



## CURRICULUM VITAE (CVA)

**IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.**

<b>Part A. PERSONAL INFORMATION</b>			<b>CV date</b>	12-01-2022
First name	RAMON			
Family name	GONZALEZ CARVAJAL			
Gender (*)	MALE	Birth date (dd/mm/yyyy)	30/03/1970	
Social Security, Passport, ID number	27308977L			
e-mail	<a href="mailto:carvajal@us.es">carvajal@us.es</a>	URL Web	<a href="https://bibliometria.us.es/prisma/investigador/1737">https://bibliometria.us.es/prisma/investigador/1737</a>	
Open Research and Contributor ID (ORCID)(*)	0000-0003-3891-8987			

(\*) Mandatory

### A.1. Current position

Position	Full Professor		
Initial date	03/01/2008		
Institution	University of Sevilla		
Department/Center	Electronics Engineering Department		
Country	SPAIN	Teleph. number	608790226
Key words	Microelectronics, Analogue, digital and mixed circuits, A/D converters, Design in micro/nanometric CMOS technologies, Electronic instrumentation, Internet of Things, Wireless sensor networks, Embedded systems		

### A.2. Previous positions (research activity interruptions, art. 45.2.c))

Period	Position/Institution/Country/Interruption cause
25/04/2002-02/01/2008	Associate Professor/Univ. of Seville/Spain
09/10/1996 – 24/04/2002	Assistant Professor/Univ. of Seville/Spain

### A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Industrial Engineer	University of Sevilla	1995
PhD Industrial Engineer	University of Sevilla	1999

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

Professor of Electronic Technology at the University of Sevilla (US) and Honorary Adjunct Professor at New Mexico State University, USA. Vice-Rector of Technology Transfer at the University of Seville between 2009 and 2015, a position he combined with that of General Director of the Research Foundation of the University of Seville (FIUS) and Coordinator of the Campus of International Excellence Andalucía TECH. He has also been Director of the OTRI of the University of Seville, member of the Steering Group of ITEA2 (EUREKA) and Secretary General of R&D&I in Health of the Andalusian Regional Government. **Dr. Carvajal is an IEEE FELLOW.**

During his research career he has carried out research stays in prestigious centres such as Texas A&M University, New Mexico State University, The Imperial College of Engineering and Medicine, University of Catania or the Instituto Nacional de Astrofísica, Óptica y Electrónica de Puebla. In all of them he has collaborated with top researchers such as Edgar Sanchez Sinencio, Jaime Ramírez Angulo, Gaetano Palumbo or Esther Rodriguez Villegas. Throughout his research career he has produced more than 300 publications, 151 of them in high impact indexed journals. He has also participated in more than 132 research projects, some of them with prestigious entities such as NASA, National Science Foundation, EPSRC, EUREKA or the European Union Framework Programme. His curriculum highlights technology transfer, which has produced more than 70 projects in collaboration with industry and innovative public procurement. He is co-author of a dozen patents, 5 of which are owned by the Japanese multinational SEIKO-EPSON.

Given the extensive curriculum, I will focus what remains of the free presentation of the curriculum on the experience in the design of very low power analog and mixed microelectronic circuits for sensor signal processing, an area in which Dr. González Carvajal has made important contributions and which is the central theme of the proposal presented. We highlight the design of class AB and super class AB circuits as well as quasi-floating gate circuits. For example, the article "Carvajal, RG et al., The flipped voltage follower: A useful cell for low-voltage low-power circuit design, IEEE Transactions on Circuits and Systems I: Regular Papers, vol. 52, no. 7, pp. 1276-1291, 2005", has coined a term (the Flipped voltage Follower or FVF) that is used in hundreds of publications on the IEEE website. This article is still, today, among the most downloaded articles in the journal and in the last 9 years alone has been downloaded more than 18,000 times and cited more than 600 times. Another contribution that has attracted the attention of the research community is the concept of super class AB operation. It was proposed by Dr. González Carvajal in the articles "López-Martín, Antonio J; Baswa, Sushmita; Ramirez-Angulo, Jaime; Carvajal, Ramón González; Low-voltage super class AB CMOS OTA cells with very high slew rate and power efficiency, IEEE Journal of Solid-State Circuits, vol. 40, no. 5, pp. 1068-1077, 2005" and "Galan, Juan A; Lopez-Martin, Antonio J; Carvajal, Ramon G; Ramirez-Angulo, Jaime; Rubia-Marcos, Carlos; Super class-AB OTAs with adaptive biasing and dynamic output current scaling, IEEE Transactions on Circuits and Systems I: Regular Papers, vol. 54, no. 3, pp. 449-457, 2007", which have been downloaded more than 10,000 times from the IEEE website in the last 9 years and have been cited more than 300 times according to Google Scholar.

