

Part A. PERSONAL INFORMATION		CV date		10-01-2021
First and Family name	Carlos Molero Jiménez			
Social Security, Passport, ID number	NSS: 411039193355 ID number: 47507458S	Age	33	
Researcher codes	WoS Researcher ID (*)	H-9843-2019		
	SCOPUS Author ID(*)			
	Open Researcher and Contributor ID (ORCID) **	0000-0001-8994-5809		

A.1. Current position

Name of University/Institution	Universidad de Granada		
Department	Department of Teoría de la Señal, Telemática y Comunicaciones		
Address and Country	Calle Periodista Daniel Saucedo Aranda S/N, ETSIIT-UGR, Granada, Spain		
Phone number	+34603538082	E-mail	cmoleroj@ugr.es
Current position	Posdoc	From	01-09-2020
Key words	Sistemas de comunicación, teoría de circuitos, estructuras periódicas		

A.2. Education

PhD	University	Year
	Universidad de Sevilla	2012

A.3. JCR articles, h Index, thesis supervised...

h index = 6, JCR articles: 10, citations: 177, 1 thesis revised

#Books:	0	
#Book chapters:	1	
#JCR Journal papers:	12	
# Conference papers: (30)	International (20)	National (10)
#Patents:	1	

Part B. CV SUMMARY (max. 3500 characters, including spaces)

Degree of physics from the Universidad de Sevilla, Seville. Spain (2005 - 2011, US), PhD in physics with European Mention by the Universidad de Sevilla in 2017 and Cum Laude. Additional research collaboration and publications with top international researchers of top universities in the world: Technische Universitat Delft (TUD, The Netherlands), University of Mississippi (UM, USA) and University California Los Angeles (UCLA, USA). In particular, research collaboration with reputed Prof. T. Itoh (UCLA), worldwide reference and one of the most successful researchers in the field. 3 years and half of Posdoc at Institute National des Sciences Appliquees (INSA) in Rennes, France, from March 2017 to July 2020. INSA Rennes belongs to the "Grandes coles" system in France, recognized as high-level institutions and with an excellent ratio of highly-qualified professionals. From September 2020, posdoc at University of Granada, Spain, in SWAT group headed by Pablo Padilla and Juan Valenzuela.

From the research point of view:

- 12 publications in JCR journals, all Q1. Research strategy based on the search of high-quality results and innovation.
- 30 articles in international and national (Spain) congresses
- 1 chapter in a book
- 1 patent
- Participation in several projects and contracts with private and public institutions. Some of them having a budget of more than half a million euros. In particular, projects and contracts with Thales Alenia Space (France), one of the most important companies for defense and aerospace technology in Europe
- Researcher in The Netherland (4 months), France (3.5 years) and Spain

From the educational point of view

- More than 200 hours of experience as a teacher at the university
- International experience at INSA Rennes (France), with more than 100 hours in a degree of electronic engineering. Laboratory lessons
- National experience in Spain at the University of Granada and Sevilla. In Granada, 60 hours of magisterial lessons in a master of engineering.



Leadership

- Experience with master and degree students as supervisor
- Supervisor of 4 master students at INSA Rennes, as well as one phd student
- Supervisor of 3 master a degree students at the University of Granada (Two TFMs and one TFG).

Part C. RELEVANT MERITS

C.1. Publications (including books)

