher and Contributor ID (ORCID)	0000-0003-4396-4363		

A.1. Current position

Job Title	Profesora Titular de Universidad		
Starting date	2011		
Institution	Universidad Politécnica de Madrid		
Department / Centre	Ingeniería Electrónica / Escuela Técnica Superior de Ingenieros de Telecomunicación Dpto./		
Country	Spain	Phone Number	910672222
Keywords	Electronic device		

A.2. Previous positions (Research Career breaks included)

Period	Job Title / Name of Employer / Country
2005 - 2011	Profesora Contratada Doctor - I3 ETSI Telecomunicación / Universidad Politécnica de Madrid
2003 - 2005	Investigadora Ramón y Cajal ETSI Telecomunicación / Universidad Politécnica de Madrid
2001 - 2003	Asesora en innovación y transferencia de tecnología / IDETRA, S. A.
1997 - 2000	Becaria de postgrado (FPI-MEC) ETSI Telecomunicación / Universidad Politécnica de Madrid
1995 - 1996	Becaria de postgrado Facultad de Ciencias / Universidad Autónoma de Madrid
1995 - 1995	Becaria de postgrado Instituto de Estructura de la Materia / Consejo Superior de Investigaciones Científicas
1995 - 1995	Becaria de pregrado Instituto de Estructura de la Materia / Consejo Superior de Investigaciones Científicas

A.3. Education

Degree/Master/PhD	University / Country	Year
Grado de licenciatura en Ciencias (Físicas)	Universidad Autónoma de Madrid	1997
Licenciada en Ciencias (Físicas)	Universidad Autónoma de Madrid	1995

Part B. CV SUMMARY

4 six-year terms (sexenios) last one 2021
h index 22 (according to Google Scholar)
1795 citations (according to Google Scholar)
114 papers, among which 43 in JCR journals (32 Q1 and 9 Q2)
104 works submitted to international conferences

Jimena Olivares Roza received her B.Sc. degree and the M.Sc. degree in physics from the Universidad Autonoma de Madrid, Spain, in 1995 and 1997, respectively. She received her

PhD degree in physics from the Universidad Politécnica de Madrid, Spain, in 2001 for research work on polycrystalline SiGe thin films. She spent two years in a Spanish company, working as an expert in technology transfer and research projects management. In 2003, she joined the GMME of the Universidad Politécnica de Madrid with a Ramón y Cajal fellowship. Since June 2011 she is Associate Professor in the same institution. Her research activity has been related with development of thin film materials for a variety of applications (thin film transistors, surface and bulk acoustic wave resonators, filters, sensors). Her current research focus on the development of gravimetric sensors for health and environment applications.

She has participated in 41 competitive research projects, leading 7 of them. She has 114 papers, including 43 in indexed journals. The great majority of the rest of the publications correspond to proceedings of international conferences such as IEEE and SPIE with peer review selection processes. Her papers have received 1795 citations, with h index of 22, according to Google Scholar. She has been an evaluator of the 7th Framework programme, the 2017 and 2018 EDGE programmes within the Marie Sklodowska-Curie actions frame and of the 2017 Ramón y Cajal, Juan de la Cierva-Incorporación and Juan de la Cierva-Formación programmes. She is a referee for the following journals Applied Physics Letters, Semiconductor Science andTechnology, Smart Materials and Structures, Sensors and Actuators B, Surface and Coatings Technology, Thin Solid Films, Sensors and Nanomaterials and for the conference International Conference on Metallurgical Coatings and Thin Films.

