



## Elisabetta Moisello, Ph.D.

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### Biography

Elisabetta Moisello was born in Pavia, Italy, in 1993. In 2015 and 2017, respectively, she received the Bachelor's degree in electronic engineering and computer science and the Master's degree (*summa cum laude*) in electronic engineering from the University of Pavia. In 2017 she joined the Integrated MicroSystems and Sensors (IMS<sup>2</sup>) laboratory at the University of Pavia as a Ph.D. candidate. In 2020 she received the Ph.D. in microelectronics from the University of Pavia. Since 2020 she has been a postdoctoral research fellow and contract professor at the same institution. Her research topics include sensor interface circuits (for contactless thermal detectors, smart temperature sensors, IR imagers, CMUT devices, audio band applications), switching dc-dc converters and wireless power transfer. She has been and still is part of the Organizing Committee of the PRIME Conference and has served on the Technical Program Committees of several International Conferences (PRIME, ICECS, NEWCAS and MWSCAS). She is an Associate Editor for IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS—PART II: EXPRESS BRIEFS (TCAS-II).

### Employment History

- 2020 – . . .  **Postdoctoral Research Fellow**  
University of Pavia, Italy.  
Research interests: interface circuits for contactless integrated temperature sensors, temperature-to-digital converters, high efficiency switching dc-dc converters, wireless power and data transfer, bandgap voltage reference circuits, interface circuits for CMUT devices, isolated power converters systems, interface circuits for IR imagers.
- 2021 – . . .  **Contract Professor**  
University of Pavia, Italy.  
Module of Electronics I – 2 CFU (Elettronica I), in the frame of the Bachelor's Degree on Electronic and Computer Engineering.

### Education

- 2017 – 2020  **Ph.D. in Microelectronics**  
University of Pavia, Italy.  
Thesis title: *Integrated interface circuits for MEMS contact-less temperature sensors.*
- 2015 – 2017  **Master's Degree in Electronic Engineering**  
University of Pavia, Italy.  
Thesis title: *Design of a chopper stabilized readout circuit for integrated thermopiles.*  
110/110 cum laude
- 2012 – 2015  **Bachelor's Degree in Electronic Engineering and Computer Science**  
University of Pavia, Italy.  
Thesis title: *Automation of voltage and current measurements for characterizing a chip for electro-optical transmissions.*  
107/110
- 2007 – 2012  **High School Degree**  
Liceo Scientifico "N. Copernico", Pavia, Italy.  
100/100 cum laude





