MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE (CVA)

CV date	09/12/2021

Part A. PERSONAL INFORMATION

First name	SONIA		
Family name	MARTÍN LÓPEZ		
Gender (*)	FEMALE	Birth date (	04/02/1977
ID number			46847868L
e-mail	sonia.martinlo@uah.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0001-5203-6206	

(*) Mandatory

A.1. Current position

Position	Profesora Titular de Universidad (Associate Professor)		
Initial date	20/05/2019		
Institution	Universidad de Alcala		
Department/Center	Electrónica	https://www.depeca.uah.es/	
Country	Spain	Teleph. number	+34 918856554
Key words	Fiber Optics, Non Linear Effects, Distributed Optical Fiber Sensors		

A.2. Previous positions (research activity interuptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
01-09-2002/31-12-2002	Tutor/Universidad Alfonso X el Sabio
01-01-2003-12-05-2004	Research Grant/ Instituto de Física Aplicada-CSIC
13-05-2004/30-05-2006	FPI Grant, Ministerio de Educación y Ciencia/ Instituto de Física Aplicada-CSIC
01-06-2004/09-03-2007	FPI contract, Ministerio de Educación y Ciencia/ Instituto de Física Aplicada-CSIC
10-03-2007/29-06-2009	I3P Postdocotral contract / Instituto de Física Aplicada-CSIC
20-10-2009/07-01-2013	Research contract, Juan de la Cierva/Instituto de Óptica-CSIC
08-01-2013/31-01-2014	Postdoctoral research contract/ Dpto. Electrónica-UAH
01-02-2014/31-01-2019	Research Contract, Ramón y Cajal/ Dpto. Electrónica-UAH
01-02-2019/19-05-2019	Lecturer/ Dpto. Electrónica-UAH

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licensed in Mathematics	Universidad Complutense de Madrid	2002
PhD in Physics	Universidad Complutense de Madrid	2006

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Dr. Sonia Martín López received the Ph.D degree from the Universidad Complutense de Madrid in May 2006. The topic of her doctoral dissertation was on **experimental and theoretical understanding of continuous-wave pumped supercontinuum generation in optical fibers**. During her PhD thesis, she made a 6 month stay in the Nanophotonics and Metrology Laboratory, Ecole Polytechnique Federale de Lausanne, Switzerland. After her PhD, she was engaged as post-doctoral researcher in the Applied Physics Institute and in the Optics Institute at the Spanish Council for Research (CSIC) through different competitive grants (**I3P JAEDoc Program, Juan de la Cierva Program**). In the period 2013-2018, she was engaged as post-doctoral **Ramon y Cajal** researcher in the Department of Electronic at the University of Alcala, Madrid. Currently, she is Associate Professor at the Electronic Department in the University of Alcala.

She is **author or co-author of more than 200 publications** in high impact scientific journals (78) and conference contributions, of which more than 40 are in the first quartile, and of them more than 10 in the first decil. Her papers have accumulated a total of >3000 cites. Her **h-index is 28** (According to Scopus). Among those scientific contributions should be highlighted **the first explanation of the mechanisms behind the supercontinuous generated from cw sources** (10.1364/OPEX.13.006615), **the first demonstration that by acting on the phase profile of the optical pulses it is possible to introduce important conceptual and practical changes to the traditional Phase Sensitive OTDR operation** (10.1364/OE.24.013121) (this is a paper from 2016, with more than 200 cites) or **the first demonstration of the benefits of using first and second order Raman amplification in BOTDA and phase sensitive OTDR** (10.1109/JLT.2014.2308354).

She has participated in 31 competitive research projects (4 as PI) and 19 industrial (10 as PI).

She has supervised 10 doctoral thesis and is currently supervising 2 more.