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

### C.1. Publications (see instructions)

- 1. Journal Publication:** A Paul, J Ramírez-Angulo, A Díaz Sánchez, AJ López-Martín, RG Carvajal, FX Li, (2021), "An Enhanced Gain-Bandwidth Class-AB Miller op-amp With 23,800 MHz· pF/mW FOM, 11-16 Current Efficiency and Wide Range of Resistive and Capacitive Loads Driving Capability", IEEE Access, Vol. 9, 69783-69797
- 2. Journal Publication:** A Paul, J Ramirez-Angulo, A Díaz Sánchez, AJ López-Martín, RG Carvajal, FX Li, (2021), "Super-Gain-Boosted AB-AB Fully Differential Miller Op-Amp With 156dB Open-Loop Gain and 174MV/V MHz pF/μW Figure of Merit in 130nm CMOS Technology", IEEE Access, 9, 57603-57617
- 3. Journal Publication:** HD Rico-Aniles, J Ramirez-Angulo, JM Rocha-Perez, AJ Lopez-Martin, RG Carvajal, (2020), "Low-Voltage 0.81 mW, 1–32 CMOS VGA With 5% Bandwidth Variations and– 38dB DC Rejection", IEEE Access, 8, 106310-106321
- 4. Journal Publication:** HD Rico-Aniles, J Ramírez-Angulo, AJ Lopez-Martin, RG Carvajal, JM Rocha-Pérez, MP Garde, (2020), "Power Efficient Simple Technique to Convert a Reset-and-Hold Into a True-Sample-and-Hold Using an Auxiliary Output Stage", IEEE Access, 8, 66508-66516

5. **Journal Publication.** JR García-Oya, E Hidalgo-Fort, F Muñoz-Chavero, RG Carvajal (2020), "Compressive-Sensing-Based Reflectometer for Sparse-Fault Detection in Elevator Belts" IEEE Transactions on Instrumentation and Measurement, 69, 4, 947-949
6. **Journal Publication.** A Paul, J Ramírez-Angulo, AJ López-Martín, RG Carvajal, JM Rocha-Pérez (2019), "Pseudo-Three-Stage Miller Op-Amp With Enhanced Small-Signal and Large-Signal Performance", IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 27 (10), 2246-2259
7. **Journal Publication:** MP Garde, AJ. Lopez-Martin, RG Carvajal, J Ramirez-Angulo (2018), "Super class-AB recycling folded cascode OTA", IEEE Journal of Solid-State Circuits, 53 (9), 2614-2623.
8. **Journal Publication.** AJ. Lopez-Martin; MP Garde; JM Algueta; CA de la Cruz Blas; RG. Carvajal; J Ramirez-Angulo (2018), "Enhanced Single-Stage Folded Cascode OTA Suitable for Large Capacitive Loads", IEEE Transactions on Circuits and Systems II: Express Briefs, 65 (4), 441-445
9. **Journal Publication.** S Pourashraf; J Ramirez-Angulo; AR Cabrera-Galicia; AJ Lopez-Martin; RG Carvajal, (2018), "An Amplified Offset Compensation Scheme and Its Application in a Track and Hold Circuit", IEEE Transactions on Circuits and Systems II: Express Briefs, 65 (4), 416-420
10. **Journal Publication.** E. Hidalgo Fort, J.R. García Oya, F. Muñoz Chavero, R.G. Carvajal, (2017), "Intelligent Containers based on a Low-Power Sensor Network and a Non-Invasive Acquisition System for Management and Tracking of Goods". IEEE Transactions on Intelligent Transportation Systems. 2017. Pag. 1-6.

