Reporte Global de Citas al Trabajo de Investigación del Dr. José Ernesto Rayas Sánchez

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Contenido:

1. Listado de publicaciones citadas

1.1. Artículos publicados en revistas científicas indexadas con riguroso arbitraje internacional

[R36] J. E. Rayas-Sánchez and J. A. Reynoso-Hernández, "An overview on RF and microwave research in Latin America: scanning Latin American research on microwaves," *IEEE Microwave Magazine*, vol. 24, no. 5, pp. 45-57, May 2023. (p-ISSN: 1527-3342; e-ISSN: 1557-9581; INSPEC: 22930264; published online: 11 April 2023; DOI: 10.1109/MMM.2023.3242559)

[R35] J. W. Bandler and J. E. Rayas-Sánchez, "An early history of optimization technology for automated design of microwave circuits," *IEEE J. of Microwaves*, vol. 3, no. 1, pp. 319-337, Jan. 2023. (e-ISSN: 2692-8388; INSPEC: 22476835; published online: 22 December 2022; DOI: 10.1109/JMW.2022.3225012)

[R34] G. P. Gibiino, J. E. Rayas-Sánchez, J. B. King, M. Pirola, R. Khazaka, Q. J. Zhang, D. E. Root, and J. W. Bandler, "TC-2 Design Automation Committee—On the future of RF and microwave design automation—2022," *IEEE Microwave Magazine*, vol. 23, no. 11, pp. 104-105, Nov. 2022. (p-ISSN: 1527-3342; e-ISSN: 1557-9581; published online: 4 Oct. 2022; DOI: 10.1109/MMM.2022.3196416)

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[R31] A. Viveros-Wacher, R. Baca-Baylón, F. E. Rangel-Patiño, J. L. Silva-Cortés, E. A. Vega-Ochoa, and J. E. Rayas-Sánchez, "Fast jitter tolerance testing for high-speed serial links in post-silicon validation," *IEEE Trans. Electromagnetic Compatibility*, vol. 64, no. 2, pp. 516-523, Apr. 2022. (p-ISSN: 0018-9375; e-ISSN: 1558-187X; INSPEC: 21685176; published online: Nov. 15, 2021; DOI: 10.1109/TEMC.2021.3122348)

[R30] J. E. Rayas-Sánchez, S. Koziel, and J. W. Bandler, "Advanced RF and microwave design optimization: a journey and a vision of future trends," *IEEE J. of Microwaves*, vol. 1, no. 1, pp. 481-493, Jan. 2021. (e-ISSN: 2692-8388; INSPEC: 20369054; published online: 11 Jan. 2021; DOI: 10.1109/JMW.2020.3034263)

[R29] F. J. Leal-Romo, J. E. Rayas-Sánchez, and J. L. Chávez-Hurtado, "Surrogate-based analysis and design optimization of power delivery networks," *IEEE Trans. Electromagnetic Compatibility*, vol. 62, no. 6, pp. 2528-2537, Dec. 2020. (p-ISSN: 0018-9375; e-ISSN: 1558-187X; published online: 24 Mar. 2020; INSPEC: 20261130; DOI: 10.1109/TEMC.2020.2973946)

[R28] G. Rafael-Valdivia and J. E. Rayas-Sánchez, "The second IEEE MTT-S Latin America microwave conference [Conference Report]," *IEEE Microwave Magazine*, vol. 21, no. 1, pp. 114-118, Jan. 2020. (p-ISSN: 1527-3342; e-ISSN: 1557-9581; published online: 26 Nov. 2019; DOI: 10.1109/MMM.2019.2945217)

[R27] A. Viveros-Wacher, J. E. Rayas-Sánchez, and Z. Brito-Brito, "Analog gross fault identification in RF circuits using neural models and constrained parameter extraction," *IEEE Trans. Microwave Theory Techn.*, vol. 67, no. 6, pp. 2143-2150, Jun. 2019. (p-ISSN: 0018-9480; e-ISSN: 1557-9670; INSPEC: 18734819; published online: 21 May 2019; DOI: 10.1109/TMTT.2019.2914106)

[R26] I. Lomelí-Illescas, S. A. Solis-Bustos, and J. E. Rayas-Sánchez, "A tool for the automatic generation and analysis of regular analog layout modules," *Elsevier Integration - the VLSI Journal*, vol. 65, pp. 81-87, Mar. 2019. (p-ISSN: 0167-9260; published online: 30 Nov. 2018; DOI: 10.1016/j.vlsi.2018.11.005)

