EUROPEAN CURRICULUM VITAE FORMAT

PERSONAL INFORMATION

Name	**PROF. MATTIA BORGARINO**
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Website	**http://personale.unimore.it/Rubrica/dettaglio/borgarino**
Nationality	Italian
Date of birth	16/03/1968

GENERAL RESEARCH INTERESTS

Radio Frequency Integrated Circuits, Low Frequency Noise, DAC/ADC, Quantum microelectronics.

BIBLIOMETRIC SUMMARY DATA

• Total international publications	>90
• Total citations	695
• H-index	15

EDUCATION AND TRAINING

• 1993	• Master degree in Electronic Engineering, Parma University, Italy
• 1999	• PhD in “Information Technologies”, Parma University, Italy

PRINCIPAL POSITIONS

• From 2005	Associate Professor
• Name and address of employer	Università degli Studi di Modena e Reggio Emilia
• From 2000 to 2005	University Researcher
• Name and address of employer	Università degli Studi di Modena e Reggio Emilia
• From 1999-2000	Post-Doctoral Position
• Name and address of employer	Laboratoire d’Analyse et d’Architecture des Systèmes (LAAS) du Centre Nationale de la Recherche Scientifique (CNRS) a Toulouse (Francia)
• Type of business or sector	Public National Research

VISITING POSITIONS

• 2018 Visiting professor at the University of Bordeaux (France)

TEACHING

Analog Electronics
Electronics I (AY 2013/2014; 2014/2015; 2015/2016; 2016/2017; 2017/2018; 2018/2019; 2019/2020; 2021/2022; 2022/2023; 2023/2024)
Electronics II (AY 2011/2012; 2019/2020; 2020/2021)
Analog Electronics (AY 2024/2025; 2025/2026)
Microelectronic Technology and Integrated Circuits
Integrated Circuits Design (AY 2004/2005; 2012/2013; 2013/2014; 2014/2015; 2015/2016)
Fabrication and Design of Integrated Circuits (AY 2009/2010; 2010/2011)
Mixed-signal and Radiofrequency Circuits
Telecom Electronics (AY 2004/2005; 2005/2006; 2006/2007; 2007/2008; 2008/2009; 2009/2010; 2010/2011)
Advanced Circuit Design (AY 2016/2017; 2017/2018; 2018/2019)
Applied Electronics (AY 2010/2011; 2011/2012; 2012/2013)
Analog and Mixed Signal Circuit Design (AY 2020/2021; 2021/2022; 2022/2023; 2023/2024; 2024/2025; 2025/2026)
Device Physics & Analog Circuits
Electron Devices A (AY 2005/2006; 2006/2007; 2007/2008; 2008/2009)
Electronic A (AY 2004/2005)
Electronic Circuit Lab (AY 2023/2024; 2024/2025; 2025/2026)
Digital Electronics
Electronics D (AY 2005/2006; 2006/2007; 2007/2008; 2008/2009; 2009/2010; 2010/2011)

ACADEMIC CHARGES

• From 2022 Enzo Ferrari Engineering Department Delegate for the Unimore Sport Excellence Program dedicated to high-level student athletes for best combining competitive sport and university commitment.

• From 2017 Member of the Board for the Evaluation of the International Students applying to the Master Degree Course in Electronics Engineering

• 2013-2022 Joint Teachers-Students Committee (Commissione Paritetica) of the Enzo Ferrari Engineering Department (Vice-president: 2013-2015, President: 2016-2020, Member: 2021-2022)

• From 2013 Member of the Scientific Board of the Enzo Ferrari Engineering Department Library

GRANTS & PROJECTS

• 2003 Staff member in the PRIN 2002 project “Multistandard 5-6 GHz transceiver front-end for domotic WLANs”

• 2004 Staff member in the PRIN 2003 project “Non-linear noise models and design of low phase-noise oscillators for high performance communication systems”

