

**Part A. Personal Information**

|             |            |
|-------------|------------|
| <b>DATE</b> | 15-09-2021 |
|-------------|------------|

|                                      |  |                     |
|--------------------------------------|--|---------------------|
| Surname(s)                           | Vázquez García                             |                     |
| Forename                             | Carmen                                     |                     |
| Social Security, Passport, ID number |  |                     |
| Sex                                  | Female                                     |                     |
| Age                                  | 53   |                     |
| Researcher codes                     | WoS Researcher ID (*)                      | C-6778-2015         |
|                                      | SCOPUS Author ID(*)                        | 7101849415          |
|                                      | Open Researcher and Contributor ID (ORCID) | 0000-0003-4895-0913 |

**A.1. Current position**

|                                    |  |  |
|------------------------------------|--|--|
| Post/<br>Professional Category     | Full Professor   |  |
| UNESCO Code                        | 2209.05 3307.99  |  |
| Key Words                          | Optical fiber sensors, access networks, plastic optical fibers, photonics integrated circuits, power over fiber, 5G infrastructure |  |
| Name of the University/Institution | Carlos III University of Madrid  |  |
|                                    | Department/Centre  | Electronics Technology/Polytechnic School        |
|                                    | Full Address   | Av. Universidad 30, 28911 Leganés, Madrid, Spain |
|                                    | Email Address  |  |
|                                    | Phone Number   |  |
| Start date                         | 2009   |  |

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

| Year | University                        | Degree                        | Title                                   |
|------|-----------------------------------|-------------------------------|---|
| 1991 | Complutense                       | First degree +Masters (5 yrs) | Licenciada CC Físicas (Electronics)     |
| 1995 | Universidad Politécnica de Madrid | PhD                           | Dr. CC. Físicas (ETSI Telecomunicación) |

**A.3. Indicators of Quality in Scientific Production**

She has 4 **researching evaluations at national level (sexenios), the last one from 2015.** She has supervised 8 PhD students, 6 with Extraordinary Doctorate Prize. She has coauthor more than 90 papers published in JCR journals, more than 50 in the first quartil (Q1).

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

Carmen Vázquez is Full Professor at Electronics Technology Department of the Universidad Carlos III de Madrid (UC3M), Spain. She is leader of Displays and Photonics Applications Group and Head of Master Sc degrees on Photonics Engineering and on Electronics Systems Engineering. She was Vice-President of Postgraduate Studies, Quality and Infrastructures for 4 yrs and Electronics Technology Department Head for 3 yrs. She was Visiting Scientist at RLE in Massachusetts Institute of Technology for 1 yr, working on silicon photonics. She received her Ph.D. degree in 1995 from Polytechnic University of Madrid at Photonics Technology Department. In 1991, she graduated in Physics at Complutense University of Madrid and she got a fellowship at TELECOM (Denmark). She worked at Optoelectronics Division of Telefónica Investigación y Desarrollo. She has participated in European projects and networks in ESPRIT, RACE, IST and Horizon 2020 programs such as PLANET, OMAN, HEMIND, SAMPA, EPhoton/One+, BONE(*Building the Future Optical Network in Europe*),