[R25] F. E. Rangel-Patiño, J. E. Rayas-Sánchez, A. Viveros-Wacher, J. L. Chávez-Hurtado, E. A. Vega-Ochoa, and N. Hakim, "Post-silicon receiver equalization metamodeling by artificial neural networks," *IEEE Trans. Computer-Aided Design of Integrated Circuits and Systems*, vol. 38, no. 4, pp. 733-740, Apr. 2019. (p-ISSN: 0278-0070; e-ISSN: 1937-4151; INSPEC: 18529158; published online: 8 May 2018; DOI: 10.1109/TCAD.2018.2834403)

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[R21] J. L. Chávez-Hurtado and J. E. Rayas-Sánchez, "Polynomial-based surrogate modeling of RF and microwave circuits in frequency domain exploiting the multinomial theorem," *IEEE Trans. Microwave Theory Techn.*, vol. 64, no. 12, pp. 4371-4381, Dec. 2016. (p-ISSN: 0018-9480; e-ISSN: 1557-9670; INSPEC: 16519017; published online: 17 Nov. 2016; DOI: 10.1109/TMTT.2016.2623902)

[R20] J. E. Rayas-Sánchez, "Power in simplicity with ASM: tracing the aggressive space mapping algorithm over two decades of development and engineering applications," *IEEE Microwave Magazine*, vol. 17, no. 4, pp. 64-76, Apr. 2016. (p-ISSN: 1527-3342; INSPEC: 15823213; published online: 7 Mar. 2016; DOI: 10.1109/MMM.2015.2514188)

[R19] J. C. Cervantes-González, J. E. Rayas-Sánchez, C. A. López, J. R. Camacho-Pérez, Z. Brito-Brito, and J. L. Chávez-Hurtado, "Space mapping optimization of handset antennas considering EM effects of mobile phone components and human body," *Int. J. RF and Microwave CAE*, vol. 26, no. 2, pp. 121-128, Feb. 2016. (p-ISSN: 1096-4290; e-ISSN: 1099-047X; published online: 21 Oct. 2015, DOI: 10.1002/mmce.20945)

[R18] J. E. Rayas-Sánchez, J. L. Chávez-Hurtado, and Z. Brito-Brito, "Optimization of full-wave EM models by low-order low-dimension polynomial surrogate functionals," *Int. J. Numerical*

Modelling: Electron. Networks, Dev. Fields, vol. 30, no. 3-4, e2094, May-Aug. 2017. (ISSN: 0894-3370; Online ISSN: 1099-1204; published online: 13 Sep. 2015, DOI: 10.1002/jnm.2094)

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[R14] V. Gutiérrez-Ayala and J. E. Rayas-Sánchez, "Neural input space mapping optimization based on nonlinear two-layer perceptrons with optimized nonlinearity," *Int. J. RF and Microwave CAE*, vol. 20, no. 5, pp. 512-526, Sep. 2010. (p-ISSN: 1096-4290; e-ISSN: 1099-047X; IDS: 642LB; DOI: 10.1002/mmce.20457)

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[R11] J. E. Rayas-Sánchez, F. Lara-Rojo, and E. Martínez-Guerrero, "A linear inverse space mapping (LISM) algorithm to design linear and nonlinear RF and microwave circuits," *IEEE Trans. Microwave Theory Techn.*, vol. 53, no. 3, pp. 960-968, Mar. 2005. (p-ISSN: 0018-9480; e-ISSN: 1557-9670; INSPEC: 8364580; IDS: 904GV; DOI: 10.1109/TMTT.2004.842482)

[R10] J. E. Rayas-Sánchez, "A frequency-domain approach to interconnect crosstalk simulation and minimization," *Elsevier Microelectronics Reliability,* vol. 44, no. 4, pp. 673-681, Apr. 2004. (ISSN: 0026-2714; IDS: 807YG; DOI: 10.1016/j.microrel.2003.10.013)

[R9] J. E. Rayas-Sánchez, "EM-based optimization of microwave circuits using artificial neural networks: the state of the art," *IEEE Trans. Microwave Theory Techn.*, vol. 52, no. 1, pp. 420-435, Jan. 2004. (p-ISSN: 0018-9480; e-ISSN: 1557-9670; INSPEC: 7989285; IDS: 769LK; DOI: 10.1109/TMTT.2003.820897)