## Research Publications

### Journal Articles

- 1 **E. Moiselto**, A. Liotta, P. Malcovati, and E. Bonizzoni, "Recent Trends and Challenges in Near-Field Wireless Power Transfer Systems," *IEEE Open Journal of the Solid-State Circuits Society*, vol. 3, pp. 197–213, 2023. [DOI: 10.1109/OJSSCS.2023.3313575](https://doi.org/10.1109/OJSSCS.2023.3313575).
- 2 **E. Moiselto**, M. E. Castagna, A. La Malfa, G. Bruno, P. Malcovati, and E. Bonizzoni, "Reference Temperature Sensor for TMOS-Based Thermal Detectors," *IEEE Access*, vol. 11, pp. 96 594–96 602, 2023. [DOI: 10.1109/ACCESS.2023.3312620](https://doi.org/10.1109/ACCESS.2023.3312620).
- 3 **E. Moiselto**, C. M. Ippolito, G. Bruno, P. Malcovati, and E. Bonizzoni, "A MOS-Based Temperature Sensor With Inherent Inaccuracy Reduction Enabled by Time-Domain Operation," *IEEE Transactions on Instrumentation and Measurement*, vol. 72, pp. 1–10, 2023. [DOI: 10.1109/TIM.2023.3276016](https://doi.org/10.1109/TIM.2023.3276016).
- 4 A. Gemelli, M. Tambussi, S. Fusetto, A. Aprile, **E. Moiselto**, E. Bonizzoni, and P. Malcovati, "Recent Trends in Structures and Interfaces of MEMS Transducers for Audio Applications: A Review," *Micromachines*, vol. 14, no. 4, 2023. [DOI: 10.3390/mi14040847](https://doi.org/10.3390/mi14040847).
- 5 **E. Moiselto**, M. Vaiana, M. E. Castagna, G. Bruno, I. Brouk, Y. Nemirovsky, P. Malcovati, and E. Bonizzoni, "A MEMS-CMOS Microsystem for Contact-Less Temperature Measurements," *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 69, no. 1, pp. 75–87, 2022. [DOI: 10.1109/TCSI.2021.3091839](https://doi.org/10.1109/TCSI.2021.3091839).
- 6 **E. Moiselto**, M. E. Castagna, A. La Malfa, G. Bruno, P. Malcovati, and E. Bonizzoni, "High Responsivity Thermopile Sensors Featuring a Mosaic Structure," *Micromachines*, vol. 13, no. 6, 2022. [DOI: 10.3390/mi13060934](https://doi.org/10.3390/mi13060934).
- 7 **E. Moiselto**, P. Malcovati, and E. Bonizzoni, "Thermal Sensors for Contactless Temperature Measurements, Occupancy Detection, and Automatic Operation of Appliances during the COVID-19 Pandemic: A Review," *Micromachines*, vol. 12, no. 2, 2021. [DOI: 10.3390/mi12020148](https://doi.org/10.3390/mi12020148).
- 8 **E. Moiselto**, M. Vaiana, M. E. Castagna, G. Bruno, P. Malcovati, and E. Bonizzoni, "An Integrated Thermopile-Based Sensor with a Chopper-Stabilized Interface Circuit for Presence Detection," *Sensors*, vol. 19, no. 18, 2019. [DOI: 10.3390/s19183999](https://doi.org/10.3390/s19183999).
- 9 **E. Moiselto**, M. Vaiana, M. E. Castagna, G. Bruno, P. Malcovati, and E. Bonizzoni, "An Integrated Micromachined Thermopile Sensor With a Chopper Interface Circuit for Contact-Less Temperature Measurements," *IEEE Transactions on Circuits and Systems I: Regular Papers*, vol. 66, no. 9, pp. 3402–3413, 2019. [DOI: 10.1109/TCSI.2019.2928717](https://doi.org/10.1109/TCSI.2019.2928717).


### Conference Proceedings

- 1 **E. Moiselto**, P. Malcovati, and E. Bonizzoni, "A compact-area low-power temperature sensor featuring high supply voltage scalability," in *2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2023, pp. 1–4. [DOI: 10.1109/ICECS58634.2023.10382756](https://doi.org/10.1109/ICECS58634.2023.10382756).
- 2 A. Liotta, **E. Moiselto**, G. Frattini, P. Giannelli, P. Malcovati, and E. Bonizzoni, "An s-matrix-based model of a capacitive-inductive channel for wireless power and data transmission," in *2023 30th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2023, pp. 1–4. [DOI: 10.1109/ICECS58634.2023.10382847](https://doi.org/10.1109/ICECS58634.2023.10382847).
- 3 **E. Moiselto**, E. Bonizzoni, and P. Malcovati, "A 0.756-ppm/°C Time-Domain-Based Curvature-Compensated Bandgap Reference," in *2023 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2023, pp. 1–5. [DOI: 10.1109/ISCAS46773.2023.10181819](https://doi.org/10.1109/ISCAS46773.2023.10181819).
- 4 A. Liotta, **E. Moiselto**, G. Frattini, P. Giannelli, P. Malcovati, and E. Bonizzoni, "A Novel Capacitive-Inductive Channel for Wireless Power and Data Transmission," in *2023 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2023, pp. 1–5. [DOI: 10.1109/ISCAS46773.2023.10181831](https://doi.org/10.1109/ISCAS46773.2023.10181831).