COST299, COST TD1001 (*Novel and Reliable Optical Fibre Sensor Systems for Future Security and Safety Applications*). Principal Investigator of BlueSpace (*Building on the Use of Spatial Multiplexing 5G Networks Infrastructures and Showcasing Advanced technologies and Networking Capabilities*- <https://bluespace-5gppp.squarespace.com/>), several national research projects and SINFOTON2-CM (<http://www.sinfoton-cm.es/>) consortium with more than 70 researchers. Her research interest focus on integrated optics, optical communications and instrumentation including: power over fiber, plastic optical fibers, broadband access networks and monitoring techniques, RoF systems, filters, fiber optic sensors and 5G & WDM networks. She is SPIE (*International Society for Optical Engineering*) fellow and IEEE (*Electrical and Electronics Engineering*) senior member. She was the president of the Optoelectronics Committee at Spanish Society of Optics. She has published more than 290 scientific publications, more than 90 JCR and holds 6 patents. She has supervised 8 PhD students. She has given more than 17 invited talks among them *Optical Fiber Sensor Networks and Monitoring Techniques* in Boston chapter of *IEEE Photonics Society in Lincoln Laboratories* Her teaching activities include Optical Devices, Photonics Subsystems, Electronics Instrumentation. She gives short courses on Optical Fiber Sensors in Telecom Bretagne (France). She won the extraordinary doctorate prize of UPM in 1995, UC3M young professor prize 2004 and 2009, among the top best UC3M professors since 2012. She is reviewers of more than 12 high impact JCR journals including *Optic Express*, *IEEE Photonics Technology Letters*, *Sensors and Actuators A*, *Optics Letters*, *IEEE Journal of Lightwave Technology*, *Measurements Science and Technology*... She is reviewer for ERC (*European Research Council*), EIC (*European Innovation Council*), Horizon 2020 ICT 2014 (*European Commission*) and *Swedish Research Council*. She was member of *Council for Doctoral Education (CDE) of European University Association (EUA)* and coordinated *Meeting of EUA-CDE "Promoting Creativity-cultivating the research mindset"*. She was panelist of ANECA (*Agencia Nacional de Evaluación de la Calidad*), AEI (*Agencia de Investigación*), UNIBASQ, AQU, CDTI, La Caixa, AVAP ...

## Part C. Relevant accomplishments

### C.1. Publications

1. D. López-Cardona, P. C. Lallana, R. Altuna, A. Fresno, X. Barreiro and C. Vázquez Optically feeding 1.75 W with 100 m MMF in efficient C-RAN front-hauls with Sleep Modes, **IEEE Journal of Lightwave Technology**, Early Access , 2021
2. S Aretusini, A Núñez-Cascajero, E. Spagnuolo, A Tapetado, C Vázquez, G Di Toro Fast and Localized Temperature Measurements During Simulated Earthquakes in Carbonate Rocks, **Geophysical Research Letters** 2021.
3. F. M. A. Al-Zubaidi, J. D. López Cardona, D. S. Montero and C. Vázquez Optically Powered Radio-Over-Fiber Systems in Support of 5G Cellular Networks and IoT," , **Journal of Lightwave Technology**, vol. 39, no. 13, pp. 4262-4269, July 1, 2021
4. F.M.A. Al-Zubaidi, D. S. Montero, C. Vázquez SI-POF Supporting Power-over-Fiber in Multi-Gbit/s Transmission for In-Home Networks , **IEEE Journal of Lightwave Technology**, vol. 39, no. 11, pp. 112-121, 2020.
5. A. Nuñez Cascajero, A. Tapetado and C. Vázquez High spatial resolution optical fiber two colour pyrometer with fast response, **IEEE Sensors**, 21(3), 2942-2950, 2020.
6. C. Vázquez, J.D. López-Cardona, P. Contreras, D. S. Montero, Fahad M. A. Al-Zubaidi, S. Pérez, and I. Pérez "Multicore Fiber scenarios supporting Power over Fiber in Radio over Fiber systems", **IEEE Access**, 7, 2019.
7. Juan D. López-Cardona, David S. Montero, and C. Vázquez "Smart Remote Nodes Fed by Power over Fiber in Internet of Things Applications" **IEEE Sensors**, 19 (17), 7328-7334, 2019.
8. S. Vargas, C. Vázquez Power, sensitivity, and response time optimization in TDM self-reference intensity sensor networks with ring resonators, **Optics Express**, 2018.
9. C Vázquez, S Pérez-Prieto, JD López-Cardona, A Tapetado, E Blanco, ...Fiber-optic pyrometer with optically powered switch for temperature measurements, **Sensors** 18 (2), 483, 2018.
10. JD López-Cardona, C Vázquez, DS Montero, PC Lallana Remote Optical Powering using Fiber Optics in Hazardous Environments. **IEEE Journal of Lightwave Technology** 36 (3), 748-754, 2018.