1. R. Rodríguez-Berral, **C. Molero**, F. Medina, F. Mesa, “Wideband analytical model for slits/strips gratings loaded with dielectric slabs”, IEEE Transactions on Microwave Theory and Techniques, Year: 2012 (**Q1**).
2. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Analytical circuit model for 1-D periodic T-shaped corrugated surfaces”, IEEE Transactions on Antennas and Propagation, Year: 2014 (**Q1**).
3. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, A. B. Yakovlev, “Wideband analytical equivalent circuit for 1-D periodic stacked arrays”, Physical Review E, Year: 2016 (**Q1**).
4. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Dynamical equivalent circuit for 1-D periodic compound gratings”, IEEE Transactions on Microwave Theory and Techniques, Year: 2016 (**Q1**).
5. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Making metals transparent: a circuit model approach”, Optics Express, Year: 2016 (**Q1**).
6. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Wideband analytical equivalent circuit for coupled asymmetrical non-aligned slit arrays”, Physical Review E, Year: 2017 (**Q1**).
7. **C. Molero**, M. García-Vigueras, R. Rodríguez-Berral, F. Mesa, N. Llombart, “Equivalent circuit approach for practical applications of meander-line gratings”, IEEE Antennas and Wireless Propagation Letters, Year: 2017 (**Q1**).
8. **C. Molero**, M. García-Vigueras, “Circuit modeling of 3D Cells to design full-metal polarizers”, IEEE Transactions on Microwave theory and techniques, Year: 2019 (**Q1**).
9. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, M. Memarian, T. Itoh “Planar resonant blazed gratings from a circuit model standpoint”, IEEE Transactions on Antennas and Propagation, Year: 2020 (**Q1**).
10. **C. Molero**, E. Menargues, M. García-Vigueras, “All-metal 3-D frequency selective surface with versatile dual-band polarization conversion”, IEEE Transactions on Antennas and Propagation, Year: 2020 (**Q1**).
11. A. Álex-Amor, F. Mesa, A. Palomares-Caballero, **C. Molero**, P. Padilla, “Exploring the potentials of the multi-modal equivalent circuit approach for stacks of 2D aperture arrays”, IEEE Transactions on Antennas and Propagation, Year: 2021 (**Q1**).
12. **C. Molero**, A. Palomares-Caballero, A. Álex-Amor, I. Parellada-Serrano, F. Gámiz, P. Padilla, J. Valenzuela-Valdés “Metamaterial-based reconfigurable intelligent surface: 3D meta-atoms controlled by graphene structures”, Communications Magazine, Year: 2021 (**Q1**).

Chapters in Books:

1. F. Medina, F. Mesa, R. Rodríguez-Berral, **C. Molero**. Chapter title: Circuit and Analytical Modelling of Extraordinary Transmission Metamaterials. Book title: World Scientific Handbook of Metamaterials and Plasmonics: Electromagnetic metamaterials, Ed. World Scientific, ISBN 9789813227613, 2017.

Congress papers: 30 papers in international and national symposia of the highest level (included here the main contributions to conferences in the last years)

1. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Analytical circuit model for stacked slit gratings”, International Microwave Symposium (IMS), Tampa Bay, USA, Year: 2014, ISBN 1-4799-3869-8/14
2. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Wideband equivalent circuit for 1-D periodic compound gratings”, 9th Conference on Antennas and Propagation (EuCAP 2015), Lisbon, Portugal, Year: 2015
3. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Wideband equivalent circuit for non-aligned 1-D periodic metal strip coupled gratings”, 45th European Microwave Conference (EuMC 2015), Paris, France, Year: 2015, ISBN 978-1-4673-9270-9. **Awarded with Young Engineer Prize**



4. **C. Molero**, F. Medina, R. Rodríguez-Berral, F. Mesa, “Making metal transparent: a circuit model approach”, 9th International Congress on Advanced Electromagnetic materials in Microwave and Optics (Metamaterials 2015), Oxford, United Kingdom, Year: 2015, ISBN 978-88-941141
5. **C. Molero**, F. Medina, R. Rodríguez-Berral, F. Mesa, “Metal grating with slits and grooves for transmission control: an analytical approach”, 9th International Congress on Advanced Electromagnetic materials in Microwave and Optics (Metamaterials 2015), Oxford, United Kingdom, Year: 2015, ISBN 978-88-941141
6. **C. Molero**, R. Rodríguez-Berral, F. Mesa, F. Medina, “Analytical modeling of non-symmetric and non-uniform compound gratings”, 46th European Microwave Conference (EuMC 2016), London, United Kingdom, Year: 2016, ISBN 978-1-5090-1514-6
7. **C. Molero**, R. Rodríguez-Berral, F. Medina, F. Mesa, M. Memarian, T. Itoh, “Accurate circuit model for a planar resonant blazed grating”, 47th European Microwave Conference (EuMC 2017), Nuremberg, Germany, Year: 2017, ISBN 978-1-5386-3964-1
8. **C. Molero**, M. García-Vigueras, R. Rodríguez-Berral, F. Mesa, “Circuit model approach for polarizing surfaces based on stacked gratings”, 12th Conference on Antennas and Propagation (Eucap 2018), London, United Kingdom, Year: 2018, ISBN 978-1-5386-5285-5
9. **C. Molero**, T. Debogovic, M. García-Vigueras, “Design of full-metal polarizing screen based on circuit modeling”, International Microwave Symposium (IMS), Philadelphia, USA, Year: 2018, ISBN 978-1-5386-5068-5
10. M. García-Vigueras, **C. Molero**, “Circuit analysis of full-metal polarisers based on 3D unit cells”, 48th European Microwave Conference (EuMC 2018), Madrid, Spain, Year: 2018, ISBN 978-1-5386-5285-5
11. **C. Molero**, E. Menargues, T. Debogovic, M. García-Vigueras, “Circuit modeling of metallic dual-band dual-polarized FSS”, 49th European Microwave Conference (EuMC 2019), Paris, France, Year: 2019
12. **C. Molero**, L. Simon, E. Menargues, T. Debogovic, M. García-Vigueras, “Dual-band polarizing screen based on self-supported metallic structures”, 14th European Conference on Antennas and Propagation (Eucap 2020), Copenhagen, Denmark, Year: 2020

