UAB
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# CURRICULUM VITAE

Ferran Martín Antolín
GEMMA Group and CIMITEC
Departament d'Enginyeria Electrònica
Universitat Autònoma de Barcelona

February, 2024

## OUTLINE

## 1. PERSONAL

**Name**: Joan Ferran
**Surname**: Martín Antolín
**Birth**: December 16th, 1965, Barakaldo (Spain)
**Citizenship**: Spain
**Present Position**: Full Professor of Electronics, Departament d'Enginyeria Electrònica, Universitat Autònoma de Barcelona, 08193 BELLATERRA (Barcelona), Spain.
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## 2. ACADEMIC RECORD

- **B.S. Degree** in Physics from the Universitat Autònoma de Barcelona (UAB) in 1988.
- **Master Degree in Physics** from the Universitat Autònoma de Barcelona (UAB) in 1989
    - Title of the Master Thesis: *Hot electron transport and energy distribution in MOS structures*
- **PhD. Degree** in Physics from the Universitat Autònoma de Barcelona (UAB) in 1992.
    - Title of the PhD Thesis: *Charge transport and storage in oxide-nitride films: application to MNOS memory devices*.

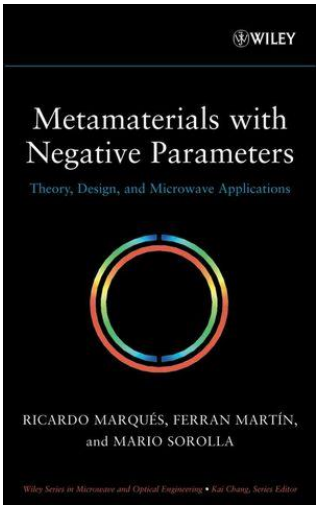
## 3. RELEVANT ACADEMIC AND RESEARCH POSITIONS

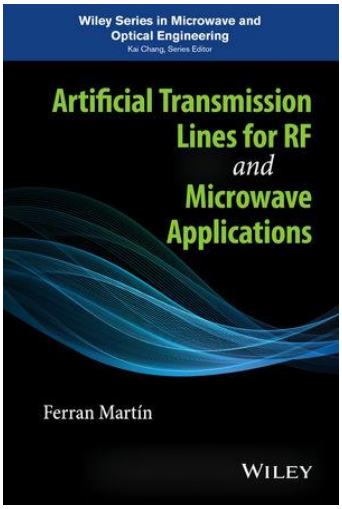
- **FELLOW of the IEEE**, since January 2012.
- **FELLOW of the IET**, since February 2016.
- **Associate Professor** in Electronics from September 1994 up to December 2006.
- **Full Professor** of Electronics at the *Departament d'Enginyeria Electrònica*, *Universitat Autònoma de Barcelona* (UAB), since January 2007.
- **Director** of the *Departament d'Enginyeria Electrònica*, *Universitat Autònoma de Barcelona* (UAB), from May 2015 up to April 2021.
- **Founder and Head** of the GEMMA Group (Microwave, Metamaterials and Antenna Group) at Universitat Autònoma de Barcelona (since 2005).
- **Founder and Director** of CIMITEC, a Research Center on Metamaterials, partially supported by ACC1Ó (Catalan Government) and ascribed to the Departament d'Enginyeria Electrònica (Universitat Autònoma de Barcelona), since January 2006.
- **Coordinator** of the **Spanish Network** on Metamaterials (REME), from January 2006 up to March 2008.
- **Head of the Electronic Engineering Graduate Courses** at UAB from June 1998 up to October 2001.
- **Postgraduate Course Coordinator** of the *Departament d'Enginyeria Electrònica* at UAB from December 2001 up to June 2003.

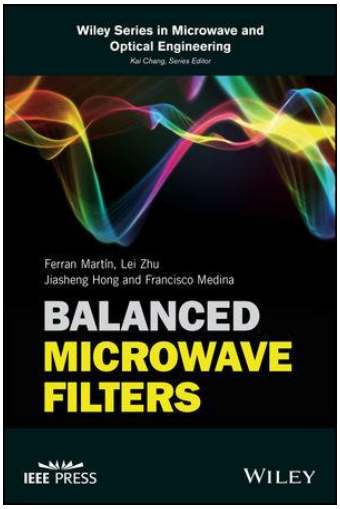
## 4. PUBLICATIONS

### 4.1. BOOKS AND BOOK CHAPTERS

- **Book Title:** *Metamaterials with negative parameters: theory, design and microwave applications*.
  **Authors:** R. Marqués**, F. Martín** and M. Sorolla**.**
  **Editorial: John Wiley & Sons, Inc.**
  **Publication date:** December 2007
  **Type**: **BOOK (INVITED)**
  **Number of pages:** 315 pages
  **ISBN:** 978-0-471-74582-2
  Book published within the *Wiley Series in Microwave and Optical Engineering*. **Invitation** to write the book to Ferran Martín by Prof. Kai Chang, Series Editor. **More than 1.300 samples sold since December 2007**. The book has received **over 1.500 citations** (Google Scholar).





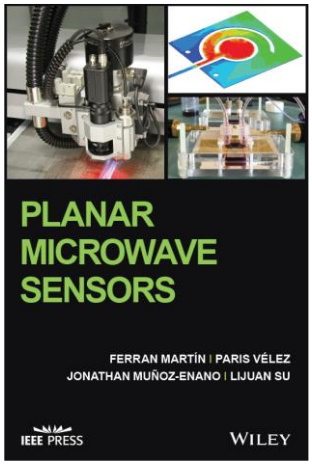


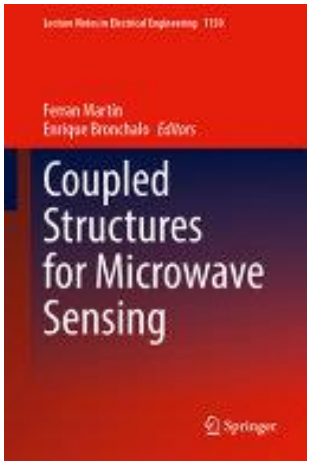

- **Book Title:** *Artificial Transmission Lines for RF and Microwave Applications*.
  **Author: F. Martín.**
  **Editorial: John Wiley & Sons, Inc.**
  **Publication date:** July 2015.
  **Type**: **BOOK**
  **Number of pages:** 552 pages
  **ISBN:** 978-1-118-48760-0
  Book published within the *Wiley Series in Microwave and Optical Engineering*, edited by Prof. Kai Chang (Series Editor). 350 samples sold since July 2015.

- **Book Title:** *Balanced Microwave Filters*.
  **Authors: F. Martín,** L. Zhu, J-S. Hong and F. Medina (Editors)
  **Editorial: Wiley-IEEE Press.**
  **Publication date:** March 2018.
  **Type**: **BOOK**
  **ISBN:** 978-1-119-23761-7
  **Number of pages:** 688 pages
  Book published within the *Wiley Series in Microwave and Optical Engineering*, edited by Prof. Kai Chang (Series Editor). 251 samples sold since March 2018.

- **Book Title:** *Time-domain signature barcodes for chipless-RFID and sensing applications*
  **Authors: F. Martín,** C. Herrojo, J. Mata-Contreras, F. Paredes

**Editorial: Springer**
**Publication date:** February 2020
**Type: BOOK**
**ISBN:** 978-3-030-39725-8


- **Book Title:** *Planar Microwave Sensors*
  **Authors: F. Martín,** P. Vélez, J. Muñoz-Enano, L. Su
  **Editorial: Wiley-IEEE Press**
  **Publication date:** September 2022
  **Type**: **BOOK**
  **ISBN:** 978-1-119-81103-9
  **Number of pages**: 480 pages
  135 samples sold since September 2022.

  **Book Title:** *Coupled Structures for Microwave Sensing*
  **Authors: F. Martín** and E. Bronchalo (Editors)
  **Editorial: Springer**
  **Publication date:** May 2024
  **Type: BOOK**
  **ISBN:** 978-3-031-53860-5
  **Number of pages** (estimated): 390

- **Book Title:** *Metamateriales: un nuevo concepto para el diseño de sistemas de comunicaciones*
  **Authors: F. Martín,** J. Bonache, J. García, I. Gil, M. Gil and F. Aznar.
  **Editorial:** Social Council of the Universitat Politècnica de Catalunya (UPC).
  **Date**: 2006.
  **Type**: Short BOOK (39 pages).
  Published by invitation to point out the research activity of the applicant and his Group after being awarded with the *Duran Farall Prize of Technological Research* (see Section 13).

- **Book Title:** *Metamaterials Handbook: Theory and Phenomena of Metamaterials*
  **Chapter title:** *Split rings resonators and related topologies*
  **Authors:** R. Marqués and **F. Martín**.
  **Editorial: Taylor and Francis** (Edited by F. Capolino)
  **Publication date:** 2009
  **Type**: BOOK CHAPTER
  **Invited contribution**
  **ISBN:** 978-1-4200-5425-5

- **Book Title:** *Metamaterials Handbook: Applications of Metamaterials*
  **Chapter title:** *Applications of Split Ring Resonators to microwave circuit design*
  **Authors: F. Martín** and R. Marqués.
  **Editorial: Taylor and Francis** (Edited by F. Capolino)
  **Publication date:** 2009
  **Type**: BOOK CHAPTER
  **Invited contribution**
  **ISBN:** 978-1-4200-5423-1

- **Book Title:** *Metamaterials Handbook: Applications of Metamaterials*
  **Chapter title:** *Application of Electromagnetic bandgaps (EBG) to microwave circuit design*
  **Authors:** J. Bonache, F. Falcone, I. Gil, J. García-García and **F. Martín**
  **Editorial: Taylor and Francis** (Edited by F. Capolino)
  **Publication date:** 2009
  **Type**: BOOK CHAPTER
  **Invited contribution**
  **ISBN:** 978-1-4200-5423-1

- **Book Title:** *Integrated Circuits, Photodiodes and Organic Field Effect Transistors*
  **Chapter title:** *Metamaterials technology: application to radiofrequency and microwave circuits*
  **Authors: F. Martín,** J. Bonache
  **Edited by Nova Science Publishers, Inc.**
  **Publication date:** 2009
  **Type**: BOOK CHAPTER
  **Invited contribution**
  **ISBN**: 978-1-60692-660-4

- **Book Title:** *Metamaterials and Plasmonics: Fundamentals, Modelling and Applications* (*NATO Science for Peace and Security Series-B: Physics and Biophysics*)
  **Chapter title:** *Dispersion Engineering in Resonant Type Metamaterial Transmission Lines and Applications*
  **Authors:** Jordi Bonache, Gerard Sisó, Marta Gil and **Ferran Martín**
  **Edited by Springer** (Saïd Zouhdi, Ari Sihvola and Alexey Vinogradov Edts.)
  **Publication date:** 2009.
  **Type**: BOOK CHAPTER
  **Invited contribution**
  **ISBN:** 978-1-4020-9406-4 (PB)
  **ISBN:** 978-1-4020-9405-7 (HB)
  **ISBN:** 978-1-4020-9407-1 (e-book)

- **Book Title** *Passive Microwave Components and Antennas*
  **Chapter title:** *Electrically small resonators for metamaterial and microwave circuit design.*
  **Authors:** Marta Gil, Francisco Aznar, Adolfo Vélez, Miguel Durán-Sindreu, Jordi Selga, Gerard Sisó, Jordi Bonache and **Ferran Martín**
  **Edited by IN-TECH.**
  **Publication date**: 2010
  **Type:** BOOK CHAPTER
  **ISBN:** 978-953-307-083-4
  **DOI:** 10.5772/9409

- **Book Title:** *Metamaterials*

**Chapter title:** *Characterization of Metamaterial Transmission Lines with Coupled Resonators through Parameter Extraction*
**Authors:** Francisco Aznar, Marta Gil, Miguel Durán-Sindreu, Jordi Bonache and **Ferran Martín**
**Edited by IN-TECH.**
**Publication date**: 2012
**Type:** BOOK CHAPTER
**ISBN:** 979-953-307-563-0

- **Book Title:** *Wiley Encyclopedia of Electrical and Electronics Engineering*
  **Chapter title:** *Artificial transmission lines*
  **Authors: Ferran Martín,** Jordi Bonache, Miguel Durán-Sindreu, Jordi Naqui, Ferran Paredes, Gerard Zamora.
  **Edited by:** John Webster
  **Pubished by:** John Wiley & Sons Inc.
  **Publication date**: July 2012
  **Type:** BOOK CHAPTER
  **DOI:** 10.1002/047134608X.W8151
  **ISBN:** 9780471346081

- **Book Title:** *Wiley Encyclopedia of Electrical and Electronics Engineering*
  **Chaptet title:** *Composite right/left handed transmission line metamaterials*
  **Authors:** Miguel Durán-Sindreu, Jordi Naqui, Jordi Selga, Paris Vélez, Jordi Bonache, **Ferran Martín**.
  **Edited by:** John Webster
  **Pubished by:** John Wiley & Sons Inc.
  **Publication date**: April 2013
  **Type:** BOOK CHAPTER
  **DOI:** 10.1002/047134608X.W8195
  **ISBN:** 9780471346081

- **Book Title:** Surrogate-Based Modeling and Optimization: Applications in Engineering
  **Chapter title:** *Practical Application of Space Mapping Techniques to the Synthesis of CSRR-based Artificial Transmission Lines*
  **Authors:** Ana rodríguez, Jordi Selga, **Ferran Martín**, Vicente E. Boria.
  **Edited by:** S. Koziel
  **Pubished by:** Springer.
  **Publication date**: 2013
  **Type:** BOOK CHAPTER
  **ISBN:** 978-1-4614-7551-4

- **Book title:** Recent Advances in Metamaterial Science and Technology
  **Chapter title:** Differential Transmission Lines and Differential Microwave Circuits based on Metamaterial Concepts
  **Authors:** Jordi Naqui, Paris Vélez, Jordi Bonache, Ferran Martín.
  **Edited by:** Rakesh Mohan Jha
  **Published by:** Tech Science Press
  **Publication date**: 2016
  **Type:** BOOK CHAPTER
  **ISBN:**

- **Book title:** Handbook of Metamaterials and Nanophotonics. Vol 1: Electromagnetic Metamaterials
  **Chaptet title:** Microwave Sensors based on Symmetry Properties and Metamaterial Concepts

**Authors:** Jordi Naqui, Ferran Martín
**Edited by:** E. Shamonina
**Published by:** World Scientific
**Date**: 2017
**Type:** BOOK CHAPTER
**ISBN:** 978-9-813-22761-3

- **Book title:** Simulation-Driven Modeling and Optimization
  **Chapter title:** Unattended Design of Wide-Band Planar Filters using a Two-Step Aggressive Space Mapping (ASM) Optimization Algorithm
  **Authors:** Marc Sans, Jordi Selga, Ana Rodríguez, Paris Vélez, V.E. Boria, J. Bonache, Ferran Martín.
  **Edited by:** S. Koziel, L. Leifsson, X.-S. Yang
  **Published by:** Springer
  **Date**: 2016
  **Type:** BOOK CHAPTER
  **ISBN:** 978-3-319-27517-8

- **Book Title:** Metamaterials and Metasurfaces
  **Chapter title:** Coding metasurfaces and applications
  **Authors:** Hengyi Sun, Changqing Gu, Zhuo Li and Ferran Martín
  **Edited by:** Josep Canet-Ferrer
  **Published by:** Intech
  **Date:** January 2019
  **Type:** BOOK CHAPTER
  **ISBN:** 978-1-78984-843-4

- **Book Title:** Wireless Identification and Sensing Systems for Harsh and Severe Environments
  **Chapter title:** MICROWAVE ENCODERS FOR MOTION CONTROL AND CHIPLESS-RFID APPLICATIONS
  **Authors:** Ferran Martín, Ferran Paredes, and Amirhossein Karami-Horestani
  **Edited by:** Smail Tedjini and Valentina Palazzi
  **Published by: Wiley**
  **Date:** scheduled 2024
  **Type:** BOOK CHAPTER
  **ISBN:** 978-1394169078

### 4.2. PUBLISHED PAPERS IN INTERNATIONAL JOURNALS

1989

1. J. Suñé, E. Farrés, I. Placencia, N. Barniol, F. Martín and X. Aymerich, “Non-destructive multiple breakdown events in very thin $SiO_2$ films” , Applied Physics Letters, vol. 55, p. 128-130 (1989).

2. J. Suñé, Placencia, Farrés, N. Barniol, F. Martín and X. Aymerich, "Gate oxide breakdown statistics in wearout tests of metal-oxide-semiconductor structures", Microelectronics Journal, vol. 20, p. 27-39 (1989).

1990

3. J. Suñé, I. Placencia, N. Barniol, E. Farrés, F. Martín and X. Aymerich, "On the breakdown statistics of very thin $SiO_2$ films", Thin Solid Films, vol. 185, p. 347-362 (1990).

4. I. Placencia, F. Martín, J. Suñé and X. Aymerich, "On the dissipation of energy by hot electrons in $SiO_2$", Journal of Physics D: Applied Physics, vol. 23, p. 1576-1581 (1990).

5. N. Barniol, E. Farrés, F. Martín, J. Suñé, I. Placencia and X. Aymerich, "Simple STM theory", Vacuum, vol. 41, p. 379-381 (1990).

1991

6. F. Martín and X. Aymerich, "Transient analysis of charge transport in the nitride of MNOS devices under Fowler-Nordheim injection conditions", Microelectronics Journal, vol. 22, 5 (1991).

1992

7. F. Martín, F. Campabadal, M. C. Acero and X. Aymerich, "Carrier transport and storage in $Si_3N_4$ for MNOS memory applications", Thin Solid Films, vol. 213, 235 (1992).

8. F. Martín and X. Aymerich, " Characterization of the spatial distribution of traps in $Si_3N_4$ by field assisted discharge of MNOS devices", Thin Solid Films, vol. 221, 147 (1992).

1995

9. X. Oriols, J. Suñé, F. Martín and X. Aymerich, "Stationary modeling of two dimensional states in resonant tunneling diodes ", J. Appl. Phys. vol. 78, 2135 (1995).

1996

10. J. Suñé, X. Oriols, F. Martín and X. Aymerich, "Bohm Trajectories and their potential use for the Monte Carlo Simulation of resonant tunneling diodes" Appl. Surf. Science, vol. 102, 255 (1996).

11. X. Oriols, F. Martín and J. Suñé, "Oscilatory Bohm Trajectories in resonant tunneling structures", Sol. Stat. Communications, vol. 99, 123 (1996).

12. X. Oriols, F. Martín and J. Suñé, "Implications of the non-crossing property of Bohm trajectories in one-dimensional tunneling configurations", Phys. Rev. A, vol. 54, 2594 (1996).

13. J. García-García, X. Oriols, F. Martín and J. Suñé, "Comparison between the relaxation time approximation and the Boltzmann collision operator on the simulation of dissipative electron transport in resonant tunnelling diodes", Sol. Stat. Electron., vol. 39, 1795 (1996)

1997

14. J. Suñé, X. Oriols, J. García, F. Martín, T. González, J. Mateos and D. Pardo, "Bohm trajectories for the modeling of tunneling devices", Microelectronics Engineering, vol. 36, 125 (1997).

15. X. Oriols, J. García, F. Martín, J. Suñé, T. González, J. Mateos and D. Pardo, "Quantum Monte Carlo Simulation of tunneling devices using Bohm trajectories", Phys. Stat. Solidi B, vol. 204, 404 (1997).

16. J. Vizoso, F. Martín, J. Suñé and M. Nafría, "Model for hydrogen desorption in SiGe(100) films,", J. Vacuum Science and Technol. A, vol 15, 2693 (1997).

17. J. Vizoso, F. Martín, J. Suñé and M. Nafría, "Hydrogen desorption in SiGe films: a diffusion limited process", Appl. Phys. Lett., vol. 70, 3287 (1997).

1998

18. X. Oriols, J. García, F. Martín, J. Suñé, T. González, J. Mateos and D. Pardo, "Bohm trajectories for the Monte Carlo Simulation of quantum based devices", Appl. Phys. Lett., vol 72, 806 (1998)

19. J. García, X. Oriols, F. Martín and J. Suñé, "Effects of the spacer layers on the Wigner function simulation of resonant tunneling diodes", J. Appl. Phys, vol. 83, 8057 (1998).

20. J. García, F. Martín, X. Oriols and J. Suñé, "Quantum Monte Carlo simulation of resonant tunneling diodes based on the Wigner distribution function formalism", Appl. Phys. Lett., vol. 73, 3539 (1998).

1999

21. F. Martín, J. García, X. Oriols and J. Suñé, "Coupling between the Liouville equation and a classical Monte Carlo solver for the simulation of electron transport in resonant tunneling diodes", Solid State Electronics, vol. 43, 315 (1999).

22. E. Miranda, J. Suñé, R. Rodríguez, M. Nafria, F, Martín and X. Aymerich, "Soft breakdown in ultrathin $SiO_2$ layers: the conduction problem from a new point of view", Jpn. J. Appl. Phys., vol. 38, 2223 (1999).

23. F. Martín, J. García, X. Oriols and J. Suñé, "Quantum simulation of resonant tunneling diodes: a reliable approach based on the Wigner function method", Jpn. J. Appl. Phys., vol. 38, 2669 (1999).

24. X. Oriols, J. García, F. Martín, J. Suñé, T. González, J. Mateos and D. Pardo, "Towards the Monte Carlo Simulation of resonant tunnelling diodes using time-dependent wavepackets and Bohm trajectories", Semiconductor Sci. Technol., vol. 14, 532-42 (1999)

25. J. Vizoso, F. Martín, X. Martínez, M. Garriga and X. Aymerich, "Growth of nanoscale Si nuclei on $SiO_2$ by rapid thermal chemical vapor deposition", J. Electrochem. Soc. vol. 146, p. 4219 (1999)

26. J. Vizoso, F. Martín, X. Martínez, M. Garriga and X. Aymerich, "Growth of Si nuclei on $SiO_2$ for quantum dot memory applications", Microelectronics Engineering, vol. 48, p.431 (1999)

2000

27. J. García-García and F. Martín, "Simulation of multilayered resonant tunneling diodes using coupled Wigner and Boltzmann distribution function approaches", Appl. Phys. Lett., vol. 77, 3412 (2000).

2001

28. F. Martín and X. Oriols "A simple model to study soliton wave propagation in periodically loaded nonlinear transmission lines", Appl. Phys. Lett., vol. 78, 2802 (2001).

29. F. Martín and X. Oriols "Understanding soliton wave propagation in nonlinear transmission lines for millimeter wave multiplication", Int. Journal of Infrared and Millimeter Waves, vol. 22(1), 85-92 (2001).

30. F. Martín and X. Oriols "Effects of line parameters on soliton-like propagation in nonlinear transmission lines: application to the optimization of frequency triplers", Int. Journal of Infrared and Millimeter Waves, vol. 22 (2), 225-235 (2001)

31. X. Oriols and F. Martín "Analytical solitons in nonlinear transmission lines loaded with heterostructura barrier varactors" J. Appl. Phys., vol. 90, 2595 (2001).

32. X. Oriols, F. Martin and J. Suñé, "Approach to study the noise properties in nanoscale electron devices", Appl. Phys. Lett., vol. 79, 1703 (2001).

2002

33. F. Martín, X. Oriols, J.A. Gil and J. García-García, "Optimization of nonlinear transmission lines for harmonic generation: the role of the capacitance voltage characteristic and the area effect", Int. Journal of Infrared and Millimeter Waves, vol. 23, p. 95, january 2002.

34. M. Fernández, F. Martín, P. Steenson, X. Melique, A. Oistein, X. Oriols, O. Vanbesien, J. García-García, R. Miles and D. Lippens, "A comparison of different approaches for the simulation of nonlinear transmission lines", Microwave and Optical Technology Lett, vol. 33 (2), 134-136 (April 2002).

35. J. García-García, F. Martín, R.E. Miles, D.P. Steenson, J.M. Chamberlain, J.R. Fletcher and J.R. Thorpe "Parametric analysis of micromachined reflex klystrons for operation at millimeter and submillimeter wavelengths", J. Appl. Phys., vol. 92, pp. 6900-04 (2002).

36. F. Martin, X. Oriols and J. García-García, "Comparison of distributed and lumped element models for the analysis of the filtering properties of nonlinear transmission lines", Int. J. RF and Microwaves Computer Aided Engineering, vol. 12, pp. 503-507, November 2002.

37. Xavier Oriols, Ferran Martin and Jordi Suñé, "High frequency components of current fluctuations in semiconductor tunneling barriers", Applied Physics letters, vol. 80(21), 4048 (2002).

38. Xavier Oriols, Ferran Martin and Jordi Suñé, "Study of noise properties in nanoscale electronic devices using quantum trajectories", Journal of Computational Electronics, vol. 1, pp. 43-48 (2002).

39. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, M.A.G. Laso, M. Sorolla, " New periodic-loaded photonic bandgap coplanar waveguide with complete spurious passband suppression", IEEE Microwave and Wireless Components Lett., vol. 12 (11), pp. 435-437 (2002).

2003

40. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, M.A.G. Laso, M. Coderch and M. Sorolla, "Periodic-loaded sinusoidal patterned electromagnetic bandgap coplanar waveguides", Microwave and Optical Technology Letters, vol. 36(3), pp. 181-184 (2003).

41. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, M.A.G. Laso, M. Sorolla, "Analysis of the reflection properties in electromagnetic bandgap coplanar waveguides loaded with reactive elements - *abstract*", J. Electromagnetic Waves and Applications, vol. 17, pp. 1319-1322, 2003.

42. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, M.A.G. Laso, M. Sorolla, "Analysis of the reflection properties in electromagnetic bandgap coplanar waveguides loaded with reactive elements – *full text*", Progress in Electromagnetic Research, PIER 42, pp. 27-48 (2003).

43. F. Martín, J.L. Carreras, J. Bonache, F. Falcone, T. Lopetegi,. M.A.G. Laso and M. Sorolla, "Frequency tuning in electromagnetic bandgap nonlinear transmission lines", Electronics Letters, vol. 39(5), pp.440-442 (2003).

44. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, M.A.G. Laso, J.L. Carreras, M. Sorolla, "New electromagnetic bandgap nonlinear coplanar waveguides", Microwave and Optical Technology Lett., vol. 37, pp. 397-401 (2003).

45. F. Martín, F. Falcone, J. Bonache, M.A.G. Laso, T. Lopetegi, M. Sorolla, "Dual electromagnetic bandgap CPW structures for filter applications", IEEE Microwave and Wireless Components Letters, vol. 13, pp. 393-395 (2003).

46. F. Martín, F. Falcone, J. Bonache, M.A.G. Laso, T. Lopetegi, M. Sorolla, "New CPW low pass filter based on a slow wave structure", Microwave and Optical Technology Lett., vol. 38 pp. 190-193 (2003).

47. F. Martín, F. Falcone, J. Bonache, R. Marqués and M. Sorolla, "Split ring resonator based left handed coplanar waveguide", Appl. Phys. Lett., vol. 83, pp. 4652-4654, December 2003.

48. F. Martín, F. Falcone, J. Bonache, T. Lopetegi, R. Marqués and M. Sorolla, "Miniaturized CPW stop band filters based on multiple tuned split ring resonators" IEEE Microwave and Wireless Components Letters, vol. 13, pp. 511-513, December 2003.

2004

49. F. Martín, J. Bonache, I. Gil, F. Falcone, T. Lopetegi, M.A.G,. Laso and M. Sorolla, "Compact spurious free CPW band pass filters based on electromagnetic bandgap structures", Microwave and Optical Technology Lett, vol. 40, pp. 146-148, January 2004.

50. F. Falcone, F. Martin, J. Bonache, R. Marqués and M. Sorolla, "Coplanar waveguide structures loaded with split ring resonators", Microwave and Optical Technology Letters, vol. 40, pp. 3-6, January 2004.

51. F. Falcone, F. Martín, J. Bonache, R. Marqués, T. Lopetegi and M. Sorolla, "Left handed coplanar waveguide band pass filters based on bi-layer split ring resonators", IEEE Microwave and Wireless Components Letters, vol. 14, pp. 10-12, January 2004.

52. J. Martel, R. Marqués, F. Falcone, J.D. Baena, F. Medina, F. Martín and M. Sorolla, "A new LC series element for compact band pass filter design", IEEE Microwave Wireless Components Letters, vol. 14, pp. 210-212, May 2004.

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339. J. Muñoz-Enano, P. Vélez, P. Casacuberta, L. Su, and F. Martín, "Reflective-Mode Phase-Variation Permittivity Sensor Based on a Step-Impedance Microstrip Line Terminated with a Slot Resonator for Solid and Liquid Characterization", IEEE Transactions on Microwave Theory and Techniques, accepted.

340. A. Karami-Horestani, F. Paredes, and F. Martín, "Hybrid time/phase/frequency domain linear electromagnètic encoders for displacement sensing and near-field chipless RFID", IEEE Journal of Radio Frequency Identification, accepted.

## Publications (journal papers) in numbers

- Total number of journal papers (published or accepted): **340**
- **29 invited papers (including 1 paper, published in 2011, in *Proceedings of the IEEE*, the top Journal in Engineering, and 1 paper published in 2023 in the Special Issue *Celebrating the 70th Anniversary of the MTT Society*, in *IEEE Journal of Micowaves*).**
- **2 of 17 core papers** in the **Fast Moving Research Front** of **Negative refraction** (according to the Essential Science Indicators of Thomson Scientific).
- **7 of 8 core papers** in the **Research front** of **Split Ring Resonators** (according to the Essential Science Indicators of the ISI Web of Knowledge).
- Total number of (published or accepted) **papers in IEEE Journals** (the top Journals in Engineering): **122**.
- **4th Spanish** researcher (**1st in Catalonia**) with more papers in ***IEEE Microwave and Wireless Components Letters***, ***IEEE Transactions on Microwave Theory and***

***Techniques***, ***IEEE Transactions on Antennas and propagation*** and ***IEEE Antennas and Wireless Propagation Letters*** (the top IEEE Microwave Engineering and Antennas and Propagation Journals) since 2010 (ISI Web of Knowledge).

- The paper J. Bonache *et al. IEEE Transactions on Microwave Theory and Techniques*, vol. 54, pp. 265-271, January 2006 was a **hot paper** (highly cited paper in the first two years since publication). This paper was awarded by the applicant university with the **Excellence in research Prize (call 2008).**
- The paper A. Vélez *et al. IEEE Microwave and Wireless Components Letters*., vol. 19, pp. 197-199, April 2009 was awarded by the applicant university with the **Excellence in research Prize (call 2010).**
- The paper L. Su, *et al.*, *IEEE Access*, vol. 9, pp. 27928-27944, 2021, was **Featured as IEEE Access "Article of the Week"** and selected as **Editors' Top Article Selections of 2021.**

## 4.3. PUBLICATIONS IN CONFERENCE PROCEEDINGS

### 4.3.1. International conferences

1. J. Suñé, I. Placencia, E. Farrés, N. Barniol, F. Martín and X. Aymerich, "Stable conduction after dielectric breakdown of very thin $SiO_2$ films", Proceedings of the 9th Conference of Condensed Mater Division of European Physical Society. Europhysics Conference Abstracts, 13A, I-14 (1989).

2. I. Placencia, F. Martín, J. Suñé, E. Farrés, N. Barniol and X. Aymerich, "Energy distribution of tunnelling injected hot electrons in $SiO_2$", Proceedings of the 9th Conference of Condensed Mater Division of European Physical Society. Europhysics Conference Abstracts, 13A, I-141 (1989).

3. N. Barniol, E. Farrés, F. Martín, J. Suñé, I. Placencia and X. Aymerich, "A simple STM theory", Proceedings of the VII International Conference on Solid Surfaces, p. 550 (1989). Organized by International Union for Vacuum Science.

4. J. Suñé, E. Farrés, F. Martín and X. Aymerich, "Resonant tunneling and the breakdown of very thin $SiO_2$ films", Proceedings of the 20th IEEE Semiconductor Specialists Conference (IEEE-SISC), PI.1 (1989).

5. I. Placencia, F. Martín and X. Aymerich, "On the dissipation of energy by hot electrons in silicon dioxide", Proceedings of Recent Advances in Dielectric Breakdown and High Field Phenomena in Solids, 43, (1990).

6. F. Martín and X. Aymerich, "Effect of temperature on charge transport and storage in the nitride of MNOS devices", Proceedings of the 19th Yugoslav Conference on Microelectronics, I, p. 343-348 (1991).

7. F. Martín and X. Aymerich "Carrier conduction and trapping in the nitride of MNOS capacitors under Fowler-Nordheim injection conditions", Proceedings of 3rd ESPRIT Workshop on the Caracterization of Thin Dielectrics in Microelectronics, 1 (1991).

8. F. Martín and X. Aymerich "Characterization of $Si_3N_4$ in oxide-nitride stacked films", Proc. of the 182nd Meeting of the Electrochemical Society, Toronto (Canadá), 416 (1992).

9. F. Martín and X. Aymerich "Interface and bulk traps in oxide-nitride stacked films", Proc. of the 1992 Fall Meeting of the Materials Research Society, vol. 282, p. 141. Boston (USA), Diciembre de 1992.

10. J. Suné, X. Oriols, F. Martín and X. Aymerich, "Bohm Trajectories for Monte Carlo simulation of resonant tunneling diodes", Proc. of the International Symposium on Si heterostructures: from Physics to Devices, pag. 57. Crete (Grecia), Septiembre de 1995.

11. X. Oriols, F. Martín and J. Suñé, "Analysis of tunneling through MOS structures via Bohm trajectories", Proc. of the 26th IEEE Semiconductor Specialists Conference. Charleston (USA), diciembre de 1995.

12. X. Oriols, F. Martín and J. Suñé, "A comprehensive software package for quantum based electron devices: from eigenfunctions to Bohm trajectories" Proceeding of the 1st European Workshop on Microelectronics Education", Grenoble (Francia), febrero de 1996.

13. X. Oriols, F. Martín, J. Suñé, T. González, J. Mateos and D. Pardo, "Quantum Monte Carlo simulation of nanometric devices using Bohm trajectories", 16th European Conference on Surface Science, Genova (Italia) 9-13 de septiembre de 1996. Organized by European Physical Society.

14. J. García, X. Oriols, F. Martín and J. Suñé, "Transient analysis of resonant tunneling diodes in the self consistent Wigner distribution formalism", Proceedingt of the III-V Semiconductor Device Simulation Workshop. Torino (Italia), 1997.

15. J. Suñé, X, Oriols, J. García, F. Martín, T. González, J. Mateos and D. Pardo, "Bohm trajectories for the modeling of tunneling devices", Proceedings of the 10th Biennial Conference on Insulating Films on Semiconductors (INFOS'97). Stenungsund (Suecia), 1997.

16. X. Oriols, J. García, F. Martín, J. Suñé, T. González, J. Mateos and D. Pardo, , "Quantum Monte Carlo Simulation of tunneling devices Using Bohm trajectories", Proceedings of the 10th Int. Conf. On Nonequilibrium carrier Dynamics in Semiconductors (HCIS'10). Berlín (Alemania), 1997.

17. J. Vizoso, F. Martín and X. Aymerich, "The role of surface diffusion on hydrogen desorption in SiGe films", Proceeding of the European Research Conference on Cluster-Surface Interactions, Cargese (Corcega), Mayo 1998. Sponsored by the European Science Foundation.

18. J. Vizoso, F. Martín, X. Martínez, M. Garriga and X. Aymerich, "Growth of Si nuclei on $SiO_2$ for quantum dot memory applications", Proceedings of the 11th Biennial Conference on Insulating Films on Semiconductors (INFOS'99). Erlangen (Germany), 1999.

19. J. García, F. Martín, X. Oriols and J. Suñé, "A new approach for the reliable simulation of resonant tunneling diodes", Extended abstracts of the 1998 International Conference on Solid State Devices and Materials (SSDM'98). Hiroshima (Japón), 1998. Sponsored by IEEE Electron Dev. Society.

20. E. Miranda, J. Suñé, R. Rodríguez, M. Nafria, F. Martín and J. Suñé, "Experimental study of the soft breakdown I-V characteristics in ultrathin $SiO_2$ layers", Extended abstracts of the 1998 International Conference on Solid State Devices and Materials (SSDM'98). Hiroshima (Japón), 1998. Sponsored by IEEE Electron Dev. Society.