11. Díaz-Álvarez, J., Tapetado, A., Vázquez, C., Miguélez, H. Temperature Measurement and Numerical Prediction in Machining Inconel 718. **Sensors**, 17(7), 1531, 2017
12. Plinio Jesús Pinzón; David Sánchez Montero; Alberto Tapetado; Carmen Vázquez “Dual-Wavelength Speckle-Based SI-POF Sensor for Cost-Effective Detection of Microvibrations” **IEEE Journal of Selected Topics in Quantum Electronics**, 23(2), 2017.
13. A Tapetado, J Díaz-Álvarez, MH Miguélez, C Vázquez Two-color pyrometer for process temperature measurement during machining. **IEEE Journal of Lightwave Technology** 34 (4), 1380-1386, 2016.
14. Tapetado, A.; Pinzón, P.J.; Zubia, J.; **Vázquez, C.** “Polymer Optical Fiber Temperature Sensor With Dual-Wavelength Compensation of Power Fluctuations” **IEEE Journal of Lightwave Technology**, 33 (13), 2015.
15. Pinzón, P.J.; Pérez, I.; **Vázquez, C.** “Efficient Multiplexer/Demultiplexer for Visible WDM Transmission over SI-POF Technology” **IEEE Journal of Lightwave Technology** 33(17), 3711-3718, 2015.

## C.2. Research Projects and Grants

### Coordinator and principal researcher

*Sensores e Instrumentación en Tecnologías Fotónicas II.* S2018/NMT-4326-SINFOTON2-CM. (2019-2022). Partners: U Carlos III Madrid, UPM, CSIC, UAH, U Rey Juan Carlos. Programa Actividades Investigación Tecnologías 2018 Comunidad de Madrid

*Sensores e Instrumentación en Tecnologías Fotónicas.* S2013/MIT-2790-SINFOTON-CM. (2014-2018). Partners: U Carlos III Madrid, UPM, CSIC, UAH, U Rey Juan Carlos. Programa Actividades Investigación Tecnologías 2013 Comunidad de Madrid

### Principal researcher in national and regional projects

*TECNOLOGIAS AVANZADAS INTELIGENTES BASADAS EN FIBRAS OPTICAS* RTI2018-094669-B-C32 (2019-2022) Ministerio de Economía y Competitividad.

*Telealimentación Fotovoltaica por fibra Óptica para medida y control en entornos extremos.* Y2018/EMT-4892 (2019-2022). Proyecto sinérgico Comunidad de Madrid.

*Tecnologías sostenibles para sensado y comunicaciones basadas en fibras ópticas en el sector del transporte y biomédico.* TEC2015-63826-C3-2-R. (2016-2018) Ministerio de Economía y Competitividad.

*Nuevas técnicas fotónicas de transmisión, monitorización y sensado en redes de banda ancha de bajo consumo.* TEC2012-37983-C03-02 (2013-2015). Ministerio de Economía y Competitividad.

### Principal researcher in international projects

*BlueSpace: Building on the Use of Spatial Multiplexing 5G Networks Infrastructures and Showcasing Advanced technologies and Networking Capabilities.* 5G PPP Bluespace project Grant 762055. ICT-07-2017

*FIBER-optic sensors for Smart Thermal Ablation at Radiofrequency.* Ref. 652871. Marie Curie-UE.

*Dispositivos y sistemas fotónicos en tecnología CMOS que optimicen el consumo energético.* (2012-2013) Instituto Tecnológico de Massachusetts. MEC (PRX12/00007) /Fund.Caja Madrid.

### C.3. Contracts

2020 Subsistema TDLAS y nuevas formas de alimentación remota en Build-in RedLook, Sensia SL

(2016-2021) Optical fiber plug. HOYNG ROKH MONEGIER.

(2010-2011) Advanced Systems for an Ecoefficient Aircraft: Photonics Applications. AIRBUS GROUP DEFENCE & SPACE S.A.U.