- 5 S. Fusetto, **E. Moisélo**, H. Petersen, S. Abedinpour, P. Malcovati, and E. Bonizzoni, “An 87.2%-peak efficiency 4.1 W-output power switchedcapacitor 3-level inverting buck-boost dc-dc converter,” in *2023 IEEE Custom Integrated Circuits Conference (CICC)*, 2023, pp. 1–2.  DOI: 10.1109/CICC57935.2023.10121232.
- 6 A. Aprile, **E. Moisélo**, E. Bonizzoni, and P. Malcovati, “Performance Comparison of BJT and MOS Devices as Temperature Sensing Elements,” in *2022 29th IEEE International Conference on Electronics, Circuits and Systems (ICECS)*, 2022, pp. 1–4.  DOI: 10.1109/ICECS202256217.2022.9970964.
- 7 **E. Moisélo**, M. Vaiana, M. E. Castagna, A. La Malfa, G. Bruno, E. Bonizzoni, and P. Malcovati, “A Novel CMOS-SOI High-Responsivity Thermopile for Thermal Sensing Applications,” in *2022 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2022, pp. 871–875.  DOI: 10.1109/ISCAS48785.2022.9937944.
- 8 A. Aprile, **E. Moisélo**, E. Bonizzoni, and P. Malcovati, “An Extensive Investigation and Analysis of Temperature-to-Digital Converter FoMs,” in *2021 28th IEEE International Conference on Electronics, Circuits, and Systems (ICECS)*, 2021, pp. 1–4.  DOI: 10.1109/ICECS53924.2021.9665502.
- 9 S. Fusetto, **E. Moisélo**, F. Cannillo, P. Malcovati, and E. Bonizzoni, “A Power Switch Size Optimization Strategy for Multi-Switch DC-DC Converters,” in *2021 28th IEEE International Conference on Electronics, Circuits, and Systems (ICECS)*, 2021, pp. 1–4.  DOI: 10.1109/ICECS53924.2021.9665603.
- 10 **E. Moisélo**, M. Vaiana, M. E. Castagna, G. Bruno, I. Brouk, T. Blank, S. Bar-Lev, Y. Nemirovsky, P. Malcovati, and E. Bonizzoni, “Study of a Voltage-Mode Readout Configuration for Micromachined CMOS Transistors for Uncooled IR Sensing,” in *2021 IEEE 12th Latin America Symposium on Circuits and System (LASCAS)*, 2021, pp. 1–4.  DOI: 10.1109/LASCAS51355.2021.9459117.
- 11 **E. Moisélo**, M. Vaiana, M. E. Castagna, G. Bruno, E. Bonizzoni, and P. Malcovati, “A Chopper Interface Circuit for Thermopile-Based Thermal Sensors,” in *2019 IEEE International Symposium on Circuits and Systems (ISCAS)*, 2019, pp. 1–5.  DOI: 10.1109/ISCAS.2019.8702506.

## Languages



Italian  Native.

English  Advanced reading, writing and speaking competencies.

## Skills

Coding	 MATLAB, LabVIEW, $\LaTeX$ , Verilog-A, Wiring (Arduino), C.
Computer Aided Design	 Cadence, SIMPLIS, Altium.
Hardware	 Computer, analog/digital oscilloscope, functions generator, digital multimeter, universal source, spectrum analyzer, logic analyzer, dynamic signal analyzer, LCR meter, climatic chamber, electronic load, PCB soldering.
Software	 Windows, Linux, Microsoft Office, Adobe Acrobat, Inkscape.

## International Scientific Activity

- 2024– ···  Associate Editor for the IEEE Transactions on Circuits and Systems II – Express Briefs.
- 2020– 2023  Guest Editor for “IEEE Transactions on Circuits and Systems II – Express Briefs” (Special Issues on ISICAS 2021, LASCAS 2021, ISICAS 2022, ISCAS 2023)