Among the more than 50 groups with which he maintains or has maintained international collaborations are: the EPFL fibre optics group in Lausanne, the group of the University of Padova-Photonics and Electromagnetic Group, the group of the ICM-CSIC-Barcelona Center for Subsurface Imaging and the group of Caltech-Geophysics Seismological Laboratory and Non-linear Dynamics & Fiber Optics group-CSIC; with whom he has maintained close contact throughout his career through research stays of researchers from both groups, research projects and scientific articles.
-She is reviewer in most of the leading journals in Photonics. She has been an evaluating member of the ANEP since 2014. In the years 2015 and 2021 she participated as a member of a commission of the TEC area in the evaluation of the projects of the 2014 and 2020 calls. In 2019 she participated as reviewer for the National Research Council of Norway, and in 2016 for the Ministerio de Ciencia, Tecnología e Innovación Productiva of Argentina.
-Her work has been recognized through different awards and mentions as: **Best paper award - EWOFS 2010, Best student paper award - OFS 2012, Best student paper award - EWOFS 2013, Best paper award - EWOFS 2016, Best student paper award - OFS 2014, Best student paper award - APOS 2016. Prize to the best patent of Madrid region 2014 (foundation for knowledge madri +d), Award to the best national patent UAH (ex aequo) 2016, Best student paper award ofs 2018, Premio a la excelencia en la dirección de tesis 2019 (uah).**
She was a **founding partner of the technology-based company FOCUS SL**, which currently belongs to the Fibercom group and obtained the 18-month funding from the Repsol Foundation thanks to its Entrepreneurs Fund program. She is the co-author of **5 patents in explotations** on distributed sensing methods.

Part C. RELEVANT MERITS *(sorted by typology)*

C.1. Publications

1- Miguel Soriano-Amat, Hugo F Martins, Vicente Durán, Luis Costa, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez, María R Fernández-Ruiz. 2021. Time-expanded phase-sensitive optical time-domain reflectometry, **Light: Science & Applications** 10 (1), 1-12.
2- María R Fernández-Ruiz, Marcelo A Soto, Ethan F Williams, **Sonia Martin-Lopez**, Zhongwen Zhan, Miguel Gonzalez-Herraez, Hugo F Martins. 2020. Distributed acoustic sensing for seismic activity monitoring. **APL Photonics** 5 (3), 030901
3- Luis Duarte Pereira Da Costa, Hugo Fidalgo Martins, **Sonia Martín López**, María Del Rosario Fernández Ruiz, Miguel González Herráez. 2019. Fully distributed optical fiber strain sensor with 10−12ε/√Hz sensitivity, Journal of Lightwave Technology. IEEE.
4- María R Fernández-Ruiz, Juan Pastor-Graells, Hugo F Martins, Andres Garcia-Ruiz, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez. 2018. Laser Phase-Noise Cancellation in Chirped-Pulse Distributed Acoustic Sensors Journal of Lightwave Technology. IEEE. 36-4, pp.979-985.
5- Juan Pastor-Graells, Javier Nuño, María Rosario Fernández-Ruiz, Andres Garcia-Ruiz, Hugo F Martins, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez. 2017. Chirped-Pulse Phase-Sensitive Reflectometer Assisted by First-Order Raman Amplification, Journal of Lightwave Technology. IEEE. 35-21, pp.4677-4683.

6- Alejandro Dominguez-Lopez, Marcelo A Soto, **Sonia Martin-Lopez**, Luc Thevenaz, Miguel Gonzalez-Herraez. 2017. Resolving 1 million sensing points in an optimized differential time-domain Brillouin sensor, OPTICS LETTERS. ELSEVIER. 42, pp.1903-1906. ISSN 0146-9592.
7- Juan Pastor-Graells, Luis Romero Cortés, María R Fernández-Ruiz, Hugo F Martins, José Azaña, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez. 2017. SNR enhancement in high-resolution phase-sensitive OTDR systems using chirped pulse amplification concepts OPTICS LETTERS. ELSEVIER. 42, pp.1728-1731.
8- Javier Tejedor, Javier Macias-Guarasa, Hugo F Martins, Juan Pastor-Graells, **Sonia Martin-Lopez**, Pedro Corredera Guillén, Guy De Pauw, Filip De Smet, Willy Postvoll, Carl H Ahlen, Miguel Gonzalez-Herraez. 2017. Real field deployment of a smart fiber-optic surveillance system for pipeline integrity threat detection: Architectural issues and blind field test results. Journal of Lightwave Technology 36 (4), 1052-1062.
9- Juan Pastor-Graells, Hugo F Martins, Andrés Garcia-Ruiz, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez. 2016. Single-shot distributed temperature and strain tracking using direct detection phase-sensitive OTDR with chirped pulses, OPTICS EXPRESS. 24, pp.13121-13133. ISSN 1094-4087.
10- Alejandro Dominguez-Lopez, Xabier Angulo-Vinuesa, Alexia Lopez-Gil, **Sonia Martin-Lopez**, Miguel Gonzalez-Herraez. 2015. Non-local effects in dual-probe-sideband Brillouin optical time domain analysis, Optics Express. 23-8, pp.10341-10352.