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[R5] J. W. Bandler, M. A. Ismail, and J. E. Rayas-Sánchez, "Broadband physics-based modeling of microwave passive devices through frequency mapping," *Int. J. RF and Microwave CAE*, vol. 11, no. 3, pp. 156-170, May 2001. (p-ISSN: 1096-4290; e-ISSN: 1099-047X; IDS: 427JV; DOI: 10.1002/mmce.1017)

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1.2. Artículos publicados en memorias de congresos internacionales con riguroso arbitraje

[C110] J. E. Rayas-Sánchez and J. W. Bandler, "Basic space mapping: a retrospective and its application to design optimization of nonlinear RF and microwave circuits," in *European Microwave Conf. (EuMC-2022)*, Milan, Italy, Sep. 2022, pp. 12-15. (ISBN: 978-1-6654-5881-8; e-ISBN: 978-2-8748-7069-9; DOI: 10.23919/EuMC54642.2022.9991871)

[C109] J. E. Rayas-Sánchez and J. W. Bandler, "System-level measurement-based design optimization by space mapping technology," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Denver CO, Jun. 2022, pp. 118-120. (ISSN: 0149-645X; ISSN-e: 2576-7216; ISBN: 978-1-6654-9614-8; e-ISBN: 978-1-6654-9613-1; INSPEC: 22011267; DOI: 10.1109/IMS37962.2022.9865412)

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[C104] R. Loera-Díaz and J. E. Rayas-Sánchez, "An objective function formulation for circuit parameter extraction based on the Kullback-Leibler distance," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Los Angeles, CA, Aug. 2020, pp. 80-82. (ISSN: 0149-645X; ISSN-e: 2576-7216; ISBN: 978-1-7281-6816-6; e-ISBN: 978-1-7281-6815-9; INSPEC: 20054460; DOI: 10.1109/IMS30576.2020.9224002)

[C103] J. E. Rayas-Sánchez, F. E. Rangel-Patiño, B. Mercado-Casillas, F. Leal-Romo, and J. L. Chávez-Hurtado, "Machine learning techniques and space mapping approaches to enhance signal and power integrity in high-speed links and power delivery networks," in *IEEE Latin American Symp. Circuits and Systems Dig. (LASCAS 2020)*, San Jose, Costa Rica, Feb. 2020, pp. 1-4. (ISSN: 2330-9954; eISSN: 2473-4667; ISBN: 978-1-7281-3428-4; e-ISBN: 978-1-7281-3427-7; INSPEC: 19534057; DOI: 10.1109/LASCAS45839.2020.9068994)

[C102] B. Mercado-Casillas and J. E. Rayas-Sánchez, "Towards signal-power integrity analysis by efficient power delivery network lumped models obtained from parameter extraction," in *Int. Conf. Electrical Performance of Electronic Packaging and Systems (EPEPS 2019)*, Montreal, Canada, Oct. 2019, pp. 1-3. (ISSN: 2165-4107; eISSN: 2165-4115; ISBN: 978-1-7281-4586-0; e-ISBN: 978-1-7281-4585-3; INSPEC: 19569119; DOI: 10.1109/EPEPS47316.2019.193214)

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[C97] F. E. Rangel-Patiño, J. E. Rayas-Sánchez, and N. Hakim, "Transmitter and receiver equalizers optimization methodologies for high-speed links in industrial computer platforms post-silicon validation," in *Int. Test Conf. (ITC-2018)*, Phoenix, AZ, Oct. 2018, pp. 1-10. (p-ISSN: 1089-3539; e-ISSN: 2378-2250; ISBN: 978-1-5386-8383-5; e-ISBN: 978-1-5386-8382-8; INSPEC: 18429815; DOI: 10.1109/TEST.2018.8624794)

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[C95] A. Viveros-Wacher and J. E. Rayas-Sánchez, "Analog fault identification in RF circuits using artificial neural networks and constrained parameter extraction," in *IEEE MTT-S Int. Conf. Numer. EM Mutiphysics Modeling Opt. (NEMO-2018)*, Reykjavik, Iceland, Aug. 2018, pp. 1-3. (ISBN: 978-1-5386-5205-3; e-ISBN: 978-1-5386-5204-6; INSPEC: 18197592; DOI: 10.1109/NEMO.2018.8503117)

[C94] F. E. Rangel-Patiño, J. E. Rayas-Sánchez, A. Viveros-Wacher, E. A. Vega-Ochoa, and N. Hakim, "High-speed links receiver optimization in post-silicon validation exploiting Broyden-based input space mapping," in *IEEE MTT-S Int. Conf. Numer. EM Mutiphysics Modeling Opt. (NEMO-2018)*, Reykjavik, Iceland, Aug. 2018, pp. 1-3. (ISBN: 978-1-5386-5205-3; e-ISBN: 978-1-5386-5204-6; INSPEC: 18197574; DOI: 10.1109/NEMO.2018.8503099)