She belongs to the Grupo de Materiales y Dispositivos Electrónicos from UPM since its foundation in 2004 and deputy director of CEMDATIC since its foundation in 2011 until May 2021. Since May 2021 she is deputy director for Research at ETSI Telecomunicación-UPM. She collaborates regularly with the University of Cambridge, the Universidad Politècnica de Catalunya, CEA-Leti and Sorex Sensors.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Most important publications in national or international peer-reviewed journals, books and conferences

AC: corresponding author. (nº x / nº y): position / total authors. If applicable, indicate the number of citations

1. **Scientific paper**. Jimena Olivares (AC); Teona Mirea; Lorena Gordillo-Dagalier; Bruno Marco-Dufort; José Miguel Escolano; Enrique Iborra. (1/6). 2019. Direct growth of few-layer graphene on AlN-based resonators for high-sensitivity gravimetric biosensors.Beilstein Journal of Nanotechnology. 10, pp.975-984. ISSN 2190-4286. https://doi.org/10.3762/bjnano.10.98
2. **Scientific paper**. Teona Mirea; Jimena Olivares; Marta Clement; Enrique Iborra. (2/4). 2019. Impact of FBAR design on its sensitivity as in-liquid gravimetric sensor. Sensors and Actuators A-Physical. 289, pp.87-93. ISSN 0924-4247.
3. **Scientific paper**. M. DeMiguel-Ramos; B. Díaz-Durán; J. M. Escolano; M. Barba; T. Mirea; J. Olivares; M. Clement; E. Iborra. 2017. Gravimetric biosensor based on a 1.3 GHz AlN shear-mode solidly mounted resonator. REVISTA: Sensors and Actuators B. 239, pp.1282-1288. ISSN 0925-9635.
4. **Scientific paper**. Eduardo; Teona; José Manuel; Marta; Jimena; Juan Carlos; Jordi. (5/7). 2023. Analysis of spurious peaks at series resonance in solidly mounted resonators by combined BVD-Mason modelling. Ultrasonics. 131, pp.106958. ISSN 0041-624X. https://doi.org/10.1016/j.ultras.2023.106958
5. **Scientific paper**. José Manuel; Teona; Jesús; Jimena; Valeriy; Marta. (4/6). 2023. Homogeneity and Thermal Stability of Sputtered Al0.7Sc0.3N Thin Films. Materials. MDPI. 16-6, pp.2169. ISSN 1996-1944. https://doi.org/10.3390/ma16062169
6. **Scientific paper**. Mirea Teona; Clement Marta; Olivares Jimena; Iborra Enrique. 2020. Assessment of the Absolute Mass Attachment to an AlN-Based Solidly Mounted Resonator Using a Single Shear Mode. IEEE Electron Device Letters. 41-4, pp.609-612. ISSN 0741-3106.

7 **Scientific paper**. J. M. Escolano; B. Díaz-Durán; M. DeMiguel-Ramos; J. Olivares; M. A. Geday; E. Iborra. 2017. Selection of aptamers to Neisseria meningitidis and Streptococcus pneumoniae surface specific proteins and affinity assay using thin film AlN resonators. REVISTA: Sensors and Actuators B - Chemical 246. pp.591-596. ISSN 0925-9635.

8 **Scientific paper**. M. DeMiguel-Ramos; B. Díaz-Durán; J.M. Escolano; J. Olivares; M. Clement; T. Mirea; E. Iborra. 2016. Effects of biologically compatible buffers on the electrical response of gravimetric sensors operating at GHz frequencies. REVISTA: Sensors and Actuators B: Chemical 222. pp.692. ISSN 0925-4005.

9 **Scientific paper**. T. Mirea; V. Yantchev; J. Olivares; E. Iborra. 2016. Influence of liquid properties on the performance of S-0-mode Lamb wave sensors II: Experimental validation. REVISTA: Sensors and Actuators B-Chemical 229. pp.337. ISSN 0925-4005.

10 **Scientific paper**. B. Díaz-Durán; J. Olivares; T. Mirea; M. Clement; M. DeMiguel-Ramos; J. Sangrador; E. Iborra. 2016. Sheet resistance measurements of carbon nanotube forests for extended electrodes. REVISTA: Diamond & Related Materials 61 (2016). pp.75. ISSN 0925-9635.