## International Scientific Activity (continued)

- 2019– . . .    📌 Experience as Reviewer for “IEEE Transactions on Circuits and Systems I – Regular Papers”, “IEEE Transactions on Circuits and Systems II – Express Briefs”, “IEEE Transactions on Electron Devices”, “IEEE Journal of Solid-State Circuits”, “IEEE Sensors”, “MDPI Applied Sciences”, “Integration – Elsevier”, ISCAS Conference, ICECS Conference, PRIME Conference, MWSCAS Conference, NEWCAS Conference
- 2021– . . .    📌 Experience as Session Chair at ISCAS Conference, ICECS Conference, PRIME Conference
- 2022           📌 Co-organizer of the Special Session on “Circuits and systems for non-contact sensing applications” at ISCAS 2022
- 📌 Member of the Technical Program Committee for PRIME 2022 Conference
- 📌 Member of the Organizing Committee for PRIME 2022 Conference – Publication Co-Chair and Finance Chair
- 📌 Special Issue Editor (Co-organizer and Guest Editor) for “MDPI Micromachines” – “Special Issue: Microsensors and Microsystems for the Human Body”
- 📌 Co-organizer of the Special Session on “Challenges and requirements in sensory circuit design” at ICECS 2022
- 📌 Member of the Technical Program Committee for ICECS 2022 Conference – Co-Track Chair of “Design of analog and mixed-signal circuits and systems”
- 📌 Organization support at ESSCIRC 2022
- 📌 “Challenges and Requirements in Sensory Circuit Design” Session Chair at the 2022 IEEE ICECS Conference.
- 📌 Co-organizer of the Special Session on “Challenges and Requirements in Sensory Circuit Design” at the 2022 IEEE ICECS Conference.
- 2023           📌 Member of the Organizing Committee for PRIME 2023 Conference – Publication Co-Chair
- 📌 Member of the Technical Program Committee for PRIME 2023 Conference
- 📌 Member of the Technical Program Committee for NEWCAS 2023 Conference – Track Chair of “Sensory Circuits and Systems”
- 📌 Member of the Technical Program Committee for MWSCAS 2023 Conference – Associate Editor for “Analog and Mixed Signal Circuits and Systems” Track
- 2020– . . .    📌 Young Professional representative for the CASS-North Italy Chapter
- 2020– 2022    📌 Secretary of the IEEE Italy Section Young Professional Affinity Group

## Teaching Activity

- 2021 – . . .    📌 Module of Electronics I – 2 CFU (Elettronica I), in the frame of the Bachelor’s Degree in Electronic and Computer Engineering
- 2023 – . . .    📌 Exercise and Laboratory – 2 hours for the “Integrated Power Management” course, in the frame of the Masters’s Degree in Electronic Engineering
- 2018– 2022    📌 Tutor – 90 hours for the “Elettronica I” course at University of Pavia (exercises at the blackboard, assistance during laboratory activities, assistance during exams); 30 hours for the “Circuiti Elettrici Lineari” course at University of Pavia (exercises at the blackboard, assistance during exams)

## Mentoring Activity

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| Bachelor's Thesis | ■ Alessandro Portesan, "Development of a data acquisition program for the characterization of a sensor for presence detection" |
|                   | ■ Luca Manfredi, "Experimental characterization of thermopile-based integrated sensors"  |
|                   | ■ Luca Torretta, "Experimental characterization of coils for wireless power transfer"  |
| Master's Thesis   | ■ Samuele Fusetto, "Design of a high efficiency inverting buck-boost converter for OLED displays"                              |
|                   | ■ Daniele La Cognata, "Design of a novel active rectifier circuit for wireless charging applications"                          |
| Doctoral Thesis   | ■ Samuele Fusetto, "Design of a high efficiency switched-capacitor 3-level inverting buck-boost converter for OLED displays "  |
|                   | ■ Alessandro Liotta, "Design of a capacitive-inductive simultaneous wireless information and power transfer system"            |
|                   | ■ Daniele La Cognata, "Design of a receiver for wireless power transfer compatible with AirFuel standard"                      |
|                   | ■ Francesco Romano, "Design of a control system for dual-active bridge dc-dc converters"                                       |
|                   | ■ Abdollah Sohrab Amini, "Design of an interface circuit for a CMUT transducer"  |

## Memberships

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| 2023 - . . . | ■ Solid-State Circuits Society (SSCS) Member.                              |
| 2021 - . . . | ■ Circuits and Systems Society (CASS) Member.                              |
|              | ■ Institute of Electrical and Electronics Engineers (IEEE) Member.         |
| 2018 - 2020  | ■ Circuits and Systems Society (CASS) Student Member.                      |
|              | ■ Institute of Electrical and Electronics Engineers (IEEE) Student Member. |