[C93] F. J. Leal-Romo, J. L. Silva-Perales, C. López-Limón, and J. E. Rayas-Sánchez, "Optimizing phase settings of high-frequency voltage regulators for power delivery applications," in *IEEE Workshop on Signal and Power Integrity (SPI-2018)*, Brest, France, May 2018, pp. 1-4. (ISBN: 978-1-5386-2300-8; e-ISBN: 978-1-5386-2299-5; INSPEC: 17895920; DOI: 10.1109/SaPIW.2018.8401657)

[C92] F. E. Rangel-Patiño, J. E. Rayas-Sánchez, E. A. Vega-Ochoa, and N. Hakim, "Direct optimization of a PCI Express link equalization in industrial post-silicon validation," in *IEEE Latin American Test Symp. (LATS 2018)*, Sao Paulo, Brazil, Mar. 2018, poster.

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1.3. Capítulos de libros

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https://www.worldscientific.com/worldscibooks/10.1142/q0317 (book)
https://www.worldscientific.com/doi/10.1142/9781800610750_0005 (chapter)

Título del libro: Surrogate Modeling for High-Frequency Design: Recent Advances (Editors: Slawomir Koziel and Anna Pietrenko-Dabrowska)
Título del capítulo: Surrogate-based Modeling and Design Optimization Techniques for Signal Integrity in High-Performance Computer Platforms
Autores del capítulo: Francisco Elías Rangel-Patiño and José Ernesto Rayas-Sánchez
Estado actual: Publicado (electrónicamente: Marzo 30, 2022; en papel: Abril 2022)
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País: Singapore
Editorial: World Scientific Publishing Europe Ltd
Edición: 2022
Páginas del libro: 398
Objetivo básico: Investigación y/o docencia a nivel posgrado.
Documento probatorio: Versión electrónica.

[BC3] J. E. Rayas-Sánchez, "Artificial neural networks and space mapping for EM-based modeling and design of microwave circuits," in *Surrogate-Based Modeling and Optimization: Applications in Engineering*, S. Koziel and L. Leifsson, Ed., New York, NY: Springer, 2013, ch. 7, pp. 147-169.
http://www.springer.com/us/book/9781461475507 (book)
https://link.springer.com/chapter/10.1007/978-1-4614-7551-4_7 (chapter)
DOI 10.1007/978-1-4614-7551-4_7.

Título del libro: Surrogate-Based Modeling and Optimization: Applications in Engineering (Editors: Slawomir Koziel and Leifur Leifsson)
Título del capítulo: Artificial Neural Networks and Space Mapping for EM-Based Modeling and Design of Microwave Circuits
Autores del capítulo: José Ernesto Rayas Sánchez
Estado actual: Publicado (electrónicamente: Junio 2013; en papel: Octubre 2013)

ISBN: 978-1-4614-7550-7 (Print) 978-1-4614-7551-4 (Online)
DOI: 10.1007/978-1-4614-7551-4
País: Estados Unidos
Editorial: Springer, New York
Edición: 2013
Páginas del libro: 412
Objetivo básico: Investigación y/o docencia a nivel posgrado.
Documento probatorio: Versión electrónica.

[BC2] J. E. Rayas-Sánchez, "Neural space mapping methods for EM-based yield estimation," in *Simulation-Driven Design Optimization and Modeling for Microwave Engineering*, S. Koziel, X-S Yang, and Q. J. Zhang, Ed., London, England: Imperial College Press, 2013, ch. 11, pp. 271-310.
http://www.worldscientific.com/worldscibooks/10.1142/p860 (book)
https://www.worldscientific.com/doi/abs/10.1142/9781848169173_0011 (chapter)
DOI: 10.1142/9781848169173_0011

Título del libro: Simulation-Driven Design Optimization and Modeling for Microwave Engineering (Editors: Slawomir Koziel, Xin-She Yang and Qi-Jun Zhang)
Título del capítulo: Neural Space Mapping Methods for EM-Based Yield Estimation
Autores del capítulo: José Ernesto Rayas Sánchez
Estado actual: Publicado (electrónicamente: Enero 2013; en papel: Junio 2013)
ISBN: 978-1-84816-916-6
País: Inglaterra
Editorial: *Imperial College Press*, Londres, Inglaterra
Edición: 2013
Páginas del libro: 501
Objetivo básico: Investigación y/o docencia a nivel posgrado.
Documento probatorio: Versión electrónica y ejemplar físico del libro.