11 **Scientific paper**. M. DeMiguel-Ramos; T. Mirea; J. Olivares; M. Clement; J. Sangrador; E. Iborra. 2015. Assessment of the acoustic shear velocity in SiO2 and Mo for acoustic. REVISTA: Ultrasonics 62. pp.199. ISSN 0041-624X.

12 **Scientific paper**. S. Esconjauregui; T. Makaryan; T. Mirea; et al; E. Iborra. 2015. Carbon nanotube forests as top electrode in electroacoustic resonators. REVISTA: Applied Physics Letters 107. pp.3. ISSN 0003-6951.

13 **Scientific paper**. T. Mirea; J. Olivares; M. Clement; M. DeMiguel-Ramos; J. de Frutos; J. Sangrador; E. Iborra. 2015. Carbon nanotube growth on piezoelectric AlN films: influence of catalyst underlayers. REVISTA: RSC ADVANCES 5. pp.80687. ISSN 2046-2069.

14 **Scientific paper**. J. Olivares; T. Mirea; B. Díaz-Durán; M. Clement; M. DeMiguel-Ramos; J. Sangrador; J. De Frutos; E. Iborra. 2015. Growth of Carbon Nanotube Forests of Metallic Thin Films. REVISTA: Carbon 90. pp.15. ISSN 0008-6223.

15 **Scientific paper**. M. DeMiguel-Ramos; T. Mirea; M. Clement; J. Olivares; J. Sangrador; E. Iborra. 2015. Optimized tilted c-axis AlN films for improved operation of shear mode resonators. REVISTA: Thin Solid Films 590. pp.223. ISSN 0040-6090.

16 **Scientific paper**. J. Zhou; M. DeMiguel-Ramos; L. Garcia-Gancedo; et al; Y. Q. Fu. 2014. Characterisation of aluminium nitride films and surface acoustic wave devices for microfluidic applications. REVISTA: Sensors and Actuators B Chem. 202. pp.992. ISSN 0925-4005.

17 **Scientific paper**. L. García-Gancedo; J. Pedrós; E. Iborra; et al; A.J. Flewitt. 2013. Direct comparison of the gravimetric responsivities of ZnO-based FBARs and SMRs. REVISTA: Sensors & Actuators B 183. pp.143. ISSN 0925-4005.

18 **Scientific paper**. E. Iborra; M. Clement; J. Capilla; J. Olivares; V. Felmetsger. 2012. Low thickness high quality aluminium nitride films for super high frequency solidly mounted resonators. REVISTA: Thin Solid Films 520(7). pp.3063. ISSN 0040-6090.

19 **Scientific paper**. J. Olivares; M. Clement; S. González-Castilla; L. Vergara; E. Iborra; J. Sangrador. 2010. Porous silicon oxide sacrificial layers deposited by pulsed-DC magnetron sputtering for MEMS applications. REVISTA: Thin Solid Films 518. pp.5133. ISSN 0040-6090.

20 **Scientific paper**. M. Clement; J. Olivares; E. Iborra; S. González-Castilla; N. Rimmer; A. Rastogi. 2009. AlN films sputtered on iridium electrodes for bulk acoustic wave resonators. REVISTA: Thin Solid Films 517. pp.4678. ISSN 0040-6090.

21 **Scientific paper**. M. Clement; E. Iborra; J. Olivares; S. Giraud; S. Bila; N. Rimmer; A. Reinhardt. 2009. DCS Tx filters using AlN resonators with Iridium electrodes. REVISTA: 2009 IEEE International Frequency Control Symposium Proc.pp.948. ISSN 1075-6787.

22 **Scientific paper**. L. La Spina; E. Iborra; H. Schellevis; M. Clement; J. Olivares; L. K. Nanver. 2008. Aluminum nitride for heatspreading in RF IC's. REVISTA: Solid State Electronics 52. pp.1363.