21. J. Vizoso, F. Martín, M. Martínez, M. Garriga, and X. Aymerich, "Characterization of RTCVD grown Si films on $SiO_2$ for nanotechnology applications", Proceeding of the 194th Meeting of the Electrochemical Society (meeting Abstracts), Boston (USA), 1998.

22. J. Vizoso, F. Martín, M. Martínez, M. Garriga, and X. Aymerich, "Characterization of RTCVD grown Si films on $SiO_2$ for nanotechnology applications", in Proceeding of the Fifth International Symposium on Quantum Confinement in Nanostructures, p. 27, Edited by M. Cahay, D.J. Lockwood, J.P Leburton and S. Bandyopadhyay . The Electrochemical Society, New Jersey (USA), 1999.

23. X.Oriols, J.J.Garcia, F.Martín and J.Suñé, "*Quantum Monte Carlo simulation of resonant tunneling diodes"* Proceedings of the NATO Advanced Study Institute, Quantum Mesoscopic phenomena and Mesoscopic Devices in Microelectronics, Antalaya/ Ankara, Turkey (June, 1999)

24. X.Oriols, F.Martin, J.J.Garcia ,and J.Suñé, "*Simulation of mesoscopic devices with Bohm trajectories and Wave packets",* Conference on Mesoscopic Devices, Sitges, Spain (June, 1999)

25. F.Martin, J.J.Garcia, X.Oriols,and J.Suñé, "Improving Electron transport simulation in Mesoscopic systems by coupling a classical Monte Carlo algortihm to a Wigner function solver", Conference on Mesoscopic Devices, Sitges, Spain (June, 1999)

26. J. García-García, F. Martín, X. Oriols and J. Suñé, "Selfconsistent simulation of resonant tunneling diodes by coupling a classical Monte Carlo to a Wigner function solver", Proceeding of the 11th III-V

Semiconductor Device Simulation Workshop. Lille (Francia), 10-11 de mayo de 1999. Organized by IEMN – Universite des Sciences et Technologies de Lille.

27. X. Oriols, J. García-García, F. Martín and J. Suñé, "Quantum Monte Carlo Simulation of resonant tunneling diodes", Proceeding of the 11th III-V Device Simulation Workshop. Lille (Francia). 10-11 de mayo de 1999.

28. F. Martin, "Understanding soliton wave propagation in non-linear transmission lines for millimeter wave multiplication", 25th International Conference on Infrared and Millimeter Waves (IRMMW2000). Conference digest, p. 451, Edited by S. Liu and X. Shen, Beijing, september 2000. Sponsored by IEEE-MTT and IEEE-EDS.

29. F. Martín, "Effects of non-linear capacitance on soliton wave propagation in NLTLs for millimeter wave multiplication", 2000 2nd International Conference on Microwave and Millimeter Wave Technology Proceedings, p. 485, Edited by Z. Feng and Y. Zhang, Beijing, september 2000. Sponsored by IEEE-MTT

30. F. Martín, "Modelling soliton pulses in nonlinear transmission lines for millimeter wave generation", Proceedings of the 30th Eurpean Microwave Conference, p. 179 (vol. 3). París, 3-5 octubre de 2000. Organized by Microwave Engineering Europe and European Microwave Association.

31. J.A. Gil, X. Oriols, J. García-García and F. Martín, "Effects of of nonlinear capacitance on the performance of NLTL frequency multipliers: searching the key parameter for multiplier optimization", Proceeding of the 26th International Conference of Infrared and Millimeter Waves, Toulouse, 2001, pp. 3-93 a 3-96.

32. Xavier Oriols, Ferran Martin and Jordi Suñé, "Study of noise properties in nanoscale electronic devices using quantum trajectories", 8th International Workshop on Computational Electronics, University of Illinois, Beckman Institute, Urbana (USA), October 15-17, 2001.

33. J. García-García, F. Martín and R.E. Miles, "Analysis of dispersion angle effects and grid separation on the optimization of micromachined THz reflex klystrons", Proceeding of the 13th Workshop on Physical Simulation of Semiconductor Devices, Ilkley, West Yorkshire, UK, 25-26 march 2002. Organized by the Institute of Microwave and Photonics, University of Leeds.

34. F. Martín, M. Sorolla, F. Falcone, "Spurious passband suppression in periodically loaded coplanar waveguides by using photonic bandgap structures", Proc. Mediterranean Microwave Symposium, pp. 253-256, Cáceres (Spain), 26-28 june 2002. Sponsored by IEEE-MTT.

35. Ferran Martín, Francisco Falcone, Jordi Bonache, Txema Lopetegi, Miguel A.G. Laso and Mario Sorolla, "New PBG nonlinear distributed structures: application to the optimization of millimeter wave frequency multipliers" , Int. Conf. Infrared Millimeter Waves, Conference Digest, pp. 59-60, Edited by R.J. Tempkin, San Diego (USA), September 2002. Sponsored by IEEE-MTT

36. Francisco Falcone, Ferran Martín, Jordi Bonache, Txema Lopetegi, Miguel A.G. Laso and Mario Sorolla "PBG RESONATOR IN COPLANAR WAVEGUIDE TECHNOLOGY", Int. Conf. Infrared Millimeter Waves, Conference Digest, pp.355-356, Editer by R.J. Tempkin, San Diego (USA), September 2002. Sponsored by IEEE-MTT.

37. F. Martín, Francisco Falcone, Jordi Bonache, Txema Lopetegi, Miguel A.G. Laso and Mario Sorolla, "A novel photonic band gap CPW periodically loaded with reactive elements", Proc. Microwave Technology and Techniques Wokshop, pp. 131-138. Organized by European Space Agency (ESA), Nordwijk, Nederlands, 8-9 october 2002.

38. Francisco Falcone, Txema Lopetegi, Miguel A.G. Laso, Ferran Martín, Jordi Bonache and Mario Sorolla,"Application of photonic band gap structures for the implementation of band pass filters in coplanar waveguide technology", Proc. Microwave Technology and Techniques Wokshop, pp. 139-144. Organized by European Space Agency (ESA), Nordwijk, Nederlands, 8-9 october 2002.

39. X. Melique, T. Akalin, R. Lalinde, J. Ciberta, S. Arscott, F. Martín, O. Vanbésien, D. Lippens, "Propagation dans les materiaux main gauche:applications aux guides d'ondes et coupleurs", Proceedings of the thirtheen National Microwave Conference (JNM) paper 4B1-1, 21-23 may. Lille (France).

40. F. Falcone, F. Martín, J. Bonache, T. Lopetegi, M.A.G. Laso and M. Sorolla, "New CPW filters based on a double periodic structure", Proc. of the 3rd ESA Workshop on Millimetre Wave Technology and Applications: circuits, systems and measurement techniques, pp. 471-475, Organized by European Space Agency (ESA), Espoo, Finland, 21-23 may, 2003.

41. F. Martín, J. Bonache, I. Gil, F. Falcone, T. Lopetegi, M.A.G. Laso and M. Sorolla, "New capacitively coupled resonator band pass filters based on electromagnetic bandgaps", Proceeding of the International Conference on Electromagnetics in Advanced Applications, ICEAA, 2003, pp. 663-666, 8-12 september 2003, Torino (Italy). Organized by IEEE and URSI. **Invited.**

42. R. Marqués, J.D. Baena, J. Martel, F. Medina, F. Falcone, M. Sorolla and F. Martín, "Novel small resonant electromagnetic particles for metamaterial and filter design" Proceeding of the International Conference on Electromagnetics in Advanced Applications, ICEAA, 2003, pp. 439-443, 8-12 september 2003, Torino (Italy). Organized by IEEE and URSI.

43. J. Martel, R. Marqués, J.D. Baena and F.Medina, F. Falcone, M. Sorolla and F. Martín,"Application of Modified Split-Ring Resonators to the Design of Small Microstrip and CPW Filters", Progress In Electromagnetics Research Symposium (PIERS 2003), October 13-16, 2003, Hawaii, USA.

44. Francisco Falcone, Ferran Martín, Jordi Bonache, Miguel A. G. Laso, Txema Lopetegi and Mario Sorolla "Implementation of Coplanar Waveguide Low Pass Filters by Using Electromagnetic Band-Gap Structures" (PIERS 2003), Oct., 13-16, 2003 in Hawaii, USA.

45. Miguel A. G. Laso, Txema Lopetegi, Francisco Falcone, Ferran Martin, David Benito, Mario Sorolla, and Tapani Närhi "Fourier Transform Using Microstrip Non-Uniform Periodic Structures: Survey of Potential Applications" (PIERS 2003), Oct., 13-16, 2003 in Hawaii, USA.

46. F. Martín, F. Falcone, R. Marqués, J. Bonache and M. Sorolla "Transmission Characteristics in Split Ring Resonator Based Left-Handed Coplanar Waveguides" (PIERS 2003), Oct., 13-16, 2003 in Hawaii, USA.

47. F. Falcone, F. Martín, J. Bonache, J. Martel, R. Marqués, T. Lopetegi, MAG Laso and M. Sorolla, "Implementation of Negative mu structures in Microstrip Technology", 28th International Conference on Infrared and Millimeter Waves Conference Digest, pp. 349-350, Sept. 29-Oct. 4, 2003, Shiga, Japan. Sponsored by IEEE-MTT.

48. F. Falcone, F. Martín, J. Bonache, T. Lopetegi, M.A.G. Laso and M Sorolla, "Enhanced doubly-periodic Electromagnetic Bandgap Filter in Coplanar Waveguide Technology", 28th International Conference on Infrared and Millimeter Waves Conference Digest, pp. 437-438, Sept. 29-Oct. 4, 2003, Shiga, Japan. Sponsored by IEEE-MTT.

49. F. Falcone, F. Martin, J. Bonache, T. Lopetegi, M.A.G. Laso, M. Sorolla, " Analysis of Doubly Periodic Electromagnetic Bandgap Filters in Coplanar Waveguide Technology", Proceedings of the 9th International Symposium on Microwave and Optical Technology, Aug.11-Aug.15, 2003, Ostrava, Czech Republic

50. J.M Illescas, J.A. Marcotegui, F. Falcone , F. Martín , M.A.G. Laso, T. Lopetegi and M. Sorolla, "Simulation of EBG structures in coplanar waveguide with the aid of FDTD", Proceedings of the 9th International Symposium on Microwave and Optical Technology, Aug.11-Aug.15, 2003, Ostrava, Czech Republic

51. F. Falcone, F. Martín, J. Bonache, T. Lopetegi, M.A.G Laso and M. Sorolla, "Multiple Tuned continuous Electromagnetic Bandgap Structures in coplanar waveguide technology", Proceedings of

the 9th International Symposium on Microwave and Optical Technology, Aug.11-Aug.15, 2003, Ostrava, Czech Republic.

52. F. Falcone, F. Martín, R. Marqués, J. Martel, J. Bonache, T. Lopetegi, M.A.G Laso and M. Sorolla, " Implementation of Negative mu medium in Coplanar Waveguide technology", Proceedings of the 9th International Symposium on Microwave and Optical Technology, Aug.11-Aug.15, 2003, Ostrava, Czech Republic.

53. Francisco Falcone, Txema Lopetegi, Miguel A. G. Laso, Ferran Martín, Jordi Bonache, Ricardo Marqués, and Mario Sorolla, "Electromagnetic band gaps in planar microwave technology", International Workshop on Optical properties of complex materials over different length scales, July 7-11, 2003, San Sebastian (Spain). **Invited.** Organized by Donosti Int. Physics Center (DIPC).

54. Francisco Falcone, Txema Lopetegi, Ferran Martín, Jordi Bonache, Ricardo Marqués, and Mario Sorolla "Novel metamaterial configurations in microwave and millimeter wave planar technology", International Workshop on Optical properties of complex materials over different length scales, July 7-11, 2003, San Sebastian (Spain). Organized by Donosti Int. Physics Center (DIPC).

55. F. Martín, F. Falcone, J. Bonache, R. Marqués and M. Sorolla, "Modelling and simulation of coplanar waveguide structures loaded with split ring resonators", Proceedings of the 14th Worshop on Modelling and Simulation of Electron Devices", pp. 105-107, Barcelona, October, 2003.

56. J. García-García and F. Martín , "Monte Carlo simulation of THz Reflex klystrons", Proceedings of the 14th Worshop on Modelling and Simulation of Electron Devices, pp. 113-116, Barcelona, October, 2003.

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59. F. Martín, F. Falcone,, T. Lopetegi, J. Bonache, M.A.G. Laso , J. D. Baena, J. García-García, R. Marqués, and M. Sorolla," Application of split rings resonators and related structures to the miniaturization of planar microwave circuits" Proc. Microwave Technology and Techniques Wokshop, pp. 31-38. Organized by European Space Agency (ESA), Nordwijk, Nederlands, May 2004.

60. F. Martín, J. Bonache, F. Falcone, J. García-García, J. Martel, R. Marqués and M. Sorolla, "Application of metamaterials to the design of planar microwave filters", IX Workshop on Microwave Engineering Metamaterials and special materials for electromagnetic applications and Telecommunications, Roma, 5 April, 2004.

61. Francisco Falcone, Ferran Martin, Jordi Bonache, Txema Lopetegi, Miguel Ángel Gómez-Laso, Joan Garcia, Nacho Gil and Mario Sorolla, "Electromagnetic Bandgap Structures in Planar Circuit Technology", Proceedings of the IEEE Antennas and Propagation Society Symposium AP-S/URSI vol. 4, pp. 3545-3548, Monterrey, California, USA, June 2004.

62. Falcone, F.; Martin, F.; Bonache, J.; Baena, J.; Lopetegi, T.; Gomez-Laso, M.A.; Garcia-Garcia, J.; Ignacio Gil; Marques, R.; Sorolla, M, "Metamaterial configurations in coplanar waveguide technology" Proceedings of the IEEE Antennas and Propagation Society Symposium AP-S/URSI vol. 4, pp. 3773-3776, Monterrey, California, USA, June 2004**.**

63. Ricardo Marqués, Juan Antonio Baena, Ferran Martín, Jordi Bonache, Francisco J. Falcone, Txema Lopetegi, Miguel Beruete, Mario Sorolla, "Left-Handed Metamaterial based on Dual Split Ring Resonatros in Microstrip Technology", Proceedings of the 2004 International Symposium on Electromagnetic Theory (URSI-EMTS), pp. 1188-1190, Pisa, Italy, May 23-27, 2004

64. Francisco Falcone, Ferran Martin, Jordi Bonache, Juan Baena, Txema Lopetegi, Miguel Angel Gomez Laso, Joan Garcia, Ricardo Marqués and Mario Sorolla , "Implementation of Bandpass Filters based on Left-Handed Structures in Coplanar Waveguide Technology", Proceedings of the 27th ESA Antenna Technology Workshop on Innovative Periodic Antennas: Electromagnetic Bandgap, Left-handed Materials, Fractal and Frequency Selective Surfaces, pp. 535-540, Santiago, Spain, march 2004. Organized by European Space Agency (ESA)

65. María Flores, Francisco Falcone, Ferran Martin, Jordi Bonache, Juan Baena, Txema Lopetegi, Miguel Angel Gomez Laso, Miguel Beruete, J.A. Marcotegui, Joan Garcia, Ricardo Marqués and Mario Sorolla, "Radiation Phenomena in Coplanar Waveguide Metamaterial Structures" Proceedings of 27th ESA Antenna Technology Workshop on Innovative Periodic Antennas: Electromagnetic Bandgap, Left-handed Materials, Fractal and Frequency Selective Surfaces, pp. 75-80, Santiago, Spain, march 2004. Organized by European Space Agency (ESA)

66. Francisco Falcone, Ferran Martin, Jordi Bonache, Juan Baena, Miguel Beruete, Txema Lopetegi, Miguel Angel Gomez Laso, Joan Garcia, Ricardo Marqués and Mario Sorolla, "Application of Split Ring Resonator Particles in Planar Circuit Technology", Proceedings of the 27th ESA Antenna Technology Workshop on Innovative Periodic Antennas: Electromagnetic Bandgap, Left-handed Materials, Fractal and Frequency Selective Surfaces, pp. 529-534, Santiago, Spain, march 2004. Organized by European Space Agency (ESA)

67. Ferran Martín, Francisco Falcone, Jordi Bonache, Juan Baena, Txema Lopetegi, Ricardo Marqués, Mario Sorolla, "Demonstration of Left-handedness in coplanar waveguide technology", Proceedings of the 2004 Progress in Electromagnetic Research Symposium (PIERS 2004), p. 565, Pisa (Italy), march 2004.

68. Francisco Falcone, Ferran Martín, Jordi Bonache, Juan Baena, Txema Lopetegi, Ricardo Marqués, Mario Sorolla, "Negative magnetic permeability media in planar microwave circuits",. Proceedings of the 2004 Progress in Electromagnetic Research Symposium (PIERS 2004), p. 566, Pisa (Italy), march 2004.

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**71.** J. García-García, J. Bonache, F. Falcone, I. Gil, J.D. Baena, T. Lopetegui, M.A.G. Laso, F. Martín, R. Marqués, A. Marcotegui, M. Sorolla, "SPURIOUS PASSBAND SUPPRESSION IN MICROWAVE FILTERS BY MEANS OF SUB-WAVELENGTH RESONANT STRUCTURES", 34th European Microwave Conference, vol. II, pp. 577-580, Amsterdam, October 2004. Organized by the European Microwave Association (EuMA). **Nominated to the EuMC Prize.**

72. J.D. Baena, J. Bonache, F. Martin, R. Marqués, F. Falcone, T. Lopetegi, M. Beruete, M.A.G. Laso, J. García-García, F. Medina, M. Sorolla, "Modified and complementary split ring resonators for metasurface and metamaterial design", Proceedings of the 10th Conference on Complex Media and Metamaterials, Bianisotropics 2004, pp. 168-171, Ghent (Belgium), September 22-24, 2004.

73. F. Falcone, F. Martin, J. Bonache, J. Baena, T. Lopetegi, M.A. Gómez-Laso, J. García-García, I. Gil, J.A. Marcotegui, R. Marqués, M. Sorolla, "Split ring resonator-based metamaterials in microwave planar circuits", Proceedings of the 10th Conference on Complex Media and Metamaterials, Bianisotropics 2004, pp. 264-267, Ghent (Belgium), September 22-24, 2004.

74. M. Beruete, J.D. Baena, F. Falcone, I. Campillo, J.S. Dolado, T. Lopetegi, M.A.G. Laso, J. Bonache, J. García-García, A. Marcotegui, F. Martín, R. Marqués, and M. Sorolla, "Subwavelength Hole Arrays and Split Ring Resonators Based Metasurfaces for Frequency Selective Surfaces", Conference Digest

of the 2004 Joint 29th International Conference on Infrared and Millimeter Waves (IRMMW) and 12th International Conference on Terahertz Electronics", pp. 97-98, Karlsruhe, Germany, 27 September-1 October 2004.

75. E. Jarauta, M.A.G. Laso, T. Lopetegi, F. Falcone, M. Beruete, J.D. Baena, J. Bonache, I. Gil, J. García-García, A. Marcotegui, F. Martín, R. Marqués, and M. Sorolla "Metamaterial Microstrip Backward Couplers for Fully Planar Fabrication Techniques", Conference Digest of the 2004 Joint 29th International Conference on Infrared and Millimeter Waves (IRMMW) and 12th International Conference on Terahertz Electronics", pp. 185-186, Karlsruhe, Germany, 27 September-1 October 2004.

76. Jordi Bonache, Ferran Martín, Francisco Falcone, J.D. Baena, Txema Lopetegi, Joan García-García, Ignacio Gil, Miguel A.G. Laso, Mario Sorolla, Ricardo Marqués and A. Marcotegui, **"**Miniaturization of planar microwave filters by means of sub-wavelength resonators", Int. Workshop on Microwave Filters, Organized by ESA and CNES, Toulousse (Francia), 13-15 September 2004.

77. Ignacio Gil, Jordi Bonache, Joan García and Ferran Martín, "Tunable and spurious free photonic bandgap filters in planar technology", Int. Workshop on Microwave Filters, Organized by ESA and CNES, Toulousse (Francia), 13-15 September 2004.

78. J. Bonache, I. Gil, J. García-García, F. Martín, "Planar microwave filters based on metamaterials", Proceedings of the 1st Workshop of the Metamorphose Network of Excellence, 24-26 november 2004, Lille (France) and Louvain la Neuve (Belgium).

**79.** R. Marqués, M. Sorolla and F. Martín, "Duality in metamaterials and metasurfaces design", LATSIS Symposium 2005: Negative Refraction: Revisiting Electromagnetics from Microwaves to Optics, 28 February-2 March 2005, pp. 50-53, Laussane (Switzerland). **Invited**

80. I Gil, J. Bonache, J. García-García, F. Martín and R. Marqués, "Tunable single negative (SNG) metamaterials" LATSIS Symposium, 28 February-2 March 2005, Laussane (Switzerland).

81. M. A. G. Laso, T. Lopetegi, F. Falcone, E. Jarauta, J. D. Baena, J. Bonache, J. García-García, J. Illescas, A. Marcotegui1 F. Martín, R. Marqués, M. Sorolla, "Split Ring Resonators and Complementary Split Ring Resonators: Left-handed Lines and Applications in Microwave Planar Technology" Progress in electromagnetic Research Symposium (PIERS 2005), Hangzhou August 23-26.

82. F. Falcone, J. Bonache, J.D. Baena, I. Gil, T. Lopetegi, M.A.G. laso, M. Beruete, J. García-García, R. Marqués, F. Martín, M. Sorolla, "Evolution of metamaterial structures in planar technology", Proc. of the 1st International Seminar/Workshop on Metamaterials and Circuit Design based on Split Rings Resonators, Barcelona, 22 April, 2005.

83. J. Bonache, I. Gil, J. García- García, F. Martín, "Complementary split rings resonators: towards the miniaturization of microwave device design", 15th Workshop on Modelling and Simulation of Electron Devices (MSED 2005), pp. 47-48, Pisa (Italy), 4-5 July 2005.

84. J. Bonache, I. Gil , J. García-García, F. Martín, "Band Pass Filters for Ultra Wideband Systems", Proc. of the APS-URSI, Washington (USA), july 2005.

85. I. Gil, J. Bonache, J. García-García F. Falcone and F. Martín, "Metamaterials in Microstrip Technology for Filter Applications", Proc. of the APS-URSI, Washington (USA), july 2005.

86. J. Bonache, I. Gil, J. García-García, E. Jarauta and F. Martín, "Microwave diplexer based on complementary split rings resonators", Proc. of the APS-URSI, Washington (USA), july 2005.

87. J. Bonache, I. Gil, J. García-García and F. Martín., "Microwave circuit design by using metamaterial concepts", PECS-VI International Symposium on Photonic and Electromagnetic Crystal Structures, June 19-15, 2005, Crete (Greece).

88. F. Falcone, M. Beruete, J.D. Baena, M.A.G. Laso, T. Lopetegi, J. Bonache, F. Martin, R. Marques, M. Sorolla, "Coupling effects in left handed structures in coplanar waveguide technology", Abstracts of

the 2005 Workshop on Metamaterials for Microwave and Optical Technology, p. 62, San Sebastián (Spain),18-20 July 2005.

89. J. Bonache, I. Gil, J. García-García and F. Martín, "NEW QUASI-LUMPED RESONATORS FOR COMPACT MICROSTRIP FILTER DESIGN", Proc. 35th European Microwave Conference, pp. 13-16, Paris. October 2005.

90. I. Gil, J. Bonache, J. García-García , F. Martín and R. Marqués, "TUNABLE SPLIT RINGS RESONATORS FOR RECONFIGURABLE METAMATERIAL TRANSMISSION LINES", Proc. 35th European Microwave Conference, pp. 905-908, Paris. October 2005 (**invited paper to a Focused Session**).

91. J. García-García, J. Bonache, I. Gil, F. Martín, M.C. Velázquez-Ahumada and J. Martel, "Efficient area reduction in microstrip cross-coupled resonator filters by using split rings resonators and spiral resonators", Proc. 35th European Microwave Conference, pp. 1235-1238, Paris. October 2005.

92. I. Vendik, O. Vendik, D. Kholodnyak, S. Zubko, I. Kolmakov, I. Kolmakova, E. Serebryakova, I. Nefedov and S. Tretyakov, F. Martín, J. Bonache, J. García-García, I. Gil "Microwave Applications of Left/Right-handed Transmission Lines", Progress in Electromagnetic Research Symposium (PIERS 2006), Cambridge (MA).

93. M. Gil, I. Gil, J. Bonache, J. García and F. Martín, "Microwave circuit applications of resonant type left handed lines based on complementary split rings resonators", Progress in Electromagnetic Research Symposium (PIERS 2006), Tokio, Japan, August 2006, **Invited.**

94. I. Gil, M. Gil, J. Bonache, J. García and F. Martín, "Metamaterial transmission lines based on complementary split rings resnators: a review", Progress in Electromagnetic Research Symposium (PIERS 2006), Tokio, Japan, August 2006, **Invited.**

95. I. Gil, J. Bonache, M. Gil, J. García, F. Martín and R. Marqués, "Modelling Complementary-Split-Rings-Resonator (CSRR) left-handed lines with inter-resonator's coupling" 13th IEEE Mediterranean Electrochemical conference (MELECON 2006), pp. 225-228, May 16-19, 2006. Torremolinos (Málaga), Spain.

96. Jordi Bonache, Marta Gil, Ignacio Gil, Joan García-García and Ferran Martín, "Limitations and Solutions of Resonant-Type Metamaterial Transmission Lines for Filter Applications: the Hybrid Approach", 2006 IEEE MTT-S International Microwave Symposium Digest, pp. 939-942, San Francisco (CA), USA, June 2006.

97. Marta Gil, Jordi Bonache, Ignacio Gil, Joan García-García and Ferran Martín, "Artificial Left-handed Transmission Lines for Small Size Microwave Components: Application to Power Dividers", Proceedings of the 36th European Microwave conference (EuMC) 2006, pp. 1135-1138, Manchester, September 2006.

98. J. Bonache, J. Martel, I. Gil, M. Gil, J. García-García, F. Martín, I. Cairó and M. Ikeda, "Super compact (<1cm$^2$) band pass filters with wide bandwidth and high selectivity at C-band", Proceedings of the 36th European Microwave conference (EuMC) 2006, pp. 599-602, Manchester, September 2006.

99. I.B. Vendik, D.V. Kholodnyak, I.V. Kolmakova, P.V. Kapitanova, and E.V. Serebryakova, J. Bonache, I. Gil, J. García, M. Gil and F. Martín, "Applications of right/left handed and resonant type left handed transmission lines for microwave circuit design", Proceedings of the 36th European Microwave conference (EuMC) 2006, pp. 955-958, Manchester, September 2006. **Invited**.

100. I. Gil, J. Bonache, M. Gil, J. García and F. Martín, "On the left handed and rigth handed transmission properties of microstrip lines loaded with complementary split rings resonators", Third Workshop on Metamaterials and Special Materials for Electromagnetic and TLC Applications, Rome, Italy, March 30-31, 2006, p. 33.

101. Marta Gil, Ignacio Gil, Jordi Bonache, Joan García-García and Ferran Martín, "Metamaterial transmission lines with extreme impedance values", Third Workshop on Metamaterials and Special Materials for Electromagnetic and TLC Applications, Rome, Italy, March 30-31, 2006, p. 34.

102. M. Gil, J. Bonache, I. Gil, J. García-García and F. Martín, "Metamaterial transmission lines based on complementary split rings resonators: design and applications", Conference Proceeding of the Mediterranean Microwave Symposium 2006, pp. 24-27, Génova (Italy), September 2006. **Invited**.

103. J. García-García, J. Bonache, I. Gil, F. Martín, "Wideband band pass filter design using coupling coefficients between sub-wavelength resonators", International Workshop on Microwave Filters, organized by ESA and CNES, Toulousse, 16-18 October 2006.

104. J. Bonache, M. Gil, I. Gil, J. García-García and F. Martín, "Recent advances in resonant-type metamaterial transmission lines for planar filter design", International Workshop on Microwave Filters, organized by ESA and CNES, Toulousse, 16-18 October 2006.

105. J. García-García, F. Aznar, M. Gil, J. Bonache and F. Martín, "Size reduction of SRRs for metamaterial and left handed media design", Progress in Electromagnetic Research Symposium (PIERS 2007), pp. 893-896, Beijing, China, 26-30 March 2007.

106. M. Gil, J. Bonache, J. Selga, J. García-García and F. Martín, "High-pass filters implemented by composite right/left handed (CRLH) transmission lines based on complementary split rings resonators (CSRRs)", Progress in Electromagnetic Research Symposium (PIERS), pp. 483-485, Beijing, China, 26-30 March 2007. **Invited paper.**

107. G. Sisó, J. Bonache, M. Gil, I. Gil, J. García-García and F. Martin, "Compact Rat-Race Hybrid based on Complementary Split Rings Resonators", Progress in Electromagnetic Research Symposium (PIERS), pp. 480-482, Beijing, China, 26-30 March 2007. **Invited paper.**

108. M. Gil, J. Bonache, J. García-García, F. Martín, "Resonant-Type Metamaterial Transmission Lines: Design and Applications", Proc. of the Young Scientist meeting on Metamaterials, Sevilla (Spain), 25-27 november 2006.

109. G. Sisó, J. Bonache, M. Gil, I. Gil, J. García-García and F. Martin, "Compact metamaterial Rat-Race Hybrid", Proc. of the Young Scientist meeting on Metamaterials, Sevilla (Spain), 25-27 november 2006.

110. Gerard Sisó, Jordi Bonache, Marta Gil, Joan García-García and Ferran Martín, "Compact Rat-Race Hybrid Coupler Implemented Through Artificial Left Handed and Right Handed Lines", 2007 IEEE MTT-S Int'l Microwave Symposium Digest, Honolulu (Hawaii), USA, pp. 25-28, June 2007.

111. Marta Gil, Jordi Bonache, Joan García-García and Ferran Martín, "New Left Handed Microstrip Lines with Complementary Split Rings Resonators (CSRRs) Etched in the Signal Strip", 2007 IEEE MTT-S Int'l Microwave Symposium Digest, Honolulu (Hawaii), USA, pp. 1419-1422, June 2007.

112. J. García-García, I. B. Vendik, B. Sans, D. Kholodnyak, P. Kapitanova, J. Bonache and F. Martín, "Miniaturization and Optimization of Planar Microwave Filters Based on Metamaterials", 2007 European Microwave Conference, Munich (Germany), 9-12 Octobre 2007, pp. 500-503.

113. F. Aznar, M. Gil, J. Bonache, F. Martín and J. García-García, "Miniaturization of Resonant Particles Suitable for Metamaterial and Left Handed Media Design", Progress in Electromagnetic Research Symposium (PIERS) Prague (Czeck Republic), August 2007.

114. F. Martín, M. Gil, J. Bonache and J. García-García, "Composite right/left handed (CRLH) transmission lines based on complementary split rings resonators (CSRRs) and applications", 1st International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Metamaterials'07, Rome (Italy), October 2007. **Invited paper**.

115. A. Vélez, J. Bonache and F. Martín, "Tunable metamaterial transmission lines based on complementary split rings resonators (CSRRs)", 1st International Congress on Advanced

Electromagnetic Materials in Microwaves and Optics, Metamaterials'07, Rome (Italy), October 2007. **Invited Paper.**

116. J. García-García, F. Aznar, M. Gil, J. Bonache and F. Martín, "Considerations for the miniaturization of electromagnetic resonators for metamaterial and left handed media design", 1st International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Metamaterials'07, Rome (Italy), October 2007.

117. G. Sisó, J. Bonache, M. Gil and F. Martín, "RAT-RACE HYBRID BASED ON LEFT AND RIGHT HANDED METAMATERIAL TRANSMISSION LINES", 14th Int. Student Seminar on Microwave and Optical Applications of Novel Physical Phenomena, 23-24 August 2007, Belfast, Northern Ireland, United Kingdom.

118. A. Vélez, J. Bonache, and F. Martín, "Complementary Split Rings Resonator based Tunable metamaterial transmission lines", 14th Int. Student Seminar on Microwave and Optical Applications of Novel Physical Phenomena, 23-24 August 2007, Belfast, Northern Ireland, United Kingdom.

**119.** G. Sisó, J. Bonache, M. Gil and F. Martín, "Enhancing bandwidth in microwave components by means of metamaterial transmission lines", 11th Int. Symposium in Microwave and Optical Technology, ISMOT 2007, Villa Mondragone, Monte Porzio Catone, Italy, 17-21 December 2007, **Invited.**

**120.** F. Martín, J. Bonache, M. Gil, G. Sisó, "Engineering the electrical characteristics of resonante type metamaterial transmisión lines", in Metamaterials III, edited by N. Johnson, E. Ozbay, N. Zheludev and R.W. Ziolkowski (ISBN 9780819471857), Proc. of the SPIE, vol. 6987, (SPIE, Bellingham WA, 2008), Article CID 6987-18, Strasbourg, France, 7-10 April, 2008. **Invited paper**.

121. G. Sisó, M. Gil, J. Bonache and F. Martín, "Dispersion Engineering in Resonant Type Metamaterial Transmission Lines and Applications", NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies, 7-10 May, 2008, Marrakesh – Morocco, **Invited.**

122. A. Vélez, J. Bonache, X. Rottenberg, I Gil, W. de Raedt and F. Martín, "Tunable metamaterial transmission lines based on complementary split ring resonators (CSRRs): two approaches", NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies, 7-10 May, 2008, Marrakesh – Morocco, **Invited.**

123. M. Gil, J. Bonache, F. Martín, "Ultra Wide Band Pass Filters based on Metamaterial Transmission Lines", NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies, 7-10 May, 2008, Marrakesh – Morocco, **Invited.**

124. M. Gil, J. Bonache, F. Martín, "Application of Metamaterial Resonators in the design of Ultra Compact Band Pass Filters", NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies, 7-10 May, 2008, Marrakesh – Morocco.

125. Francisco Aznar, Marta Gil, Jordi Bonache and Ferran Martín, "Revising the Equivalent Circuit Models of Resonant-Type Metamaterial Transmission Lines", IEEE MTT-S International Microwave Symposium, Atlanta (USA), June 2008, pp. 323-326.

126. Gerard Sisó, Jordi Bonache and Ferran Martín, "Dual-Band Y-Junction Power Dividers Implemented Through Artificial Lines Based on Complementary Resonators", IEEE MTT-S International Microwave Symposium, Atlanta (USA), June 2008, pp. 663-666.

127. Marta Gil, Jordi Bonache and Ferran Martín, "Ultra Compact Band Pass Filters Implemented Through Complementary Spiral Resonators (CSRs)", IEEE MTT-S International Microwave Symposium, Atlanta (USA), June 2008, pp. 1119-1122.

128. Ferran Paredes, Gerard Sisó, Marta Gil, Jordi Bonache and Ferran Martín "Dual-band impedance matching networks based on resonant type metamaterial transmission lines", IEEE 2008 International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting. San Diego (USA), Julio 2008.

129. Francisco Aznar, Jordi Bonache, Ferran Martín, Ekmel Ozbay, K. Boratai-Alici, Filiberto Bilotti, Simone Tricarico, Lucio Vegni, Juan D. Baena, Lucas Jelinek and Ricardo Marqués, "Miniaturization and characterization of metamaterial resonant particles", 2008 European Microwave Conference, Amsterdam (Holland), Octobre 2008, accepted.

130. F. Aznar, M. Gil, J. Bonache and F. Martín, "SRR- and CSRR-loaded metamaterial transmission lines: a comparison to the light of duality", 2nd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Metamaterials'08, Pamplona (Spain), September 23-26 2008, **Invited paper.**

131. G. Sisó, M. Gil, M. Aranda, J. Bonache and F. Martin, "Compact quadrature phase shifter based on complementary spiral resonators (CSRs)", 2nd International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Metamaterials'08, Pamplona (Spain), September 23-26 2008.

132. G. Sisó, M. Gil, J. Bonache, F. Martín, "Bandwidth Enhancement in Metamaterial Microwave Devices", 15th International Student Seminar on Microwave and Optical Applications of Novel Physical Phenomena, Saint Petersburg, Russia, May 2008.