### C.3. Research projects

1. **Reference:** PID2019-107258RB-C31  
**Title:** Self-Powered and Maintenance-Free IoT System for Structural Health Monitoring  
**Funding Entity:** MINECO - Retos  
**Principal Investigator:** Dr. Ramón González Carvajal (University of Seville)  
**Dates:** June 2020 - May 2023 **Amount:** 99.400 €.  
**Type of participation:** Principal Investigator and coordinator
2. **Reference:** Project Number 826429  
**Title:** "Smart glasses for multifaceted visual loss mitigation and chronic disease prevention indicator for healthier, safer, and more productive workplace ageing population" (See Far)  
**Funding Entity:** European Commission (H2020). RIA with 12 Partners from 5 countries  
**Principal Investigator:** Dr. Ramón González Carvajal (University of Seville)  
**Dates:** December 2018 - November 2021 **Amount:** 3.998.000 € (410.000 € US)  
**Type of participation:** Principal Investigator of the US and Coordinator of the Consortium
3. **Reference:** EQC2019-006274-P  
**Title:** Infrastructure to adapt the Electromagnetic Compatibility Laboratory of the Engineering School of Seville to the new wireless communications standards.  
**Funding Entity:** Ministry of Science and Innovation.  
**Principal Investigator:** Dr. Ramón González Carvajal  
**Dates:** January 2020- December 2021 **Amount:** 183,720 €.  
**Type of participation:** Principal Investigator
4. **Reference:** P18-FR-4317  
**Title:** Monolithic Active Pixel Sensor in Nanometric Technology for Harsh Environments  
**Funding Entity:** Andalucía Regional Government, R&D projects  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** January 2020 to December 2022 **Amount:** 110.000,00 €.  
**Type of participation:** Principal Investigator

5. **Reference:** AT17\_5508\_USE  
**Title:** WaterIoT: Remote reading of water meters based on NbloT.  
**Funding entity and call:** Andalucía Regional Government, Technology Transfer  
**Principal Investigator:** Dr. Ramón González Carvajal (University of Seville)  
**Dates:** February 2020 - October 2021      **Amount:** 45.000 €  
**Type of participation:** Principal Investigator

#### C.4. Contracts, technological or transfer merits

##### C.4.1 Contracts

1. **Title:** IoT for Smart Metering  
**Funding Entity:** WOODSWALLOW S.L (Subsidiary of EDMI-METERS)  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** 2019 -2021  
**Amount:** 1.200.000,00€.  
Type of participation: Principal Investigator
2. **Title:** Digital Reservoir: EMASESA's Digital Transformation  
**Funding Entity:** EMASESA  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** 2021 - 2026  
**Amount:** 600.000 €.  
**Type of participation:** Principal Investigator
3. **Title:** HUMS: Health and Usage Management System  
**Funding Entity:** General Dynamics  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** 2020 - 2021  
**Amount:** 73.000 €.  
**Type of participation:** Principal Investigator
4. **Title:** HW and FW Test of embedded systems intended for large deployments  
**Funding Entity:** WOODSWALLOW UK (EDMI-METERS subsidiary in UK)  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** 2019 -2021  
**Amount:** 600.000,00€.  
**Type of participation:** Principal Investigator
5. **Title:** Integrated Production Management System  
**Funding Entity:** General Dynamics  
**Principal Investigator:** Dr. Ramón Gonzalez Carvajal (University of Seville)  
**Dates:** May 2015 - December 2016  
**Amount:** 459.524,00 €.  
**Type of participation:** Principal Investigator

##### C.4.2 Patents

1. **Inventors** (p. o. signature): Carvajal, RG, Hidalgo Fort, E, Oya, JRG, Muñoz-Chavero, F, Onieva, L, Cortés-Achedad, P, Guadix, J, Muñozuri, J  
**Reference:** ES20160030546 20160429 Priority date 29/04/2016  
**Title:** "Sistema y metodo de monitorizacion de contenedores de carga de paredes metalicas".  
**Country of priority:** Spain, **Countries to which it has been extended:** AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS LI LT LU LV MC MT NL NO PL PT RO SE SI  
**Assignee:** Agencia de obra publica de la Junta de Andalucia