23 **Scientific paper**. S. González-Castilla; J. Olivares; M. Clement; E. Iborra; J. Sangrador; J. Malo; J. I. Izpura. 2008. Electrical detection of the mechanical resonances in AlN-actuated microbridges for mass sensing applications. REVISTA: Applied Physics Letters 92. pp.1_3.

24 **Scientific paper**. E. Iborra; J. Olivares; M. Clement; L. Vergara; A. Sanz-Hervás; J. Sangrador. 2004. Piezoelectric properties and residual stress of sputtered AlN thin films for MEMS applications. REVISTA: Sensors and Actuators A 115. pp.507.

25 **Scientific paper**. J. Olivares; J. Sangrador; A. Rodríguez; T. Rodríguez. 2001. Effect of deposition parameters on the characteristics of Low-Pressure Chemical Vapor Deposited SiGe films grown from Si2H6 and GeH4. REVISTA: Journal of the Electrochemical Society 148(10). pp.C689.

26 **Scientific paper**. A. Rodríguez; T. Rodríguez; J. Olivares; J. Sangrador; P. Martín; O. Martínez; J. Jiménez; C. Ballesteros. 2001. Nucleation site location and its influence on the microstructure of solid-phase crystallized SiGe films. REVISTA: Journal of Applied Physics 90(5). pp.2552.

27 **Scientific paper**. J. Olivares; P. Martín; A. Rodríguez; J. Sangrador; J. Jiménez; T. Rodríguez. 2000. Raman spectroscopy study of amorphous SiGe films deposited by low pressure chemical vapor deposition and polycrystalline SiGe films obtained by solid-phase crystallization. REVISTA: Thin Solid Films 358. pp.61. ISSN 0040-6090.

C.3. Research projects and contracts

1 **Project**. Materiales para resonadores electro-acústicos y sensores para futuras aplicaciones sub-6GHz 5G - EAD5G. Olivares Roza 1. (Universidad Politécnica de Madrid). 01/09/2021-31/08/2024. 88.935 €.

2 **Project**. Sensores gravimétricos de gases basado en resonadores electroacústicos de película delgada de AlN para aplicaciones en temperaturas extremas (TEC2017-84817-C2-1-R). Ministerio de Ciencia e Innovación. Jimena. (Universidad Politécnica de Madrid). 01/2018-08/2021.

3 **Project**. Materiales avanzados para sensores químicos y biológicos basados en resonadores piezoeléctricos combinados con capas nano estructurados derivadas del carbono (BIOPICA). (MAT2013-45857-R). Ministerio de Ciencia e Innovación. 09/2014-09/2017.

4 **Project**. Materiales multifuncionales en película delgada para dispositivos piezoeléctricos avanzados (resonadores acústicos y sensores MEMS) (BIOPICA). Ministerio de Economía y Competitividad. Dres. Enrique Iborra Gray y Marta Clement Lorenzo. From 2014.

5 **Project**. Integrating devices and materials: a challenge for new instrumentation in ICT (Acción COST IC1208). Comisión Europea. Dr. José Manuel Otón. From 2013.

6 **Project**. Rapid aptamer based diagnostics for bacterial meningitis (RAPTADIAG). Comisión Europea. Dr. Morten A. Geday. From 2012.

7 **Project**. Integración de resonadores BAW basados en AlN con frecuencias sustancialmente distintas en el mismo sustrato. Universidad Politécnica de Madrid y Comunidad de Madrid. Dra. Jimena Olivares Roza. From 2011.

8 **Project**. Óxidos complejos piezoeléctricos para aplicaciones en microsistemas y filtros de alta frecuencia. Universidad Politécnica de Madrid y Comunidad de Madrid. Dra. Jimena Olivares Roza. From 2008.

9 **Project**. MOBILIS: Mixed SiP and SoC Integration of BAW Filters for Digital Wireless Transmission. Comisión Europea. Dr. Enrique Iborra Grau. From 2006.