[BC1] J. E. Rayas-Sánchez, "Electromagnetics-based design using artificial neural networks," in *Special Topics of EMC at Chip and System Levels*, D. Lupi, Ed., Buenos Aires, Argentina: Dunken, Programa CYTED (Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo), 2006, ch. 3, pp. 75-129.

Título del libro: Special Topics of EMC at Chip and System Levels (Editor: Daniel Lupi)
Título del capítulo: Electromagnetics-Based Design Using Artificial Neural Networks
Autores del capítulo: José Ernesto Rayas Sánchez
Estado actual: Publicado
ISBN-10: 987-02-1884-9
ISBN-13: 978-987-02-1884-5
País: Argentina
Editorial: Dunken, Buenos Aires, Argentina

Programa CYTED (Programa Iberoamericano de Ciencia y Tecnología para el Desarrollo)
Edición: Julio 2006
Páginas: 133
Objetivo básico: Investigación y/o docencia a nivel posgrado.
Documento probatorio: Ejemplares del libro.

2. Índices cienciométricos del impacto de la investigación del Dr. Rayas

Los principales índices cienciométricos del impacto de las publicaciones del Dr. Rayas a la fecha son como sigue[1]:

```
Query: rayas-sanchez
Query date: 05/June/2023
Papers: 204
Citations: 2602
Cites/year: 104.08
Cites/paper: 12.75
Authors/paper: 2.53
h-index: 22
g-index: 48
```

3. Artículos científicos como autor principal más altamente citados

Los 10 artículos que han recibido mayor cantidad de citas, en los que el Dr. Rayas es el autor principal, son los siguientes[1]:

Número de citas	Referencia
413	**[R9]** J. E. Rayas-Sánchez, "EM-based optimization of microwave circuits using artificial neural networks: the state of the art," *IEEE Trans. Microwave Theory Techn.*, vol. 52, no. 1, pp. 420-435, Jan. 2004.
267	**[R1]** J. W. Bandler, M. A. Ismail, J. E. Rayas-Sánchez, and Q. J. Zhang, "Neuromodeling of microwave circuits exploiting space mapping technology," *IEEE Trans. Microwave Theory Techn.*, vol. 47, no. 12, pp. 2417-2427, Dec. 1999.
163	**[R12]** J. E. Rayas-Sánchez and V. Gutiérrez-Ayala, "EM-based Monte Carlo analysis and yield prediction of microwave circuits using linear-input neural-output space mapping," *IEEE Trans. Microwave Theory Techn.*, vol. 54, no. 12, pp. 4528-4537, Dec. 2006.
148	**[R2]** M. H. Bakr, J. W. Bandler, M. A. Ismail, J. E. Rayas-Sánchez, and Q. J. Zhang, "Neural space mapping optimization for EM-based design," *IEEE Trans. Microwave Theory Techn.*, vol. 48, no. 12, pp. 2307-2315, Dec. 2000.
138	**[C44]** J. E. Rayas-Sánchez and V. Gutiérrez-Ayala, "A general EM-based design procedure for single-layer substrate integrated waveguide interconnects with microstrip

[1] Tarma Software Research Pty Ltd (Copyright © 1990-2019), based on Google Scholar (Publish or Perish 6.46.6370.7005).

	transitions," in *IEEE MTT-S Int. Microwave Symp. Dig*., Atlanta, GA, Jun. 2008, pp. 983-986.
110	**[R20]** J. E. Rayas-Sánchez, "Power in simplicity with ASM: tracing the aggressive space mapping algorithm over two decades of development and engineering applications," *IEEE Microwave Magazine*, vol. 17, no. 4, pp. 64-76, Apr. 2016.
57	**[R11]** J. E. Rayas-Sánchez, F. Lara-Rojo, and E. Martínez-Guerrero, "A linear inverse space mapping (LISM) algorithm to design linear and nonlinear RF and microwave circuits," *IEEE Trans. Microwave Theory Techn.*, vol. 53, no. 3, pp. 960-968, Mar. 2005.
55	**[R6]** J. W. Bandler, J. E. Rayas-Sánchez, and Q. J. Zhang, "Yield-driven electromagnetic optimization via space mapping-based neuromodels," *Int. J. RF and Microwave CAE*, vol. 12, no. 1, pp. 79-89, Jan. 2002.
50	**[R8]** J. W. Bandler, M. A. Ismail, J. E. Rayas-Sánchez, and Q. J. Zhang, "Neural inverse space mapping (NISM) for EM-based microwave design," *Int. J. RF and Microwave CAE*, vol. 13, no. 2, pp. 136-147, Mar. 2003.
43	**[R30]** J. E. Rayas-Sánchez, S. Koziel, and J. W. Bandler, "Advanced RF and microwave design optimization: a journey and a vision of future trends," *IEEE J. of Microwaves*, vol. 1, no. 1, pp. 481-493, Jan. 2021.