C.2. Research projects and grants

1. **PROJECT**: SISTEMAS ELECTROMAGNÉTICOS AVANZADOS PARA COMUNICACIONES Y APLICACIONES MÉDICAS (Ref. TEC2010-16948), FUNDING INSTITUTION: Ministerio de Ciencia e Innovación and Feder Funds from European Union, 01/01/2011 - 31/12/2013, IP: Francisco Luis Mesa Ledesma, Funding total: 222.519 €
2. **PROJECT**: MODELADO Y APLICACIONES DE ESTRUCTURAS ELECTROMAGNÉTICAS PERIÓDICAS PARA TECNOLOGÍAS EMERGENTES (Ref. TEC2013-41913-P), FUNDING INSTITUTION: Ministerio de Economía y Competitividad, 01/01/2014 - 31/12/2017, IP: Francisco Medina Mena y Francisco Luis Mesa Ledesma, Funding total: 120.000 €
3. **PROJECT**: REFLECTARRAYS, SSF, Y FILTROS IMPRESOS A FRECUENCIAS DE MICROONDAS (Ref. P12-TIC-1435), FUNDING INSTITUTION: Junta de Andalucía, 30/01/2014 - 01/02/2018, IP: Rafael Rodríguez Boix, Funding total: 136.144 €
4. **PROJECT**: DE LA THEORIE AU PROFIT DES TECHNOLOGIES DE FABRICATION ADDITIVE INNOVANTES POUR DES APPLICATIONS AUX ONDES MILIMETRIQUES, FUNDING INSTITUTION: SAD Région de Bretagne, 01/03/2017 - 31/05/2018, IP: María García Vigueras, Funding total: 50.400 €
5. **PROJECT**: ALL METAL POLARIZER OPERATING IN TRANSMISSION, FUNDING INSTITUTION: Thales Alenia Space, 01/12/2017 - 31/07/2018, IP: María García Vigueras, Funding total: 20.000 €
6. **PROJECT**: MULAN: MULTIMODAL ANTENNAS FOR ADVANCED COMMUNICATIONS, FUNDING INSTITUTION: Rennes Métropole, 01/06/2018 - 31/05/2020, IP: María García Vigueras, Funding total: 10.000 €
7. **PROJECT**: TOWARD AN ALL-METAL AND WIDEBAND POLARIZER, FUNDING INSTITUTION: Thales Alenia Space, 01/08/2018 - 31/12/2018, IP: María García Vigueras, Funding total: 20.000 €
8. **PROJECT**: RADÔME POLARISANT POUR ANTENNE À FORMATEUR DE FAISCEAUX QUASI-OPTIQUE, FUNDING INSTITUTION: Centre National d'Études Spatiales, 01/05/2019 - 31/17/2020, IP: María García Vigueras, Funding total:



9. PROJECT: Diseño, fabricación y caracterización de tecnologías para comunicaciones hasta 300 GHz), Ref. P18-RT-4830, FUNDING INST.: JUNTA DE ANDALUCIA, 01/01/2020-31/12/2022, IP: Juan Francisco Valenzuela, Pablo Padilla. Funding: 95.342,00€