133. Adolfo Vélez, Francisco Aznar, Jordi Bonache, Jesús Martel, Maria C. Velázquez-Ahumada and Ferran Martín, "Novel CPW Structures Loaded with Open Complementary Split Ring Resonators (OCSRRs) for Filtering Applications", International Symposium on Antennas and Propagation 2008 (ISAP), Taipei (Taiwan), October 2008. **Invited.**

134. Gerard Sisó, Adolfo Vélez, Marta Gil, Jordi Bonache and Ferran Martín, "New approach to the design of multi-band microwave components based on metamaterials", International Symposium on Antennas and Propagation 2008 (ISAP), Taipei (Taiwan), October 2008. **Invited.**

135. I. Gil , X. Rottenberg, W. De Raedt and F. Martín, "RF-MEMS Metamaterials: Application to high-performance tunable stop-band filters", Second STIMESI Workshop on MEMS and Microsystems Research and Teaching, 18th November 2008, Technical University of Berlin, Germany, submitted.

136. G. Sisó, J. Bonache and F. Martín, "Miniaturization and Dual-Band Operation in Planar Microwave Components by Using Resonant-Type Metamaterial Transmission Lines", IEEE MTT-S International Microwave Workshop Series (IMWS) on Art of Miniaturizing RF and Microwave Passive Components, December 14-15, 2008, Chengdu, China. **Invited**.

137. F. Aznar, J. Bonache and F. Martín, "Analysis of resonant-type metamaterial transmission lines on the basis of their equivalent circuit models", Asia Pacific Microwave Conference 2008, 16-19 December, Hong Kong, Accepted.

138. F. Aznar, M. Gil, G. Sisó, J. Bonache and F. Martín, "SRR- and CSRR-based Metamaterial Transmission Lines: Modeling and Comparison", IEEE MTT-S International Microwave Workshop Series on Signal Integrity and High Speed Interconnects", Guadalajara (Mexico), February 19-20, 2009, accepted.

139. G. Sisó, M. Gil, F. Aznar, J. Bonache and F. Martín, "Size Reduction and Dispersion/Impedance Engineering with Resonant Type Metamaterial Transmission Lines: Current Status and Future Applications", IEEE MTT-S International Microwave Workshop Series on Signal Integrity and High Speed Interconnects", Guadalajara (Mexico), February 19-20, 2009, accepted.

140. J.Selga, F.Aznar, A.Vélez, M.Gil, J.Bonache and F. Martín, "Low-Pass and High-Pass Microwave Filters with Transmission Zero Based on Metamaterial Concepts", 2009 IEEE International Workshop on Antenna Technology (iWAT2009): Small Antennas and Novel Metamaterials, March 2–4, 2009, Santa Monica, California (USA), accepted.

141. J. Selga, M. Gil, G. Sisó, J. Bonache and F. Martín, "Application of complementary spiral resonators (CSRs) to microwave circuit miniaturization", Workshop on Metamaterials and Special Materials for Electromagnetic Applications and TLC", Naples, Italy, December 18 - 19, 2008, accepted.

142. Miguel Durán-Sindreu, Francisco Aznar, Adolfo Vélez, Jordi Bonache and Ferran Martín, "New Composite Right/Left Handed Transmission Lines based on Electrically Small Open Resonators", IEEE-MTT-S International Microwave Symposium, Boston, USA, June 2009, pp. 45-48.

143. Gerard Sisó, Jordi Bonache and Ferran Martín, "Dual-band Rat Race Hybrid Coupler Implemented Through Artificial Lines Based on Complementary Split Ring Resonators", IEEE-MTT-S International Microwave Symposium, Boston, USA, June 2009, pp. 625-628.

144. F. Aznar, A. Vélez, M. Gil, M. Durán-Sindreu, J. Bonache and F. Martín, "Recent progress on modelling and conceptions of resonant type metamaterial transmission lines", Days on Diffraction, S. Petersburg, Rusia, 26-29 May, 2009. **Invited**.

145. M. Durán-Sindreu, F. Aznar, A. Vélez, J. Bonache and F. Martín, "Artificial transmission lines exhibiting left handed and right handed wave propagation and implemented by means of open split ring resonators (OSRRs) and open complementary split ring resonators (OCSRRs)", Days on Diffraction, S. Petersburg, Rusia, 26-29 May, 2009.

146. Adolfo Vélez, Francisco Aznar, Miguel Durán-Sindreu, Jordi Bonache and Ferran Martin, "Open complementary split ring resonators (OCSRRs): the missing particle", Metamaterials 2009, London, 1-4 September 2009. **Invited.**

147. Gerard Sisó, Jordi Bonache and Ferran Martin, "Metamaterial transmission lines with right-handed wave propagation at low frequencies and left-handed wave propagation at high frequencies: application to dual-band microwave components", Metamaterials 2009, London, 1-4 September 2009, accepted.

148. Ferran Paredes, Gerard Zamora, Jordi Bonache and Ferran Martín, "Dual-band impedance matching networks based on a perturbation method", APS-URSI, Charleston, SC, USA, June 1-5, 2009.

149. Jordi Bonache, Adolfo Vélez, Francisco Aznar, Miguel Durán-Sindreu and Ferran Martín, "Electrically small metamaterial-inspired open resonators: theory and applications", APS-URSI, Charleston, SC, USA, June 1-5 2009, accepted.

150. M. Gil, C. Damm, A. Giere, M. Sazegar, J. Bonache, R. Jakoby, F. Martín, "Reconfigurable Split-ring Resonators based on ferroelectric materials", 3rd Young Scientist Meeting on Metamaterials (YSMM'09), 6-8 July 2009, Leganés, Spain. **Invited**.

151. M. Durán-Sindreu, J. Bonache and F. Martín, "Modeling Open Split Ring Resonator (OSRRs) and Open Complementary Split Ring Resonator (OCSRRs) in coplanar waveguide technology", 3rd Young Scientist Meeting on Metamaterials (YSMM'09), 6-8 July 2009, Leganés, Spain.

152. J. Selga, M. Gil, F. Aznar, J. Bonache and F. Martín. "Microwave filters based on composite right/left handed transmission lines", 3rd Young Scientist Meeting on Metamaterials (YSMM'09), 6-8 July 2009, Leganés, Spain.

153. Adolfo Vélez, Francisco Aznar, Miguel Durán-Sindreu, Jordi Bonache and Ferran Martín, "Coplanar Waveguide Stop-band Filters Implemented by means of Open Split Ring Resonators (OSRRs)", Asia Pacific Microwave Conference, Singapore, Dec. 7-10, 2009, accepted.

154. David Bouyge, Julien Givernaud, Aurélian Crunteanu, Jean-Christophe Orlianges, Adolfo Velez, Jordi Bonache, Ferran Martin, Pierre Blondy, "Reconfigurable Bandpass Filter Based on Split Ring Resonators and Vanadium Dioxide ($VO_2$) microwave switches", Asia Pacific Microwave Conference, Singapore, Dec. 7-10, 2009.

155. M. Durán-Sindreu, F. Aznar, A. Vélez, J. Bonache and F. Martín, "Open complementary split ring resonators (OCSRRs): modeling and applications", 12th International Symposium on Microwave and Optical Technology (ISMOT-2009), New Delhi, India, 16 - 19, December 2009, **Invited**.

156. David Bouyge, Aurélian Crunteanu, Jean-Christophe Orlianges, Damien Passerieux, Pierre Blondy, Adolfo Velez, Jordi Bonache, Ferran Martin, Corine Champeaux, Alain Catherinot "Tuneable

Bandpass Filter Based on Split Ring Resonators Using Semiconductor-to- Metal Transition of Vanadium Dioxide Thin Film", Int. Workshop on Microwave Filters.

157. Ferran Paredes, Gerard Zamora, Jordi Bonache and Ferran Martín, "Perturbation Method Based on Resonant Type Metamaterial Transmission Lines for Dual-Band Matching Networks", 2009 Mediterranean Microwave Symposium, **Invited**.

158. Miguel Durán-Sindreu, Gerard Sisó, Jordi Bonache and Ferran Martín, "Fully Planar Implementation of Generalized Composite Right/Left Handed Transmission Lines for Quad-band Applications", IEEE-MTT-S International Microwave Symposium, Anaheim (CA), USA, 23-28 May 2010.

159. Ana Rodriguez, Jordi Selga, Marta Gil, Jorge Carbonell, Vicente E. Boria, and Ferran Martín, "Automated Synthesis of Resonant-type Metamaterial Transmission Lines using Aggressive Space Mapping", IEEE-MTT-S International Microwave Symposium, Anaheim (CA), USA, 23-28 May 2010.

160. David Boyuge, Aurélian Crunteanu, Arnaud Pothier, P. Olivier Martin, Pierre Blondy, Adolfo Velez, Jordi Bonache, J. Christophe Orlianges, Ferran Martin, "Reconfigurable 4 Pole Bandstop Filter based on RF-MEMS-loaded Split Ring Resonators", IEEE-MTT-S International Microwave Symposium, Anaheim (CA), USA, 23-28 May 2010.

161. A. Crunteanu, D. Bouyge, J.-C. Orlianges, C. Champeaux, A. Catherinot, A.Velez, J. Bonache, F. Martin, D. Cros, P. Blondy , "Intégration de films de VO2 à transition de phase pour la réalisation d'un filtre accordable passe-bande en technologie SRR", 11èmes Journées de Caractérisation Microondes et Matériaux, Brest, France, April 2010

162. Miguel Durán-Sindreu, Adolfo Vélez, Jordi Bonache and Ferran Martín, "Broadband filters based on OSRR and OCSRR balanced composite right/left handed transmission lines" in Meta '10, 2nd International Conference on Metamaterials, Photonic Crystals and Plasmonics, Cairo, Egypt, pp. 488-493, February 2010**. Invited.**

163. Adolfo Vélez, Gerard Sisó, Miguel Durán-Sindreu, Jordi Bonache and Ferran Martín, "Dual-band microwave duplexer based on metamaterial concepts", Meta '10, 2nd International Conference on Metamaterials, Photonic Crystals and Plasmonics, Cairo, Egypt, pp. 414-419, February 2010. **Invited.**

164. Jordi Selga, Ana Rodríguez, Jorge Carbonell, Vicente E. Boria,and Ferran Martín, "Synthesis of metamaterial transmission lines through aggressive space mapping", Metamaterials 2010, pp. 690-692, Karlsruhe, Germany, September 2010.

165. Miguel Durán-Sindreu, Gerard Sisó, Jordi Bonache and Ferran Martín, "Multiband components based on metamaterial Concepts", Metamaterials 2010, pp. 597-599, Karlsruhe, Germany, September 2010. **Invited**.

166. F. Paredes, G.Zamora, F. Martin and J. Bonache, "Miniaturization of RFID tags by means of an electrically small resonator", 2010 IEEE International Conference on Wireless Information Technology and Systems (ICWITS)" August 28 to Sept.3, 2010, in Honolulu, Hawaii.

167. David Bouyge, Aurelian Crunteanu, Oriol Massagué, Jean-Christophe Orlianges, Corinne Champeaux, Alain Catherinot, Adolfo Velez, Jordi Bonache, Ferran Martin, Pierre Blondy, "Applications of Vanadium Dioxide ($VO_2$)-loaded Electrically Small Resonators in the Design of Tunable Filters", European Microwave Conference, Paris (France), September 26- October 1, 2010. Accepted.

168. Miguel Durán-Sindreu, Paris Vélez, Jordi Bonache and Ferran Martín, "Broadband Microwave Filters Based on Metamaterial Concepts", 20th International Conference on Applied Electromagnetics and Communications, 20 – 23 September 2010 Dubrovnik, CROATIA, **Invited**.

169. Miguel Durán-Sindreu, Jordi Bonache, Ferran Martín, "Compact CPW Dual-Band Bandpass Filters Based on Semi-lumped Elements and Metamaterial Concepts", 2010 Asia Pacific Microwave Conference, 7-10 December 2010, Yokohama, Japan, pp. 670-673.

170. Jordi Naqui, Armando Fernández-Prieto, Miguel Durán-Sindreu, Jordi Selga, Francisco Medina, Francisco Mesa, and Ferran Martín, "Split Rings-Based Differential Transmission Lines with Common-Mode Suppression", *IEEE MTT-S Int. Microwave Symposium*, Baltimore (USA), June 2011.

171. Miguel Durán-Sindreu, Christian Damm, Mohsen Sazegar, Yuliang Zheng, Holger Maune, Jordi Bonache, Rolf Jakoby, Ferran Martín, "Electrically Tunable Composite Right/Left Handed Transmission-Line based on Open Resonators and Barium-Stronium-Titanate Thick Films", *IEEE MTT-S Int. Microwave Symposium*, Baltimore (USA), June 2011.

172. Jordi Naqui, Miguel Durán-Sindreu, Jordi Bonache and Ferran Martín, "Stepped Impedance Shunt Stubs (SISS): Analysis and Potential Applications in Planar Metamaterials", 4th Young Scientist Meeting on Metamaterials (YSMM'11), Valencia, February 2011.

173. Ana Rodríguez, Jordi Selga , Ferrán Martín and Vicente E. Boria, "A More Robust Approach for the Automated Synthesis of Artificial Transmission Lines Combining Aggressive Space Mapping with Line Search", 4th Young Scientist Meeting on Metamaterials (YSMM'11), Valencia, February 2011.

174. Jordi Selga, Ana Rodriguez, Vicente Boria and Ferran Martín, **"**Automated parameter extractor for metamaterial transmission lines based on Complementary Split Ring Resonators (CSRRs)", 4th Young Scientist Meeting on Metamaterials (YSMM'11), Valencia, February 2011.

175. Ferran Paredes, Gerard Zamora, Francisco Javier Herraiz-Martinez, Ferran Martin, and Jordi Bonache, "Application of dispersion engineering to the optimization of RFID tags", 4th Young Scientist Meeting on Metamaterials (YSMM'11), Valencia, February 2011. **Invited**.

176. Ferran Paredes, Gerard Zamora, Francisco Javier Herraiz-Martinez, Ferran Martín and Jordi Bonache, "Dual-band metallic tags for RFID applications", APS/URSI 2011.

177. Jordi Selga, Ana Rodriguez, Vicente E. Boria, and Ferran Martín, "Application of Aggressive Space Mapping to the Synthesis of Composite Right/Left Handed (CRLH) Transmission Lines Based on Complementary Split Ring Resonators (CSRRs)", *European Microwave conference*, Manchester (UK), october 2011.

178. A. Rodríguez, J. Selga, F. Martín, V. E. Boria, "On the implementation of a robust algorithm which automates the synthesis of artificial transmission lines based on CSRRs", Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2011).

179. F. J. Herraiz-Martínez, J. Bonache, F. Paredes, G. Zamora and F. Martín, "Dual-Band Printed Dipole Antenna loaded with Open Complementary Split Ring Resonators (OCSRRs)", Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2011).

180. Jordi Naqui, Miguel Durán-Sindreu, Armando Fernández-Prieto, Francisco Mesa, Francisco Medina, and Ferran Martín, "Differential transmission lines loaded with split ring resonators (SRRs) and complementary split ring resonators (CSRRs)", Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2011). **INVITED.**

181. Paris Vélez, Miguel Durán-Sindreu, Jordi Bonache and Ferran Martín, "Compact Right-Handed (RH) and Left-Handed (LH) Lattice-Network Unit Cells Implemented in Monolayer Printed Circuits", Asia Pacific Microwave Conference, Melbourne (Australia), Dec. 2011, pp. 534-537.

182. M. Durán-Sindreu, P. Vélez, F. Paredes, J. Naqui, G. Zamora, J. Bonache, F. Martín, "How can metamaterials help in aeronautics and transport?", Meta '12, 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics, Paris, France, 19-22 April, 2012. **INVITED**.

183. J. Naqui, M. Durán-Sindreu, F. Martín, "Selective mode suppression in coplanar waveguides using metamaterial resonators", Meta '12, 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics, Paris, France, 19-22 April, 2012. **INVITED**.

184. Ana Rodriguez, Jordi Selga, Vicente Boria and Ferran Martín, "Practical Application of Space Mapping Techniques to the Synthesis of CSRR-based Artificial Transmission Lines", Meta '12, 3rd

International Conference on Metamaterials, Photonic Crystals and Plasmonics, Paris, France, 19-22 April, 2012. **INVITED**.

185. Ferran Paredes, Gerard Zamora, Francisco Javier Herraiz-Martínez, Ferran Martín and Jordi Bonache, "Dual-band RFID Tags based on Folded Dipole Antennas Loaded with Spiral Resonators", 2012 IEEE International Workshop on Antenna Technology: Small Antennas and Unconventional Applications (IWAT 2012), March 5 - 7, 2012, Tucson, Arizona, USA. **Invited**.

186. Jordi Naqui, Miguel Durán-Sindreu and Ferran Martín, "On the Symmetry Properties of Coplanar Waveguides Loaded with Symmetric Resonators: Analysis and Potential Applications", *IEEE MTT-S Int. Microwave Symp*., June 2012, Montreal (Canada).

187. F. J. Herraiz-Martínez, E. Ugarte-Muñoz and D. Segovia-Vargas, F. Paredes, G. Zamora, F. Martín and J. Bonache, "Chipless RFID System Based on Magnetoinductive-Wave (MIW) Delay Lines", AP-S URSI 2012.

188. F. Martin, "Split Ring Metamaterials: Applications to Microwave Circuit and Antenna Design", Communications, Microsystems, Optoelectronics, Sensors (CMOS) Emerging Technologies, July 18-20, 2012, Vancouver, British Columbia, Canada. **Invited**.

189. Miguel Durán-Sindreu, Jordi Bonache, Ferran Martín, Tatsuo Itoh, "Novel Fully-Planar Extended-Composite Right/Left Handed Transmission Line based on Substrate Integrated Waveguide for Multi-Band Applications", European Microwave Conference, Amsterdam, 2012.

190. Ana Rodriguez, Jordi Selga, Ferran Martín, and Vicente E. Boria, "A Robust Space Mapping Method for the Practical Synthesis of CSRR-based Artificial Transmission Lines from Equivalent Circuit Models", European Microwave Conference, Amsterdam, 2012.

191. J. Naqui, M.Durán-Sindreu, F. Martín, "Transmission lines loaded with folded stepped impedance resonators (SIRs): modelling and applications", Sixth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2012), S. Petersburg, **Invited**.

192. J. Naqui, M. Durán-Sindreu, and F. Martín, "Selective mode suppression in microstrip differential lines by means of electric-LC (ELC) and magnetic-LC (M-LC) resonators", Meta '13, 4th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Sharjah (United Arab Emirates), 18-22 March, 2013, **Invited**.

193. J. Naqui, M. Durán-Sindreu, and F. Martín, "Transmission Lines Loaded with Bisymmetric Resonators and Applications", *IEEE MTT-S Int. Microwave Symp*., June 2013, Seatle (USA).

194. P. Vélez, M. Durán-Sindreu, J.Bonache, A. Fernánde Prieto, J. Martel, F. Medina and F. Martín, **"**Differential bandpass Filters with Common-Mode Suppression based on Stepped Impedance Resonators (SIRs)", *IEEE MTT-S Int. Microwave Symp*., June 2013, Seatle (USA).

195. Miguel Durán-Sindreu, Jun Choi, Jordi Bonache, Ferran Martín, Tatsuo Itoh "Dual-band Leaky Wave Antenna with filtering capability based on Extended-Composite Right/Left-Handed Transmission Lines", *IEEE MTT-S Int. Microwave Symp*., June 2013, Seatle (USA).

196. Jordi Selga, Ana Rodríguez, Jordi Naqui, Miguel Durán-Sindreu, Vicente E. Boria and Ferran Martín, "Application of Aggressive Space Mapping (ASM) to the Efficient Synthesis of Stepped Impedance Resonators (SIRs)", European Microwave Conference, Nuremberg (Germany), 2013.

197. P. Vélez, M. Durán-Sindreu, J. Bonache, F. Martín, "Differential Dual-Band Impedance Inverter with Common Mode Suppression based on Composite Right/Left Handed (CRLH) Transmission Lines", Metamaterials 2013, Bordeaux, France, 16-19 September 2013.

198. J. Naqui, M. Durán-sindreu, F. Martín, "Strategies for the implementation of sensors and RF barcodes based on transmission lines loaded with symmetric resonators", 21st International Conference on Applied Electromagnetics and Communications (ICECom 2013), Dubrovnic, Croatia, 14-16 October, 2013. INVITED.

199. J. Naqui, M. Durán-Sindreu, F. Martín, A. Fernández-Prieto, F Mesa, F. Medina, "Complex Modes in Periodic Transmission Lines based on Split Rings", ICEAA 2013, Turin (Italy), INVITED.

200. Simone Zuffanelli, Gerard Zamora, Ferran Paredes, Pau Aguilà, Ferran Martín and Jordi Bonache, "On-metal UHF-RFID tags based on non-bianisotropic complementary split ring resonators", Meta '14, 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Singapore, 20-23 May, 2014, **Invited**.

201. Jordi Selga, Ana Rodríguez, Marco Orellana, Vicente Boria, Ferran Martín, "Automated Synthesis of Transmission Lines Loaded with Complementary Split Ring Resonators (CSRRs) through Aggressive Space Mapping", Meta '14, 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics, Singapore, 20-23 May, 2014, **Invited**.

202. J. Selga, M. Sans, A. Rodríguez, J. Bonache, V. Boria, F. Martín, "Automated Synthesis of Planar Wideband Bandpass Filters based on Stepped Impedance Resonators (SIRs) and Shunt Stubs through Aggressive Space Mapping (ASM)", *IEEE MTT-S Int. Microwave Symp*., June 2014, Tampa, FL (USA).

203. P. Vélez, J. Bonache, J. Mata-Contreras, F. Martín, "Ultra-Wideband (UWB) Balanced Bandpass Filters with Wide Stop Band and Intrinsic Common-Mode Rejection Based on Embedded Capacitive Electromagnetic Bandgaps (EBG)", *IEEE MTT-S Int. Microwave Symp*., June 2014, Tampa, FL (USA).

204. J. Naqui, C. Damm, A. Wiens, R. Jakoby, L. Su, F. Martín, "Transmission lines loaded with pairs of magnetically coupled stepped impedance resonators (SIRs): modeling and application to microwave sensors", *IEEE MTT-S Int. Microwave Symp*., June 2014, Tampa, FL (USA).

205. S. Zuffanelli, G. Zamora, F. Paredes, P. Aguilà, F. Martín, and J. Bonache, "An Impedance Matching Method for Optical Disc-Based UHF-RFID Tags", 8th Annual IEEE International Conference on RFID (IEEE-RFID 2014), Orlando (FL), USA, April, 8-10, 2014.

206. P. Vélez, I. de la Fuente, J.Bonache, F. Martín, "Common-Mode Suppressed Differential Transmission Lines Based on Periodic Structures", 2014 International Symposium on Antennas and Propagation and USNC-URSI Radioscience Meeting (APS/URSI 2014), Memphis, Tennessee, 6-11 July 2014.

207. S. Zuffanelli, P. Aguilà, F. Paredes, G. Zamora, F. Martín and J. Bonache, "Passive UHF-RFID tags for Blu-ray discs", 2014 International Symposium on Antennas and Propagation and USNC-URSI Radioscience Meeting (APS/URSI 2014), Memphis, Tennessee, 6-11 July 2014.

208. G. Zamora, P. Aguila, S. Zuffanelli, F. Paredes, F. Martin and J. Bonache, "Design of UHF-RFID tags based on the T-match network", 2014 International Symposium on Antennas and Propagation and USNC-URSI Radioscience Meeting (APS/URSI 2014), Memphis, Tennessee, 6-11 July 2014.

209. G. Zamora, S. Zuffanelli, F. Paredes, F. J. Herraiz-Martínez, F. Martín, J. Bonache, "Leaky-Wave Antenna (LWA) based on Slot Line and Non-Bianisotropic Split Ring Resonators (NB-SRRs) and Comparison with CPW Approach", IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications, Palm Beach, Aruba, 3-9 August 2014. **Invited**.

210. P. Vélez, J. Naqui, G. Zamora, J. Bonache, F. Martín "Applications of electromagnetic band gaps (EBGs) in microstrip and balanced microstrip lines", International Conference on Electromagnetics for Advanced Applications, ICEAA 2014, Palm Beach, Aruba, 3-9 August 2014. **Invited.**

211. L. Su, J. Naqui, J. Mata, F. Martín, "Recent Advances in Modeling Metamaterial Transmission Lines Based on Pairs of Split Ring Resonators (SRRs): Coupling between the SRRs Forming the Pair", Metamaterials 2014, Copenhagen, Denmark, France, 25-28 August 2014. **Invited.**

212. J. Naqui, L. Su, J. Mata, F. Martin, "Analysis of transmission lines loaded with pairs of coupled resonant elements and application to sensors" Moscow International Symposium on Magnetism (MISM'14), Moscow (Rusia), 29 June – 3 July, 2014. **Invited**.

213. A. Rodríguez, V.E. Boria, J. Selga and F. Martín, "Synthesis of Open Complementary Split Ring Resonators (OCSRRs) through Agressive Space Mapping (ASM) and Application to Bandpass Filters", European Microwave Conference, Rome, 5-10 October, 2014.

214. J. Selga, A. Rodríguez, V.E. Boria and F. Martín, "Development of a Graphical User Interface (GUI) for the Synthesis of Step Impedance Resonators (SIR) through Aggressive Space Mapping", ANSYS Electronics Simulation Conference, Madrid (Spain), Nov. 2014.

215. J. Naqui, J. Coromina, A. Karami-Horestani, C. Fumeaux, F. Martín, "Comparative Analysis of Split Ring Resonators (SRR), Electric-LC (ELC) Resonators, and S-Shaped Split Ring Resonators (S-SRR). Potential Application to Rotation Sensors", Mediterranean Microwave Symposium 2014, Marrakesch, Morocco, 12-14 December 2014.

216. J. Naqui, G. Zamora, F. Paredes, J. Bonache, F. Martín, "Metamaterial Transmission Lines for Wireless Communications, Sensing and RFID", Mediterranean Microwave Symposium 2014, Marrakesch, Morocco, 12-14 December 2014. **INVITED, PLENARY TALK.**

217. P. Velez, J. Selga, M. Sans, J. Bonache, F. Martin, "Design of differential-mode wideband bandpass filters with wide stop band and common-mode suppression by means of multisection mirrored stepped impedance resonators (SIRs)", *IEEE MTT-S Int. Microwave Symp*., May 2015, Phoenix, Arizona (USA).

218. P. Vélez, M. Valero, L. Su, J. Naqui, J. Mata-Contreras, J. Bonache, F. Martín, "Differential microstrip lines with wideband common-mode rejection based on chirped-EBGs", International Conference on Electromagnetics for Advanced Applications, ICEAA 2015, Torino, Italy, 7-11 September 2015. **Invited.**

219. L. Su, J. Naqui, J. Mata-Contreras, P. Vélez, F. Martín, "Transmission line metamaterials based on pairs of coupled split ring resonators (SRRs) and complementary split ring resonators (CSRR): a comparison to the light of the lumped element equivalent circuits", International Conference on Electromagnetics for Advanced Applications, ICEAA 2015, Torino, Italy, 7-11 September 2015. **Invited.**

220. Paris Vélez, Jordi Selga, Marc Sans, Ana Rodríguez, Jordi Bonache, Vicente Boria, and Ferran Martín, "Automatic Design of Single-ended and Common-mode Suppressed Balanced Microstrip Bandpass Filters through Aggressive Space Mapping", 6th CNES/ESA International Workshop on Microwave Filters, 23rd – 25th March 2015 – Toulouse, France.

221. Ali K. Horestani, Jordi Naqui, Ferran Martín, and Christophe Fumeaux, "Application of S-Shaped Split Ring Resonators (S-SRRs) for Metamaterial-Inspired Microwave Structures in Coplanar Waveguide Technology", Fourteenth Australian Symposium on Antennas, Sidney, Australia, 18-19 February 2015.

222. Ferran Martín, "Artificial transmission lines based on metamaterial concepts and some microwave applications", Annual S. Petersburg Electrotechnical University Faculty Member Scientific Conference, S. Petersburg, Russia, 27-28 January, 2015, **INVITED, OPEN PLENARY TALK**.

223. Ferran Paredes, Pau Aguilà, Simone Zuffanelli, Gerard Zamora, Ferran Martin and Jordi Bonache, "2-SR based electrically small antenna for RFID application", Meta '15, 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York, August 2015, **Invited**.

224. M. Sans, J. Selga, P. Vélez, A. Rodríguez, V. E. Boria, F. Martín, "Application of aggressive space mapping (ASM) to the automated design of differential-mode wideband bandpass filters with common-mode suppression", European Microwave Conference, Paris, France, 6-11 September 2015.

225. Pau Aguilà, Gerard Zamora, Simone Zuffanelli, Ferran Paredes, Ferran Martin and Jordi Bonache, "Design of printed antennas based on electrically small resonators for microwave applications", 2015 International Symposium on Antennas and Propagation and USNC-URSI Radioscience Meeting (APS/URSI 2015), Vancouver, BC, Canada, 19-25 July 2015.

226. Ferran Paredes, Pau Aguilà, Simone Zuffanelli, Gerard Zamora, Ferran Martin and Jordi Bonache, "Quasi-isotropic electrically small antennas for UHF-RFID passive tags based on 2-turns spiral resonators", 2015 International Symposium on Antennas and Propagation and USNC-URSI Radioscience Meeting (APS/URSI 2015), Vancouver, BC, Canada, 19-25 July 2015.

227. L. Su, J. Naqui, J. Mata, F. Martín, "Dual-Band Epsilon-Negative (ENG) Transmission Line Metamaterials based on Microstrip Lines Loaded with Pairs of Coupled Complementary Split Ring Resonators (CSRRs): Modeling, Analysis and Applications", Metamaterials 2015, Oxford, UK, September, 7-12, 2015.

228. L. Su, J. Naqui, J. Mata, F. Martín, "Analysis of Coupled Microstrip Lines Loaded with Complementary Split Ring Resonators (CSRRs) and Applications", Asia Pacific microwave Conference (APMC'15), December 6-9, 2015, Nanjing, China.

229. A. Fernández-Prieto, J. Martel, F. Medina, F. Mesa, R.R. Boix, A. Lujambio, J. Naqui, P. Vélez and F. Martín, "Recent Contributions on Common Mode Bandstop and Differential Mode Bandpass Filtering" X Iberian Meeting on Computational Electromagnetics, 5-8 May 2015, Baeza, Spain.

230. C. Herrojo, J. Naqui and F. Martín, "S-shaped split ring resonators (S-SRRs) for the design of spectral signature barcodes", International Workshop on Metamaterials-by-Design, Theory, Methods, and Applications to Communications and Sensing, Paris, France, 3-4 Decembrer 2015.

231. M. Orellana, J. Selga, P. Vélez, M. Sans, A. Rodríguez, V. Boria and F. Martín, "Application of Aggressive Space Mapping (ASM) Optimization to the Design of Electromagnetic Bandgap (EBG) based Wideband Microwave Bandpass Filters", International Workshop on Metamaterials-by-Design, Theory, Methods, and Applications to Communications and Sensing, Paris, France, 3-4 Decembrer 2015.

232. C. Herrojo, J. Naqui, F. Paredes, F. Martín, "Spectral signature barcodes implemented by multi-state multi-resonator circuits for chipless RFID tags", IEEE MTT-S International Microwave Symposium (IMS'16), San Francisco, May 2016.

233. J. Selga, P. Vélez, M. Orellana, A. Rodríguez, V. Boria, F. Martín, "Size Reduction and Spurious Suppression in Microstrip Coupled Line Bandpass Filters by means of Capacitive Electromagnetic Bandgaps", IEEE MTT-S International Microwave Symposium (IMS'16), San Francisco, May 2016.

234. L. Su, J. Naqui, J. Mata-Contreras, F. Martín, "Cascaded Splitter/Combiner Microstrip Sections Loaded with Complementary Split Ring Resonators (CSRRs): Modeling, Analysis and Applications", IEEE MTT-S International Microwave Symposium (IMS'16), San Francisco, May 2016.

235. J. Naqui, F. Martín, "Application of broadside-coupled split ring resonator (BC-SRR) loaded transmission lines to the design of rotary encoders for space applications", IEEE MTT-S International Microwave Symposium (IMS'16), San Francisco, May 2016.

236. S. Zuffanelli, G. Zamora, P. Aguilà, F. Paredes, F. Martin, and J. Bonache, "Passive UHF-RFID tag based on Electrically Small Square-Shaped Split Ring Resonator (SRR) Antenna", 2016 IEEE International Symposium on Antennas and Propagation/USNC-URSI National Radio Science meeting (APS/URSI), June 26 - July 1, 2016 Fajardo, Puerto Rico.

237. P. Vélez, J. Selga, J. Bonache and F. Martín, "Slow-wave inductively-loaded electromagnetic bandgap (EBG) coplanar waveguide (CPW) transmission lines and application to compact power dividers", European Microwave Conference, London (UK), 3-7 October 2016.

238. J. Selga, P. Vélez, F. Martín, "Reactively-Loaded EBG-Based Transmission Lines and Application to Power Splitters", Metamaterials 2016, Creete, 17-22 September 2016.

239. J. Bonache, G. Zamora, F. Paredes, S. Zuffanelli, P. Aguilà, F. Martin, "Application of metamaterials in near field UHF-RFID readers", Metamaterials 2016, Creete, 17-22 September 2016, **Invited**.

240. J. Selga, P. Vélez, J. Bonache, and F. Martín, "EBG-based transmission lines with slow-wave characteristics and application to miniaturization of microwave components", 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics, META'16, Málaga, Spain, 25-28 July 2016.

241. J. Selga, P. Vélez, J. Bonache, and F. Martín, "Slow wave EBG-based transmission lines and applications", 18th International Conference on Electromagnetics in Advanced Applications, (ICEAA 2016), Cairns, Australia, on September 19 - 23, 2016, **Invited**.

242. J. Bonache, G. Zamora, F. Paredes, S. Zuffanelli, P. Aguila and F. Martin, "Near Field RFID Reader Based on Metamaterials", IEEE RFID 2016, Orlando (FL), 3-5 May 2016.

243. J. Bonache, G. Zamora, F.Paredes, S. Zuffanelli, P. Aguila, F. Martin, "Surface wave-based field confinement device for UHF-RFID readers", 7th International Conference on Metamaterials, Photonic Crystals and Plasmonics, META'16, Málaga, Spain, 25-28 July 2016. **Invited**.

244. J. Selga, P. Vélez, J. Bonache, F. Martín, "Recent advances in the design of compact microwave components based on reactively-loaded transmission lines", 2016 IEEE MTT-S Latin America Microwave Conference (LAMC 2016), Puerto Vallarta, Mexico, Dec. 12-14, 2016.

245. L. Su, J. Mata-Contreras, P. Vélez and F. Martín, "Estimation of Conductive Losses in Complementary Split Ring Resonator (CSRR) Loading an Embedded Microstrip Line and Applications", IEEE MTT-S International Microwave Symposium (IMS'17), Honolulu, Hawaii, June 2017.

246. C. Herrojo, J. Mata-Contreras, F. Paredes, Ferran Martín, "Near-Field Chipless RFID Encoders with Sequential Bit Reading and High Data Capacity", IEEE MTT-S International Microwave Symposium (IMS'17), Honolulu, Hawaii, June 2017.

247. A. Rodríguez, V. Boria, J.V. Morro, M. Guglielmi, J. Selga, M. Sans, F. Martín, "Robust Optimization and Tuning of Microwave Filters and Artificial Transmission Lines using Aggressive Space Mapping Techniques", IEEE MTT-S International Microwave Symposium (IMS'17), Honolulu, Hawaii, June 2017.

248. P. Aguilà, G. Zamora, S. Zuffanelli, F. Paredes, F. Martín, J. Bonache, "Reducing the Width of Planar Yagi-Uda Antennas using Square-Shaped Split Ring Resonators (SRRs)", 11th European Conference on Antennas and Propagation (EuCAP 2017), Paris, France, 19-24 March 2017.