El Dr. Rayas es el autor principal de los artículos [R1], [R2], [R6] y [R8] de la tabla anterior, como se hace constar en la constancia del Prof. John W. Bandler, de la Universidad McMaster, Canadá (incluida en la siguiente sección de este documento), ya que en esos artículos los autores aparecen en estricto orden alfabético

4. Constancia del Prof. J. W. Bandler, de la U. McMaster, Canadá

SIMULATION OPTIMIZATION SYSTEMS
Research Laboratory

July 3, 2001

Sistema Nacional de Investigadores (SNI)
SEP-CONACYT
México

This will confirm that **José E. Rayas-Sánchez** is the principal author of the following papers.

Work Published

[1] J.W. Bandler, J.E. Rayas-Sánchez and Q.J. Zhang, "Space mapping based neuromodeling of high frequency circuits," *Micronet Annual Workshop* (Ottawa, ON), 1999, pp. 122-123.

[2] J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neuromodeling of microwave circuits exploiting space mapping technology," *IEEE MTT-S Int. Microwave Symp. Digest* (Anaheim, CA), 1999, pp. 149-152.

[3] J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "New directions in model development for RF/microwave components utilizing artificial neural networks and space mapping," (invited), *IEEE AP-S Int. Symp. Digest* (Orlando, FL), 1999, pp. 2572-2575.

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[5] J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neuromodeling of microwave circuits exploiting space mapping technology," *IEEE Trans. Microwave Theory Tech.*, vol. 47, 1999, pp. 2417-2427.

[6] J.W. Bandler, J.E. Rayas-Sánchez, F. Wang and Q.J. Zhang, "Realizations of Space Mapping based neuromodels of microwave components," (invited) *AP2000 Millennium Conf. on Antennas & Propagation* (Davos, Switzerland), vol. 1, 2000, pp. 460.

[7] J.W. Bandler, J.E. Rayas-Sánchez and Q.J. Zhang, "Software implementation of space mapping based neuromodels of microwave components," *Micronet Annual Workshop* (Ottawa, ON), 2000, pp. 67-68.

[8] M.H. Bakr, J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neural space mapping optimization of EM microwave structures," *IEEE MTT-S Int. Microwave Symp. Digest* (Boston, MA), 2000, pp. 879-882.

Page 1 of 3

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Department of Electrical and Computer Engineering

[9] M.H. Bakr, J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neural space mapping optimization for EM-based design of RF and microwave circuits," *First Int. Workshop on Surrogate Modeling and Space Mapping for Engineering Optimization* (Lyngby, Denmark), November 2000.

[10] M.H. Bakr, J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neural space mapping optimization for EM-based design," *IEEE Trans. Microwave Theory Tech.*, vol. 48, 2000, pp. 2307-2315.

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[12] J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neural inverse space mapping EM-optimization," *IEEE MTT-S Int. Microwave Symp. Digest* (Phoenix, AZ), 2001, pp. 1007-1010.

Work Accepted

[13] J.W. Bandler and J.E. Rayas-Sánchez, "Neural space mapping methods for device modeling and optimal design," *1st. Annual McMaster Optimization Conf.* (Hamilton, Ontario), 2001.

[14] J.W. Bandler, J.E. Rayas-Sánchez and Q.J. Zhang, "Yield driven EM optimization using space mapping-based neuromodels," *European Microwave Conf.* (London, England), 2001.

[15] J.W. Bandler, J.E. Rayas-Sánchez and Q.J. Zhang, "Yield-driven electromagnetic optimization via space mapping-based neuromodels," *Int. J. RF and Microwave CAE*, 2001.

Work Submitted

[1] J.W. Bandler, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "Neural inverse space mapping (NISM) optimization for EM-based design of microwave structures," *IEEE Trans. Microwave Theory Tech.*, December 2001.

This will confirm that **José E. Rayas-Sánchez** collaborated in the following papers.