### C.4. Patents and other IPR

1. J. Montalvo, O. Frazao, L. A. Ferreira, F. M. Araujo, J. L. Santos, **C. Vázquez**, J.M. Baptista *Processo De Desmodulação De Sensores De Fibra Óptica De Intensidade E Respectivo Dispositivo*. Nº concesión 103868. País de prioridad: Portugal. Entidad titular: INESC. Fecha prioridad: 29 Oct. 2007
2. **C. Vázquez**, D. S.Montero *Sistema de medición de nivel de combustible en ultraligeros* ES 2 339 205. País de prioridad: ES. Entidad titular: UC3M. Fecha prioridad: 2008.
3. **C. Vázquez**, A. Tapetado, D.S. Montero, J. Montalvo. *Método y sistema para la monitorización de redes de fibra óptica*. ES201530018A. País de prioridad: ES. Entidad titular: UC3M. Fecha prioridad: 9/1/2015. PCT WO2016110604A1
4. **C. Vázquez**, A. Tapetado, M. H. Miguélez, J. Díaz *Pirómetro de fibra óptica a dos colores*. ES201530546A. País de prioridad: ES. Entidad titular: UC3M. Fecha prioridad: 22/4/2015 2015. PCT/ES2016/070269
5. **C. Vázquez**, J. D. López-Cardona, D.S. Montero, D. Barrera, J. Madrigal, S. Sales, “Sistema y método de monitorización de potencia y temperatura en redes de fibra óptica” co-titularidad UC3M-UPV. Nº: ES2760798, concedida con examen sustantivo. Fecha prioridad: 19/12/2019
6. **C. Vázquez**, P. Contreras, A. Núñez *Pirómetro con alta resolución espacial*, solicitud 20/04/2021. Nº solicitud: P202130347

### C.5. Committes

**2018-2021** TPC 44<sup>th</sup> 45<sup>th</sup> 46<sup>th</sup> European Conference on Optical Communications 2018, 2019, 2020  
**2018-2019** Presidenta Comité Optoelectrónica Sociedad Española de Óptica  
**2018** Optical Fiber Workshop at ECOC 2018 Boom of Plastic Optical Fibers in real scenarios? Organizada por C Vázquez y J Zubia.  
**2017-today** Comité Dirección y Académico MSc Photonics Engineering  
**2016 y 2019** TPC 6<sup>th</sup> 7<sup>th</sup> European Workshop on Optical Fiber Sensors 2016 y 2019  
**2016-2018** Miembro del Comité Científico de URSI´16 y sucesivas ediciones.  
**2015** Comité Organizador 41st European Conference on Optical Communications 2015.  
**2015-2019** Comité Fellow SPIE (*International Society for Optical Engineering*)  
**2013-today** Comité Dirección y Académico Máster Ingeniería Sistemas Electrónicos y Aplicaciones  
**2012-2014** Comité de Publicaciones SPIE (*International Society for Optical Engineering*)  
**2011** Comité Organizador *20th International Conference on Plastic Optical Fibers, 2011*.  
**2018-2021** Miembro vocal del Comité de Evaluación en Ingeniería de UNIBASQ  
**2013-2021** Miembro vocal del Comité de Acreditación de Catedráticos en Ingeniería y Arquitectura y C11 del Programa ACADEMIA en ANECA.  
**2007-2011** Miembro Consejo de Dirección UC3M  
**2009-2011** Presidente Comités como Vicerrectora de Postgrado y Calidad  
**2007-2009** Presidente Comités como Vicerrectora de Calidad, Infraestructuras y Medio Ambiente  
**2008** Miembro del Comité Científico de BONE (*Building the Future Optical Network in Europe*) Master Programme 2008.  
**2007** Miembro del Comité Científico de EPhoton ONE+ (*Optical Networks Towards Bandwidth Manageability and Cost Efficiency*) Summer School 2007  
**2004-2005 y 2007-2011** Miembro Consejo de Gobierno UC3M  
**2004-2007** Miembro Comisión de Profesorado, Comisión Investigación como directora Dpto  
**2003** Miembro del Comité Organizador OPTOEL´03 co-sponsored by SPIE, OSA, IEEE  
**2003-presente** Miembro del Comité Científico de OPTOEL´03 y sucesivas hasta la actualidad.  
**2000-2004 & 2006-2008& 2010-presente** Miembro electo del Claustro.