C.2. Congress

More than 70 contributions to national and international conferences in the last 10 years.

C.3. Research projects

1- Sistema de monitorización para la protección y mantenimiento predictivo de infraestructuras de cable submarino (PSI) PLEC2021-007875. Miguel González Herráez. (Universidad de Alcalá 339.995,65€). 01/11/2021-31/10/2024.
2- Sensores e instrumentación en tecnologías fotónicas 2 (SINFOTON 2) P2018/NMT-4326. Óscar Esteban. (Universidad de Alcalá 70.622,98 €.). 01/01/2019-31/12/2022.
3- Engineering Complex Optical Signals for fibre-optic sYStems beyond TElecoM. ECOSYSTEM RTI2018-097957-B-C31. **Sonia Martin-Lopez** and Miguel González Herráez. (Universidad de Alcalá 133.342 €). 01/01/2019-31/12/2021.
4- Ocean-DAS (GA.875302) European Research Council. Miguel Gonzalez-Herraez. (Universidad de Alcalá 150.000 €). 01/01/2020-30/06/2021.
5- FINESSE (FIBRE NERVE SYSTEMS FOR SENSING) 722509- ITN Marie Curie Unión Europea. Miguel Gonzalez-Herraez. (Universidad de Alcalá 3.880.324,44 €.). 01/10/2016-30/09/2020.
6- DOMINO (MONITORIZACION DE DIQUES Y FLUJOS DE ESCOMBROS MEDIANTE NOVEDOSOS SENSORES DE FIBRA OPTICA) PCIN-2015-219 European Union; Ministerio de Ciencia e Innovación. Investigación. Miguel Gonzalez-Herraez. (Universidad de Alcala 149.200 €). 18/04/2016-07/04/2019.
7- SENSORES E INSTRUMENTACIÓN EN TECNOLOGÍAS FOTONICAS SINFOTON Carmen Vázquez. (Universidad de Alcala 94.000 €). 01/10/2014-30/09/2018.
8- ICONE_ ALIIED INITIATIVE FOR TRAINING AND EDUCATION IN COHERENT OPTICAL NETWORKS. MARIE CURIE ACTIONS- INITIAL TRAINING NETWORKS (ITN). **Sonia Martin-Lopez**. (Fiber Optics Consulting Services and Technologies SL). 4 097 330,60 €. 01/02/2014-31/01/2018.
9- DESAFIO- DEtección temprana de amenazas para infraestructuras críticas usando SistemAs distribuidos de FIbra Óptica. Ministerio de Ciencia e Innovación. Investigación. **Sonia Martín López**. (Universidad de Alcalá, 52.998 €). 01/01/2014-31/12/2017.
10- Early Detection of thearts in critical InfrastructureS using a distributed fiber Optic surveirlaNce system (EDISON). Universidad de Alcalá. **Sonia Martin-Lopez**. (Universidadde Alcalá). 15/12/2014-14/12/2015. 10.000 €.

C.4. Contracts, technological or transfer merits

1- Analisys of Chirped-Pulse das Signals. PIs: Miguel González Herráez; **Sonia Martín López**. Funding entity or bodies: OMNISENS-Switzerland. 19/05/2020 Duration: 1 year. Amount: **35.000 €**