Work Published

[1] J.W. Bandler, N. Georgieva, M.A. Ismail, J.E. Rayas-Sánchez and Q.J. Zhang, "A generalized space mapping tableau approach to device modeling," *European Microwave Conf.* (Munich, Germany), vol. 3, 1999, pp. 231-234.

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[4] J.W. Bandler, M.A. Ismail and J.E. Rayas-Sánchez, "Microwave device modeling exploiting generalized space mapping," *First Int. Workshop on Surrogate Modeling and Space Mapping for Engineering Optimization* (Lyngby, Denmark), November 2000.

[5] M.H. Bakr, J.W. Bandler, K. Madsen, J.E. Rayas-Sánchez and J. Søndergaard, "Space mapping optimization of microwave circuits exploiting surrogate models," *IEEE Trans. Microwave Theory Tech.*, vol. 48, 2000, pp. 2297-2306.

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[7] J.W. Bandler, M.A. Ismail and J.E. Rayas-Sánchez, "Expanded space mapping design framework exploiting preassigned parameters," *IEEE MTT-S Int. Microwave Symp. Digest* (Phoenix, AZ), 2001, pp. 1151-1154.

[8] M.H. Bakr, J.W. Bandler, Q.S. Cheng, M.A. Ismail and J.E. Rayas-Sánchez, "SMX—A novel object-oriented optimization system," *IEEE MTT-S Int. Microwave Symp. Digest* (Phoenix, AZ), 2001, pp. 2083-2086.

[9] J.W. Bandler, M.A. Ismail and J.E. Rayas-Sánchez, "Broadband physics-based modeling of microwave passive devices through frequency mapping," *Int. J. RF and Microwave CAE*, 2001, vol. 11, pp. 156-170.

Work Submitted

[1] J.W. Bandler, M.A. Ismail and J.E. Rayas-Sánchez, "Expanded space mapping design framework exploiting preassigned parameters," *IEEE Trans. Microwave Theory Tech.*, December 2001.

John W. Bandler
Professor Emeritus

Page 3 of 3

5. Gráfico de citas por año de las últimas dos décadas (*Google Scholar*)

(Hasta junio 5, 2023)

Fuente:
https://scholar.google.com/citations?user=YhsODCoAAAAJ&hl=es#d=gsc_md_hist&t=1686015172080

6. Apéndice A: Reporte de *Google Scholar* sobre los 100 trabajos más citados

Jose Ernesto Rayas-Sanchez

ITESO
- The Jesuit University of Guadalajara

RF
microwaves
space mapping
surrogate modeling
artificial neural networks

CREAR MI PROPIO PERFIL

	Total	Desde 2018
Citas	2590	1130
Índice h	22	16
Índice i10	41	25

0 artículos 1 artículo

no disponibles disponibles

Basado en requisitos de financiación

TÍTULO	CITADO POR	AÑO
EM-based optimization of microwave circuits using artificial neural networks: The state-of-the-art JE Rayas-Sánchez IEEE Transactions on Microwave Theory and Techniques 52 (1), 420-435	413	2004
Neuromodeling of microwave circuits exploiting space-mapping technology JW Bandler, MA Ismail, JE Rayas-Sánchez, QJ Zhang IEEE Transactions on Microwave Theory and Techniques 47 (12), 2417-2427	267	1999
EM-based Monte Carlo analysis and yield prediction of microwave circuits using linear-input neural-output space mapping JE Rayas-Sanchez, V Gutierrez-Ayala IEEE transactions on microwave theory and techniques 54 (12), 4528-4537	163	2006
Neural space-mapping optimization for EM-based design MH Bakr, JW Bandler, MA Ismail, JE Rayas-Sánchez, QJ Zhang IEEE Transactions on Microwave Theory and Techniques 48 (12), 2307-2315	148	2000
A general EM-based design procedure for single-layer substrate integrated waveguide interconnects with microstrip transitions JE Rayas-Sanchez, V Gutierrez-Ayala 2008 IEEE MTT-S International Microwave Symposium Digest, 983-986	138	2008
Power in simplicity with ASM: Tracing the aggressive space mapping algorithm over two decades of development and engineering applications JE Rayas-Sanchez IEEE Microwave Magazine 17 (4), 64-76	110	2016
Space-mapping optimization of microwave circuits exploiting surrogate models MH Bakr, JW Bandler, K Madsen, JE Rayas-Sanchez, J Sondergaard IEEE Transactions on Microwave Theory and Techniques 48 (12), 2297-2306	99	2000
A generalized space-mapping tableau approach to device modeling JW Bandler, N Georgieva, MA Ismail, JE Rayas-Sánchez, QJ Zhang IEEE Transactions on Microwave Theory and Techniques 49 (1), 67-79	96	2001
Polynomial-based surrogate modeling of RF and microwave circuits in frequency domain exploiting the multinomial theorem JL Chávez-Hurtado, JE Rayas-Sánchez	83	2016