249. C. Herrojo, J. Mata-Contreras, F. Paredes, F. Martín, "Near-field chipless RFID tags for identification and authentication applications", Progress in Electromagnetic Research Symposium (PIERS 2017), St Petersburg, 22-25 May 2017. **Invited.**

250. C. Herrojo, J. Mata-Contreras, F. Paredes, A. Núñez, E. Ramón, F. Martín, "Near-field chipless-RFID tags with sequential bit reading implemented in plastic substrates", Moscow International Symposium on Magnetism (MISM'17), Moscow (Rusia), 1 – 5 July, 2017. **Invited.**

251. C. Herrojo, J. Mata-Contreras, F. Paredes, F. Martín, "Chipless RFID tags based on metamaterial concepts", Metamaterials 2017. **Invited.**

252. J. Selga, P. Vélez, J. Bonache, F. Martín, "Compact and spurious free microwave devices based on electromagnetic bandgap structures", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2017) and 7th IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2017), Verona, Italy, September 11 - 15, 2017. **Invited.**

253. J. Selga, J. Coromina, P. Vélez, F. Martín, "Application of electromagnetic bandgaps based on capacitively-loaded lines to the reduction of size and suppression of harmonic bands in microwave devices", IEEE MTT-S International Conference on Numerical Electromagnetic and multiphysics Modeling and Optimization for RF, Microwave and Terahertz Applications (NEMO), May, 17-19, 2017, Sevilla, Spain.

254. M. Sans, et al., "Optimized wideband differential-mode bandpass filters with broad stopband and common-mode suppression based on multi-section stepped impedance resonators and interdigital capacitors", IEEE MTT-S International Conference on Numerical Electromagnetic and multiphysics Modeling and Optimization for RF, Microwave and Terahertz Applications (NEMO), May, 17-19, 2017, Sevilla, Spain.

255. J. Mata-Contreras, L. Su, F. Martín, "Microwave sensors based on symmetry properties and metamaterial concepts: a review of some recent developments", 2017 IEEE MTT-S Wireless and Microwave Technology Conference (WAMICON'17), 24-25 April 2017, Cocoa Beach, FL. **Invited**.

256. F. Martín, "Symmetry properties and metamaterials", Oxford Symposium on Metamaterials, Oxford University (UK), 20-21 March, 2017. **Invited**.

257. F. Paredes, P. Aguilà, S. Zuffanelli, G. Zamora, F. Martin and J. Bonache, "Split-Ring Resonators (SRR)-based antenna for WLAN applications", 2017 IEEE AP-S Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (APS/URSI 2017), July 9–14, 2017, San Diego, California, USA.

258. P. Aguilà, G. Zamora, F. Paredes, F. Martín and J. Bonache, "Planar Fan-Beam Reflective Array Antenna based on Non-Bianisotropic Complementary Split-Ring Resonators (NB-CSRRs)", 2017 IEEE AP-S Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting (APS/URSI 2017), July 9–14, 2017, San Diego, California, USA.

259. J. Selga, P. Vélez, J. Bonache, F. Martín, "High Miniaturization Potential of Slow-Wave Transmission Lines based on Simultaneous Inductor and Capacitor Loading", European Microwave Conference, Nurember, Germany, October 2017.

260. P. Vélez, J. Mata-Contreras, L. Su, D. Dubuc, K. Grenier, F. Martín, "Modeling and Analysis of Pairs of Open Complementary Split Ring Resonators (OCSRRs) for Differential Permittivity Sensing", 2017 IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes (IMWS-AMP 2017), Pavia, Italy, 20-22 September 2017.

261. L. Su, J. Mata-Contreras, P. Vélez, F. Martín, "Estimation of the Complex Permittivity of Liquids by means of Complementary Split Ring Resonator (CSRR) Loaded Transmission Lines", 2017 IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes (IMWS-AMP 2017), Pavia, Italy, 20-22 September 2017.

262. F. Martín, "Application of metamaterial concepts to sensors and chipless RFID", International Workshop on Metamaterials-by-Design: Theory, Methods, and Applications to Communications and Sensing", Madrid, Spain, December 2017. **Keynote speaker**.

263. C. Herrojo, J. Mata-Contreras, A. Núñez, F. Paredes, E. Ramon, and F. Martín, "Application of metamaterial concepts to chipless RFID", SPIE Photonics Europe Metamaterials, 22-26 April 2018, Strasbourg, France. **Invited**.

264. J. Mata-Contreras, C. Herrojo, F. Martín, "Electromagnetic rotary encoders based on split ring resonators (SRR) loaded microstrip lines", IEEE MTT-S International Microwave Symposium (IMS'18), Philadelphia, Pennsylvania, June 2018.

265. J. Coromina, J. Selga, et al, "Slow-wave artificial transmission lines based on stepped impedance shunt stub (SISS) loading: analysis and stopband bandwidth enhancement", 48th European Microwave Conference, Madrid, Spain, September, 2018.

266. P. Vélez, J. Mata-Contreras, D. Dubuc, K. Grenier, F. Martín, "Solute Concentration Measurements in Diluted Solutions by means of Split Ring Resonators", 48th European Microwave Conference, Madrid, Spain, September, 2018.

267. F. Paredes, G. Zamora, T. M. Nguyen, F. Martín, and J. Bonache, "A Novel Design Strategy for Small On-Metal UHF-RFID Tags with Long Read Range based on Complementary Split-Ring Resonators (CSRRs)", 48th European Microwave Conference, Madrid, Spain, September, 2018.

268. M. Abdelkarim, G. Zamora, F. Paredes, J. Bonache, F. Martín and A Gharsallah, "A compact split - ring resonator using spiral technique for near field UHF RFID tag", 2nd Spring School on Advanced Technologies in Signal & Image processing (SS-ATSIP'2018), Sousse, Tunisia, March 21-24, 2018.

269. P. Vélez, J. Mata-Contrera, D. Dubuc, K. Grenier, F. Martín, "Sensing Strategies for Dielectric Characterization and Solute Concentration Measurement in Liquids Based on Metamaterials-Inspired Resonators in Microstrip Technology", International Symposium on Nanophotonics and Metamaterials - St Petersburg, Russia, 2018. **Invited**.

270. A. Fernández-Prieto, P. J. Ugarte-Parrado, A. Lujambio, A. J. Martínez-Ros, F. Martín, J. Martel, F. Medina, and R. R. Boix, "Balanced Dual-Bandpass Filter Based on Embedded Resonators with Magnetic Coupling", 2nd URSI AT-RASC, Gran Canaria, 28 May – 1 June 2018.

271. Jaroslav Havlicek, Cristian Herrojo, Javier Mata-Contreras, Ferran Paredes, Ferran Martín, "Stub-Loaded Microstrip Line Loaded with Half-Wavelength Resonators and Application to Near-Field Chipless-RFID", 2018 IEEE MTT-S Latin America Microwave Conference (LAMC 2018), Arequipa, Perú, Dec. 12-14, 2018.

272. Miquel Moras, Alba Nuñez, Cristian Herrojo, Ferran Paredes, Ferran Martín and Eloi Ramon, "Organic chipless-RFID tags inkjet printed on paper substrates", Innovations in Large-Area Electronics Conference (InnoLAE 2019), Cambridge, UK, 22-23 January, 2019.

273. Miquel Moras, Alba Nuñez, Cristian Herrojo, Ferran Paredes, Ferran Martín and Eloi Ramon, "Organic chipless-RFID tags inkjet printed on paper substrates", Large-area, Organic & Printed Electronics Convention (LOPE-C), March 20-21, 2019, Munchen, Germany.

274. Jonatan Muñoz-Enano, Paris Vélez, Marta Gil, Javier Mata-Contreras, and Ferran Martín, "Microwave Comparator based on Defect Ground Structures", 1st European Microwave Conference in Central Europe, Prague, Czech Republic, May 13-15 2019.

275. Hengyi Sun, et al, "Experimental investigation of the field uniformity in mode reverberation chambers with metasurface walls for low frequency regime", 1st European Microwave Conference in Central Europe, Prague, Czech Republic, May 13-15 2019.

276. Josep Ignasi Cairó, Jordi Bonache, Ferran Paredes, Ferran Martín, "NFC system optimization for simultaneous powering and communication with wireless sensors", 1st European Microwave Conference in Central Europe, Prague, Czech Republic, May 13-15 2019.

277. C. Herrojo, F. Paredes, J. Mata-Contreras, F. Martín, "All-dielectric electromagnetic encoders based on permittivity contrast for displacement/velocity sensors and chipless-RFID tags", IEEE-MTT-S International Microwave Symposium (IMS'19), Boston (MA), USA, June 2019.

278. P. Vélez, J. Muñoz-Enano, F. Martín, "Electrolyte concentration measurements in DI water with 0.125g/L resolution by means of CSRR-based structures", 49th European Microwave Conference, Paris, France, September-october 2019.

279. J. Muñoz-Enano, P. Vélez, J. Mata-Contreras, M. Gil, D. Dubuc, K. Grenier, F. Martín, "Microwave Sensors/Comparators with Optimized Sensitivity Based on Microstrip Lines Loaded with Open Split Ring Resonators (OSRRs)", 49th European Microwave Conference, Paris, France, September-october 2019.

280. Jonatan Muñoz-Enano, Paris Vélez, Cristian Herrojo, Marta Gil, and Ferran Martín, "On the Sensitivity of Microwave Sensors based on Slot Resonators and Frequency Variation", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019.

281. Cristian Herrojo, Ferran Paredes, Paris Vélez, and Ferran Martín, "Microwave encoders and application to near-field chipless-RFID: a review", International Conference on Electromagnetics in

Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019. **Invited**.

282. Jan Coromina, Paris Vélez, Jordi Bonache, Francisco Aznar, and Ferran Martín, "Reactively-loaded EBG transmission lines with periodicity truncation for improvement of the stop band performance", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019.

283. Ali K. Horestani, Negar Varmazyar, Fatemeh Sadeghikia, Mahmoud Talafi Noghani, and Ferran Martín, "On the Applications of S-Shaped Split Ring Resonators (S-SRR) in Sensors, Filters, and Antennas", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019.

284. Ali K. Horestani, Zahra Shaterian, and Ferran Martín, "Detection Modalities of Displacement Sensors based on Split Ring Resonators: Pros and Cons", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019.

285. Cristian Herrojo, Ferran Paredes, Paris Vélez, Ferran Martin, "A new paradigm in chipless-RFID: all-dielectric permittivity contrast tags", 10th IEEE International Conference on RFID Technology and Applications (IEEE RFID-TA 2019), Pisa, Italy, 25-27 September 2019.

286. A.K. Horestani, M. T. Noghani, F. Sadeghikia, M. R. Dorbin, F. Martín, "Reconfigurable and Frequency Tunable Inverted F Antenna Based on Plasma Technology", International Conference on Electromagnetics in Advanced Applications, (ICEAA 2019) and IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (IEEE APWC 2019), ICEAA-IEEE APWC 2019, Granada, Spain, 9 – 13 September 2019.

287. Ferran Paredes, Cristian Herrojo, Ferran Martin, "An approach for Synchronous Reading of Near-Field Chipless-RFID Tags", 10th IEEE International Conference on RFID Technology and Applications (IEEE RFID-TA 2019), Pisa, Italy, 25-27 September 2019. **BEST PAPER AWARD.**

288. F. Paredes, et al., "Near-Field Chipless-RFID System Based on Tags Implemented with Organic Inks", Assia Pacific Microwave Conference (APMC'19), Singapore, Dec. 2019.

289. Paris Vélez, Jonatan Muñoz-Enano, Amir Ebrahimi, James Scott, Kamran Ghorbani, Ferran Martín, "Step impedance resonator (SIR) loaded with complementary split ring resonator (CSRR): modeling, analysis and applications", 2020 IEEE-MTT-S International Microwave Symposium (IMS'20), Los Angeles, CA, USA, 21-26 June, 2020. Accepted.

290. Ferran Paredes, Cristian Herrojo, Ferran Martín, "Microwave Encoders with Synchronous Reading and Direction Detection for Motion Control Applications", 2020 IEEE-MTT-S International Microwave Symposium (IMS'20), Los Angeles, CA, USA, 21-26 June, 2020. Accepted.

291. Ferran Paredes, Cristian Herrojo, Ferran Martín, "Chipless-RFID Sensors for Motion Control Applications", URSI-GASS 2020, Rome, 29 August – 5 September 2020. **Invited**.

292. Cristian Herrojo, Ferran Paredes, Ferran Martín, "3D-Printed Microwave Encoders based on Embedded and Buried Dielectric Inclusions", URSI-GASS 2020, Rome, 29 August – 5 September 2020. **Invited**.

293. Marta Gil et al., "Electro-inductive Wave Transmission Line based Microfluidic Microwave Sensor", 2020 International Microwave Biomedical Conference (IMBioC 2020), May 25-28, 2020, Toulouse, France.

294. J. Coromina, J. Muñoz-Enano, P. Vélez, A. Ebrahimi, J. Scott, K. Ghorbani, and F. Martín, "Permittivity Sensor Based on a Slow-Wave Artificial Transmission Line", 14th International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials 2020), New York, USA, 28 Sep.-3 oct. 2020.

295. M. Gil, P. Vélez, J. Muñoz-Enano, F. Martín, "Differential Microfluidic Sensors based on Electroinductive-Wave (EIW) Transmission Lines", 14th International Congress on Artificial Materials for Novel Wave Phenomena (Metamaterials 2020), New York, USA, 28 Sep.-3 oct. 2020.

296. Jan Coromina, Jonatan Muñoz-Enano, Paris Vélez, Amir Ebrahimi, James Scott, Kamran Ghorbani, Ferran Martín, "Capacitively-Loaded Slow-Wave Transmission Lines for Sensitivity Improvement in Phase-Variation Permittivity Sensors", 50th European Microwave Conference, Utrecht, The Netherlands September 2020.

297. Ferran Paredes, Cristian Herrojo, Ferran Martín "Strategies for Synchronously Reading Microwave Encoders and Application to Sensors for Motion Control",5th International Conference on Smart and Sutainable Technologies, Split and Bol, Croatia, 1-4 July 2020.

298. Jonathan Muñoz-Enano, Pau Casacuberta, Lijuan Su, Paris Vélez, Marta Gil and Ferran Martín, "Open-Ended-Line Reflective-Mode Phase-Variation Sensors for Dielectric Constant Measurements", IEEE Sensors 2020, Rotterdam, The Netherlands, 25-28 October 2020.

299. Ferran Martín, Cristian Herrojo, Ferran Paredes, "Recent advances in time-domain signature barcodes for chipless-RFID and related sensors", VI International Conference on Metamaterials and Nanophotonics, METANANO 2021, Tbilisi, Georgia, September 2021. **KEYNOTE TALK**, **INVITED.**

300. Ferran Paredes, Cristian Herrojo, Ferran Martín, "Metamaterial-inspired electromagnetic encoders and applications", Metamaterials 2021, New York, September 2021. **INVITED**.

301. Jonathan Muñoz-Enano, Paris Vélez, Lijuan Su, Marta Gil, Pau Casacuberta, and Ferran Martín, "On the Capacitance of Slotted Metamaterial Resonators for Frequency-Variation Permittivity Sensing", 51st European Microwave Conference, London, UK, 12-14 October 2021.

302. Paris Vélez, Cristian Herrojo, Xavi Illa, Rosa Villa, Jonathan Muñoz, Lijuan Su, Pau Casacuberta, Marta Gil, Ferran Martín, "A Microwave Microfluidic Reflective-Mode Phase-Variation Sensor", IEEE Sensors 2021, Virtual Conference, October 31 – November 4 2021, **Invited.**

303. F. Medina, J. Martel, A. Fernandez-prieto, J.L. Medran-del-Rio, and F. Martin, "Balanced Differential Coplanar Waveguide Directional Coupler", URSI-GASS 2021, Rome, 28 August – 4 September 2021.

304. Cristian Herrojo, Ferran Paredes, Ferran Martín, "Encoding Strategy to Increase the Data Capacity in Near-Field Chipless-RFID Systems", 16th European Conference on Antennas and Propagation (EuCAP), Madrid, Spain, March 27th, 2022 to April 1st, 2022. **Invited**.

305. M. Elgeziry, F. Paredes, P. Vélez, F. Costa, S. Genovesi, F. Martín, "A Method to Retrieve the Output Variables in Reflective-Mode Phase-Variation Sensors", 52nd European Microwave Conference, Milan, Italy, 20-25 September 2022.

306. Amirhossein Karami-Horestani, Ferran Paredes and Ferran Martín, "Near-Field Chipless-RFID System Based on Hybrid Time/Frequency Domain Encoding and Power Splitter Reader", 52nd European Microwave Conference, Milan, Italy, 20-25 September 2022.

307. Amirhossein Karami-Horestani, Ferran Paredes and Ferran Martín, "A Hybrid Time/Frequency Domain Near-Field Chipless-RFID system", 21st Mediterranean Microwave Symposium, Pizzo Calabro, Italy, May 9-13, 2022.

308. Amirhossein Karami-Horestani, Ferran Paredes and Ferran Martín, "Near-Field Hybrid (Time/Frequency Domain) Chipless-RFID System based on Linear Strips Tag", 10th MICROWAVE & RADAR WEEK, 12-14 September 2022 Gdansk, Poland.

309. Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su, Marta Gil-Barba and Ferran Martín, "Reflective-Mode Phase-Variation Permittivity Sensors Based on Coupled Resonators", IEEE Sensors 2022, Dallas, Texas, USA, Oct. 30 –Nov. 2, 2022.

310. Lijuan Su, Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Marta Gil-Barba and Ferran Martín, "Reflective-Mode Submersible Microwave Sensor", IEEE Sensors 2022, Dallas, Texas, USA, Oct. 30 –Nov. 2, 2022.

311. Amir Ebrahimi, J. Muñoz-Enano, Paris Vélez, James Scott, Kamran Ghorbani, and Ferran Martín, "Phase Variation Microfluidic Permittivity Sensor Using a Dispersive Transmission Line", IEEE Sensors 2022, Dallas, Texas, USA, Oct. 30 –Nov. 2, 2022.

312. L. Su, J. Muñoz-Enano, P. Vélez, P. Casacuberta, M. Gil, F. Martín, "Phase-Variation Microwave Sensor for Permittivity Measurements Based on a High-Impedance Half-Wavelength Transmission Line", IEEE Sensors 2022, Dallas, Texas, USA, Oct. 30 –Nov. 2, 2022, **Invited talk**.

313. P. Vélez, J. Muñoz-Enano, A. Ebrahimi, C. Herrojo, F. Paredes, J. Scott, K. Ghorbani, and F. Martín, "Single-Frequency Amplitude-Modulation Sensor for Dielectric Characterization of Solids and Microfluidics", IEEE Sensors 2022, Dallas, Texas, USA, Oct. 30 –Nov. 2, 2022, **Invited talk**.

314. Ferran Martín, Paris Vélez, Lijuan Su, Jonathan Muñoz, and Pau Casacuberta, "Recent advances in phase-variation microwave sensors", 52nd European Microwave Conference, Milan, Italy, 20-25 September 2022. **Invited talk**.

315. Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su, and Ferran Martín, "Highly sensitive microwave sensors for monitoring the corrosion in urban and industrial scenarios", IEEE International Microwave Symposium (IMS'23), San Diego CA, USA, June 2023, accepted.

316. Ferran Paredes, Amirhossein Karami-Horestani, Ferran Martín,"Enhanicng the bit density in linear electromagnetic encoders for chipless-RFID and motion sensing applications", European Conference on Antennas and Propagation (EuCAP 2023), Florence, Italy, March 27-31, 2023, accepted.

317. Amirhossein Karami-Horestani, Ferran Paredes, and Ferran Martín,"Hybrid Time/Frequency Domain Electromagnetic Encoders Screen-Printed on PET Substrate", European Conference on Antennas and Propagation (EuCAP 2023), Florence, Italy, March 27-31, 2023, accepted.

318. Jonathan Muñoz-Enano, Paris Vélez, Pau Casacuberta, Lijuan Su, and Ferran Martín, "Characterization of the quality of edible oils subjected to industrial frying processes through high sensitivity microwave sensors", 53rd European Microwave Conference, Berlin, Germany, 17-22 September 2023.

319. Ferran Paredes, Amir Karami-Horestani and Ferran Martín, "Hybrid Time/Phase Domain Electromagnetic Encoders Based on Electric LC (ELC) Resonators", IEEE International Conference RFID Technology and Applications (RFID-TA 2023), Aveiro, Portugal, 4-6 September 2023.

320. Amirhossein Karami-Horestani, Ferran Paredes, and Ferran Martín, "Extracting the ID Code of a Time/Frequency Chipless-RFID Tag with Only One Power Splitter Output", International Conference on Smart and Sustainable Technologies (Splitech 2023), Split - Bol, June 20-23, 2023.

321. Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su and Ferran Martín, "Highly sensitive microwave sensors based on weakly coupled resonators", International Workshop on Microwave Research and Applications, Comarruga 2023 (Comarruga - Spain), Monday, July 3 to Friday, July 7, 2023. **INVITED**

322. Amirhossein Karami-Horestani, Ferran Paredes, and Ferran Martín, "Enhancing the Bit Density and Capacity in Hybrid Time/Phase Domain Electromagnetic Encoders", 24th International Conference on Electromagnetics in Advanced Applications, (ICEAA 2023), Venice, Italy, September 9-13, 2023.

323. Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su, Xavier Canalias, and Ferran Martín, "Highly-Sensitive Microwave Phase-Variation Permittivity Sensors", 20th SBMO/IEEE MTT-S International Microwave and Optoelectronics Conference, IMOC 2023, Castelldefels, Barcelona, Spain, 5-9 November 2023. **INVITED**

324. Ferran Martín, "Recent progress on electromagnetic encoders and highly sensitive phase-variation sensors and applications", 2023 International Workshop on Wireless Sensing Technologies and Applications (IWSA 2023), Macao, 23 - 24 November 2023.

325. Amirhossein Karami-Horestani, Ferran Paredes, Ferran Martín, "Phase-Variation Microwave Displacement Sensor with High Resolution, Sensitivity and Dynamic Range", 18th European Conference on Antennas and Propagation (EuCAP 2024), Glasgow, Scotland, 17-22 March 2024.

326. Ferran Paredes, Amir Ebrahimi, Eloi Ramon, and Ferran Martín, "Recyclable Near-Field Chipless-RFID Tags with High Data Capacity and Density", 2024 IEEE International Symposium on Antennas and Propagation and INC/USNC-URSI Radio Science Meeting (AP-S/INC-USNC-URSI), Jul. 13-20, 2024, Firenze, Italy, submitted.

327. Amirhossein Karami-Horestani, Ferran Paredes, and Ferran Martín, "Recent Advances in Electromagnetic Encoders for Motion Sensing and Chipless-RFID", 4th URSI Atlantic Radio Science Conference (URSI AT-RASC), Gran Canaria, 19-24 May 2024, submitted.

### 4.3.2. National Conferences

1. F. Martín, I. Placencia and X. Aymerich, "Distribuciones energéticas de electrones calientes en estructuras MOS", Proceedings de la XXII Reunion Bienal de la Real Sociedad española de Física, 3, p. 53-54 (1989).

2. E. Farrés, J. Suñé, N. Barniol, I. Placencia, F. Martín and X. Aymerich, "L'oxid de silici a l'estructura MOS", Proceedings de les Trobades Científiques de la Mediterrània: Microelectrónica, Menorca (Septiembre 1989).

3. F. Martín and X. Aymerich, "Atrapamiento por inyeccion de carga sobre nitruro de silicio en dispositivos MNOS", Proceedings de la V Escuela de MicroElectrónica, Granada, p. 253-256 (1990).

4. E. Farrés, M. Nafría, I. Placencia, F. Martín, J. Suñé and X. Aymerich "Caracterización de la ruptura dieléctrica del $SiO_2$ en estructuras MOS", Proceedings de la XXIII Reunión Bienal de Física, 1, 216-217 (1991).

5. F. Martín and X. Aymerich, "Descarga asistida por campo en dispositivos de memoria metal-nitruro-óxido-semiconductor", VI Escuela de Microelectrónica, Laredo (Septiembre de 1992). En *Microelectrónica 92: Tecnologías, Diseño, Aplicaciones*, Ed. por A.M. Burón et al., p. 175, 1993.

6. X. Oriols, J. García, F. Martín y J. Suñé, "Simulación Monte Carlo de dispositivos de efecto túnel mediante trayectorias de Bohm" Proceeding de la Conferencia de Dispositivos Electrónicos, p.463 (1997). Barcelona, 1997.

7. J. García, X. Oriols, F. Martín and J. Suñé, Simulación autoconsistente de la característica I-V en diodos túnel resonante de doble barrera", Proceeding de la Conferencia de Dispositivos Electrónicos, p.469 (1997). Barcelona, 1997.

8. X. Oriols, J. García-García, F. Martín and J. Suñé, "Towards the Monte Carlo Simulation of resonant tunneling diodes usinf time-dependent wave-packets and Bohm trajectories", Actas de la Conferencia de Dispositivos Electrónicos 1999, p. 395. Madrid 10-11 de junio de 1999.

9. F. Martín, J. García-García, X. Oriols and J. Suñé, "Quantum Monte Carlo simulation of vertical transport mesoscopic devices: application to resonant tunneling diodes", Actas de la Conferencia de Dispositivos Electrónicos 1999, p. 403. Madrid 10-11 de junio de 1999.

10. F. Martín and X. Oriols, “Analytical solitons in nonlinear transmission lines loaded with heterostructure barrier varactors: application to terahertz generators”, Actas de la Conferencia de Dispositivos Electrónicos 2001, p. 153. Granada, 15 y 16 de febrero de 2001.

11. F. Martín, J. Bonache, F. Falcone, T. Lopetegi, M.A.G. Laso, M. Sorolla, “Aplicaciones de estructuras PBG en tecnología coplanar”, Proc. XVII Simposium Nacional de la Unión Científica Internacional de Radio, URSI 2002, pp. 543-544, Universidad de Alcalà de Henares, 11-13 septiembre de 2002.

12. F. Falcone, F. Martín, J. Bonache, T. Lopetegi, M.A.G. Laso and M.Sorolla, “Implementación de Filtros Paso Bajo EBG de doble periodicidad en Guía Coplanar.” Proc. XVIII Simposium Nacional de la Unión Científica Internacional de Radio, Sept. 10-12, 2003, A Coruña, Spain.

13. J. Illescas ,J.A. Marcotegui, F. Falcone, M.A.G. Laso, T. Lopetegi , F. Martín and M. Sorolla, “Análisis de Estructuras EBG en guía coplanar mediante simulación basada en FDTD.” Proc. XVIII Simposium Nacional de la Unión Científica Int. de Radio, Sept. 10-12, 2003, A Coruña, Spain.

14. E. Jarauta, M.A.G. Laso, F. Falcone ,T. Lopetegi, J. D. Baena, J. Bonache, J. García-García, F. Martín, R. Marqués y M. Sorolla, "Diseño de acopladores backward a partir de acopladores forward mediante el uso de una línea metamaterial en microstrip" Actas del XIX Symposium Nacional de la Unión Científica Internacional de Radio (URSI), Barcelona, septiembre de 2004.

15. F. Falcone ,T. Lopetegi, MAG Laso, J. D. Baena, J. Bonache, , R. Marqués F. Martín y M. Sorolla, "El principio de Babinet aplicado al diseño de metamateriales y metasuperfices", Actas del XIX Symposium Nacional de la Unión Científica Internacional de Radio (URSI), Barcelona, septiembre de 2004.

16. María Flores, Francisco Falcone, Juan Baena, Txema Lopetegi, Miguel Beruete, Miguel Angel Gomez Laso, J.A. Marcotegui, Jordi Bonache, Joan Garcia, Ferran Martin, Ricardo Marqués and Mario Sorolla. "FENÓMENOS DE RADIACIÓN EN METAMATERIALES BASADOS EN TECNOLOGÍA COPLANAR", Actas del XIX Symposium Nacional de la Unión Científica Internacional de Radio (URSI), Barcelona, septiembre de 2004.

17. J. Bonache, I Gil, J. García-García, F. Falcone, T. Lopetegi, M.A.G. Laso, J.D. Baena, F. Martín, M. Sorolla, R. Marqués, “Split rings resonators: key particles for microwave device design”, Proceedings del la Conferendcia de Dispositivos Electrónicos (CDE 2005), Tarragona, febrero de 2005.

18. J. García-García, J. Bonache, I. Gil, M. Gil and F. Martín, “Diseño de filtros de microondas mediante metamateriales”, Actas del XX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2005), Gandia, septiembre de 2005.

19. F. Falcone, F. Martín, J. Bonache, J. Baena, T. Lopetegi, M.A.G. Laso, J. García-García, M. Beruete, R. Marqués, M. Sorolla, “Estructuras metamateriales en tecnología plana basadas en partículas SRR y CSRR”, Actas del XX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2005), Gandia, septiembre de 2005.

20. Joan Garcia-Garcia, Francisco Aznar, Marta Gil, Jordi Bonache, Ferran Martín, “New Ultra Compact Resonant Particle based on Split Rings Resonator suitable for Left Handed planar structures”, Actas del XXI Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2006), Oviedo, 12-15 de septiembre de 2006.

21. A. Velez, J. Bonacjhe and F. Martín, “CSRR and Varactor loaded Tunable Metamaterial Transmission Lines”, XXII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2007), Tenerife, septiembre de 2007.

22. M. Gil, J. Bonache, I. Gil and Ferran Martín, “LÍNEAS DE TRANSMISIÓN COMPUESTAS ZURDAS/DIESTRAS BASADAS EN EL MODELO RESONANTE Y APLICACIONES”, XXII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2007), Tenerife, septiembre de 2007.

23. F. Aznar, J. Bonache, A. Valcarcel and F. Martín, "Miniaturization of narrow-band power dividers by using CPW left-handed transmission lines", XXIII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2008), Madrid, 21-23 de septiembre de 2008.

24. F. Martín, J. Bonache, "Metamaterials: noves perspectives en ciència i tecnologia", III Congrés Enginyeria i Cultura Catalana: Tecnologia, Territori i Societat, Palma (Illes Balears) 4, 5 i 6 de desembre de 2008, aceptado.

25. M. Durán-Sindreu, F. Aznar, A. Vélez, J. Bonache and F. Martín, "OSRR- and OCSRR-based metamaterial transmission lines", XXIV Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2009), Palacio de la Magdalena (Santander), 16-18 de Septiembre de 2009. Aceptado

26. Adolfo Vélez, Francisco Aznar, Miguel Durán-Sindreu, Jordi Bonache, Ferran Martín., "Resonadores abiertos y sus aplicaciones en sıntesis de Filtros de Microondas en guía de ondas coplanar", XXIV Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2009), Palacio de la Magdalena (Santander), 16-18 de Septiembre de 2009.

27. Francisco Javier Herraiz Martínez(1), Ferran Paredes(1), Gerard Zamora(1), Ferran Martín(1), Jordi Bonache, "DIPOLO IMPRESO DE DOBLE BANDA CARGADO CON OCSRRs PARA APLICACIONES INALÁMBRICAS", XXVI Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011),Leganés, Septiembre de 2011.

28. Ferran Paredes, Gerard Zamora, Francisco-Javier Herraiz-Martínez, Ferran Martín, Jordi Bonache, "Tags de RFID basados en dipolos meandro para operar en Europa y USA", XXVI Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011),Leganés, Septiembre de 2011.

29. Ferran Paredes, Gerard Zamora, Francisco-Javier Herraiz-Martínez, Ferran Martín, Jordi Bonache, "Dipolo Doblado Cargado con Espiras Resonantes para Implementar Etiquetas RFID de Banda Dual", XXVII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011),Elche, Septiembre de 2012.

30. Miguel Durán-Sindreu, Christian Damm, Mohsen Sazegar, Jordi Bonache, Rolf Jakoby, Ferran Martín, "Analysis and Applications of Tunable Metamaterial Transmission Lines based on Open Resonators and Barium-Stronium-Titanate Thick Films", XXVII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011),Elche, Septiembre de 2012.

31. F.J. Herraiz-Martínez, F. Paredes, G. Zamora, F. Martín, J. Bonache, D. Segovia-Vargas, "Chipless RFID and Wireless Sensors Based on Planar Magnetoinductive-Wave (MIW) Delay Lines", XXVII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011), Elche, Septiembre de 2012.

32. Jordi Selga, Ana Rodríguez, Vicente E. Boria and Ferran Martín, "Automated Synthesis of Complementary Spit Ring Resonator (CSRR) loaded transmission lines by means of Two Step Optimization based on Aggressive Space Mapping (ASM)", XXIX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2014), Valencia, Septiembre de 2014.

33. Pau Aguilà, Simone Zuffanelli, Gerard Zamora, Ferran Paredes, Ferran Martín, Jordi Bonache, "Non-Bianisotropic Split-Ring Resonator printed antenna with enhanced front-to-back ratio for microwave motion detectors", XXX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2014), Pamplona, Septiembre de 2015.

34. Jordi Naqui and Ferran Martín, "Angular displacement and velocity sensors for space applications based on metamaterial transmission lines", XXX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2014), Pamplona, Septiembre de 2015.

35. Armando Fernández Prieto, Aintzane Lujambio Genua, Jesús Martel Villagrán, Francisco Medina Mena, Ferran Martín Antolín, Rafael Rodríguez Boix, "Diplexor Balanceado Basado en Resonadores Acoplados Magnéticamente", XXXII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2017), Cartagena, Septiembre de 2017.

36. C. Herrojo et al., "Erasable/programmable chipless-RFID tags with orientation-independent sequential bit reading", XXXII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2018), Granada, Spain, September, 2018.

37. Armando Fernández-Prieto, Pedro Ugarte, Jesús Martel, Aintzane Lujambio, Alejandro Martínez-Ros, Francisco Medina, Rafael R. Boix y Ferran Martín, "Diseño de un filtro balanceado con doble banda de paso basado en resonadores SIR complejos acoplados magnéticamente", XXXII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2018), Granada, Spain, September, 2018.

38. Jonathan Muñoz-Enano, Paris Vélez, Marta Gil, Ferran Martín, "Highly Sensitive Phase Variation Permittivity Sensor Based on a Stepped-Impedance Transmission Line", 50th European Microwave Conference, Utrecht, The Netherlands September 2020.

**Publications (conference proceedings) in numbers**

- Total number of conference proceedings: **363**
- **75 invited presentations**
- The paper M. Durán-Sindreu, *et al*., "Novel Fully-Planar Extended-Composite Right/Left Handed Transmission Line based on Substrate Integrated Waveguide for Multi-Band Applications", *European Microwave Conference*, Amsterdam, 2012, received the **Young Engineer Prize** (given to M. Durán-Sindreu) in this edition of the conference, the most important European Conference in Microwave Engineering.
- The paper J. Naqui, *et al*, "Comparative Analysis of Split Ring Resonators (SRR), Electric-LC (ELC) Resonators, and S-Shaped Split Ring Resonators (S-SRR)", MMS'14, Dec. 2014 received the **Yarman-Carlin Best Student Paper Contest** of the Mediterranean Microwave Symposium (MMS'14).
- The paper Jordi Naqui and Ferran Martín, "Angular displacement and velocity sensors for space applications based on metamaterial transmission lines", XXX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2015), Pamplona, Septiembre de 2015 was awarded the **Young Scientist Prize URSI 2015**.
- The paper Ferran Paredes, Cristian Herrojo, Ferran Martin, "An approach for Synchronous Reading of Near-Field Chipless-RFID Tags", 10th IEEE International Conference on RFID Technology and Applications (IEEE RFID-TA 2019), Pisa, Italy, 25-27 September 2019 received the **BEST PAPER AWARD.**

**Citations (including journal papers and conference proceedings), Febrary 2023**

- Sum of the Times Cited: **23.052** (Google Scholar), **13.317** (ISI Web of Knowledge)
- H-index: **71** (Google Scholar), **56** (ISI Web of Knowledge)

### 4.4. OTHER PUBLICATIONS

#### 4.4.1. Edited books or electronic publications

- **Title**: *Proceedings of the 14th Workshop on Modelling and Simulation of Electron Devices.*
  **Edited by: F. Martín**, J. García-García, J. Suñé, X. Oriols, D. Jiménez and J. Bonache.
  **Publication date and place**: Bellaterra, Spain, October 2003.
  ISBN: 84-688-1314-1

- **Title:** *Seminar on Metamaterials and Circuit Design based on Split Rings Resonators*
  **Edited by: F. Martín**, J. García, J. Bonache, I. Gil
  **Publication date and place**: Bellaterra, April 2005.