10. PROJECT: Optimización de las tecnologías facilitadoras para redes Ultradensas 5G de alta frecuencia (Evo5G), Ref.: B-TIC-402-UGR182, FUNDING INST.: UGR-JUNTA DE ANDALUCIA. 01/01/2020-31/12/2021. IP: Juan Francisco Valenzuela, Pablo Padilla. Funding: 37.500,00€

11. PROJECT: OPTIMIZACION MULTI-CAPA DE REDES 5G (Ref. RTI2018-102002-A-I00), FUNDING INSTITUTION: Ministerio de Economía y Competitividad, 01/01/2019 - 31/12/2020, IP: Antonio Mora, Funding total: 44.500€

12. PROJECT: Mastering 5G: deep learninG and smart Infrastructure Communications for a secure connected society, Ref. EQC2019-005605-P, FUNDING INST.: Ministerio de Ciencia e Inno., 01/01/2019-31/12/2021, IP: Isaac Álvarez, Funding total: 667.845,32€

14. PROJECT: IoT5GLab: Design and implementation of future networks for 5G and IoT (Ref. EQC2018-004988-P), FUNDING INSTITUTION: Ministerio de Economía y Competitividad, Subprograma Estatal de proyectos de Infraestructuras Científicas y Técnicas y Equipamiento, 01/01/2018 - 31/12/2020, IP: Pablo Padilla, Sandra Sendra, Funding total: 583.426,17€

C.3. Contracts

Associated with a particular project

1. CONTRACT: Modelado y aplicaciones de estructuras electromagnéticas periódicas para tecnologías emergentes, in the framework of the project TEC2013-41913-P, FUNDING INSTITUTION: Ministerio de Economía y competitividad, 01/09/2015 - 31/05/2016. CHARGE: Researcher. RESPONSIBLE: Francisco Medina Mena

2. CONTRACT: Modelado y aplicaciones de estructuras electromagnéticas periódicas para tecnologías emergentes, in the framework of the project TEC2013-41913-P, FUNDING INSTITUTION: Ministerio de Economía y competitividad, 04/07/2016 - 03/10/2016. CHARGE: Researcher. RESPONSIBLE: Francisco Medina Mena

3. CONTRACT: Stratégie 3D de la théorie au profit des technologies de fabrication additive innovantes pour des systèmes de communication et applications aux ondes millimétriques, FUNDING INSTITUTION: Région de Bretagne, 01/03/2017 -31/05/2018 . CHARGE: Posdoc Researcher. RESPONSIBLE: María García Vigueras

With companies

4. CONTRACT: Trabajo en ámbitos de sistemas de medidas de cámaras , FUNDING INSTITUTION: Aryitec Soluciones S.L., con N.I.F. nº B-19.693.027. CHARGE: researcher . RESPONSIBLE: Juan Francisco Valenzuela

5. CONTRACT: Medidas de posicionamiento para cámaras , FUNDING INSTITUTION: CREATEC4 S.C.A., con N.I.F. nº F-19.528.470. CHARGE: researcher . RESPONSIBLE: Juan Francisco Valenzuela

6. CONTRACT: realización de medidas en cámara anecóica, FUNDING INSTITUTION: VALEO ILUMINACIÓN SAU. CHARGE: researcher . RESPONSIBLE: Juan Francisco Valenzuela

C.4. Patents

1. ECRAN POLARISEUR A CELLULE(S) POLARISANTE(S) RADIOFREQUENCES LARGE BANDES, Demande France N° 1904139, Thales/ INSA Rennes, 2019. INVENTORS : Hervé Legay, **Carlos Molero Jiménez**, María García Vigueras

C.5, C.6, C.7... (e. g., Institutional responsibilities, memberships of scientific societies...)

- IEEE Member. Member number: 94489476

- Member of “Colegio de Físicos” (COFIS) in Spain. Member number: 4794

- Currently, member of Smart and Wireless Applications and Technologies Group (SWAT) , which belongs to the University of Granada



- Currently member of department council in the department “Teoría de la señal, Telemática y comunicaciones”