• From 2005 Local investigator for the PRIN 2005 project “Silicon Integrated Radiometer for Fire Prevention and Civil and Environmental Safeguard”
Industrial R&D contract “Design of an inductive heating and cooking system for domestics applications” (2005)
Industrial R&D contract “Microanalysis of solid-state light sources for industrial applications” (2007)
Industrial R&D contract “Design of a multi-frequency sensors for the measurement of moisture content in dielectrics” (2008)
Industrial R&D contract “Design of macro-blocks in SiGe technology for an RX chip working in the L band” (2009)
Industrial R&D contract “DC, low frequency noise, and chromatic characterization of white light LED” (2010)
Industrial R&D contract “Microanalysis of Alumina substrate for LED applications” (2012)
FAR project “Transimpedance Microamplifier for the low frequency noise characterization of electron devices” (2015)
Staff member in the project “GaN for Advanced Power Applications” (Horizon 2020, DOI

10.3030/101007310) (2021)
Staff member in the project BAC-PNRR (2024), SMILE-SQUIP (addressing molecular and donor Spins with MIcrowave puLsEs through Superconducting circuits for QUantum Information Processing)
Staff member in the project "Wide Band Gap Pilot Line – Future Power Electronics" (HORIZON-JU-RIA HORIZON JU Research and Innovation Actions (2025)).

AWARDS

- 2019 University Tutor of a team of students of the secondary school in the frame of the program "Alternanza Scuola Lavoro". The project was focused on the design, fabrication and test of a simple digital integrated circuit. The work received the Union Camere Award (Camera di Commercio di Modena) (2nd rank).
- 2009 1 Best student paper and 2 poster awards at international conferences

SCIENTIFIC ROLES

- From 2023 Guest Editor for the Special Issue "Recent Advances in Quantum Microprocessor" of the MDPI Journal "Electronics". (IF=2.6)
- 2021 Guest Editor for the Special Issue "Recent Advances in Silicon-based RFIC Design" of the MDPI Journal "Electronics". (IF=2.4)
- 2018 MIUR REPRISE Scientific observer for the Basic Research Activity
- 2009 Scientific Reviewer for the French ANR (Agence Nationale de la Recherche) for the program Jeunes Chercheuses et Jeunes Chercheurs.
- From 2004 *Reviewer of several journals (IEEE, Elsevier, MDPI)*

OTHER PROFESSIONAL ACHIEVEMENTS

- *1994* Qualification for engineering profession (Italy)
- *1994-1995* Military Service with Specialization Electronic Technician (Italy)
- *1999* Qualification à Maitre de Conference released by Ministere de l'Education Nazionale, de la Recherche et de la Tecnologie", section 63: Electronique, optronique et systèmes (France)

SELECTED PUBLICATIONS

• Books and Chapters

- *M.Borgarino, "Analog Microelectronics", Springer Nature, 2025*
- *F.Fantini, M.Borgarino, "Appunti di Microelettronica", Ed. Pitagora, Italy, 2002*
- *M.Borgarino, "Esercizi di Elettronica Digitale", Ed. Pitagora, Italy, 2012*

• Selected Papers

- *M.Borgarino, A.Badiali, "Demystifying Quantum Gate Fidelity for Electronics Engineers", Applied Sciences Journal, MDPI, Vol. 15, 2675, 2025 DOI: 10.3390/app15052675*
- *A.Badiali, M.Borgarino, "Low-Power Silicon-Based Frequency Dividers: An Overview", Electronics Journal, MDPI, Vol. 14, 652, 2025 DOI: 10.3390/electronics14040652*
- *A.Badiali, M.Borgarino, "Cryo-CMOS Multi-Frequency Modulator for 2-Qubit Controller", Electronics Journal, MDPI, Vol. 13, 2546, 2024 DOI: 10.3390/electronics13132546*
- *N.Zagni, G.Verzellesi, A.Bertacchini, M.Borgarino, F.Iucolano, A.Chini, "Hole Virtual Gate Model Explaining Surface-Related Dynamic Ron in p-GaN Power HEMTs", IEEE Electron Device Letters, Volume: 45, Issue: 5, May 2024, pp. 801-804, doi: 10.1109/LED.2024.3375912 (IF: 4.1; Citations: 0, Reads: 35)*