- **Title**: *Aplicaciones de los metamateriales en circuitos / antenas / subsistemas de microondas milimétricas y fotónicos*
  **Edited by: F. Martín**
  **Publication date and place**: La Laguna (Tenerife), September 2007.
  ISBN: 978-84-690-7499-2
  **Electronic publication** (Proceedings of the tutorial indicated in the title, held within the XII *Simposium Nacional de la Unión Científica Intrnacional de Radio* -URSI 2007).

- **Title**: *Proceedings of the Fifth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials 2011)*
  **Edited by: F. Martín**, J. Bonache and G. Sisó.
  **Publication date and place**: Barcelona, October 2011.
  ISBN: 978-952-67611-0-7 (PDF), 978-952-67611-1-4 (CD-ROM)

**4.4.2. Publications in Tutorials/Workshops of international conferences (all <u>INVITED</u>)**

- **Conference:** 34th European Microwave Conference, Amsterdam, October 2004**.**
  **Tutorial title:** Left handed metamaterials, circuits and their technical applications (organized by J. Zehentner and T. Itoh).
  **Lesson title**: Planar metamaterial design based on split ring resonators: theory and applications
  **Authors**: R. Marqués, **F. Martín**, M. Sorolla and F. Medina

- **Conference**: IEEE-MTT International Microwave Symposium, Long Beach, CA, June 2005.
  **Workshop title:** Physics, theory, fabrication and applications of microwave metamaterials (organized by C. Caloz and **F. Martín**).
  **Talk title:** Application of metamaterial concepts to the design of compact microwave filters
  **Authors: F.Martín**, R.Marqués, M. Sorolla.

- **Conference**: International Seminar on Metamaterials and Circuit Design based on SRRs (**organized** by **F. Martín** under support of METAMORPHOSE and REME), Barcelona, April, 22nd, 2005.
  **Lesson title:** Microwave circuits and metasurface design based on SRRs and related topologies
  **Authors: F. Martín** and M. Sorolla

- **Metamaterials for Industry** (Short Course for Industries and SME), 28-30 0ctober 2005. Thales Campus, Jouy-en-Josas, France.
  **Lesson title:** Applications of Metamaterials in RF and microwave circuit design
  **Author: F. Martín**

- **Conference**: IEEE-MTT International Microwave Symposium, Honolulu, Hawai, June 2007.
  **Workshop title**: Recent Advances in Electromagnetic Metamaterials: Theory, Computation and Applications (organized by C. Caloz and **F. Martín**).
  **Talk title**: Recent advances in resonant type metamaterial transmission lines.
  **Authors: F. Martín**, J. Bonache.

- **Conference**: IEEE-MTT International Microwave Symposium, Honolulu, Hawai, June 2007.
  **Workshop title**: MINIATURE, ELECTRONICALLY TUNED FILTER TECHNOLOGY (organized by H. Dayal and V. Boria).

**Talk title:** Tunable and compact microwave filters and resonators based on metamaterials.
**Author: F. Martín**.

- **Conference**: 2007 European Conference on Circuit Theory and Design (ECCTD 2007), Sevilla, Spain, August 2007.
  **Workshop title**: Metamaterial-based technologies and their application to the design of RF/microwave circuits
  **Authors and organizers:** J. Bonache, **F. Martín**.

- **Conference:** 39th European Microwave Conference, Rome (Italy) October 2009
  **Workshop Title:** *Recent Advances on Microwave Applications of Metamaterial Concepts* (organized by **F. Martín** and L. Vegni).
  **Talk title:** Recent advances on resonant type metamaterial transmission lines and applications
  **Authors**: **F. Martín** and J. Bonache

- **Conference:** 39th European Microwave Conference, Rome (Italy) October 2009
  **Workshop Title:** *Tunable RF-Components and Modules for Wireless Communications: Materials and Packaging* (organized by H. Maune, R. Sorrentino, R. Jakoby and R. Weigel)
  **Talk title:** Different strategies for the implementation of tunable metamaterial transmission lines and applications
  **Authors**: **F. Martín** and J. Bonache

- **Conference:** 4rth Young Scientist Meeting on Metamaterials (YSMM 2011), Valencia, Spain, February 2011.
  **Talk title:** Recent advances on the applications of artificial transmission lines based on split rings
  **Authors:** M. Durán-Sindreu, J. Bonache, P. Vélez, **F. Martín**

- **Conference:** 42nd European Microwave Conference, Amsterdam, October 2012**.**
  **Workshop title:** *Design of miniaturized filters and multiplexers: technical and technological solutions* (organized by S. Bila and J.S. Hong).
  **Talk title**: Compact planar filters based on semilumped resonators
  **Authors**: M. Durán-Sindreu, J. Bonache, **F. Martín**.

- **Conference:** IEEE Radio Wireless Week, Austin (TX), January 2013
  **Workshop title:** *Metamaterials in communications and sensing: reality or fiction?* (organized by M. Schuessler and C. Damm).
  **Talk title:** Split ring resonator (SRR) and stepped impedance resonator (SIR) based metamaterial transmsision lines: application to microwave components and novel sensing strategies
  **Authors**: **F. Martín**, J. Naqui, P. Vélez, M. Durán-Sindreu and J. Bonache.

- **Conference:** IEEE MTT-S International Microwave Symposium, Seattle, WA (USA), June 2013
  **Workshop title:** *Recent Advances on RF/Microwave Multi-Function Filtering Devices* (organized by R. Gómez-García and X. Gong).
  **Talk title:** Tunable and Multi-Function Microwave Filters Based on Metamaterial Concepts
  **Authors: F. Martín**, J. Bonache, M. Durán-Sindreu and P. Vélez

- **Conference:** 43rd European Microwave Conference, Nuremberg, October 2013.

**Workshop title:** *Microwave Metamaterial Concepts, Circuits and Applications* (organized by Dmitry Kholodnyak, and Matthias Hein).
**Talk title:** On the Symmetry Properties of Transmission Lines Loaded with Metamaterial Resonators: Theory and Applications
**Authors:** J. Naqui, M. Durán-Sindreu, **F. Martín**

- **Conference:** 43rd European Microwave Conference, Nuremberg, October 2013.
  **Workshop title:** Metamaterials in Communications and Sensing: Reality or Fiction? (organized by C. Damm, and M. Schuessler).
  **Talk title:** Microwave Components and Sensors Based on Resonant Type Metamaterial Transmission Lines
  **Author: F. Martín**

- **Conference:** IEEE International Microwave Symposium, Tampa Bay, Florida (USA), June 2014.
  **Workshop title:** Revisiting equivalent circuit models for emerging technologies: from microwaves to THz (organized by F. Mesa and J. Machac).
  **Talk title**: Equivalent circuit models for metamaterial-inspired planar circuits based on split rings and related resonators
  **Authors**: Jordi Naqui, Jordi Bonache, **Ferran Martín**.

- **Conference:** 45rd European Microwave Conference, Paris, septiembre de 2015**.**
  **Workshop title:** Using symmetry-related electromagnetic properties for microwave device design: application to half-mode circuits, balanced lines and circuits, and microwave sensors (organized by Ferran Martín, and Francisco Medina).
  **Talk title**: Differential-mode metamaterial transmission lines and applications
  **Authors**: Paris Vélez, Jordi Bonache, **Ferran Martín.**

- **Conference:** 45rd European Microwave Conference, Paris, septiembre de 2015**.**
  **Workshop title:** Using symmetry-related electromagnetic properties for microwave device design: application to half-mode circuits, balanced lines and circuits, and microwave sensors (organized by Ferran Martín, and Francisco Medina).
  **Talk title**: Microwave sensors based on symmetry properties of resonator-loaded lines
  **Authors**: Jordi Naqui, Ali Karami-Horestani, Christophe Fumeaux and **Ferran Martín**.

- **Conference**: IEEE-MTT International Microwave Symposium, Honolulu, Hawai, Junio 2017.
  **Workshop title**: Advanced Microwave Technologies for Internet of Space Applications (organized by Holger Maune and Robert Weigel).
  **Talk title:** Multiband, tunable and multifunctional microwave components based on metamaterial concepts
  **Authors: F. Martín**, Jordi Bonache, Javier Mata-Contreras.

- **Conferencia:** 47th European Microwave Conference, Nuremberg (Germany), October 2017**.**
  **Workshop title:** Chipless RFID Systems, Technology and Applications (organized by **Ferran Martín**, Nemai Karmakar and Smail Tedjini).
  **Talk title**: Chipless RFID systems with high data capacity for security and authentication applications
  **Authors**: Cristian Herrojo, Javier Mata-Contreras, Ferran Paredes and **Ferran Martín**

- **Conference:** 47th European Microwave Conference, Nuremberg (Germany), October 2017**.**

**Workshop title:** Advanced RF and Microwave Circuit Technologies (organized by Dmitry Kholodnyak and Matthias Hein).
**Talk title**: RF/Microwave Circuits, Sensors and RFID Systems Based on Metamaterial Concepts
**Authors**: **Ferran Martín**

- **Authors: Ferran Martín**, Paris Vélez, Cristian Herrojo
  **Título:** Novel sensors and chipless-RFID systems based on metamaterials and symmetry properties
  **Place and date**: 48th European Microwave Conference, Madrid, Spain, Septiembre de 2018, dentro del workshop *Metamaterials, Metasurfaces and Applications* (organizado por Ferran Martín y Francisco Medina).
  **Workshop, invited.**

- **Authors: Ferran Martín**, Cristian Herrojo, Eloi Ramón
  **Título:** Near-field chipless-RFID systems with very high data capacity for secure paper applications
  **Place and date**: 48th European Microwave Conference, Madrid, Spain, Septiembre de 2018, dentro del workshop *Backscatter Communications the Next Paradigm for IoT Approaches* (organizado por Nuno Borges-Carvalho y Smail Tedjini).
  **Workshop, invited.**

- **Authors: Ferran Martín**, Paris Vélez, Jonathan Muñoz-Enano, Jan Coromina, Marta Gil
  **Title**: Strategies to enhance the sensitivity in planar microwave sensors and application to biosensing
  **Place and date**: 50th European Microwave Conference, Utrecht, The Netherlands, September 2020**,** within the workshop *Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors* (organized by Enrique Bronchalo and Benjamin Potelon).
  **Workshop, invited**.

- **Autores: Ferran Martín**, Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su
  **Título:** Recent Advances in Planar Microwave Sensors for Sensitivity Enhancement
  **Lugar de celebración**: 52th European Microwave Conference, Milan, Italy, September 2022, dentro del workshop *Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors dedicated to biomedical applications* (organized by Enrique Bronchalo and Benjamin Potelon).
  **Workshop, invited.**

- **Autores: Ferran Martín**, Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su
  **Título:** Recent Advances in Phase-Variation Permittivity Sensors: Boosting up the Sensitivity by Means of Coupled Resonators
  **Lugar de celebración**: International Microwave Syposium 2023 (IMS'23), San Diego, CA, USA, 11-16 June 2023, dentro del workshop *Microwave/RF sensors for nearfield and long-range sensing applications* (organized by Mohammad H. Zarifi)
  **Workshop, invited.**

**Summary: 21 invited workshops** in the top conferences in Microwave Engineering (IEEE MTT-S International Microwave Symposium and European Microwave Conference).

### 4.4.3. Publications in tutorials/Workshops of national conferences

- **Conference**: *XII Simposium Nacional de la Unión Científica Internacional de Radio* (URSI 2007).
  **Tutorial title**: Aplicaciones de los metamateriales en circuitos / antenas / subsistemas de microondas milimétricas y fotónicos (organized by **F. Martín**).
  **Lesson title:** Diseño de circuitos pasivos de microondas mediante metamateriales
  **Authors:** J. Bonache, **F. Martín**

## 5. RESEARCH PROJECTS

### 5.1. INTERNATIONAL PROJECTS (listed chronologically)

- Project Eureka 2895 TELEMAC (2002-06)
  Title: *Electromagnetic Band Gap Material Investigations For Microwave Applications.*
  Principal Investigator UAB: **F. Martín**
  Participants:
    - Thales Research and Technology
    - Institute d'electronique de Microelectrònique et de Nanotechnology (IEMN-CNRS)
    - Institute d'Electronica Fondamentale (IEF)
    - Consultora Navarra de Telecomunicaciones (CONATEL)
    - Omicron Circuits s.l.,
    - Universitat Autònoma de Barcelona.
    - Universidad Pública de Navarra.

  Project budget: **6.05MEuros**
  Funding in Spain through National PROFIT projects: FIT-070000-2003-933 and FIT-330200-2004-113 (see section 5.2).

- **Network of Excellence** of the European Union NoE 500252-2 METAMORPHOSE - **VI Framework Program** (June 2004-May 2008).
  Title: *Metamaterials organized for radio, millimeter wave and photonic superlattice engineering*
  Network Coordinator: Prof. Sergei Tretyakov (Helsinki University of Technology-HUT).
  Nº of partners: 23
  Pral. Investigator UAB: **Ferran Martín**.
  Total Network Funding: **4.4 MEuros**.

- Project Eureka METATEC (July 2006-December 2008)
  Title: *METAmaterial-based TEchnology for broadband wireless Communications and RF identification*
  Principal Investigator UAB: **F. Martín**
  Partners:
    - University of Novi Sad - Faculty of Technical Sciences - Center for Integrated Microsystems and Components (Serbia)
    - IMTEL Mikrotalasi A.D. (Serbia)
    - The Institute of Microwave Techniques and Electronics - IMTEL Institute (Serbia).
    - AIDA Centre s.l. (Spain)
    - Universitat Autonoma de Barcelona – CIMITEC (Spain)

  Project budget: **1.42MEuros**
  Funding in Spain through the project PROFIT FIT-330225-2007-15 and the project AVANZA I+D TSI-020400-2008-119 (see section 5.2).

- Project Eureka 5014 METASENSE (April 2009-December 2011)
  Title: *Miniature METAmaterial-Based SENsing Devices for Agricultural, Environmental and Geological Applications* (METASENSE)
  Principal Investigator UAB: **F. Martín**
  Partners:
    - University of Novi Sad - Faculty of Technical Sciences - Center for Integrated Microsystems and Components (Serbia)
    - IRITEL A.D. Beograd (Serbia)

- ISEE 2007 s.l. (España)
- Universitat Autonoma de Barcelona – CIMITEC (España)

Project budget: **1.62MEuros**
Funding in Spain through the projects AVANZA I+D TSI-020400-2009-99 and TSI-020400-2010-27 (see section 5.2).

- Project of the FRAMEWORK PROGRAMME FOR RESEARCH, TECHNOLOGICAL DEVELOPMENT AND INNOVATION 2009-2010 OF THE RESEARCH PROMOTION FOUNDATION (Republic of Cyprus and European Union)
  Title: *Design and Implementation of a Novel Wireless Receiver Chain Using Metamaterial Quad Band Devices*
  Principal Investigator UAB: **Ferran Martín**
  Funding UAB: 12.000 Euros

- Project of the European Union FP7-ICT-2011-7
  Reference number: 287682
  Project title: TDK4PE—*Technology & Design Kits for Printed-Electronics*
  Call (part) identifier: FP7-ICT-2011-7
  Funding scheme: Collaborative project (STREP)
  Partners:
    - UNIVERSITAT AUTONOMA DE BARCELONA (UAB), Spain
    - AGENZIA NAZIONALE PER LE NUOVE TECNOLOGIE, L'ENERGIA E LO SVILUPPO ECONOMICO SOSTENIBILE (ENEA), Italy
    - FLEXINK (FLEXIN), United Kingdom
    - 4INFINISCALE SA (IFS), France
    - AGENCIA ESTATAL CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC), Spain
    - PHOENIX BV (PHOENIX), Netherlands
    - Sensing Tex, S.L. (STX) Spain
    - TECHNISCHE UNIVERSITAET CHEMNITZ (TUC) Germany
    - UNIVERSIDADE DO ALGARVE (UALG) Portugal
    - 3D-Micromac AG

  Coordinador: Jordi Carrabina Bordoll (UAB)
  Investigador Principal UAB (CIMITEC): **Ferran Martín**
  Duration: October 2011 – September 2014
  Funding CIMITEC-UAB: 50.000 Euros.

- Project of the Innovation Triangle Initiative (ITI) Program of the European Space Agency (ESA)
  Reference: 4000111799/14/NL/SC
  Título: COPLANAR SYMMETRY-BASED CONTACTLESS ROTATION SENSOR
  Project coordinator: Francisco Garcia de Qurós (EMXYS)
  Participants: EMXYS Embedded Instruments, UAB, UPV
  Principal Investigator UAB: Ferran Martín
  Duration: 1 July 2014- 30 April 2015
  Funding (1st stage): 50.000 Euros (22.000 Euros UAB-CIMITEC)

**5.2. NATIONAL PROJECTS (listed chronologically)**

- Project MIC-88-0340-C02 of the *Comisión Interministerial de Ciencia y Tecnología*, coordinated between Universitat Autònoma de Barcelona and Centro Nacional de MicroElectrónica, (1989-1991).
  Coordinator and Principal Investigator: X. Aymerich.

Coordinator Subprojunt 01, U.A.B.: X. Aymerich.
Coordinator Subprojunt 02, C.N.M.: F. Campabadal.
Title: *"Dispositivos Electrónicos para ultra gran escala de integración (ULSI): análisis de los efectos de la reducción de dimensiones en la tecnología del aislante de puerta y en la fenomenología del transporte*. ‘‘
Funding: 35.000.000 ptas.
Type of participation: Member of the research team.

- Project PB94-0720 of the *Dirección General de Investigación Científica y Técnica* (1995-98).
  Principal Investigator: J. Suñé.
  Title: *"Simulación Monte Carlo cuántica de dispositivos nanométricos de transporte vertical."*
  Funding: 3.140.000 ptas.
  Type of participation: Member of the research team.

- Project PB92-0587 of the *Dirección General de Investigación Científica y Técnica* (1993-96).
  Principal Investigator: X. Aymerich.
  Title: *"Diseño y construcción de un microscopio de efecto túnel electroquímico*."
  Funding: 4.815.000 ptas.
  Type of participation: Member of the research team.

- Project PB96-1162 of the *Dirección General de Enseñanza Superior* (*Subdirección General de Formación y Promoción del Conocimiento* 1997-2000).
  Principal Investigator: X. Aymerich
  Title: "*Nanolitografía de sonda local para la fabricación de dispositivos electrónicos de dimensiones nanométricas".*
  Funding: 13.053.000 Ptas
  Type of participation: Member of the research team.

- Project PB97-0182 of the *Dirección General de Enseñanza Superior* (*Subdirección General de Formación y Promoción del Conocimiento* 1998-2001).
  Principal Investigator: **F. Martín**
  Title: "*Simulación del Transporte Coherente e Incoherente en estructuras mesoscopicas laterales y Verticales".*
  Funding: 2.300.000 ptas

- Project BFM2000-0353 of the *Dirección General de Enseñanza Superior e Investigación Científica* (2000-03).
  Principal Investigator: J. Suñé
  Title*:" Efectos Mesoscópicos en transistores MOS nanométricos".*
  Funding: 6.115.000 ptas
  Type of participation: Member of the research team.

- Project BFM2001-2001 of the *Dirección General de Investigación* (2001-04).
  Principal Investigator: **F. Martín**
  Title*: "Generación de frecuencias de terahertzs mediante líneas de transmisión no lineales y dispositivos de vacío microfabricados basados en haces electrónicos".*
  Funding: 31.102 Euros

- Project of the *Programa de Fomento de la Investigación Técnica* (PROFIT): FIT-070000-2003-933. *Programa Nacional de Tecnologías de la Información y las*

*Comunicaciones. Dirección general para el Desarrollo de la Sociedad de la Información.*(2003)
Title: "*Estudio y control de la propagación de microondas y de ondas milimétricas por metamateriales*".
Project Coordinator: José A. Marcotegui Iturmendi (Consultora Navarra de Teleconunicaciones).
Principal Investigator UAB: **F. Martín**
Partners: Consultora Navarra de Telecomunicaciones (CONATEL), Omicron Circuits s.l., Universitat Autònoma de Barcelona, Universidad Pública de Navarra.
Total Funding: 78.270 Euros
Advanced reimbursement: 156.540 Euros.

- Project of the *Programa de Fomento de la Investigación Técnica* (PROFIT): FIT-330200-2004-113. *Programa Nacional de Tecnologías de la Información y las Comunicaciones. Dirección general para el Desarrollo de la Sociedad de la Información.*(2004)
  Title: "*Estudio y control de la propagación de microondas y de ondas milimétricas por metamateriales*".
  Project Coordinator: José A. Marcotegui Iturmendi (Consultora Navarra de Teleconunicaciones).
  Principal Investigator UAB: **F. Martín**
  Partners: Consultora Navarra de Telecomunicaciones (CONATEL), Omicron Circuits s.l., Universitat Autònoma de Barcelona, Universidad Pública de Navarra and Universidad de Sevilla.
  Total Funding: 158.000 Euros.

- Project TEC2004-04249-C02-01 METASYSTEMS of the *Dirección General de Investigación* (2004-07), coordinated between the Universitat Autònoma de Barcelona and the Universidad de Sevilla.
  Project Coordinator: **F. Martín**
  Principal Investigator UAB: **F. Martín**
  Project title*:* "*Diseño, caracterización y aplicación de estructuras basadas en metamateriales al desarrollo de subsistemas de microondas y milimétricas.*"
  Total Funding: 142.000 Euros.

- Especial Action for the Creation of the Spanish Network on Metamaterials (REME) TEC2004-21322-E
  Applicant: R. Marqués (Universidad de Sevilla).
  Team: Vicente Boria, **F. Martín**, A. Vegas, C. Camacho y M. Sorolla.
  Funding: 12.000 Euros.

- Especial Action for the Consolidation of the Spànish Network on Metamaterials (REME), TEC2006-27656-E
  Network Coordinator and Principal Investigator: **F. Martín**
  Team: **F. Martín**, R. Marqués, Vicente Boria, A. Vegas, C. Camacho and M. Sorolla.
  Funding: 20.000 Euros.

- Project TEC2007-68013-C02-02 METAINNOVA of the *Dirección General de Investigación* (2007-2010), coordinatoed between the Universidad de Sevilla and the Universitat Autònoma de Barcelona.
  Project Coordinator: Ricardo Marqués (Universidad de Sevilla)
  Principal Investigator UAB: **F. Martín**
  Title*:* "*Tecnologías basadas en metamateriales y su aplicación a la innovación en componentes y subsistemas de RF microondas y milimétricas: circuitos de radiocomunicación.*"

Funding: 285.000 Euros (171.000 Euros for UAB team).

- Project of the *Programa de Fomento de la Investigación Técnica* (PROFIT): FIT-330225-2007-15. *Programa Nacional de Tecnologías de la Información y las Comunicaciones. Dirección general para el Desarrollo de la Sociedad de la Información* (2007).
  Title: "*Metamaterials based technology for broadband wireless commuications and RF identification (I)"*
  Project Coordinator: Joan Pons (AIDA Centre s.l.)
  Principal Investigator UAB: **F. Martín**
  Partners: AIDA Centre s.l. and CIMITEC-UAB.
  Funding: 168.625 Euros (88.650 for UAB-CIMITEC).

- Project **of the CONSOLIDER INGENIO 2010 Program -Ministerio de Ciencia e Innovación** (2008-2013)
  Title: *Engineering Metamaterials* (CSD2008-00066 EMET)
  Coordinator: Javier Martí Sendra (NTC-Universidad Politécnica de Valencia)
  Partners.
  - **NTC-UPV**: Instituto Universitario de Investigación Centro de Tecnología Nanofotónica (Universidad Politécnica de Valencia). Leader: Prof. Javier Martí
  - **GEMMA-CIMITEC-UAB:** Grupo de Ingeniería de Microondas y Milimétricas (GEMMA) y Centro de Investigación en Metamateriales para la Innovación en Tecnologías Electrónica y de Comunicaciones (CIMITEC) de la Universitat Autònoma de Barcelona. Leader: **Prof. Ferran Martín**
  - **GM-US:** Grupo de Microondas (Universidad de Sevilla). Leader: Prof. Ricardo Marqués
  - **GMA-UPNA:** Grupo de Milimétricas y Antenas (Universidad Pública de Navarra). Leader: Prof. Mario Sorolla.
  - **GFPS-IEM-CSIC:** Grupo de Fotónica de Plasmones Superficiales, Instituto de Estructura de la Materia, (Consejo Superior de Investigaciones Científicas). Leader: Prof. J.A. Sánchez Gil
  - **GIC-UMA:** Grupo de Ingeniería de Comunicaciones (Universidad de Málaga). Leader: Prof. Carlos Camacho
  - **GFO-UPV:** Grupo de Fenómenos Ondulatorios (Universidad Politécnica de Valencia). Leader: Prof. José Sánchez-Dehesa
  - **GIO-UPM:** Grupo de Ingeniería Óptica (Universidad Politécnica de Madrid). Leader: Prof. Juan C. Miñano.

  Principal Investigator UAB: **F. Martín**
  Funding: **3.5MEuros**.

- Project of the *Programa AVANZA I+D* (*Ministerio de Industria, Turismo y Comercio*) TSI-020400-2008-119. *Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información* (2008).
  Title: "*Metamaterials based technology for broadband wireless commuications and RF identification (II)"*
  Project Coordinator: Joan Pons (AIDA Centre s.l.)
  Principal Investigator UAB: **F. Martín**
  Partners: AIDA Centre s.l. and CIMITEC-UAB.
  Funding: 245.716 Euros (84.100 for UAB-CIMITEC).

- Project of the *Programa Nacional de Proyectos de Desarrollo Experimental* (*Ministerio de Industria, Turismo y Comercio*) DEX-600300-2008-150. *Subprograma: Desarrollo Experimental – Industrial* (2008-2009).

Title: "*Investigación de una tecnología de componentes de RF/microondas sobre papel por huecograbado (tecnopapel).*"
Coordinator: Javier Medrano (SARRIOPAPEL Y CELULOSA, SA)
Principal Investigator UAB: **F. Martín**
Partners: SARRIOPAPEL Y CELULOSA SA, TORRASPAPEL SA and CIMITEC-UAB.
Funding for CIMITEC-UAB: 68.500 Euros
Lending budget for the companies: 360.721 Euros

- Project of the *Programa AVANZA I+D (Ministerio de Industria, Turismo y Comercio). Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información*.
  Title: TSI-020400-2009-99 Miniature METAmaterial-Based SENsing Devices for Agricultural, Environmental and Geological Applications (METASENSE)
  Project Coordinator: Manel Caro (ISEE 2007 s.l.)
  Principal Investigator UAB: **F. Martín**
  Partners: ISEE 2007 s.l. and CIMITEC-UAB.
  Duration: 2009.
  Funding: 139.322 Euros (78.700 Euros for CIMITEC-UAB).

- Project of the *Programa AVANZA I+D (Ministerio de Industria, Turismo y Comercio). Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información.*
  Title: TSI-020100-2009-778 *Implementation of high performance and smal size RFID tags*
  Project Coordinator: Joan Pons (AIDA Centre s.l.)
  Principal Investigator UAB: **F. Martín** and Jordi Bonache
  Partners: AIDA Centre s.l. and CIMITEC-UAB.
  Duración: 2009
  Funding: 198.337,65 Euros (91.950 Euros for CIMITEC-UAB)

- Project TEC2010-17512 of the *Dirección General de Investigación y Gestión del Plan Nacional I+D+I, Miniterio de Ciencia e Innovación* (2010-2013)
  Principal Investigator UAB: **Ferran Martín**
  Title: *Novel strategies for the design and synthesis of METAmaterial-based microwave components with an eye towards technology TRANSFER* (METATRANSFER).
  Funding: 179.900 Euros

- Project of the *Programa AVANZA Competitividad I+D+I (Ministerio de Industria, Turismo y Comercio). Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información*.
  Title: Miniature METAmaterial-Based SENsing Devices for Agricultural, Environmental and Geological Applications (METASENSE), 2nd, 3rd year.
  Project Coordinator: Manel Caro (ISEE 2007 s.l..)
  Principal Investigator UAB: **F. Martín**
  Partners: ISEE 2007 s.l. and CIMITEC-UAB.
  Duration: 2010-2011.
  Total funding: 217.140 Euros
  Funding UAB: 47.892 Euros.

- Project of the *Programa AVANZA Competitividad I+D+I (Ministerio de Industria, Turismo y Comercio). Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información*.

Title: Research and development of a CAD tool for the synthesis of compact and high performance circuits for communications based on metamaterials (METASINTESIS)
Project Coordinator: Jordi Gil Raga (AURORA SOFTWARE AND TESTING s.l.)
Principal Investigator UAB: **F. Martín**
Partners: AURORA SOFTWARE AND TESTING s.l.. and CIMITEC-UAB.
Duration: 2010-2012
Total funding: 146.829 Euros
Funding UAB: 47.572 Euros

- Project of the *Programa AVANZA Competitividad I+D+I (Ministerio de Industria, Turismo y Comercio). Acción Estratégica de Telecomunicaciones y Sociedad de la Información. Dirección general para el Desarrollo de la Sociedad de la Información*.
  Title: *RFID tag design based on metamaterials for persons tracking and monitoring* (e-TISSUE).
  Project coordinator: AIDA Centre s.l.
  Principal Investigator UAB: J. Bonache
  Partners: AIDA Centre s.l. and CIMITEC-UAB.
  Duration: 2010-2011.
  Total funding: 118.489 Euros
  Funding UAB: 28.008 Euros

- Project of the *Programa EXPLORA, Acciones complementarias, DIRECCIÓN GENERAL DE INVESTIGACIÓN Y GESTIÓN DEL PLAN NACIONAL DE I+D+i, Ministerio de Ciencia e Innovación (MICIIN)*
  Reference: TEC2011-13615-E
  Title: *Novel sensors and detectors based on the symmetry properties of split ring resonators*
  Principal Investigator: **Ferran Martín**
  Duration: October 2011-September 2013
  Funding: 30.000 Euros

- Project TEC2013-40600-R of the *DIRECCIÓN GENERAL DE INVESTIGACIÓN CIENTÍFICA Y TÉCNICA, Ministerio de Economía y Competitividad (2013-2016)*
  Principal Investigator: **Ferran Martín**
  Title: Synthesis and design of advanced RF/microwave components and their application to communication circuits, sensors and RFID
  Funding: 180.500 Euros

- Project RTC-2014-2550-7 *ChiplessRFID* of the call *Retos de Colaboración 2014 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Economía y Competitividad)*.
  Partners: Scytel SECURE ELECTRONIC VOTING,S.A., Instituto de Microelectrónica de Barcelona-CNM (CSIC) and UAB-CIMITEC
  Principal Investigator UAB: **Ferran Martín**
  Title: Technological development of chipless RFID tags by means of printed techniques on low cost substrates and their integration in electronic voting (Chipless RFID)
  Budget: 1.686.502,99 Euros
  Total funding: 490.171,00 Euros (154.940 Euros for UAB-CIMITEC)
  Loan for Scytel: 657.977,00 Euros

- Projct of the program *EXPLORA CIENCIA Y EXPLORA TECNOLOGIA, Acciones complementarias, DIRECCIÓN GENERAL DE INVESTIGACIÓN CIENTÍFICA Y TÉCNICA, Ministerio de Economía y Competitividad* (MINECO)
  Reference: TEC2013-49221-EXP

Title: CAD tool for the unattended and automated synthesis of complex RF/microwave components in planar technology
Principal Investigator: Ferran Martín
Duration: from 01/09/2014 to 31/08/2016
Funding: 41.000 Euros

- Proyecto RTC-2015-3709-7 META-STOCK de la convocatoria Retos de Colaboración 2015 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Economía y Competitividad).
  Consorcio formado por: PALEX Medical SA, SERVISTAL MEDICA SL, y UAB-CIMITEC
  Investigador Principal UAB: Jordi Bonache
  Título del proyecto: Control de stock y logística en entornos hospitalarios (META-STOCK)
  Total financiable: 380.660,18 Euros
  Subvención total: 71.724.30 para UAB-CIMITEC
  Anticipo reembolsable FEDER: 40.931,30 para UAB-CIMITEC
  Préstamo para las empresas: 214.398,00 Euros
  Duración: abril 2015-junio 2017

- Proyecto RTC-2015-4385-7 de la convocatoria Retos de Colaboración 2015 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Economía y Competitividad).
  Consorcio formado por: EURONA WIRELESS TELECOM S.A y UAB-CIMITEC
  Investigador Principal UAB: Jordi Bonache
  Título del proyecto: Sistema de Control de ACCESos Basado en METAmateriales (META-ACCESS)
  Total financiable: 824.598 Euros
  Subvención total: 104,539 para UAB-CIMITEC
  Anticipo reembolsable FEDER: 75.543 para UAB-CIMITEC
  Préstamo para las empresas: 612.288 Euros
  Duración: junio 2015-diciembre 2017

- Proyecto de la convocatoria Acción Estratégica Economía y Sociedad Digital (AEESD'15), Ministerio de Industria Energía y Turismo
  Entidad solicitante: NABELIA
  Entidades subcontratadas: CNM-CSIC y UAB-CIMITEC
  Tíitulo: "Sccet - Maie's Sistema De Control, Conservación, Eficiencia y Trazabilidad en Medicamentos de Alto Impacto Económico"
  Investigador principal UAB: **Ferran Martín**
  Subcontratación UAB-CIMITEC: 59.259 Euros
  Duración: Septiembre 2015 – diciembre 2017

- Proyecto de la convocatoria Acción Estratégica Economía y Sociedad Digital (AEESD'15), Ministerio de Industria Energía y Turismo
  Entidad solicitante: MEDITECNOLOGIA
  Entidades subcontratadas: CNM-CSIC y UAB-CIMITEC
  Tíitulo: Desarrollo de tags chipless RFID mediante tecnologías de impresión electrónica para su integración en sistemas de receta médica segura (Medical Chipless Secure Paper)
  Investigador principal UAB: **Ferran Martín**
  Subcontratación UAB-CIMITEC: 29.000 Euros
  Duración: julio 2015 – diciembre 2017

- ACCIONES DE DINAMIZACIÓN "REDES DE EXCELENCIA" 2015, Ministerio de Economía y Competitividad.

Título: RED DE EXCELENCIA CONSOLIDER EN METAMATERIALES
Referencia: TEC2015-69195-REDC
Investigador Principal : JAVIER MARTI SENDRA
Entidad solicitante: Universidad Politécnica de Valencia
Otras entidades participantes:

- Universitat Autònoma de Barcelona- CIMITEC
- Universidad de Sevilla
- Universidad Pública de Navarra
- Grupo de Fotónica de Plasmones Superficiales, Instituto de Estructura de la Materia, (Consejo Superior de Investigaciones Científicas.
- Universidad de Málaga.
- Universidad Politécnica de Valencia.
- Universidad Politécnica de Madrid.

Investigador principal UAB: **Ferran Martín**
Financiación total de la red: 51.500 Euros
Duración en años: 2

- Proyecto del CDTI
  Entidad solicitante: Scytl
  Entidades subcontratadas: CNM-CSIC y UAB-CIMITEC
  Tñítulo: Contactless Audit - Auditorías de resultados electorales de limitación de riesgo facilitadas por circuitos RFID impresos en papel
  Investigador principal UAB: **Ferran Martín**
  Subcontratación UAB-CIMITEC: 42.500 Euros
  Duración: marzo 2016 - diciembre 2017

- Proyecto TEC2016-75650-R de la DIRECCIÓN GENERAL DE INVESTIGACIÓN CIENTÍFICA Y TÉCNICA, Ministerio de Economía y Competitividad, Programa Estatal de I+D+i Orientada a los Retos de la Sociedad
  Investigador Principal: Ferran Martín (Co-IP Jordi Bonache)
  Título del proyecto: Diseño y sintesis de componentes de RF/microondas basados en conceptos avanzados y su aplicacion a circuitos de comunicaciones, sensores y RFID (II)
  Financiación: 149.900 Euros
  Duración (3 años): enero 2017- diciembre 2019

- Proyecto RTC-2017-6303-7 de la convocatoria Retos de Colaboración 2017 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Ciencia, Innovación y Universidades).
  Consorcio formado por: Hohner Automáticos S.L. (entidad solicitante), UAB-CIMITEC y EURECAT
  Investigador Principal UAB: Ferran Martín
  Título del proyecto: Encoder de microondas impreso de campo cercano para el control preciso de la altura de ascensores y elevadores (Near-field Lift Encoder)
  Total financiable: 917,940.66 Euros
  Subvención total: 222,243.22 Euros
  Anticipo reembolsable FEDER: 104.711,50 Euros
  Importe total para UAB: 209.423 Euros
  Préstamo para la empresa: 536,043 Euros
  Duración: abril 2018-Marzo 2021

- Proyecto RTC-2017-6339-7 de la convocatoria Retos de Colaboración 2017 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Ciencia, Innovación y Universidades).