2- Research and development agreement of DOFS technologies beyond the current state of the art. PIs: **Sonia Martín López**; Miguel González Herráez. Funding entity or bodies: Omnisens-Switzerland and ARAGON PHOTONICS LABS, S.L.-Spain. 01/04/2019 Duration: 4 years. Amount: **320.000 €**
3- Asesoría y soporte a proyectos de monitorización de infraestructuras empleando sensado distribuido sobre fibra óptica. PIs: **Sonia Martín López**; Miguel González Herráez. Funding entity or bodies: ARAGON PHOTONICS LABS, S.L.-Spain. Start date: 05/02/2019 Duration: 1 year. Amount: 45.645,23€ (this contract has some other related contracts which amount reaches >20000 €)
4- Estudio sobre la viabilidad del uso de cables DST/DSP para la detección de fugas de agua en redes de abastecimiento mediante tecnología de sensado acústico distribuido (DAS) & Detección Fugas en conducciones de agua (two contracts). PI: **Sonia Martín-Lopez**. Funding entity or bodies: Empresa Metropolitana de Abastecimiento y Saneamiento de Aguas de Sevilla, S.A.-Spain. Start date: 28/11/2018 Duration: 8 months. Amount: 5.949,69 € + 1.358,35 €
5- Desarrollo de Sensores de Fibra Óptica. (Two contracts) PI: **Sonia Martin Lopez**.Funding entity or bodies:Fiber Optics Consulting Services and Technologies SL-Spain.Start date: 10/12/2016 Duration: 1+1 year. Amount: 6.000 €+12.000 €.
6- Desarrollo de Sensores de Fibra Óptica. PI: **Sonia Martin Lopez**. Funding entity or bodies: Fiber Optics Consulting Services and Technologies SL-Spain. Start date: 10/12/2016 Duration: 1 year. Amount: 6.000 €
7- Desarrollo de nuevas técnicas y sistemas de información para la Rehabilitación sostenible de PAvimentos de carreteras (REPARA 2.0). PI: Miguel Gonzalez-Herraez. Funding entity or bodies: CHM – Spain. Start date: 01/01/2016 Duration: 2 years. Amount: **57.747,25 €**
8- DINATRANS. PIs: **Sonia Martin-Lopez**; Oscar Esteban Martin. Funding entity or bodies: Fundación Universidad de Alcalá- Spain. Start date: 2014 Duration: 1 year. Amount: 19.200 €
9- PITSTOP Detección Temprana de Amenazas a la Integridad de Gasoductos usando Tecnología de Fibra Óptica. PIs: **Sonia Martín López**; Javier Macías Guarasa. Funding entity or bodies: Fiber Optics Consulting Services and Technologies SL. Start date: 17/12/2013 Duration: 18 months. Amount: 84.000 €

Registered industrial property (in exploitation):
1-Method and system for interrogating optical fibers. Inventors: H.F. Martins, MR. Fernandez-Ruiz, M. Soriano Amat, S. Martin López, M. Gonzalez-Herraez, J. Preciado, A. Villafranca. Entity holder: APL SL. Nº of application: EU 20382439.6 Country of inscription: Spain. Date of register: 25/05/2020. Companies: Aragon Photonics Lab. SL
2-Sistema y metodo de caracterizacion distribuida de variaciones de indice de refraccion de una fibra optica. Inventors: Hugo Fidalgo Martins; Aitor Villafranca Velasco; Miguel Gonzalez Herraez; Sonia Martin Lopez; Juan Pastor Graells; Andres Garcia Ruiz. Entity holder of rights: UAH, CSIC, FOCUS SL. Nº of application: PCT_ES2016_070851. Country of inscription: Spain.Date of register: 30/11/2016.Companies: Fiber Optics Consulting Services and Technologies SL
3-Sistema para la mejora del rango dinamico y la reduccion de la incertidumbre de medida en sensores distribuidos sobre fibra optica. Inventors: Sonia Martín López; J.D. Ania Castañón; P. Corredera Guillén; M. González Herraez. Entity holder of rights: CSIC, UAH, ADIF. Nº of application: ES1641.447 / PCT/ES10/70340 /US Patent 8,836,927, 2014
4-Sistema y método de caracterización distribuida continua de un medio de fibra óptica Inventors: Juan Pastor Graells; S. Martín López; M. González Herraez; Aitor Villafranca Velasco. Entity holder of rights: Universidad de Alcalá. Nº of application: PCT/ES2014/070937. Country of inscription: Spain, Community of Madrid.Date of register: 18/12/2014
5- Sistema y método de caracterización distribuida de perfil de dispersión de una fibra óptica Inventors: Juan Pastor Graells; Sonia Martín López; Miguel González Herráez; Aitor Villafranca Velasco; Pedro Corredera Guillén; Hugo Fidalgo Martins Entity holder of rights: UAH, CSIC, FOCUS SL
Nº of application: P201530793 Country of inscription: Spain, Community of Madrid Date of register: 05/06/2015 Companies: LEAN FOCUS SL.