TÍTULO	CITADO POR	AÑO
IEEE Transactions on Microwave Theory and Techniques 64 (12), 4371-4381		
A linear inverse space-mapping (LISM) algorithm to design linear and nonlinear RF and microwave circuits JE Rayas-Sánchez, F Lara-Rojo, E Martínez-Guerrero IEEE transactions on microwave theory and techniques 53 (3), 960-968	57	2005
Yield-driven electromagnetic optimization via space mapping-based neuromodels JW Bandler, JE Rayas-Sánchez, QJ Zhang International Journal of RF and Microwave Computer-Aided Engineering: Co …	55	2002
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7. Apéndice B: Reporte de citas de *Web of Science* (Citas Tipo A)

Web of Science™

Web of Science CV
Prepared on May 18th 2023

Jose Ernesto Rayas-Sanchez

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Publication Metrics

For manuscripts published from date range January 1998 - May 2023

16
H-index

1281
Sum of Times Cited

103
Publications

90
Web of Science Core Collection

For all time

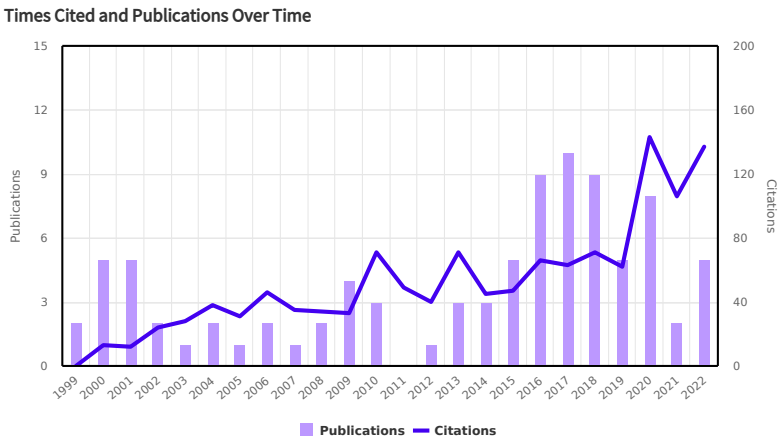
16
H-index

1281
Sum of Times Cited

105
Publications

90
Web of Science Core Collection

Publication Impact Over Time



Publishing Summary

For manuscripts published from date range January 1998 - May 2023

(22) IEEE MTT-S International Microwave Sy…	(10) IEEE Transactions on Microwave Theory…
(7) IEEE Microwave Magazine	(7) IEEE MTT-S Latin America Microwave Con…
(6) International Journal of RF and Microwa…	(5) IEEE Latin American Symposium on Circ…
(4) IEEE Conference on Electrical Performan…	(4) 46TH EUROPEAN MICROWAVE CONFERE…
(3) IEEE International Midwest Symposium o…	(3) International Caribbean Conference on D…
(3) IEEE MTT-S International Conference on …	(2) European Microwave Conference
(2) IEEE Transactions on Computer-Aided De…	(2) IEEE Journal of Microwaves
(2) IEEE Transactions on Electromagnetic Co…	(2) Ieee Mtt-s Latin America Microwave Conf…
(1) Microwave and Optical Technology Letters	(1) International Journal of Numerical Mode…
(1) Electronics, Robotics and Automotive Me…	(1) International Microwave Workshop Serie…
(1) Ieee Andescon	(1) IEEE Latin American Test Symposium (LA…
(1) Microelectronics Reliability	(1) IEEE Transactions on Circuits and System…
(1) 16TH LATIN-AMERICAN TEST SYMPOSIU…	(1) SBMO/IEEE MTT-S International Microwa…
(1) Simulation-driven Design Optimization a…	(1) IEEE Transactions on Emerging Topics in …
(1) International Conference on Synthesis, M…	(1) International Microwave Workshop Serie…
(1) IEEE International Test Conference (TC)	(1) IEEE Latin-American Test Symposium (LA…
(1) Integration, the VLSI Journal	(1) 17TH IEEE WORKSHOP ON SIGNAL AND P…
(1) European Microwave Conference (EuMC)	

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Reviewer Summary

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