Consorcio formado por: CHATU TECH, S.L. (entidad solicitante), UAB-CIMITEC
Investigador Principal UAB: Jordi Bonache
Título del proyecto: Detección e identificación de tuberías y zanjas mediante tecnología RFID en la banda de UHF (DETECT-TUBE)
Total financiable: 643,818.45Euros
Subvención total: 122,926.72 Euros
Anticipo reembolsable FEDER: 122,926.72 Euros
Importe total para UAB: 245.853,45 Euros
Préstamo para la empresa: 198,982.50Euros
Duración: abril 2018-Marzo 2021

- Proyecto PID2019-103904RB-I00 de la DIRECCIÓN GENERAL DE INVESTIGACIÓN CIENTÍFICA Y TÉCNICA, Ministerio de Ciencia e Innovación, PROGRAMA ESTATAL DE GENERACIÓN DE CONOCIMIENTO Y FORTALECIMIENTO CIENTÍFICO Y TECNOLÓGICO DEL SISTEMA DE I+D+i Y DEL PROGRAMA ESTATAL DE I+D+i ORIENTADA A LOS RETOS DE LA SOCIEDAD
  Investigador Principal: **Ferran Martín** (Co-IP Jordi Bonache)
  Título del proyecto: Diseño y sintesis de componentes de RF/microondas basados en conceptos avanzados y su aplicacion a circuitos de comunicaciones, sensores y RFID (III)
  Financiación: Total:164.560,00 Euros
  Costes Directos: 136.000,00 Euros
  Costes Indirectos: 28.560,00 Euros
  Duración (3 años): junio 2020 - junio 2023

- Proyecto RTC2019-007226-7 de la convocatoria Retos de Colaboración 2019 (Programa Estatal de Investigación, Desarrollo e Innovación Orientada a los Retos de la Sociedad, Ministerio de Ciencia, Innovación y Universidades).
  Consorcio formado por: Germark (entidad solicitante), UAB-CIMITEC y IMB-CNM-CSIC
  Investigador Principal UAB: **Ferran Martín**
  Título del proyecto: Sistema de autentificación e identificación basado en etiquetas RFID sin chip reciclables y biodegradables (AUTEN-TIC)
  Presupuest proyecto: 1.021.908,00 Euros
  Total financiable: 696.239,00 Euros
  Subvención total: 365.103,00Euros
  Importe total para UAB: **172.909 Euros**
  Préstamo para la empresa: 198.681,00 Euros
  Duración: abril 2020-Diciembre 2022.

- Proyecto del programa I+D del CDTI.
  Empresa solicitante: OffshoreTech S.L.
  Investigador principal UAB: Jordi Bonache
  Título: "BARRERA VIRTUAL (E-BARRERA)"
  Referencia: IDI-20201173.
  Presupuesto del proyecto total aceptado: 666.989,00€.
  Crédito para la Empresa: 416.868,125.
  Presupuesto para subcontratación UAB: 125.300€.
  Duración: mayo 2020 a mayo 2023

- Proyecto PDC2021-121085-I00 de la convocatòria PRUEBA DE CONCEPTO 2021 del Programa Estatal de I+D+i Orientada a los Retos de la Sociedad, del Plan Estatal de Investigación Científica y Técnica y de Innovación 2017-2020, Ministerio de Ciencia e Innovación.

Investigador Principal: **Ferran Martín**
Título del proyecto: Validación y valorización de **en**coders electromagnéticos de alta capacidad y **se**nsores de **m**icroondas de alta sensibilidad y **b**ajo coste para **l**a transferencia en múltiples **e**scenarios (ENSEMBLE)
Financiación: Total: 146.050 Euros
Costes Directos: 127.000 Euros
Costes Indirectos: 19.050 Euros
Duración (2 años): inicio 1 de diciembre de 2021.

- Proyecto CPP2021-009080 de la convocatòria COLABORACIÓN PÚBLICO-PRIVADA 2021, del Programa Estatal para Impulsar la Investigación Científico-Técnica y su Transferencia, del Plan Estatal de Investigación Científica, Técnica y de Innovación 2021-2023, en el marco del Plan de Recuperación, Transformación y Resiliencia, Ministerio de Ciencia e Innovación
  Consorcio formado por: J. García Carrión, Grupo de Bodegas Vinartis (entidad solicitante) y UAB-CIMITEC
  Coordinador Técnico del proyecto: **Ferran Martín**
  Investigador Principal UAB: **Ferran Martín**
  Título del proyecto: Sistema inteligente para el control y mejora de rendimiento en procesos industriales de embotellado y producción de vinos y productos derivados (SMART-CELLAR)
  Presupuesto proyecto: 1.225.857,50 Euros
  Total financiable: 705.354,52 Euros
  Subvención total: 506.910,10 Euros
  Importe total para UAB: **506.910,10 Euros**
  Préstamo para las empresas: 188.522,2 Euros
  Duración: septiembre 2022-agosto 2025.

  Proyecto PID2022-139181OB-I00 de la DIRECCIÓN GENERAL DE INVESTIGACIÓN CIENTÍFICA Y TÉCNICA, Ministerio de Ciencia e Innovación, PROGRAMA ESTATAL DE GENERACIÓN DE CONOCIMIENTO Y FORTALECIMIENTO CIENTÍFICO Y TECNOLÓGICO DEL SISTEMA DE I+D+i Y DEL PROGRAMA ESTATAL DE I+D+i ORIENTADA A LOS RETOS DE LA SOCIEDAD
  Investigador Principal: **Ferran Martín**
  Título del proyecto: SENSORES DE MICROONDAS DE ALTAS PRESTACIONES PARA APLICACIONES INDUSTRIALES, BIOSENSORES Y MONITORIZACION DE DAÑADO ESTRUCTURAL
  Financiación: Total: 243.750,00 Euros
  Costes Directos: 195.000,00 Euros
  Costes Indirectos: 48.750,00 Euros
  Duración (3 años): 1 Septiembre 2023 – 31 Agosto 2026

### 5.3. REGIONAL PROJECTS

- Project PNL2004-22 of the UAB-CIRIT: *Ayuda a Nuevas líneas de Investigación* (October 2004-September 2005).
  Principal Investigator: **F. Martín**
  Ttitle: "*Miniaturización de circuitos de microondas mediante tècnicas basadas en metamateriales: aplicación a la optimización de terminales de comunicaciones.*"
  Funding: 6.000 Euros.

- Project 2005SGR-00624 to recognize the Group of the Applicant as a **Singular Research Group** by the *Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR-Generalitat de Catalunya*).

Group Leader: **F. Martín**
Name of the Group: *Grup d'Enginyeria de Microones i Mil.limètriques Aplicat (GEMMA)*.
Microwave and Millimeter Wave Engineering Group.
Funding: 30.600 €
Duration (4 years): 2005-2008
**Singular Research Group corresponds to a Group with pioneering research activity in fields with great potencial impact (according to the Research and Technology Innovation Road Map of the Catalan Gevernment), and with characteristics that allow their members to carry out research of excellence and interest for the Industry and Society.**

- Project of the *Programa de Incentivos a Proyectos y Actividades de Valorización de Tecnología realizadas por Entidades ofertantes de Tecnología*. *CIDEM, Generalitat de Catalunya.*
  Title: *Novel multiband communication components based on electromagnetic metamaterials* (COMPATIBLE)
  Reference: VALTEC08-1-0009
  Principal Investigator: **Ferran Martín**
  Funding: 70.000 Euros
  Duration: 2009-2010.

- Project of the *Programa de Incentivos a Proyectos y Actividades de Valorización de Tecnología realizadas por Entidades ofertantes de Tecnología. CIDEM, Generalitat de Catalunya.*
  Title: *Printed Electronics: New Technological Oportunity*
  Reference: VALFUS08-2-0001
  Coordinador: Jordi Carrabina i Bordoll
  Total Funding: 70.000 Euros
  Partners: CEPHIS-UAB and CIMITEC-UAB (Centres of the IT Network of CIDEM/COPCA), CETEMMSA and IMB-CNM (CSIC).
  Duration: 2009-2010.

- Project 2009SGR-421 to recognize the Group of the Applicant as a **Consolidated Research Group** by the *Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR- Generalitat de Catalunya*).
  Group Leader: **F. Martín**
  Name of the Group: *Grup d'Enginyeria de Microones i Mil.limètriques Aplicat (GEMMA)*.
  Microwave and Millimeter Wave Engineering Group.
  Funding: 41.600 €
  Duration: 2009-2013

- Project of the *Línea de ayudas de TECNIO para Centros de la Red IT de TECNIO de más de un año de antiguedad*
  Funding Agency: ACC1Ó (Generalitat de Catalunya)
  Title: *Consolidation of CIMITEC as a Technology Transfer Centre*
  Principal Investigator : **F. Martín**
  Duration: 2010
  Funding: 10.000 Euros

- Project of *Subvención a entidades que realicen actuaciones propias de la Red Conect-EU (ACC1Ó – Generalitat de Catalunya)*
  Title: Group FOLAEP
  Reference: XCEU10-1-0010
  Coordinator Entity: Fundación privada CETEMMSA
  Total Funding: 99.970 Euros

Principal Investigator UAB-CIMITEC: **Ferran Martín**
Funding CIMITEC-UAB: 3.540 Euros
Duration: September 2010- December 2012

- Project 2014SGR-157 to recognize the Group of the Applicant as a **Consolidated Research Group** by the *Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR- Generalitat de Catalunya*).
  Group Leader: **F. Martín**

- Reconocimiento como **Grupo de Investigación Consolidado** por la Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR- Generalitat de Catalunya).
  Núm. expediente: 2014SGR-157
  Responsable del Grupo: **F. Martín**
  Name of the Group: Grup d'Enginyeria de Microones, Metamaterials i Antennes (GEMMA)
  Funding: 36.000 Euros
  Duration (3 años): 2014-2016

- Project of the *Programa d'Ajuts per Projectes Innovadors amb potencial d'Incorporació al Sector Productiu (LLAVOR), de l'Agencia de Gestió d'Ajuts Universitaris i de Recerca (AGAUR), Departament d'Economia i Coneixement, Generalitat de Catalunya*.
  Reference: 2014LLAV00046
  Títle: Microwave and contactless sensors for measuring angular velocities
  Principal Investigator: Ferran Martín
  Junior Scientist: Jordi Naqui Garolera
  Duración: July-December 2015
  Funding: 24.000 Euros

- Project of the *Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR) de la convocatoria de ayudas destinadas a la obtención de prototipos y a la valorización y transferencia de los resultados de investigación generada por equipos de investigación de Cataluña* (PRODUCTE)
  Principal investigator: Jordi Bonache
  Title: Near field UHF-RFID reader based on field confinement devices
  Funding: 100.000 Euros

- Projecte de la línia d'ajuts als centres TECNIO per a la mobilitat de personal investigador vinculat a aquests centres per a desenvolupar projectes de recerca aplicada orientats a la transferència tecnològica (Programa TECNIOSPRING –ACC1Ò, Generalitat de Catalunya)
  Título: Microwave Sensors for Low-Cost Blood Analyzers (SENSINGBLOOD)
  Entidades participantes:
  - UAB-CIMITEC. Supervisor científico: **Ferran Martín**
  - Laboratory for Analysis and Architecture of Systems (LAAS). País: França.

  Supervisor científico: David Dubuc y Katia Grenier
  Referencia: TECSPR15-1-0050
  Investigador Principal UAB: **Ferran Martín**
  Investigador experimentado: Paris Vélez Rasero
  Duración: Abril 2106 – marzo 2018.
  Financiación: 103.751,64 €

- Projecte del Fondo de Valorización de Tecnologías de los Centros TECNIO (ACC1Ó) dinamizados por el Parc de Recerca UAB, "TECNIOfy".
  Investigador Principal: Jordi Bonache

Título: Sistema d'identificació per UHF-RFID en camp proper de gran superfície i baix cost
Financiación: 30.000 Euros
Duración: 2016

- Proyecto de la Agència per a la Competitivitat de l'Empresa (ACCIÓ), Generalitat de Catalunya
  Título del proyecto: Pla d'actuació individual en transferència tecnològica de CIMITEC-UAB
  TIPUS PROJECTE: Pla d'actuacions individual
  NÚM. EXPEDIENT: TECCIT16-1-0014
  Investigador principal: Ferran Martín
  Financiación: 20.000 Euros
  Duración: 2016-2017

- Reconocimiento como **Grupo de Investigación Consolidado** por la Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR- Generalitat de Catalunya).
  Núm. expediente: 2017SGR-1159
  Responsable del Grupo: **F. Martín**
  Name of the Group: Grup d'Enginyeria de Microones, Metamaterials i Antennes (GEMMA)
  Duration (3 años): 2017-2019

- Proyecto de la convocatòria PROOF-OF-CONCEPT (UAB-Generalitat de Catalnya)
  Título del proyecto: High data capacity chipless-RFID system for identification, tracking and authentication.
  Investigador principal: Ferran Martín
  Duración: 9 meses (Julio 2020 – Febrero 2021)
  Financiación: 40.000 Euros

- Reconocimiento como **Grupo de Investigación Consolidado** por la Agencia de Gestión y Ayudas Universitarias y de Investigación (AGAUR- Generalitat de Catalunya).
  Núm. Expediente: 2021 SGR 00192
  Responsable del Grupo: **F. Martín**
  Nombre del grupo: Grup d'Enginyeria de Microones, Metamaterials i Antennes (GEMMA)
  Duración (3 años): 2021-2024

## 6. CONTRACTS WITH COMPANIES, INSTITUTIONS OR ADMINISTRATIONS (Technology Transfer)

- Cooperation Agreement between the Companies CONATEL s.l. and OMICRON CIRCUITS s.l., and the UNIVERSITAT AUTÒNOMA DE BARCELONA.
  Title: *Apoyo científico y diseño de prototipos de circuitos basados en metamateriales conforme al proyecto Eureka* 2895-Telemac *y al proyecto PROFIT* FIT070000-2003-933.
  Principal Investigator UAB: **F. Martín**
  Funding: 22.500 Euros
  Duration: 2003.

- Cooperation Agreement between the Companies CONATEL s.l. and OMICRON CIRCUITS s.l., and the UNIVERSITAT AUTÒNOMA DE BARCELONA.
  Title: *Apoyo científico y optimización de filtros de microondas y milimétricas para transceptores de comunicaciones conforme al proyecto Eureka* 2895-Telemac.
  Principal Investigator UAB: **F. Martín**
  Funding: 22.500 Euros
  Duration: 2003.

- Research Project contract between the Companies SEIKO EPSON CORPORATION and EPSON EUROPE ELECTRONICS GMBH and the UNIVERSITAT AUTÒNOMA DE BARCELONA, the UNIVERSIDAD DE SEVILLA, the UNIVERSIDAD PÚBLICA DE NAVARRA and CONATEL S.L. DE OTRA.
  Title: *To develop a filter usable to Epson Ultra Wide Band (UWB) system using metamaterial-based lumped resonators technology*
  Contract responsible and Principal Investigatorl: **F. Martín**
  Total funding: 66.500 Euros
  Funding UAB: 33.250 Euros
  Duration: 8 months (from 4 April up to 4 December 2005).

- Contract between the EDITORIAL JOHN WILEY & SONS Inc and PROFESSORS RICARDO MARQUÉS, FERRAN MARTÍN and MARIO SOROLLA for the publication of the book:
  *Metamaterials with negative parameters: theory, design and microwave applications*
  *Begeening: February 2005*
  *Budget: 12% of the book samples sold out.*

- Cooperation Agreement between the CONSORCIO DE LABORATORIO DE LUZ SINCROTRON and the UNIVERSITAT AUTÓNOMA DE BARCELONA
  Title: *Análisis del comportamiento electromagnético de detectores MPGD: evaluación de los efectos de "crostalk" y del acoplamiento capacitivo ánodo-cátodo*
  Principal Investigator UAB: **F. Martín**
  Funding: 2.900 Euros
  Duration: from 20 February up to 20 March 2005.

- Cooperation Agreement between the Company CONATEL s.l. and the UNIVERSITAT AUTÒNOMA DE BARCELONA
  Title: *Miniaturización y optimización de filtros de microondas en tecnología plana: análisis de la influencia del substrato*
  Principal Investigator UAB: **F. Martín**
  Funding: 13.300 Euros
  Duration: from 1 de June up to 31 December 2005.

- Cooperation Agreement between CIDEM (GENERALITAT DE CATALUNYA-Catalan Government), DURSI (GENERALITAT DE CATALUNYA- Catalan Government) and the UNIVERSITAT AUTÒNOMA DE BARCELONA for the ascription of the *CENTRE D'INVESTIGACIÓ EN METAMATERIALS PER A LA INNOVACIÓ EN TECNOLOGIES ELECTRÒNICA I DE COMUNICACIONS (CIMITEC)* of the DEPARTAMENT D'ENGINYERIA ELECTRÓNICA of the UAB to the Network of Centres of Support to Technology Innovation (IT Network)
  Responsible and Director of CIMITEC**: F. Martín**
  Duration: 2006-2008
  Funding 2006: 66.500 Euros
  Funding 2007: 70.000 Euros
  Funding 2008: 72.000 Euros

- Cooperation Agreement between the CENTRO NACIONAL DE MICROELECTRÓNICA (CNM-CSIC) and the CENTRO DE INVESTIGACIÓN EN METAMATERIALES PARA LA INNOVACIÓN EN TECNOLOGIAS ELECTRÓNICA Y DE COMUNICACIONES (CIMITEC) of the UNIVERSITAT AUTÓNOMA DE BARCELONA
  Title: *Diseño y fabricación de placas de test para resonadores piezoelectrcos de alta frecuencia (FBAR)*
  Responsible UAB-CIMITEC: Joan García.
  Participants: **Ferran Martín**, Jordi Bonache, Marta Gil, Francisco Aznar, Gerared Sisó y Benito Sans.
  Budget: 2.000 Euros
  Duration: July 2006.

- Research Project Contract between the Company EPSON EUROPE ELECTRONICS GMBH and the LA UNIVERSITAT AUTÒNOMA DE BARCELONA (CIMITEC)
  Title: *Applications of metamaterial-based planar technologies for the design of UWB band pass filters in MCM-D technology*.
  Contract Responsible and Principal Investigator: **F. Martín**
  Funding: 43.000 Euros
  Duration: 15 months (from 1 December 2006 up to 28 February 2008).

- Research Project Contract between the Company EPSON EUROPE ELECTRONICS GMBH and the LA UNIVERSITAT AUTÒNOMA DE BARCELONA (CIMITEC)
  Title: *Design optimization techniques for high efficiency power amplifiers by means of metamaterial-based planar technologies*.
  Contract Responsible and Principal Investigator: **F. Martín**
  Funding: 20.000 Euros
  Duración: 15 months (from 1 December 2006 up to 28 February 2008).

- Agreement between the VICERECTORADO DE PROYECTOS ESTRATÉGICOS-PARQUE DE INVESTIGACIÓN (VRPE) and the CENTRO DE LA RED IT CIMITEC (DEPARTAMENTO DE INGENIERÍA ELECTRÓNICA) of the UNIVERSITAT AUTÒNOMA DE BARCELONA
  Title: *Apoyo a las actividades del Grupo GEMMA/CIMITEC para la transferencia de tecnología y su participación en el Instituto Virtual Metamorphose.*
  Principal Investigator: **F. Martín**
  Funding: 10.000 Euros
  Duration: December 2006-December 2007.

- Cooperation Agreement between the Company AIDA CENTRE S.L. and the UNIVERSITAT AUTÒNOMA DE BARCELONA (CIMITEC)

**Title:** *Apoyo a la fase de definición del proyecto Eureka METATEC.*
Principal Investigator: **Ferran Martín**
Funding: 5.500 Euros.
Duration: 1 December 2006 up to 28 February 2007.

- Agreement between EL CONSORCIO PARA LA CONSTRUCCIÓN, EQUIPAMIENTO Y EXPLOTACIÓN DEL LABORATORIO DE LUZ SINCROTRON (CELLS) and LA UNIVERSITAT AUTÓNOMA DE BARCELONA (CIMITEC)
  **Títle:** Anàlisis y asesoramiento en el diseño de línies de retardo para mejorar la resolución del detector "Multiwire Proportional Chamber",
  Principal Investigator: Joan García
  Funding: 4.500 Euros
  Duration: 13 February 2007-23 March 2007

- Agreement between the VICERECTORADO DE PROYECTOS ESTRATÉGICOS-PARQUE DE INVESTIGACIÓN (VRPE) and the CENTRO DE LA RED IT CIMITEC (DEPARTAMENTO DE INGENIERÍA ELECTRÓNICA) of the UNIVERSITAT AUTÒNOMA DE BARCELONA
  **Title:** *Apoyo a las actividades del Grupo GEMMA/CIMITEC para la Consolidación como Grupo/Centro de Referencia en el campo de los Metamateriales*
  Principal Investigator: **F. Martín**
  Funding: 75.000 Euros
  Duración: January 2008-December 2010

- Cooperation Agreement between the Company ISEE S.L. and the UNIVERSITAT AUTÒNOMA DE BARCELONA
  Title: *Acción de consultoria/asesoramiento para la medición de componentes de microndas en banda K con analizadores de redes del laboratorio de CIMITEC*
  Principal Investigator: **F. Martín**
  Funding: 4.826 Euros
  Duration: July 2008-July 2011

- *Parc de Recerca UAB – Santander* Technology Transfer Chair
  Title: *To enhance the technology transfer activities of CIMITEC*
  Funding agency: awarded by *Parc de Recerca de la UAB* and funded by *Grupo Santander*.
  Director of the Chair: **Ferran Martín**
  Funding: 100.000 Euros
  Duration: 2009 and 2010.

- Icrea Academia Award to **Ferran Martin** (1st call, 2008)
  Funding Agency: ICREA
  Total Funding: 250.000 Euros
  Period: 2009-2013

- Agreement between the company AURORA SOFTWARE AND TESTING SL and UNIVERSITAT AUTÓNOMA DE BARCELONA
  Title: *Automated design of planar microwave circuits by means of Space Mapping*
  Principal Investigator: **Ferran Martín**
  Funding: 13.000 Euros
  Duration: October 2010-December 2012

- Icrea Academia Award to **Ferran Martin** (2nd call, 2013)
  Funding Agency: ICREA

Total Funding: 200.000 Euros
Period: 2014-2018

- Icrea Academia Award to **Ferran Martin** (3rd call, 2018)
  Funding Agency: ICREA
  Total Funding: 200.000 Euros
  Period: 2019-2023

- AGREEMENT BETWEEN RUBATEC S.A., ESCAILAB AND UNIVERSITAT AUTÓNOMA DE BARCELONA
  TITLE: Desarrollo de sensores para el control de la corrosión en estructuras metálicas urbanas
  Principal Investigator: **Ferran Martín**
  Co-PI: Paris Vélez
  Funding UAB: **100.000 Euros**
  Funding ESCAILAB: 40.000 Euros
  Duration: 18 months (October 2022 – April 2024)

## 7. ADDITIONAL FUNDING

- Integrated Action ACI2001-33 of the *Direcció General de Recerca* (*Generalitat de Catalunya*) with the *Centre National de la Recherche Scientifique*, France.
  Principal Investigator: **F. Martín** .
  Type: Acctions PCI: Support to the realization of Cooperation and mobiity Actions with Institutions, Regions and Inter-regional Consortia which have signed the Cooperation Agreement with Catalonia.
  Funding: 2.404 Euros

- Funding for the Aquisition of New Equipment for Research of the *Departamento de Universidades, Investigación y Sociedad de la Información de la Generalitat de Catalunya*.
  Project Code: 2003PIRA 00102
  Principal Investigator: **F. Martín**
  Equipment: Agilent 8719ET 50MHz-13.5GHz Vector Network Analyzer
  Funding: 32.623 Euros

- Call UAB-CIRIT for the funding of Visiting Professors
  Responsible: **F. Martín**
  Visiting Professor: Robert Miles of the Univertity of Leeds.
  Period: from 5 up to 11 May 2001.
  Funding: 540 Euros.

- Recognition as Consolidated Group by the *Departament d'Universitats, Recerca i Societat de la Informació de la Generalitat de Catalunya* (SGR Call).
  Name of the group: Grupo de Electrónica.
  Responsible of the Group: Xavier Aymerich Humet
  Project code: 1995SGR-00137
  Funding: 9.015 Euros
  Participation as member of the Group

- Recognition as Consolidated Group by the *Departament d'Universitats, Recerca i Societat de la Informació de la Generalitat de Catalunya* (SGR Call, 2002-2004).
  Name of the Group: Grupo de Ingeniería de dispositivos electrónicos.
  Responsibleof the Group: Xavier Aymerich Humet
  Project code: 2002SGR-00130.
  Funding: 26.901 Euros
  Participation as member of the Group

- Suporting Action for the Organization of Conferences or Symposia and other disseminating Actions (2003ARCS-00174). *Deparamento de Universidades, Investigación y Sociedad de la información (Generalitat de Catalunya).*
  Principal Investigator: X. Oriols Pladevall
  Name of the Action: *14th Workshop on Modelling and Simulation of Electron Devices.*
  Funding: 1.500 Euros

- Call UAB-CIRIT for suporting the organization of conferences and symposia (2003)
  Principal Investigator: X. Oriols Pladevall
  Conference: *14th Workshop on Modelling and Simulation of Electron Devices*.
  Funding: 700 Euros

- Especial Action (MCyT Prog. Nacional TEC) TIC2002-12906-E
  Title: *Participación en 1a anualidad del Proyecto Eureka 2895-TELEMAC*

Responsible: Jose Maria Lopetegi Beregaña (Universidad Pública de Navarra)
Responsible UAB: **F. Martín**
Duration: 2004.
Total funding: 24.000 Euros.
Funding UAB: 8 000 Euros

- Especial Action (MCyT Prog. Nacional TEC) TEC2004-22322-E
  Title: *Participación en 2a anualidad del Proyecto Eureka 2895-TELEMAC*
  Responsible: Miguel Ángel Gómez Laso (Universidad Pública de Navarra)
  Responsible UAB: **F. Martín**
  Duration: 2005.
  Total Funding: 18.000 Euros.
  Funding UAB: 6 000 Euros

- Call UAB-DURSI for obtaining Research Technicians (TSR2006-25)
  Principal Investigator. **F. Martín**
  Duration: 2007-2009
  Funding ≈ 67.000 Euros.

- Funding for a Reseaerch Grant Position (PhD Student) after receiving the ***I3 Intensificació*** Award (see Section 13)
  Duration: October 2007-October 2011
  Funding ≈ 60.000Euros

- Funding for the Aquisition of New Equipment for Research (PEIR2006) of the *Agencia de Gestión de Ayudas Universitarias y de Investigación AGAUR (Generalitat de Catalunya).*
  Project Code: 2006PEIR100001/49
  Principal Investigator: **F. Martín**
  Equipment: Probe Station for RF/microwave circuits Cascode Microtech
  Funding: 35.739 Euros

- Funding for the Aquisition of New Equipment for Research (PEIR2007) of the *Agencia de Gestión de Ayudas Universitarias y de Investigación AGAUR (Generalitat de Catalunya).*
  Proyecto code: to determine
  Principal Investigator: **F. Martín**
  Equipment: Agilent E8364B 10MHz-50GHz Vector Network Analuzer
  Funding: 42.052,50 Euros

- Funding by UAB for the organization of the *"METAMATERIALS 2011" (International Congress on Advanced Electromagnetic Materials In Microwaves And Optics)*
  Principal Investigator: **Ferran Martín**
  Funding: 3.000 Euros.
  Congress held on: 10-15 October 2011.

- Project of the AGAUR (Generalitat de Catalunya), for the organization of conferences
  Título: *"METAMATERIALS 2011" (International Congress on Advanced Electromagnetic Materials In Microwaves And Optics)*
  Principal Investigator: **Ferran Martín**
  Funding: 4.000 Euros.
  Congress held on: 10-15 October 2011.

- Project for the *REALIZACIÓN DE ACCIONES COMPLEMENTARIAS, SUBPROGRAMA DE ACCIONES COMPLEMENTARIAS. CONVOCATORIA 2011. Modalidad A: Organización de congresos, seminarios, simposios, reuniones y jornadas de carácter científico-técnico (DIRECCIÓN GENERAL DE INVESTIGACIÓN Y GESTIÓN DEL PLAN NACIONAL DE I+D+i –MICIIN).*
  Title: *"METAMATERIALS 2011" (International Congress on Advanced Electromagnetic Materials In Microwaves And Optics)*
  Principal Investigator: **Ferran Martín**
  Funding: 8.000 Euros.
  Congress held on: 10-15 October 2011.

## 8. PATENTS

- **Title**: *Filtro distribuido de paso bajo para microondas y milimétricas que comprende una estructura de guía de ondas coplanar y cristales electromagnéticos. Procedimiento para el diseño de dicho filtro.*
  **Inventors: F. Martín**, F. Falcone Lanas and M. Sorolla Ayza.
  **Applicants:** *Universitat Autònoma de Barcelona* and *Universidad Pública de Navarra*.
  **Priority application number:** P200202503 (ES)
  **Date of application:** 31 October 2002

- **Title**: *Filtros y antenas de microndas y milimétricas basados en resonadores de anillos abiertos y en líneas de transmisión planares* (*Filters and antennas for microwaves and millimetre waves, based on open-loop resonators and planar transmission lines*).
  **Inventors: F. Martín**, J.Bonache, R. Marqués, J.D. Baena, J. Martel, F. Medina, F. Falcone, J. M. Lopetegi, M. Beruete, M. Sorolla.
  **Applicants**: Universitat Autònoma de Barcelona, Universidad Pública de Navarra and Universidad de Sevilla
  **Priority application number:** P200302282 (ES)
  **Date of application:** 25 September **2003**
  **Granted with publication number:** ES2235623
  Also filed as**:**
  **PCT application:** PCT/ES2004/000414 on 22 September 2004 (WO2005/029633**).**

- **Title**: *Líneas de retardo y multiplexores de microondas basados en transductores de ondas magnetoinductivas y/o electroinductivas en tecnología planar*.
  **Inventors:** M. J. Freire Rosales, R. Marqués Sillero, F. Medina Mena, M. A. Gómez Laso y **F. Martín**
  **Applicants:** Universidad de Sevilla, Universitat Autònoma de Barcelona and Universidad Pública de Navarra.
  **Priority application number:** P200401503 (ES)
  **Date of application:** 19 June **2004**
  **Granted with publication number:** ES2258898

- **Title**: *Filtros y superficies selectivas en frecuencia*.
  **Inventors:** M. Sorolla Ayza, M. Beruete Díaz, F. Falcone Lanas, N. Ortiz Pérez de Eulate, J. D. Baena Doello, R. Marqués Sillero, **F. Martín**, J. Bonache Albacete, I. Gil Galí.
  **Applicants:** Universidad Pública de Navarra, Universidad de Sevilla and Universitat Autònoma de Barcelona.
  **Priority application number:** P200402064 (ES)
  **Date of application:** 20 August **2004**
  **Granted with publication number:** ES2261028

- **Title**: *Filtros planares de microondas y de ondas milimétricas basados en etapas acopladas que contienen resonadores de anillos abiertos.*
  **Inventors:** J. Bonache Albacete, **F. Martín,** I. Gil Galí, J.J. García García, R. Marqués Sillero, J. Martel Villagrán, J. M. Freire Rosales, J. D. Baena Doello, F. Falcone Lanas, J. M. Lopetegi Beregaña, M. Á. Gómez Laso and J. A. Marcotegui Iturmendi.
  **Applicants:** Universitat Autònoma de Barcelona, Universidad Pública de Navarra and Universidad de Sevilla.
  **Priority application number:** P200403096 (ES)
  **Date of application:** 28 December **2004**
  **Granted with publication number:** ES2272145
  Also filed as:
  **PCT application:** PCT/ES2005/000706 on 23 December 2005 (WO2006/070036).

- **Title**: *Filtros planares de microondas y de ondas milimétricas con ancho de banda controlable basados en resonadores concentrados.*
  **Inventors:** J. Bonache Albacete, I. Gil Galí, J.J. García García and **F. Martín**
  **Applicants:** Universitat Autònoma de Barcelona.
  **Priority application number:** P200403095 (ES)
  **Date of application:** 28 December **2004**
  **Granted with publication number:** ES2272144
  Also filed as:
  **PCT application**: PCT/ES2005/000705 on 23 December 2005 (WO2006/070035).

- **Title**: *Líneas de transmisión artificiales zurda*.
  **Inventors: F. Martín**, J. Bonache Albacete, M. Gil Barba, I. Gil Galí, J.J. García García.
  **Applicants:** Universitat Autònoma de Barcelona.
  **Number of application:** P200601386
  **Date of application:** 26 May **2006**
  Also filed as:
  **PCT application:** PCT/ES2007/000307 on 25 May 2007 (WO2007/138133)

- **Title**: *Band pass filter, electronic device including said band pass filterand method of producing a band pass filter.*
  **Inventors**: J. Bonache Albacete**,** J.J. García García, M. Gil Barba, **F. Martín**, I. Cairó Molins and I. Gil Galí,.
  **Applicant:** SEIKO EPSON CORPORATION
  **Priority application number:** 06113833.5 (EPO)
  **Date of application:**11 May **2006**
  **Publication number:** EP1855348
  Also filed in:
  **USA** 2007/0262834 on 08/05/2007 with publication number US2007262834
  **JP** 2007/123078 on 08/05/2007 with publication number JP2007306563
  **CN** 20070510 on 14/11/2007 with publication number CN101072017

- **Títle:** *Dispositivo divisor de potencia con capacidad filtrante*
  **Inventors:** A.Vélez, P. Vélez, J. Bonache, **F. Martín**
  **Applicant**: Universitat Autònoma de Barcelona.
  **Priority application number**: 201031563(4)
  **Date of application:** 26th October 2010.

- **Title:** *Líneas de transmisión diferenciales con supresión de modo común*
  **Inventors:** F. Martín, F. Mesa, A.Fernández-Prieto, F. Medina, J. Naqui, M. Durán-Sindreu.
  **Applicant:** Universitat Autònoma de Barcelona.
  **Priority application number:** :P201100616
  **Date of application** 1st June 2011
  **PCT published wit number** WO2012164117 on 6/12/2012.