- *M.Borgarino, A.Badiali, "Quantum Gates for Electronics Engineers", Electronics Journal, MDPI, Vol. 12, 4664, 2023, DOI: 10.3390/electronics12224664 (IF: 2.6; Citations: 0, Reads: 82)*
- *M.Borgarino, "Circuit-based Compact Model of Electron Spin Qubit", MDPI Electronics, 2022, DOI: 10.3390/electronics11040526 (IF: 2.4; Citations: 1, Reads: 114)*
- *G.Gira, E.Ferraro, M.Borgarino, "On the VCO/Frequency Divider Interface in Cryogenic CMOS PLL for Quantum Computing Applications", MDPI Electronics, 2021, DOI: 10.3390/electronics10192404 (IF: 2.4; Citations: 2, Reads: 127)*
- *A.Magnani, M.Borgarino, C.Viallon, T.Parra, G.Jacquemod, "A Low Power Ku Phase Locked Oscillator in Low Cost 130nm CMOS Technology", Microelectronics Journal, 2014, DOI: 10.1016/j.mejio.2014.04.013 (IF: 1.6; Citations: 6, Reads 42)*
- *G.Jacquemod, F.Benabdeljelil, W.Tatinian, P.Lucchi, M.Borgarino, L.Carpineto, "Comparison between RTW VCO and LC QVCO 12 GHz PLLs", Analog Integrated Circuits and Signal Processing, 2011, DOI: 10.1007/s10470-012-9885-9 (IF: 1.3 , Citations: 8, Reads: 26)*
- *M.Borgarino, A.Polemi, A.Mazanti, "Low-Cost Integrated Microwave radiometer Front-End for industrial Applications", IEEE Trans. on Microwave Theory and Techniques, 2009, DOI: 10.1109/TMTT.2009.2034209 (IF: 3.6, Citations: 11, Reads: 1668)*
- *F.Alimenti, D.Zito, A.Boni, M.Borgarino, A.Fonte, A.Carboni, S.Leone, M.Pifferi, L-Roselli, B.neri, R.Menozzi, "System-on-chip microwave radiometer for thermal remote sensing and its application to the forest fire detection", IEEE Electronics, Circuits and Systems (ICECS), 2008, DOI: 10.1109/ICECS.2008.4675090 (Citations: 17, Reads: 251)*
- *P.A.Traverso, C.Florian, M.Borgarino, F.Filicori, "An Empirical Bipolar Device Nonlinear Noise Modeling Approach for Large-Signal Microwave Circuit Analysis", IEEE Trans. on Microwave Theory and Techniques, 2007, DOI: 10.1109/TMTT.2006.885991 (IF: 3.6, Citations: 27, Reads: 22)*
- *M.Borgarino, C.Florian, P.A.Traverso, F.Filicori, "Microwave large-signal effects on the low-frequency noise characteristics of GaInP/GaAs HBTs", IEEE Trans. on Electron Devices, 2006, DOI: 10.1109/TED.2006.882042 (IF: 2.9 , Citations: 16, Reads: 8)*
- *F.Scotti, C.Porzi, P.Ghelfi, F.Falconi, M.M.Haris Amir, S.Maresca, M.Borgarino, A.Bogoni "Indoor field-trial in X band of a photonics-based multiband radar on a packaged silicon chip", IEEE International Topical Meeting on Microwave Photonics, 15-17 November, 2021, Pisa, Italy, DOI: 10.1109/MWP53341.2021.9639397*

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE **ITALIAN**

OTHER LANGUAGES

ENGLISH

• Reading skills	excellent
• Writing skills	good
• Verbal skills	good

FRENCH

• Reading skills	excellent
• Writing skills	very good
• Verbal skills	excellent

GERMAN

• Reading skills	sufficient
• Writing skills	sufficient
• Verbal skills	discrete

SOCIAL SKILLS AND COMPETENCES

Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential.

Excellent capabilities to work with other people in multicultural environments

ORGANISATIONAL SKILLS AND COMPETENCES

Coordination and administration of people, projects and budgets; at work, in voluntary work.

Excellent capabilities in coordination of projects and research teams

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.

Modena, 25.06.2024
Name Surname
Signature