- **Title:** *An optical disc with a wireless communication device, a wireless communication device and a method for its design and fabrication*
  **Inventors:** F. Martin, G. Zamora, S. Zuffanelli, J. Bonache, F. Paredes
  **Applicant**: Universitat Autònoma de Barcelona.
  **Priority application number:**
  EP13382232.0 (EPO: european patent office)
  1310982.2 (UK-PO: United Kingdom patent office)
  P201330926 (OEPM :Oficina española de patentes y marcas)

**Priority country**: EP (European)
**Priority date**: 20/06/2013

- **Title:** *Method for manufacturing a communication device to operate in near field and communication device thereof*
  **Inventors:** J. Bonache, F. Paredes, G. Zamora, S. Zuffanelli, F. Martín
  **Applicant**: Universitat Autònoma de Barcelona.
  **Priority application umber:**
  EP13382287.4 (EPO: European patent office)
  1312367.4 (UK-PO: United Kingdom patent office)
  P201331049 (OEPM :Oficina española de patentes y marcas)
  **Priority country**: EP (Europea)
  **Priority date**: 10/07/2013

- **Title:** *A contactless displacement and velocity measurement system*
  **Inventors:** F. Martín, J. Naqui
  **Applicant:** Universitat Autònoma de Barcelona
  **Priority application number**:
  EP15178984.9 (EPO: European patent office)
  1513381.2 (UK-PO: United Kingdom patent office)
  **Priority country:** EP (Europea)
  **Priority date:** 30/07/2015

- **Title:** A chipless RFID tag, a chipless RFID system, and a method for encoding data on a chipless RFID tag
  **Inventors:** C. Herrojo, J. Mata-Cintreras, F. Paredes, F. Martín
  **Applicant:** Universitat Autònoma de Barcelona
  **Priority application number**:
  EP17382326.1 (EPO: European patent office)
  1708720.6 (UK-PO: United Kingdom patent office)
  **Priority country**: EP (Europea)
  **Priority date**: 01/07/2017
  **PCT** extended with number **PCT/EP2018/064332**

## 9. ORGANIZATION AND MANAGEMENT OF R+D+i ACTIVITIES

### 9.1. ORGANIZATION OF INTERNATIONAL CONFERENCES (chronologically)

- *14th Wokshop on Modelling and Simulation of Electron Devices* (MSED'03)
  Date and place: Barcelona, 16-17 October 2003.
  **Chair** of the **Organizing** and **Technical Program Committee**.

- *1st International Seminar/Worshop on Metamaterial and Circuit Design based on Split Rings Resonators*.
  Date and place: Barcelona, 22 April 2005.
  **Chair** of the **Organizing** and **Technical Program Committee**.

- *Metamaterials Week 2008*, comprising the *9th Edition of the Distributed European School on Metamaterials* and the *2nd Young Scientist Meeting on Metamaterials* (YSMM'08), Barcelona (Spain), 5-8 February 2008.
  **General Chair**.

- **Metamaterials 2011**, *International Congress on Advanced Electromagnetic Materials In Microwaves And Optics*, comprising the *19th Edition of the Distributed European School on Metamaterials*.
  **Chair** of the **Organizing Committee** and Member of the Technical Program Committee.
  The **most relevant international conference** on the topic of **Metamaterials**. **More than 400 participants**

- **2018 European Microwave Week**
  Member of the Organizing Committee and **Technical Programme Committee (TPC)**
  **Chair** of the 48th European Microwave Conference (EuMC)
  The **most relevant conference on microwave technologies in Europe**, including an Exhibition.

### 9.2. ORGANIZATION OF TUTORIALS/WORKSHOPS IN INTERNATIONAL CONFERENCES

- Workshop title: *Physics, theory, fabrication and applications of microwave metamaterials*.
  Conference: **IEEE-MTT International Microwave Symposium (IMS).**
  Date and place: Long Beach , California (USA), 17 June 2005.
  Organizers: **F. Martín** (Universitat Autònoma de Barcelona) and C. Caloz (Politechnique University of Montreal).

- Workshop title: *Recent advances in electromagnetic metamaterials: theory, computation and applications*.
  Conference: **IEEE-MTT International Microwave Symposium (IMS).**
  Date and place: Honolulu , Hawai (USA), June 2007.
  Organizers: **F. Martín** (Universitat Autònoma de Barcelona) and C. Caloz (Politechnique University of Montreal)

- Tutorial title: *Metamaterial-based technologies and their application to the design of RF/microwave circuits*
  Conference: **2007 European Conference on Circuit Theory and Design (ECCTD 2007)**
  Date and place: Sevilla, Spain, 30 August 2007
  Organizers: **F. Martín** and J. Bonache (Universitat Autònoma de Barcelona)

- Workshop title: *Recent Advances on Microwave Applications of Metamaterial Concepts*
  Conference **39th European Microwave Conference**
  Date and place: Rome, octubre de 2009.
  Organizers: **F. Martín** and L. Vegni

- Workshop title: *Using symmetry-related electromagnetic properties for microwave device design: application to half-mode circuits, balanced lines and circuits, and microwave sensors.*
  Conference: **45th European Microwave Conference**.
  Date and place: Paris, September 2015.
  Organizers: **F. Martín** and F. Medina

- Workshop title: Chipless RFID Systems, Technology and Applications
  Conference: **47th European Microwave Conference**, Nuremberg, Germany, October 2017.
  Date and place: Nuremberg, Germany, October 2017.
  Organizers: **Ferran Martín**, Nemai Karmakar and Smail Tedjini

- **Conference:** 48th European Microwave Conference, Madrid (Spain), September 2018**.**
  **Workshop title:** Metamaterials, metasurfaces and applications (organized by **Ferran Martín**, and Francisco Medina)
  Date and place: Madrid, Spain, September 2018.

### 9.3. ORGANIZATION OF TUTORIALS IN NATIONAL CONFERENCES

- Tutorial title: Aplicaciones de los Metamateriales en circuitos/antenas/subsistemas de microondas, milimétricas y fotónicos
  Conference: Spanish URSI 2007.
  Date and place: Universidad de la Laguna (Tenerife), Spain, 18 September 2007.
  Organizer: **F. Martín**

### 9.4. ORGANIZATION OF SPECIAL/FOCUSED SESSIONS IN INTERNATIONAL CONFERENCES

- Session: *Metamorphose*: *engineering applications of metamaterials*
  Conference: **European Microwave Conference (EuMC)**
  Date and place: Manchester (United kingdom), 14 September 2006.
  Organizers: **F. Martín** (Universitat Autònoma de Barcelona) and Y. Vardaxoglou (Loughborough University, UK).

- Session: *Research Activities in the field of Microwave Metamaterials carried out by the Network of Excellence METAMORPHOSE and the Virtual Institute for Artificial Electromagnetic Materials and Metamaterials (METAMORPHOSE VI AISBL)*
  Conference: **European Microwave Conference (EuMC)**
  Date and place: Amsterdam (Holland), 27-31 October 2008.
  Organizer: **F. Martín** (Universitat Autònoma de Barcelona)

- Session: *Recent advances in metamaterial transmission lines and applications*
  Conference: NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies
  Date and place: Marrakesh (Morocco), 8 May 2008.
  Organizer: **F. Martín** (Universitat Autònoma de Barcelona)

- Session: *Planar Metamaterials I*
  Conference: Metamaterials Congress 2008
  Date and place: Pamplona (Spain), 23-26 September 2008.
  Organizer: **F. Martín** (Universitat Autònoma de Barcelona)

- Session: *Planar Metamaterials II*
  Conference: Metamaterials Congress 2008
  Date and place: Pamplona (Spain), 23-26 September 2008.
  Organizer: **F. Martín** (Universitat Autònoma de Barcelona)

- Session: *Research project CSD2008-00066 EMET Consolider Ingenio 2010*
  Conference: Meta '12, 3rd International Conference on Metamaterials, Photonic Crystals and Plasmonics
  Date and place: Paris (France), 19-22 April 2012.
  Organizer: **F. Martín** (Universitat Autònoma de Barcelona)

- Session: *Commercialization of metamaterials* (special focused session)
  Conference: Metamaterials Congress 2016
  Date and place: Creta , 17-22 de septiembre de 2016.
  Organizers: George Eleftheriades; **Ferran Martin**; Tie Jun Cui

- Session: *Chipless-RFID*
  Conference: Asia Pacífic Microwave Conference, 2019
  Date and place: Singapore, 10-13 December 2019
  Organizers: Nemai Karmakar and **Ferran Martín**

- Session: Microwave sensors and nano-materials microwave/mm-wave sensing applications
  Conference: IEEE-MTT-S International Microwave Symposium, 2023
  Date and place: San Diego, CA, USA, June 2023
  Organizers: Mohammad Zarifi and **Ferran Martín**

## 9.5. PARTICIPATION IN SCIENTIFIC AND TECHNICAL COMMITTEES, EDITORIAL BOARDS OR MEMBERSHIP

- **Associated Editor** of the Journal ***IEEE Transactions on Microwave Theory and Techniques*** since October 2022.
- **Series Editor** of *Lecture Notes in Electrical Engineering*, Springer, since October 2018.
- **Associated Editor** of the Journal ***IET Microwaves, Antennas and Propagation*** since 2007.
- Member of the **Editorial Board** of the *International Journal on RF and Microwave Computer-Aided Engineering* from 2011 up to 2018.
- **Associated Editor** of the journal ***Sensors***, since 2017
- Member of the ***Advisory Board*** of the Journal *Metamaterials* (Elsevier) since 2007.
- **Invited Editor** of the Journal *Proceedings of the European Microwave Association* for the **Special Issue** *Microwave metamaterials: theory, design and applications*. Published in March 2006.
- **Invited Editor** of the Journal *Microwave and Optical Technology Letters* for the **Special issue** on selected papers of the *Third Workshop on Metamaterials and Special Materials for Electromagnetic and Telecommunications Applications*. Publication in December 2006.

- **Invited Editor** of the journal *IET Microwaves Antennas and Propagation* for the special issue *Microwave metamaterials: application to devices, circuits and antennas*. Published October 2010.

- **Invited Editor** of the journal *Sensors* for the special issue *Advanced technologies and techniques for microwave and wireless sensors*, July 2016.

- **Invited Editor** of the journal *EPJ Applied Metamaterials* for the special issue of the Metamaterials Congress 2017.

- **Invited Editor** of the journal *Sensors* for the special issue *Microwave Resonant Sensors*, published in 2020.

- **Invited Editor** of the journal *Sensors* for the special issue *Metamaterial Based Microwave Sensors*, to be published in 2021.

- **Invited Editor** of the journal *Sensors* for the special issue *State-of-the-Art in Microwave Sensors*, to be published in 2021.

- **Invited Editor** of the journal *Sensors* for the special issue *Chipless RFID Sensors and Their Applications in Microwave Sensors*, to be published in 2022.

- **Chair of the Organizing Committee** of Metamaterials 2011, *International Congress on Advanced Electromagnetic Materials In Microwaves And Optics*.
- **Co-chair** of the *Technical Program Committee* (TPC) of the Second *International Congress on Advanced Electromagnetic Materials in Microwaves and Optics* (*Metamaterials'08*).
- GEMMA-CIMITEC (headed by F. Martín) and the Universitat Autònoma de Barcelona are **Full Members** of the **Virtual Institute for Artificial Electromagnetic Materials and Metamaterials METAMORPHOSE VI AISB, created in 2007.**
- Member of the *Technical Program Committee* (TPC) of the *International Congress on Advanced Electromagnetic Materials in Microwaves and Optics* since 2007.
- Member of the *Technical Program Committee* (TPC) of the *European Microwave Conference* (since 2014). **TPC Chair** for the 2018 Edition, held in Madrid.
- Member of the *Technical Program Committee* (TPC) of the *NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies*, Morocco, May 2008.
- Member of the *Technical Program Committee* of the *NATO Advanced Research Workshop: Metamaterials for Secure Information and Communication Technologies*, Cairo (Egypt), 2010.
- Member of the *Technical Program Committee* (TPC) of the *Conference on Design of Circuits and Integrated Systems (DCIS'08)*, Grenoble, France, 12-14 November 2008.
- Member of the *International Advisory board* of the special session *Electromagnetic Metamaterials*, within the *12th International Ceramics Congress* and *5th Forum on New Materials*, 6-18 June 2010.
- Member of the **Scientific Committee of the Spanish Network on Metamaterials** (REME) since 2004.
- Chair of many Technical Sessions, Workshops or Tutorials in several Conferences including the top Conferences in Microwave Engineering (*IEEE International Microwave Symposim* – IMS, and *European Microwave Conference* -EuMC) and Metamaterials

(*International Congress on Advanced Electromagnetic Materials in Microwaves and Optics*).

- **Fellow of the** *Institute of Electrical and Electronic Engineering* ***IEEE*** (since January 2012), **Senior Member** of the **IEEE** (since July 2008) and Member of the *Microwave Theory and Techniques Society IEEE-MTT-S.*
- **Fellow of the IET,** *Institution of Engineering and Technology* (since February 2016)
- Member of the **European Microwave Association** (EuMA)
- Member of the Scientific Committee or advisory board of:
    - *Distributed European PhD School on Metamaterials*
    - *14th* and *15th Workshop on Modelling and Simulation of electron Devices*
    - *1st Int. Seminar on Metamaterials and Microwave Circuit Design based on Split Rings Resonators*
    - *International Student Seminar on Microwave Applications of Novel Physical Phenomena*, St. Petersburg Electrotechnical University "LETI", St. Petersburg, Russia, October 17 – 19, 2005.

## 9.6. MANAGEMENT ACTIVITIES

- **Founder and Head** of the Microwave and Millimeter Wave Engineering Group (GEMMA) (Departament d'Enginyeria Electrònica - UAB), acknowleged as **CONSOLIDATED** GROUP by the Catalan Government. **17 members (June 2016).**
- **Founder and Director** of CIMITEC (Research Center on Metamaterials for Innovation in Electronics and Communication Technologies). Center of the Network of Centres of Support to Technology Innovation (IT Network) of TECNIO ACC1Ó (Catalan Government). This Center is ascribed to the Departament d'Enginyeria Electrònica at UAB and was launched in January 2006). **14 members in September 2016.**
- **Director** of the Departament d'Enginyeria Electrònica at the Universitat Autònoma de Barcelona (May 2015 – April 2021).
- Elected as **Coordinator of the Spanish Network on Metamaterials (REME)** by the General Assembly held in Gandia (Spain) on 14 September 2005. Holding this position up to March 2008.

## 9.7. EVALUATION OF RESEARCH AND DEVELOPMENT ACTIVITIES

- Reviewer of **STRATEGIC PROJECTS** for the ***Natural Sciences and Engineering Research Council*** **(NSERC) of Canadà**.
- Reviewer of the **KILLAM RESEARCH FELLOWSHIP PROGRAM** of the ***Canada Council for the Arts*** (The Killam Prizes are awarded annually to distinguished Canadian scholars in the fields of health sciences, natural sciences, engineering, social sciences and humanities. Normally, one prize of $100,000 is awarded each year in each of the five fields).
- Reviewer of **DISCOVERY GRANTS** for the *Natural Sciences and Engineering Research Council* (NSERC) of Canadá.
- Reviewer since 2004 of the *Agencia de Gestión de Ayudas Universitarias y de Investigación (AGAUR)* of the *Departamento de Universidades, Investigación y Sociedad de la Información (DURSI), Generalitat de Catalunya*.

- Reviewer of National R+D Projects.

- Member of the Committee for the evaluation of National R+D projects.

- Member of the Comission of the *Acción Estratégica de Telecomunicaciones y Sociedad de la Información*, for the realization of a report corresponding to the analysis of the results of the R+D+I actuations for 2008, first year of the *Plan Nacional 2008-2011* (SISE 2009 report). This report consists on an evaluation of the results of the *Plan Nacional de I+D+I 2008-2011* calls, in the framework of the Integral System of Evaluation (SISE) of the FECYT.

- Member of the Expert Panel of the AEI (National Research Agency, Spain) for the evaluation of projects of the National Research Plan (Area ICT, subarea Telecommunications Technology), Call 2020.

- Member of the Expert Panel of the AEI (National Research Agency, Spain) for the evaluation of projects of the *Transicion Ecológica y Digital* (Area ICT, subarea Telecommunications Technology), Call 2021.

- Member of the Expert Panel of the AEI (National Research Agency, Spain) for the evaluation of projects of the *Prueba de Concepto* (Area ICT, subarea Telecommunications Technology), Call 2023.

- Reviewer of Scientific/technical journals (Journal of Applied Physics, IEEE Electron Device Letters, Applied Physics Letters, Journal of the Electrochemical Society, IEEE Trans. Antennas and Propagation, IEEE Microwave Wireless Components Letters, IEEE Trans. Microwave Theory Techniques, IET Electronics Letters, IET Microwaves Antennas and Propagation, Proceedings of the European Microwave Association, J. Optics A, New Journal of Physics, J. Electromagnetic Waves and Applications, Sensors, IEEE Sensors Journal, Sensors and Actuators A, etc.). **REVIEWING BETWEEN 20 AND 30 JOURNAL PAPERS PER YEAR.**

### 9.8. ACTIVITIES RELATED TO THE VI FRAMEWORK PROGRAM OF THE EUROPEAN UNION

- Consultant for the *Conferencia de Rectores de Universidades Españolas* (CRUE) for the participation of Spain in the VI Framework Program.

### 9.9. SCIENTIFIC/TECHNICAL COLLABORATIONS

- Prof. Daniel Pardo (Universidad de Salamanca). In the field of Monte Carlo Simulation of Electron Devices.

- Dr. Miquel Garriga (Instituto de Ciencia de Materiales de Barcelona – ICMAB-CSIC). Characterization of Si nanostructures on $SiO_2$ through spectroscopic ellipsometry.

- Prof. Robert E. Miles (University of Leeds- Institute of Microwaves and Photonics). In the field of vacuum devices and their application to hyperfrequency generation.

- Prof. Didier Lippens (Institute d'Electronique et de Microelectronique du Nord – IEMN-CNRS). In the field of nonlinear transmission lines.

- Prof. Mario Sorolla (Universidad Pública de Navarra) and Dr. Ricardo Marqués (Universidad de Sevilla). In the field of electromagnetic crystals and metamaterials and their application to microwave and millimeter wave circuits.

- Dr. Ikeda, Dr. Banda, I. Cairo (SEIKO EPSON CORPORATION and EPSON EUROPE ELECTRONICS GmbH). Filters for UWB applications.

- Dr. Walter de Raedt (IMEC, Belgium). Metamaterial-based filters in MCM-D and RF-MEMS technologies.

- Dr. Joan Pons (Aida Centre s.l., Barcelona), in the field of RFID.

- Dr. Branka Jokanovic (IMTEL Institute, Beograd - Serbia) and Vesna Crnojevic-Bengin (University of Novi-Sad – Serbia). Application of metamaterials to broadband wireless communications.

- Prof. I.V. Vendik (S. Petersburg Electrotechnical University, Russia). Miniaturization of microwave components.

- Prof. Rolf Jakoby (Technical University Darmstadt, Germany), Tunable metamaterials based on ferroelectrics.

- Javier Martínez Esparza (Sarriopapel y Celulosa S.A, Spain), in the field of printed electronics on paper substrates.

- Prof. Vicente Boria (Universidad Politécnica de Valencia, Spain), in the field of optimization through Space Mapping.

- Prof. Francsico Medina (Universidad de Sevilla, Spain). Metamaterials and balanced circuits and filters.

- Prof. Pierre Blondy (University of Limoges, France), tunable metamaterials based on advanced technologies (RF-MEMS, $VO_2$).

- Prof. D. Segovia-Vargas (U. Carlos III), magnetoinductive wave delay lines**.**

- Prof. A. Abdipour (Amirkabir University of Technology, Iran), analysis of artificial lines in time domain (FDTD).

- Prof. Tatsuo Itoh (University of California Los Angeles –UCLA, USA), SIW technology.

- Prof. Jia-Sheng Hong, (Heriot-Watt University, United Kingdom), differential filters (only a single joint paper).

- Prof. Christophe Fumeaux (University of Adelaide, Australia), Microwave filters and sensors.

- Prof. Zhuo Li, Nanjing University of Aeronautics and Astronautics, metasurfaces.

- Prof. Katia Grenier and Prof. David Dubuc, LAAS, Toulousse, France, microfluidic sensors.

- Prof. Kamran Ghorbani and Dr. Amir Ebrahimi, RMIT University, Australia, slow-wave structures and applications.

- Several collaborations with members of the NoE METAMORPHOSE (Network of Excellence of the VI FP of the European Union).

- Several collaborations with members of the EMET CSD2008-00066 CONSOLIDER Ingenio 2010 Project.

## 10. SEMINARS, COURSES, TALKS AND LECTURES

- **Author: F Martín**
  **Title**: *Aplicaciones lineales y no lineales de las líneas de transmisión no lineales*.
  **Place**: Universidad Publica de Navarra (Departamento de Ingeniería Eléctrica y Electrónica). Pamplona (Navarra).
  **Date**: 31 January 2002.
  **Seminar**

- **Author: F. Martín**
  **Title**: *Photonic bandgap transmission lines periodically loaded with reactive elements*.
  **Place**: Institute d'Electronique et de Microelectronique du Nord (IEMN-CNRS). Lille (Francia).
  **Date**: 23 May 2002.
  **Invited seminar.**

- **Author: F. Martín**
  **Title**: *Planar left-handed materials based on split ring resonators*
  **Place**: Institute d'Electronique et de Microelectronique du Nord (IEMN-CNRS). Lille (Francia).
  **Date**: 7 October 2003.
  **Invited seminar.**

- **Author: F. Martín**
  **Title**: *Applications of metamaterials in planar circuit technology.*
  **Place**: European Space Agency ESA-ESTEC. Nordwijk (Holanda).
  **Date**: 8 October 2003.
  **Seminar**

- **Author: F. Martín**
  **Title**:*Materiales zurdos: concepción y aplicaciones.*
  **Place**: Facultad de Ciencias (Universitat Autònoma de Barcelona). Organizado por el Departamento de Física.
  **Date**: 23 March 2004.
  **Invited seminar.**

- **Author: F. Martín**
  **Title**: *Metamateriales en tecnología planar: teoría, diseño y aplicaciones.*
  **Place**: Centro Tecnológico de Telecomunicaciones de Catalunya (CTTC).
  **Date**: 15 July 2004.
  **Invited seminar.**

- **Author: F. Martín**
  **Title**: *Design of microwave and RF circuits based on the concept of metamaterial.*
  **Place**:EPSON Europe Electronics GmbH.
  **Date**: 22 July 2004.
  **Seminar.**

- **Authors**: R. Marqués, **F. Martín**, M. Sorolla and F. Medina
  **Title**: *Planar metamaterial design based on split ring resonators: theory and applications*
  **Place and date:** Amsterdam, 11 october 2004, within the Course/Tutorial **Left handed metamaterials, circuits and their technical applications (European Microwave Conference - EuMC).**
  **Tutorial Course (invited)**

- **Authors: F. Martín**, R. Marqués, M. Sorolla .
  **Title:** *Application of metamaterial concepts to the design of compact microwave filters*
  **Place and date:** Long Beach, CA (USA), June 2005, within the Workshop **Physics, theory, fabrication and applications of microwave metamaterials (IEEE-MTT International Microwave Symposium)**
  **Workshop (invited).**

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- **Authors: F. Martín** and M. Sorolla
  **Title**: *Microwave circuits and metasurface design based on SRRs and related topologies*
  **Place**: Barcelona (Casa Convalescencia), within the **International Seminar on Metamaterials and Circuit Design based on Split Rings Resonators**.
  **Date**: 22 April 2005.
  **Tutorial/seminar.**

- **Author: F. Martín**
  **Title:** *Application of metamaterials to microwave circuit design*
  **Place:** IMEC (Belgium)
  **Date:** 15 March 2005
  **Seminar**

- **Author: F. Martín**
  **Title:** *RF and microwave circuit design, optimization and miniaturization by using metamaterial-based structures*
  **Place:** MIER Comunicaciones (La Garriga – Barcelona)
  **Date**: 29 June 2005
  **Seminar**

- **Authors:** R. Marqués, **F. Martín**, M. Sorolla.
  **Title**: *SRR-based 1-D, 2-D and bult metamaterials*
  **Place:** Gandía (Spain), 13 September 2005, within the *XX Simposium Nacional de la Unión Científica Internacional de Radio* URSI 2005.
  **Invited talk**

- **Authors:** J. García, J. Bonache, I Gil, **F. Martín**
  **Title:** Metamateriales: innovación y transferencia de tecnología en el sector de las comunicaciones
  **Place and Date:** Parque Tecnológico del Vallés (Barcelona), 19 October 2005, within the Sessions *Soluciones Tecnológicas al Alcance de las PYMES: El Sector Electrónico*.

- **Author: F. Martín**
  **Title:** *Applications of Metamaterials in RF and microwave circuit design*
  **Place:** 28-30 0ctober Thales Campus, Jouy-en-Josas, France within the **Metamaterials for Industry (Short Course for Industries and SME),**
  **Invited talk.**

- **Author: F. Martín**
  **Title:** *Metamaterials: an innovative concept for microwave circuit design*
  **Place and date:** Institute of Microwave and Photonics (University of Leeds, UK), 15 March 2006.
  **Invited talk as *IEEE Lecture***

- **Author: F. Martín**
  **Title:** *Metamaterials and related structures for wireless communications*

**Place:** IMTEL Institute, Beograd (Serbia and Montenegro)
**Date**: May 2006
**Invited talk by the *Yugoslav IEEE MTT Chapter***

- **Author: F. Martín**
  **Title**: Presentación de CIMITEC
  **Place**: IESE (Barcelona)
  **Date**: 16 October 2006.
  Within the *Encuentro de Empresas de los Sectores Electrónica y TIC*, organized by CIDEM, Generalitat de Catalunya.

- **Authors: F. Martín**, J. Bonache
  **Title:** *Recent advances in resonant type metamaterial transmission lines*
  **Place and date:** Honolulu, Hawai (USA), junio 2007, wihtin the Workshop **Recent Advances in Electromagnetic Metamaterials: Theory, Computation and Applications (IEEE-MTT International Microwave Symposium)**
  **Workshop (invited)**

- **Author: F. Martín**.
  **Title:** *Tunable and compact microwave filters and resonators based on metamaterials*.
  **Place and date:** Honolulu, Hawai, junio 2007, within the Workshop **MINIATURE, ELECTRONICALLY TUNED FILTER TECHNOLOGY (IEEE-MTT International Microwave Symposium)**
  **Workshop (invited).**

- **Authors:** J. Bonache and **F. Martín**
  **Title**: Diseño de circuitos pasivos de microondas mediante metamateriales.
  **Place**: Universidad de la Laguna (Tenerife), within the *XXII Simposium Nacional de la Unión Científica Internacional de Radio* (URSI 2007)
  **Date**: 18 September 2007
  **Tutorial (invited).**

- **Authors:** J. Bonache and **F. Martín**
  **Title**: Metamaterial-based Technologies and their Application to the Design of RF/microwave Circuits
  **Place**: Sevilla, wihtin the European Conference on Circuit Theory and Design 2007 (ECCTD 2007)
  **Date**: 30 August 2007.
  **Tutorial (invited)**

- **Authors: F**. **Martín**, J. Bonache, G. Posada, G. Carchon and W. De Raedt
  **Title:** Metamaterials: an emerging technology for RF/microwave/millimeter wave components and microsystems.
  **Place:** IMEC – Leuven (Belgium), within the *Workshop on MEMS* of the European STIMESI project
  **Date**: 28 November 2007.
  **Workshop (Invited)**

- **Authors: F. Martín,** R. Marqués, M. Freire
  **Title:** *Metamateriales; hacer visible lo invisible e invisible lo visible*
  **Place:** FAD (*Fomento para las Artes y el Diseño*), Barcelona, during the inauguration of the *Mater Centro de Materiales*.
  **Date**: 27 Novemeber 2008.
  **Invited talk**

- **Authors**: **Ferran Martín** and Jordi Bonache
  **Title**: *Recent advances on resonant type metamaterial transmission lines and applications*
  **Place**: Rome, October 2009**.** within the Workshop *Recent Advances on Microwave Applications of Metamaterial Concepts* (organized by **F. Martín** and L. Vegni), **39th European Microwave Conference**.
  **Workshop**

- **Authors**: **Ferran Martín** and Jordi Bonache
  **Title**: *Different strategies for the implementation of tunable metamaterial transmission lines and applications*
  **Place**: Rome, October 2009**.** within Workshop *Tunable RF-Components and Modules for Wireless Communications: Materials and Packaging* (organized by H. Maune, R. Sorrentino, R. Jakoby and R. Weigel), **39th European Microwave Conference**.
  **Workshop, invited.**

- **Author: F. Martín**
  **Title:** *Recent progress on metamaterial research at CIMITEC-UAB*
  **Place:** Universidad Católica de Lovaina – UCL (Bélgica).
  Date: 18 November 2009.
  **Invited talk**

- **Author: F. Martín**
  **Title:** *¿Serà posible algún día la invisibilidad?*
  **Place:** Parc de la Ciutadella (Barcelona)
  **Date:** 13 June 2010 (durintg the *Fiesta de la Ciencia 2010*)
  **Invited talk (divulgative)**

- **Authors: F. Martin**, R. Marqués
  **Title:** *Metamateriales: una nueva tecnología para el siglo XXI*
  **Place:** Residencia de Investigadores del CSIC, Barcelona.
  **Date**: 14 October 2010.
  **Invited talk**

- **Authors:** Miguel Durán-Sindreu, Jordi Bonache, Paris Vélez, **Ferran Martín**
  **Title:** *Recent advances on the applications of artificial transmission lines based on split rings*
  **Place:** Valencia, Spain, within the *4rth Young Scientist Meeting on Metamaterials* (YSMM 2011).
  **Date:** February 2011
  **Workshop, invited**

- **Authors**: Miguel Durán-Sindreu, Jordi Bonache, **Ferran Martín**.
  **Title**: *Compact planar filters based on semilumped resonators*
  **Place**: Ansteedam, October 2012**.** Within the Workshop *Design of miniaturized filters and multiplexers: technical and technological solutions* (organized by S. Bila and J.S. Hong), **42nd European Microwave Conference**.
  **Workshop, invited.**

- **Authors**: **Ferran Martín**, Jordi Naqui, Paris Vélez, Miguel Durán-Sindreu and Jordi Bonache.

**Title:** *Split ring resonator (SRR) and stepped impedance resonator (SIR) based metamaterial transmsision lines: application to microwave components and novel sensing strategies*
**Place**: Austin (TX), January 2013, within the Workshop *Metamaterials in communications and sensing: reality or fiction?* (organized by M. Schuessler and C. Damm), IEEE Radio Wireless Week
**Workshop, invited.**

- **Authors: Ferran Martín**, Jordi Bonache, Miguel Durán-Sindreu, and Paris Vélez
  **Title:** *Tunable and Multi-Function Microwave Filters Based on Metamaterial Concepts*
  **Place:** Seattle, WA (USA), June 2013, within Workshop *Recent Advances on RF/Microwave Multi-Function Filtering Devices* (organized by R. Gómez-García and X. Gong), **IEEE MTT-S International Microwave Symposium**.
  **Workshop, invited.**

- **Authors:** Jordi Naqui, Miguel Durán-Sindreu, **Ferran Martín**
  **Title:** *On the Symmetry Properties of Transmission Lines Loaded with Metamaterial Resonators: Theory and Applications*
  **Place:** Nuremberg, October 2013, within the Workshop *Microwave Metamaterial Concepts, Circuits and Applications* (organized by Dmitry Kholodnyak, and Matthias Hein), **43rd European Microwave Conference**.
  **Workshop, invited**

- **Author: Ferran Martín**
  **Title:** *Microwave Components and Sensors Based on Resonant Type Metamaterial Transmission Lines*
  **Place:** Nuremberg, October 2013, within the Workshop *Metamaterials in Communications and Sensing: Reality or Fiction?* (organized by C. Damm, and M. Schuessler), **43rd European Microwave Conference**.
  **Workshop, invited**

- **Authors:** Jordi Naqui, Jordi Bonache, **Ferran Martín**
  **Title:** Equivalent circuit models for metamaterial-inspired planar circuits based on split rings and related resonators
  **Place:** Tampa Bay, Florida (USA), June 2014, within the Workshop *Revisiting equivalent circuit models for emerging technologies: from microwaves to THz* (organized by F. Mesa and J. Machac), **IEEE International Microwave Symposium**.
  **Workshop, invited.**

- **Authors:** V. E. Boria, J. V. Morro, A. Rodríguez, J. Selga, **F. Martín**
  **Título:** Robust Optimization of Passive Microwave Components and Artificial Transmission Lines using Space Mapping Techniques
  **Place:** Tampa Bay, Florida (USA), June 2014, within the Workshop *Recent Advances in Space Mapping Modeling and Optimization* (organized by Qingsha S. Cheng and John W. Bandler), **IEEE International Microwave Symposium**.
  **Workshop, invited.**

- **Authors:** Paris Vélez, Jordi Bonache, **Ferran Martín**
  **Title:** Differential-mode metamaterial transmission lines and applications
  **Place:** Paris, September 2015, within the workshop *Using symmetry-related electromagnetic properties for microwave device design: application to half-mode circuits, balanced lines and circuits, and microwave sensors* (organized by Ferran Martín, and Francisco Medina), **45th European Microwave Conference**.
  **Workshop, invited.**

- **Authors:** Jordi Naqui, Ali Karami-Horestani, Christophe Fumeaux and **Ferran Martín**
  **Title:** Microwave sensors based on symmetry properties of resonator-loaded lines
  **Place:** Paris, September 2015, within the workshop *Using symmetry-related electromagnetic properties for microwave device design: application to half-mode circuits, balanced lines and circuits, and microwave sensors* (organized by Ferran Martín, and Francisco Medina), **45th European Microwave Conference**.
  **Workshop, invited.**

- **Authors: F. Martín**, Jordi Bonache, Javier Mata-Contreras
  **Title:** Multiband, tunable and multifunctional microwave components based on metamaterial concepts
  **Place:** Honolulu (Hawaii, USA), junio de 2017, dentro workshop Advanced Microwave Technologies for Internet of Space Applications (organized by Holger Maune and Roberet Weigel), **IEEE International Microwave Symposim (IMS 2017)**.
  **Workshop, invited.**

- **Author: F. Martín**
  **Title:** Microwave Sensors based on Symmetry Properties and Metamaterials
  **Place:** Toulousse (LAAS), 26 de enero de 2017.
  **Invited talk**

- **Authors**: Cristian Herrojo, Javier Mata-Contreras, Ferran Paredes and **Ferran Martín**
  **Title:** Chipless RFID systems with high data capacity for security and authentication applications
  **Place:** 47th European Microwave Conference, Nuremberg (Germany), October 2017**,** within the workshop Chipless RFID Systems, Technology and Applications (organized by **Ferran Martín**, Nemai Karmakar and Smail Tedjini).
  **Workshop, invited**.

- **Authors**: **Ferran Martín**
  **Title**: RF/Microwave Circuits, Sensors and RFID Systems Based on Metamaterial Concepts
  **Place:** 47th European Microwave Conference, Nuremberg (Germany), October 2017, within the workshop Advanced RF and Microwave Circuit Technologies (organized by Dmitry Kholodnyak and Matthias Hein).
  **Workshop, invited**.

- **Authors: Ferran Martín**, Paris Vélez, Cristian Herrojo
  **Title:** Novel sensors and chipless-RFID systems based on metamaterials and symmetry properties
  **Place**: 48th European Microwave Conference, Madrid, Spain, Septiembre de 2018, within the workshop *Metamaterials, Metasurfaces and Applications* (organizado por Ferran Martín y Francisco Medina).
  **Workshop, invited.**

- **Authors: Ferran Martín**, Cristian Herrojo, Eloi Ramón
  **Title:** Near-field chipless-RFID systems with very high data capacity for secure paper applications
  **place**: 48th European Microwave Conference, Madrid, Spain, Septiembre de 2018, within the workshop *Backscatter Communications the Next Paradigm for IoT Approaches* (organizado por Nuno Borges-Carvalho y Smail Tedjini).
  **Workshop, invited.**

- **Authors: Ferran Martín**, Paris Vélez, Jonathan Muñoz-Enano, Jan Coromina, Marta Gil
  **Título:** Strategies to enhance the sensitivity in planar microwave sensors and application to biosensing
  **Place**: 50th European Microwave Conference, Utrecht, The Netherlands, September 2020, within the workshop *Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors* (organized by Enrique Bronchalo and Benjamin Potelon).
  **Workshop, invited.**

- **Authors:** F. Paredes, C. Herrojo, G. Zamora, J. Bonache , and **F. Martin**
  **Title:** Chipped and Chipless RFID: State of the Art and Applications
  **Place**: within the online seminar "High frequency and terahertz devices and circuits: perspectives on emerging and advanced technologies",organized by Catedra "Eugenio Méndez Docurro", Instituto Politécnico Nacional del Gobierno de Mexico, 26 and 27 November 2020.
  **Seminario invitado.**

- **Authors: Ferran Martín,** Cristian Herrojo, Ferran Paredes
  **Title:** Recent advances in time-domain signature barcodes for chipless-RFID and related sensors
  **Place:** within the VI International Conference on Metamaterials and Nanophotonics, METANANO 2021, Tbilisi, Georgia, September 2021.
  **KEYNOTE TALK, INVITED.**

- **Authors: Ferran Martín**
  **Title:** Towards a "green" and cost-effective RFID
  **Place:** within the Congrés Anual de Nanociència i Nanotecnologia (CANN), de la Societat Catalana de Nanociència i Nanotecnologia (SCN2), 18 November 2021.
  **Invited.**

- **Authors: Ferran Martín**, Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su
  **Title:** Recent Advances in Planar Microwave Sensors for Sensitivity Enhancement
  **Place**: 52th European Microwave Conference, Milan, Italy, September 2022, dentro del workshop *Recent Advances in Topologies, Technologies and Practical Realizations of Microwave Sensors dedicated to biomedical applications* (organized by Enrique Bronchalo and Benjamin Potelon).
  **Workshop, invited.**

- **Authors: Ferran Martín**, Pau Casacuberta, Paris Vélez, Jonathan Muñoz-Enano, Lijuan Su
  **Title:** Recent Advances in Phase-Variation Permittivity Sensors: Boosting up the Sensitivity by Means of Coupled Resonators
  **Place:** International Microwave Syposium 2023 (IMS'23), San Diego, CA, USA, 11-16 June 2023, wihtin the workshop *Microwave/RF sensors for nearfield and long-range sensing applications* (organized by Mohammad H. Zarifi)
  **Workshop, invited.**

## 11. TRAINING ACTIVITIES RELATED TO RESEARCH

### 11.1. ORGANIZATION OF TRAINING ACTIVITIES AND POSTGRADUATE ACTIVITIES

- **Postgraduate Course Coordinator** of the *Departament d'Enginyeria Electrònica* at UAB from December 2001 up to June 2003.

- Member of the Steering Committee of the European Distributed School on Metamaterials, launched by the *Consortium of the European Doctoral Programmes on Metamaterials* (Network of Excellence METAMORPHOSE –VI Framework Program).

- Organizer and Chair of the 9$^{th}$ European Distributed School on Metamaterials, held in Barcelona (Spain), 5-6 February 2008.

- Coordinator of the Modulus *Microsystems and Innovative Technologies for Coomunication Systems* within the *Master in Micro- and Nanoelectronic Engineering*.

- Organizer and Chair of the 19th European Distributed School on Metamaterials, held in Barcelona (Spain), 14-15 October 2011

- Member of the Comittee for the Proposal of the Master Program in Telecommunications at UAB.

### 11.2. PhD COURSES GIVEN

- Title: *Quantum transport in semiconductors* (Physics PhD Program UAB)
  Duration: 15h.
  Academic Year: 95-96

- Title: *Advanced Design of radiofrequency and microwave circuits* (Interuniversitary PhD Program of Electronic Engineering between Universitat Autònoma de Barcelona and Universitat de Barcelona).
  Duration 40h (20h given at Universitat de Barcelona).
  Academic Years: 1999-2000, 2000-01,2001-02, 2002-03, 2003-04.

- Title: *Advanced Techniques for the design of communication circuits* (Electronic Engineering PhD Program - UAB)
  Duration: 30h.
  Academic Years: 2004-05, 2005-2006.

- Title: *Design and optimization of microwave filters based on metamaterials*
  1h lecture given within the PhD Program of the *Departamento de Ingeniería Eléctrica y Electrónica, Universidad Pública de Navarra*
  December 2004
  **Invited**

### 11.3. MASTER COURSES GIVEN

- Title: *Microsystems and Innovative Technologies for Communication Systems* within the *Master in Micro- and Nanoelectronic Engineering* of the Departamnent d'Enginyeria Electrònica (UAB).
  Duration: 10 ECTS

Academic years: 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-2012 and 2012-2013

- Title: *Advanced communication circuits*, within the *Master in Telecommunications*, launched in 2013-2014 at UAB.
  Duration: 6 ECTS
  Academic years: since 2013-2014

- Title: *Sensors and Sensor Networks,* within the international master EMIMEO Erasmus Master on Innovative Microwave Electronics and Optics
  Duration: 20 h
  Academic year: since 2023-2024

**11.4. INVITED COURSES WITHIN THE EUROPEAN DISTRIBUTED PhD SCHOOL ON METAMATERIALS**

- Title: *Double negative and single negative metamaterial transmission lines based on split rings resonators and complementary split rings resonators*
  Duration: 2h
  Date and place: San Sebastian (Spain), July 2005

- Title: *Microwave circuits and filters based on metamaterials*
  Duration: 2h
  Date and place: San Sebastian (Spain), July 2005

- Title: *Tunable metamaterials based on SRRs: design and applications*
  Duration: 2h
  Date and place: S. Petersburgo (Russia), October 2006.

- Title: *Advantages and limitations of metamaterial transmission lines for RF/microwave circuit Design*
  Duration: 1.5h
  Date and place: Barcelona (Spain), 5 February 2008.

- Title: *Design of metamaterial-based passive components*
  Duration: 1.5h
  Date and place: Barcelona (Spain), 5 February 2008.

- Title: *Examples of applications of split ring metamaterials to RF/microwave circuits: ultra wide band, multiband, RFID, RADAR and high speed digital systems*
  Duration: 3h
  Date and place: Barcelona (Spain), 14 October 2011.

- Title: *Transmission line applications of metamaterials*
  Duration: 2h
  Date and place: Rome, 26 March 2014.

- Title: *12 Years of SRR-Based Metamaterial Transmission Lines*
  Duration: 1.20 h
  Date and Place: Oxford, UK, 11 September 2015.

**11.5. OTHER INVITED LECTURES**

- Title: *Applications of metamaterials to microwave device design*

Course: *International Student Seminar on Microwave Applications of Novel Physical Phenomena*
Date and Place: St. Petersburg Electrotechnical University "LETI"**,** St. Petersburg, Russia, October 17 – 19, 2005**.**
Duration: 1h

- Title: *Beyond the state-of-the-art microwave components by using metamaterial transmission lines*
  Course: European Summer School *Metamaterials: a scientific revolution?*
  Date and Place: Saint Etienne (France), 2-5 September 2008.
  Duration: 1h

**11.6. SUPERVISED PhD THESIS**

- Author: Juan José García García
  Title: *Quantum Monte Carlo Simulation of resonant tunnelling diodes within the Wigner Distribution Function formalism*
  Universitat Autònoma de Barcelona, January 2000.
  Rating: *Cum Laude*.

- Author: Francisco Falcone Lanas
  Title: *Synthesis and applications of microwave metamaterials in planar circuit technology: from electromagnetic bandgaps to left handed materials.*
  Universidad Pública de Navarra, Septiembre 2005
  Rating: *Cum Laude*.
  Co-director: Mario Sorolla Ayza.
  **2005 Award of the *Colegio Oficial de Ingenieros de Telecomunicación/Asociación Española de Ingenieros de Telecomunicación -COIT/AEIT-* (Spain Association of Electrical and Electronic Engineers) to the Best PhD Thesis in the field of Information and Telecommunciation Technologies and their Applications (National Level Award)**
  **Extraordinary PhD Prize**

- Author: Jordi Bonache Albacete
  Title: *Microwave filters based on metamaterials and lumped resonators*
  Universitat Autònoma de Barcelona, January 2007.
  Rating: *Cum Laude*.
  **Extraordinary PhD Prize**

- Author: Ignacio Gil Galí
  Title: *Reconfigurable microwave circuits based on electromagnetic crystals and active metamaterials*
  Universitat Autònoma de Barcelona, June 2007.
  Rating: *Cum Laude*
  **Extraordinary PhD Prize**

- Author: Marta Gil Barba
  Title: *Resonant-type metamaterial transmission lines and their application to microwave device design*
  Universitat Autònoma de Barcelona, February 2009.
  Rating: Excellent *Cum Laude*
  Co-director : Jordi Bonache
  **Extraordinary PhD Prize**

- Author: Francisco Aznar Ballesta
  Title: *Caracterizxación de nuevos resonadores metamaterial, líneas de transmisión artificiales y aplicaciones en el diseño de circuitos de comunicaciones.*
  Universitat Autònoma de Barcelona, July 2009.
  Rating: Excellent *Cum Laude*
  Co-director : Jordi Bonache

- Author: Adolfo Vélez Saiz
  Title: *Design of tunable microwave circuits based on metamaterial concepts*
  Universitat Autònoma de Barcelona, May 2010.
  Rating: Excellent *Cum Laude*
  Co-director : Jordi Bonache

- Author: Gerard Sisó Cuadrado
  Title: *Enginyeria de dispersió amb línies de transmissió metamaterial: aplicació al disseny de components multibanda i d'ample de banda millorat*
  Universitat Autònoma de Barcelona, June 2010
  Rating: Excellent *Cum Laude*
  Co-director Jordi Bonache

- Author: Miguel Durán-Sindreu Viader
  Title: *Miniaturization of planar microwave components based on semi-lumped elements and artificial transmission lines: application to multi-band devices and filters*
  Universitat Autònoma de Barcelona, July 2011
  Rating: Excellent *Cum Laude*
  Co-director: Jordi Bonache
  **Extraordinary PhD Prize**

- Author: Ferran Paredes Marco
  Title: *Diseño y caracterización de etiquetas de identificación por radiofreqüència (RFID) de doble banda basadas en conceptos de metamateriales.*
  Universitat Autònoma de Barcelona, June 2012
  Rating: Excellent *Cum Laude*
  Co-dirección: Jordi Bonache

- Author: Jordi Selga Ruiz
  Title: *Synthesis of microwave circuits based on metamaterials using Aggressive Space Mapping algorithms*
  Universitat Autònoma de Barcelona, November 2013
  Rating: Excellent *Cum Laude*

- Author: Gerard Zamora González
  Title: *Radio Frequency Identification (RFID) Tags and Reader Antennas Based on Conjugate Matching and Metamaterial Concepts*
  Universitat Autònoma de Barcelona, October 2013
  Rating: Excellent *Cum Laude*
  Co-director: Jordi Bonache
  **Extraordinary PhD Prize**

- Author: Jordi Naqui Garolera
  Title: *Symmetry Properties in Transmission Lines Loaded with Electrically Small Resonators: Circuit Modeling and Application to Common-Mode Suppressed Differential Lines, Microwave Sensors, and Spectral Signature Barcodes*
  Universitat Autònoma de Barcelona, October 2014

Rating: Excellent *Cum Laude*
**Thesis published as a book within the collection Outstanding PhD Theses by Springer.**
**Extraordinary PhD Prize**

- Author: Paris Vélez Rasero
  Title: *Circuitos Diferenciales de microondas con Rechazo del Modo Común basados en conceptos de Metamateriales y en Resonadores Semidiscretos*
  Universitat Autònoma de Barcelona, October 2014
  Rating: Excellent *Cum Laude*
  Co-dirección: Jordi Bonache
  **Extraordinary PhD Prize**

- Simone Zuffanelli
  *Antenna design solutions for radiofrequency identification (RFID) based on resonant structures and metamaterial-inspired resonators*
  Universitat Autònoma de Barcelona, October 2015
  Rating: Excellent *Cum Laude*
  Co-director: Jordi Bonache
  **Extraordinary PhD Prize**

- Marco Orellana
  *Optimización de filtros de microondas basados en estructuras de onda lenta mediante técnicas de mapeado espacial*
  Universitat Autònoma de Barcelona, November 2016
  Rating: Excellent *Cum Laude*

- Lijuan Su
  *Transmission lines loaded with pairs of electrically small resonators: modelling, analysis and applications to microwave sensors*
  Universitat Autònoma de Barcelona, September 2017
  Rating: Excellent *Cum Laude*
  **Extraordinary PhD Prize**

- Cristian Herrojo Prieto
  *Nuevas Estrategias para el Diseño de Sistemas Chipless-RFID y Aplicaciones.*
  Universitat Autònoma de Barcelona, May 2018
  Rating: Excellent *Cum Laude*
  **Extraordinary PhD Prize**

- Marc Sans Soler
  *Unattended design of wideband planar filters based on stepped impedance resonators (SIR) through aggressive space mapping (ASM)*
  Universitat Autònoma de Barcelona, July 2018
  Rating: Excellent *Cum Laude*

- Hengyi Sun
  *Research on the Coding Metasurfaced Reverberation Chamber*
  Nanjing University of Aeronautics and Astronautics, June 2020
  Rating: *Cum Laude*
  Co-director: Prof. Gu Changqing

- Josep Ignasi Cairó Molins
  *Short Range Device Platform for NFC and RFID Wireless Telecommunications*

Universitat Autònoma de Barcelona, July 2020
Rating: Excellent *Cum Laude*
Co-director: Jordi Bonache

- Jonathan Muñoz Enano
  *Highly Sensitive Planar Microwave Sensors for Dielectric Characterization of Solids, Liquids, and Biosamples*
  Universitat Autònoma de Barcelona, July 2022
  Rating: Excellent *Cum Laude*
  Co-director: Paris Vélez
  **2022 Award of the *Colegio Oficial de Ingenieros de Telecomunicación/Asociación Española de Ingenieros de Telecomunicación -COIT/AEIT-* (Spain Association of Electrical and Electronic Engineers) to the Best PhD Thesis in the field of Information and Telecommunciation Technologies and their Applications (National Level Award)**
  **Extraordinary PhD Prize**

### 11.7. SUPERVISED MASTER THESIS

- Author: Xavier Oriols Pladevall
  *Self-consistent simulation of the current-voltage characteristic of resonant tunnelling diodes*
  Universitat Autònoma de Barcelona, December 1994.
  Co-director: J. Suñé

- Author:Juan José García García
  *Simulation of electron transport in resonant tunnelling diodes in the formalism of the Wigner distribution function.*
  Universitat Autònoma de Barcelona, May 1996.
  Co-director: J. Suñé

- Autor: Jesús Vizoso San Segundo
  Title: *Study of hydrogen desorption in SiGe films*
  Universitat Autònoma de Barcelona, April 1997.

- Author: Jordi Bonache Albacete
  Title: *Application of electromagnetic crystals to the optimization of passive and active microwave circuits*
  Universitat Autònoma de Barcelona, July 2004

- Author: Ignacio Gil Galí
  Title: *Tunable microwave filters and resonators based on electromagnetic crystals*
  Universitat Autònoma de Barcelona, September 2004

- Author: Marta Gil Barba
  Title: *Analysis, design and applications of resonant type left handed transmission lines*
  Universitat Autònoma de Barcelona, September 2006.

- Author: Gerard Sisó Cuadrado
  Title: *Design of enhanced bandwidth components with metamaterial transmission lines*
  Universitat Autònoma de Barcelona, July 2007.

- Author: Adolfo Vélez Saiz

Title: *Analysis, design and characterization of reconfigurable metamaterial transmission lines based on complementary split ring resonators (CSRRs)*
Universitat Autònoma de Barcelona, July 2007.

- Author: Ferran Paredes Marco
  Title: *Design of dual-band components through metamaterial transmission lines for applications in RFID systems*
  Universitat Autònoma de Barcelona, July 2007.

- Author: Francisco Aznar Ballesta
  Title: *Revisión del modelo circuital de una linea de transmisión metamaterial basada en split rng resonators (SRRs)*
  Universitat Autònoma de Barcelona, April 2009.

- Author: Gerard Zamora González
  Title: *Diseño de etiquetas de RFID basadas en CSRRs*
  Universitat Autònoma de Barcelona, July 2009.

- Author: Miguel Durán-Sindreu Viader
  Title: *Modelado y aplicaciones de líneas de transmisión compuestas zurdo-diestras basadas en OSRRs y OCSRRs*
  Universitat Autònoma de Barcelona, July 2009.

- Author: Jordi Selga Ruíz
  Title: *Aplicación de líneas de transmisión metamaterial para el diseño de filtros de microondas*
  Universitat Autònoma de Barcelona, July 2009.

- Author: Paris Vélez Rasero
  Title: *Disseny de línies de transmissió artificials basat en xarxes lattice*
  Universitat Autònoma de Barcelona, july 2011.

- Author: Jordi Naqui Garolera
  Title: *Split Rings-based Microstrip Differential Transmission Lines with Common mode Suppression*
  Universitat Autònoma de Barcelona, July 2011.

- Author: Marco Valero Coca
  Title: *Differential microstrip lines with wideband common-mode rejection based on EBGs*
  Universitat Autònoma de Barcelona, July 2015.

- Author: Fernando López Bara
  Title: *Electromagnetic Propagation in Systems with Magnetic Charges*
  Universitat Autònoma de Barcelona, February 2015.

- Jan Coromina Ballester
  Compact microstrip directional couplers based on slow wave transmission lines
  Universitat Autònoma de Barcelona, Feb. 2017.

- Marcos Antonio Vélez Sandoval
  Rat-race coupler with harmonic suppression and size reduction based on reactively-loaded transmission lines
  Universitat Autònoma de Barcelona, Feb. 2018

- Arnauy Salas Bareny
  Full 3D printed electronics fabrication process for RF and microwave circuits and passive components
  Universitat Autònoma de Barcelona, Feb. 2018

- Claudia Nicolini Teixidor
  Application of artificial transmission lines based on inductive loading to filter design
  Universitat Autònoma de Barcelona, Julio 2019

- Pau Casacuberta Orta
  Highly Sensitive Coplanar Waveguide (CPW) One-Port Microwave Permittivity Sensor Terminated with a Step-Impedance Resonator (SIR)
  Universitat Autònoma de Barcelona, Julio 2022

- Xavier Canalies Ferreros
  High sensitivity microwave phase-variation sensor for frying cycles monitoring in sunflower oil
  Universitat Autònoma de Barcelona, Julio 2023

- Victor Romero Pardeiro
  Hybrid Time/Phase Domain Electromagnetic Encoders Based on S shaped Resonators (S-SRR)
  Universitat Autònoma de Barcelona, Julio 2023

### 11.8. SUPERVISED DIPLOMA THESIS (to obtain the Engineer Degree)

- Author: Rafael Hidalgo García
  Title: *Diseño y realización de un adaptador para la visualización espectral de señales en un osciloscopio*.
  Universitat Autònoma de Barcelona, September1996.

- Author: Miquel Nadal Sánchez
  Title: *Diseño de un amplificador de alta frecuencia para aplicaciones de banda ancha*.
  Universitat Autònoma de Barcelona, February 2000.

- Author: Pere Manel García Gutiérrez
  Title: *Diseño e implementación de un radioenlace digital*.
  Universitat Autònoma de Barcelona, July 2001.

- Author: Pedro Barea Carrillo
  Title: *Sistema medidor de fatiga para deportistas*.
  Universitat Autònoma de Barcelona, September 2001.

- Author: Roberto Sesma Morales
  Title: *Desarrollo de una herramienta de simulación para circuitos basados en elementos distribuidos*.
  Universitat Autònoma de Barcelona, September 2002.

- Author: Lluís Carreras González
  Title: *Estudio de los efectos de no linealidad y perturbación en multiplicadores de frecuencia basados en líneas de transmisión no lineales y cristales electromagnéticos*.
  Universitat Autònoma de Barcelona, September 2002.

- Author: Miquel Coderch Clusellas
  Title: *Optimización de filtros de microondas mediante estructuras EBG.*
  Universitat Autònoma de Barcelona, September 2002.

- Autor: Juan Argelés
  Title: *Desarrollo de un software educativo para el análisis y diseño de circuitos de microondas.*
  Universitat Autònoma de Barcelona, February 2003.

- Author: Ignacio Gil Galí
  Title: *Optimización de filtros pasa banda de microondas basados en resonadores acoplados capacitivamente y cristales electromagnéticos..*
  Universitat Autònoma de Barcelona, July 2003.

- Author: Esteve Amat Bertran
  Title: *Diseño de filtros de microondas con técnicas de eliminación de espurios mediante resonadores de anillos cortados.*
  Universitat Autònoma de Barcelona, July 2004.

- Author: Gerard Siso Cuadrado
  Title: *Diseño de un acoplador direccional con metamateriales.*
  Universitat Autònoma de Barcelona, September 2006.

- Author: Jordi Selga Ruíz
  Title: *Métodos de extracción de parámetros eléctricos para metamateriales basados en el modelo resonante*
  Universitat Autònoma de Barcelona, July 2006.

- Author: Oscar García Abad
  Title: *Parametrización de partículas metamaterial para su uso en filtros y circuitos de microondas*
  Universitat Autònoma de Barcelona, September 2007.

- Author: Ángel Iniesta Navarro
  Title: *Diseño de un acoplador branch-line en banda dual basado en metamateriales*
  Universitat Autònoma de Barcelona, September 2007.

- Author: Jordi García Rincón
  Title: *Diseño e implementación de un divisor de potencia en banda dual con estructuras metamateriales basadas en CSRRs*
  Universitat Autònoma de Barcelona, September 2007.

- Author: Gerard Zamora González
  Title: *Diseño de un tag RFID basado en metamateriales*
  Universitat Autònoma de Barcelona, February 2008.

- Author: Manuel Aranda Valero
  Title: *Minituarización de componentes planares de microondas mediante técnicas basadas en metamateriales: aplicación a un desfasador de cuadratura*
  Universitat Autònoma de Barcelona, July 2008.

- Author: Alexandre Valcárcel
  Title: *Diseño de inversores de impedancia de microondas compactos basados en metamateriales: Aplicación a divisores de potencia*

Universitat Autònoma de Barcelona, July 2008.

- Author: Jordi Selga Ruíz
  Title: *Diseño de filtros ultracompactos basados en celdas metamaterial para aplicaciones en módulos de comunicaciones para la multimedia doméstica.*
  Universitat Autònoma de Barcelona, September 2008.

- Author: José Manuel Menés Herranz
  Title: *Filtros de microondas basados en nuevos resonadores complementarios*
  Universitat Autònoma de Barcelona, September 2008.

- Author: Francisco Simón Sanchis Jorge
  Title: *Diseño de componentes multibanda de microondas con metamateriales*
  Universitat Autònoma de Barcelona, September 2008.

- Author: Antonio Campo Antón
  Title: *Diseño de un duplexor multibanda basado en tecnología metamaterial*
  Universitat Autònoma de Barcelona, September2009.

- Author: Oriol Massagué Golorons
  Title: *Design of a tunable band-reject filter based on split ring resonators loaded by vanadium dioxide switches*
  Universitat Autònoma de Barcelona, February 2010

- Author: Jordi Naqui Garolera
  Title: *Implementación de resonadores LC mediante stubs con salto de impedancia en tecnologia microstrip: analisis y limitaciones*
  Universitat Autònoma de Barcelona, June 2010

- Author: Paris Vélez
  Title: *Diseño de filtros pasabanda de microondas mediante resonadores electricamente pequeños (OSRR y OCSRR)*
  Universitat Autònoma de Barcelona, June 2010

- Author: Lluis Vicente Torell
  Title: *Desarrollo de un filtro elíptico paso bajo medinate el diseño de topologías basadas en el uso de una estructura step impedance shunt stub (SISS)*
  Universitat Autònoma de Barcelona, June 2011

- Author: Raul Coronado Nicolás
  Title: *Síntesis automatizada de circuitos pasivos de microondas mediante técnicas de space mapping: aplicación a resonadores con salto de impedancia*
  Universitat Autònoma de Barcelona, July 2011

- Author: Edgar Ruiz
  Title: *Sensor de posicionamineto basado en resonadores de anillos abiertos*
  Universitat Autònoma de Barcelona, September 2011

- Author: Jordi Rosell Pérez
  Title: *Desarrollo de sensores de alineamiento y posición basados en SRRs*
  Universitat Autònoma de Barcelona, July 2012

- Author: David Martín Sevillano
  Title: *Análisis y aplicaciones de resonadores simétricos para el diseño de sensores*

Universitat Autònoma de Barcelona, September 2012

- Author: Alex Lacambra Lines
  Sensores de posición basados en resonadores simétricos
  Universitat Autònoma de Barcelona, Septiembre 2012

- Author: Oriol Oliván Jorba
  Title: *Disseny de filtres passa banda basat en ressonadors OCSRRs i inversors d'admitàncies*
  Universitat Autònoma de Barcelona, September 2012

- Author: Marc Sans Soler
  Title: *Automatic semi-lumped filter synthesis and design using agressive space mapping (ASM)*
  Universitat Autònoma de Barcelona, July 2013

- Author: Ignacio de la Fuente Pérez
  Title: *Supresión del modo común en líneas diferenciales mediante estructurtas EBG*
  Universitat Autònoma de Barcelona, September 2013

- Author: Aitor López Martín
  Title: *Estudio de resonadores acoplados a líneas microstrip para la implementación de sensores y códigos de barras de RF*
  Universitat Autònoma de Barcelona, September 2013

- Author: Jan Coromina Ballester
  Title: Línies coplanars carregades amb ressonadors S-SRR i aplicació a sensors de rotació
  Universitat Autònoma de Barcelona, Julio 2014

- Author:David Eslava Sabate
  Title: Síntesi de filtres de microones de banda ampla mitjançant *Agressive Space Maping*
  Universitat Autònoma de Barcelona, Julio 2014

- Author:Miguel Antonio Peinado Toro
  Title: Líneas diferenciales con rechazo del modo común mediante estructuras EBG multi-sintonizadas
  Universitat Autònoma de Barcelona, Septiembre 2014

- Author:Alex Lacambra Lines
  Title: Lineas coplanares cargadas con resonadores de ranura tipo dumbbell y aplicacion a sensores/comparadores
  Universitat Autònoma de Barcelona, Junio 2015

- Author: Francisco Muela
  Title: Sistema chipless-RFID de lectura secuencial en campo cercano para la identificación de objetos
  Universitat Autònoma de Barcelona, Septiembre 2018

- Auhor: Pau Casacuberta Orta
  Title: Sensor de microones d'alta sensibilitat basat en estructures de salt d'impedància
  Universitat Autònoma de Barcelona, Julio 2020

- Blanca Mercedes Llauradó Crespo
  Title: Disseny, fabricació i caracterització d'un sensor de microones operatiu en mode

reflexió
Universitat Autònoma de Barcelona, Julio 2022

## 12. AWARDS, RELEVANT DISTINCTIONS, POSITIONS, HONORS AND ACHIEVEMENTS

**12.1. RELEVANT DISTINCTIONS** (in order of importance)

- **Fellow of the IEEE** (Institute of Electrical and Electronics Engineering) since **January 2012**. The IEEE Grade of Fellow is conferred by the IEEE Board of Directors upon a person with an outstanding record of accomplishments. IEEE Fellow is the highest grade of membership and is recognized as a prestigious honor and an important career achievement.
  Date: January 2012.

- **Fellow of the IET** (Institution of Engineering and Technology) since February 2016.

- Elevated to the Grade of **Senior Member of the IEEE** in July 2008.

**12.2. AWARDS** (in order of importance)

- **ICREA ACADEMIA Award,** given by the *Institució Catalana de Recerca i Estudis Avançats* (ICREA) in the **first call** (**2008**).
  Award: **250.000 Euros** (2009-2013)
  Date: January 2009

- **ICREA ACADEMIA Award,** given by the *Institució Catalana de Recerca i Estudis Avançats* (ICREA) in the **call 2013**.
  Award: **200.000 Euros** (2014-2018)
  Date: March 2014

- **ICREA ACADEMIA Award,** given by the *Institució Catalana de Recerca i Estudis Avançats* (ICREA) in the **call 2018**.
  Award: **200.000 Euros** (2019-2023)
  Date: December 2018

- Winner of a ***Parc de Recerca UAB – Santander Technology Transfer Chair***, given by the *Parc de Recerca de la UAB* and funded by *Grupo Santander*.
  Award: **100.000 Euros** (2009-2010)
  Date: January 2009.

- Winner of the 5th Edition of the **Duran Farell Prize for Technological Research**, **National Level Prize** given by *Social Council of the Universidad Politécnica de Catalunya* and *Gas Natural SDG*
  Title of the work: Metamaterials: a new concept for the design of communication systems.
  Award: **60.000 Euros**
  Date: May 2006

- Winner of the **Ingeniero Comerma Prize of Industrial Engineering 2014** (IX Edition), awarded by El Ferrol Council and Universidad de A Coruña
  Award: **12.000 Euros**
  Date: November 2015

- Awarded by the DURSI (Catalan Government) and the Universitat Autònoma de Barcelona with a **Prize of the program *I3 intensificacio*** consisting on a **4-year Grant Position** for incorporation of a post-graduate student in order to reduce the training activity of the Applicant and thus strength the research activity.

Date: July 2007

- **Excellence in Research Prize** given by the UAB (call 2008) to the paper: "Novel Microstrip Band Pass Filters Based on Complementary Split Rings Resonators", *IEEE Transactions on Microwave Theory and Techniques*, vol. 54, pp. 265-271, January 2006, J. Bonache, I. Gil, J. García-García, **F. Martín**
  Date: May 2008

- **Excellence in Research Prize** given by the UAB (call 2010) to the paper: Open complementary split ring resonators (OCSRRs) and their Application to Wideband CPW Band Pass Filters", *IEEE Microwave and Wireless Components Letters*, vol. 19, pp. 197-199, April 2009, A. Velez, F. Aznar, J. Bonache, M.C. Velázquez-Ahumada, J. Martel and **F. Martín**
  Date: May 2010

- **University of Sevilla Prize to research works of special relevance** (field Engineering), call 2015 for the paper "Common-mode Suppression in Microstrip Differential Lines by Means of Complementary Split Ring Resonators: Theory and Applications", IEEE Transactions on Microwave Theory and Techniques,Vol. 60, no. 10, pp. 3023-3034, octubre 2012, by Jordi Naqui (UAB), Armando Fernández-Prieto (USE), Miguel Durán-Sindreu (UAB), Francisco Mesa (USE), Jesús Martel (USE), Francisco Medina (USE), Ferran Martín (UAB).

- Ferran Paredes, Cristian Herrojo, Ferran Martin, "An approach for Synchronous Reading of Near-Field Chipless-RFID Tags", 10th IEEE International Conference on RFID Technology and Applications (IEEE RFID-TA 2019), Pisa, Italy, 25-27 September 2019. **BEST PAPER AWARD.**

- **Awards** obtained by **young researchers** supervised by Ferran Martín:

  - **2012 EuMC Young Engineer Prize**, given to Miguel Durán-Sindreu for the paper: Miguel Durán-Sindreu, Jordi Bonache, **Ferran Martín**, Tatsuo Itoh, "Novel Fully-Planar Extended-Composite Right/Left Handed Transmission Line based on Substrate Integrated Waveguide for Multi-Band Applications", 42 European Microwave Conference (EuMC), Amsterdam, 28 oct- 2 nov, 2012.
  - **Prize** of the ***Institut d'Estudis Catalans de Ciencias de la Ingeniería Rafael Campalans*** (call 2012), given to Ferran Paredes for his **PhD Thesis** supervised by **Ferran Martín** and Jordi Bonache.
  - ***Accésit Jóvenes Científicos URSI 2012***, given to Javier Herraiz Martínez for the paper: F.J. Herraiz-Martínez, F. Paredes, G. Zamora, **F. Martín**, J. Bonache, D. Segovia-Vargas, "Chipless RFID and Wireless Sensors Based on Planar Magnetoinductive-Wave (MIW) Delay Lines", XXVII Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2011), Elche, Septiembre de 2012.
  - **2005 Award** of the *Colegio Oficial de Ingenieros de Telecomunicación/Asociación Española de Ingenieros de Telecomunicación - COIT/AEIT-* (**Spain Association of Electrical and Electronic Engineers**) to the **Best PhD Thesis** in the field of Information and Telecommunciation Technologies and their Applications (National Level Award), given to Francisco Falcone (supervised by **Ferran Martín** and Mario Sorolla).
  - ***Jóvenes Científicos URSI 2015 Prize***, given to Jordi Naqui Garolera, for the paper: Jordi Naqui and Ferran Martín, "Angular displacement and velocity sensors for space applications based on metamaterial transmission lines", XXX Symposium Nacional de la Unión Científica Internacional de Radio (URSI 2015), Pamplona, September 2015.

- **Yarman-Carlin Best Student Paper Contest** of the Mediterranean Microwave Symposium (MMS'14), awarded to Jordi Naqui for the paper: Jordi Naqui, Jan Coromina, Ali K. Horestani, Christophe Fumeaux and Ferran Martín, "Comparative Analysis of Split Ring Resonators (SRR), Electric-LC (ELC) Resonators, and S-Shaped Split Ring Resonators (S-SRR)", MMS'14, Dec. 2014.
- **11 Extraordinary PhD Prizes**.

**12.3. RELEVANT POSITIONS**

- Elevated to the Grade of **Full Professor** of Electronics, after public Competition and after obtaining the *Habilitación Nacional del Cuerpo de catedréticos de universidad del área de Electrónica* (Full Professorship in Electronics) in the 2005 Call, a requirement to obtain de Grade of Full Professor. The *Habilitación Nacional* is a competition with a limited number of positions. In the 2005 call, there were only 2 positions in the area of Electronics in Spain.
  Date: January 2007

**12.4. OTHER HONORS AND ACHIEVEMENTS**

- Obtention of the **Advanced Research Degree** (expedient number U1446/4281488-30) in the field of Sciences by the *Agencia para la Calidad del Sistema Universitario de Catalunya AQU* (Catalan Government). This position enables the applicant to obtain the degree of Full Professor in the Catalan System.
  Date: February 2006

- **CIMITEC** has been certified with the **Quality Management System** based on the **ISO9001** and **EFQM Model Quality Standards**, by the Regional Administration (CIDEM – Generalitat de Catalunya)
  Date: July 2007

- Acknowledgement of the research, training and management activities through the **positive evaluation** of:
  - 5 National Research periods
  - 5 Regional Research periods
  - 6 National Training periods
  - 6 Regional Training periods
  - 1 National Knowledge-transfer period
  - 1 Regional Knowledge-transfer period
  - 1 National Management period

  (the maximum possible number of periods according to the age of the applicant).

- Present in the **top 100** list (**position 51** on July, 2016) of most relevant reseachers in the field *Electrical and Electronic Engineering*, according to Microsoft Academic, referred to the last 10 years.

http://academic.research.microsoft.com/RankList?entitytype=2&topdomainid=8&subdomainid=6&last=10&orderby=6

- Present in **Who's Who in the World since 2014 (31st edition).**

- Present in the list of the **2000 Outstanding Intellectuals of the 21st Century (8th edition), since 2014**.

- Member of the **International Biographical Centre (IBC) TOP 100 EDUCATORS 2014**. In words of the IBC, "In any one year only one hundred of the world's best

educators, both famous and uncelebrated, from all disciplines will be able to populate this exclusive list".

- Present in **Who's Who in Science and Engineering since 2016-2017 (12 Edicion)**

- 9th Ed. (2023) **Research.com**, best scientists in Electronics and Electrical Engineering. **Ranked 3rd Spanish**: https://research.com/scientists-rankings/electronics-and-electrical-engineering/es

- **Ranked 3rd Spanish scientist** in Electrical and Electronics Engineering, **DIH Group** (2023): https://grupodih.info/ing.html#ENGINEERING,ELECTRICAL&ELECTRONIC

## 13. DISSEMINATION AND FOSTERING ACTIVITIES AND SOCIAL IMPACT

- Participation of CIMITEC in the **ICT 2008 Conference and Exhibition,** of the European Comission**,** Lyon, France, November 25-27. Exhibit Coordinated by F. Martín.

- Participation in the Exhibition **Mater in Progress: New Materials and New Industry,** partially funded by *Ministerio de Industria, Turismo y Comercio*, *SEAT* and *EADS Casa*, held in Zaragoza and Madrid (Spain) in 2009. There was an exhibit related to Metamaterials, coordinated by F. Martín.

- Participation in the **CMOS Emerging Technologies** (Vancouver, Canada, July 2012), founded in 2006 to provide researchers and industry representatives in the high-tech sector with an opportunity to discuss new and exciting developments in all areas of high technology. These annually hosted symposia bring together researchers, business people, and investors interested in exploring opportunities for collaboration.

- F. Martín has **appeared in several Radio and TV programs**, **as well as Newspapers** in relation to his activity in Metamaterials (see the news section of the webpage –spanish version– of CIMITEC: http://cimitec.uab.cat/).