

SCIENTIFIC AND ACADEMIC CURRICULUM
PAOLO LAZZARONI

EDUCATION AND ACADEMIC APPOINTMENTS

2025 – now	Research Fellow (type A) Università degli Studi di Bergamo, Bergamo, Italy <i>Department:</i> Engineering and Applied Sciences <i>Scientific-Disciplinary Sector:</i> ING-INF/01 - Electronics <i>Keywords:</i> Analog integrated circuits, Front-end electronics, ASIC design, FPGA design, ASIC characterisation
2024 – 2025	Senior Technological Researcher – Level 2 Istituto Nazionale di Fisica Nucleare, Pavia, Italy <i>Title:</i> “Integration and calibration of the Si(Li) tracker of the GAPS experiment” <i>Coordinator:</i> Massimo Manghisoni <i>Keywords:</i> ASIC design, PCB design, FPGA design, data analysis, ASIC characterisation
2023 – 2024	Junior Technological Researcher – Level 1 Istituto Nazionale di Fisica Nucleare, Pavia, Italy <i>Title:</i> “Characterization of integrated circuits and modules developed for hybrid pixel readout at the CMS Inner Tracker” <i>Coordinator:</i> Gianluca Traversi <i>Keywords:</i> ASIC design, PCB design, FPGA design, data analysis, ASIC characterisation
2023 – 2024	Staff associate II Columbia University, New York, US <i>Activity:</i> Construction and testing of the GFP, the GAPS Functional prototype, as part of the GAPS experiment. <i>Coordinator:</i> Chuck Hailey <i>Keywords:</i> GAPS, Si(Li) tracker, front-end electronics, dark matter search
2020 – 2024	Doctor of Philosophy (Ph.D.) – Engineering and Applied Sciences Università degli Studi di Bergamo, Bergamo, Italy <i>Thesis:</i> “Design of a pixel readout processor for nano-meter resolution x-ray ptychography” <i>Advisor:</i> Massimo Manghisoni, Lodovico Ratti <i>Field of research:</i> Microelectronics for high energy physics <i>Keywords:</i> Radiation detection, front-end electronics, low noise, x-ray ptychography <i>Final Grade:</i> Excellent
2018 – 2020	Master of Science (M.Sc.) – Computer Engineering (Mechatronics) LM-32 Università degli Studi di Bergamo, Bergamo, Italy <i>Thesis:</i> “Characterization of a Modular System for the Realisation of the Si(Li) Tracker of GAPS experiment” <i>Advisor:</i> Massimo Manghisoni, Elisa Riceputi, Mauro Sonzogni <i>Keywords:</i> GAPS, Front-end Electronics, Analogue IC Design, Data Analysis <i>Final Grade:</i> 110/110 cum laude

2015 – 2018	Bachelor of Science (B.Sc.) – Computer Engineering LM-8 Università degli Studi di Bergamo, Bergamo, Italy <i>Thesis:</i> “Analysis of Reinforcement Learning Algorithms for Control in OpenAI Gym Simulated Environment” <i>Advisor:</i> Fabio Previdi, Mirko Mazzoleni <i>Keywords:</i> Machine Learning, Reinforcement Learning, Control, OpenAI Gym <i>Final Grade:</i> 107/110
2010 – 2015	Technical Certificate – Accounting & IT for Enterprise Istituto di Istruzione Superiore “Lorenzo Lotto”, Trescore Balneario (BG), Italy <i>Final Grade:</i> 100/100

SCIENTIFIC ACTIVITY

The scientific activity and research interest of Paolo Lazzaroni fall mainly in the design and characterisation of low-noise, low-power analogue front-end integrated circuits for semiconductor detector readout in particle physics, photon science, and astroparticle physics application.

The research activity to date encompasses the following:

1. Readout electronics for semiconductor detectors in photon science

The focus of the activity is the usage of integrated circuit technologies, mainly CMOS, for the design of high-granularity pixellated detectors for x-ray imaging applications, mainly leveraging fourth-generation synchrotron light sources.

Paolo Lazzaroni’s contribution to the topic follows:

- Development and test of a pixel readout processor for x-ray ptychography applications, pFREYA16, in a 65 nm CMOS technology in the frame of the FALCON project, an international collaboration between Argonne National Laboratory (Chicago, US), University of Bergamo, and University of Pavia. The ASIC integrates different analog, mixed, and digital structures and it is configurable through a serial interface. The circuit targets x-ray ptychography application with rate up to 1 MHz, a noise level below 300 e⁻ rms, and provide zero-suppression.

He is currently working on a 110 nm CMOS technology for a new hybrid detector for photon science in collaboration with DECTRIS (Switzerland).

2. Testing of front-end circuitry for XFELs and astrophysics

Paolo Lazzaroni has been investigating the operation of different systems, sensors, and chips designed to be used in the field of high-energy physics, photon science, and astrophysics.

Paolo Lazzaroni’s main works in this field include:

- Test and analysis of data coming from CROCv2, the final chip design for the CMS experiment at CERN, to be integrated in the upcoming years in the HL-LHC upgrade.
- Characterisation of the DEPFET sensors and readout ASICs for the upgrade of the DSSC camera, a hybrid pixel detector for the European XFEL, in a collaboration including DESY (Hamburg, Germany), INFN, and German and Italian universities.
- Characterisation of the Si(Li) tracker of the GAPS experiment, a balloon-borne experiment for the search of dark matter and antimatter in cosmic rays, in a big international collaboration comprising different universities and institutes across

the globe including NASA, JAXA, ASI, INFN, and American, Japanese, and Italian universities.

3. Design and development of affordable IoT solutions

The activity is collateral to the main topic of Paolo Lazzaroni's research and consists in designing efficient, precise, and smart IoT infrastructures to address different needs and developing machine learning solutions both on the back-end and on the IoT node. Paolo Lazzaroni's main interest lies in the low-power radar sensing field, especially on the design of microstrip RF front-ends for MMICs.

The main achievements to date coming from this activity are:

- Design and development of a low-power radar-based board for human presence detection, vital parameters monitoring, and position tracking. Paolo Lazzaroni contributed mainly to the design of the microstrip RF front-end, based on an array of patch antennas, and to the selection of the commercially available components for the system overall.
- Design and development of data acquisition system for multi-sensor readout, with the aim of monitoring the dynamics of a bike and the environment surrounding the rider. The activity is part of the MOST, Spoke 5 project funded by the Italian PNRR.
- Design and development of an IoT system for the monitoring of domestic boilers, with the aim of improving their efficiency and reducing energy consumption. The activity resulted in the first prize in Bosch SensorTec's "Making SensorTec" challenge, together with the microlab team.


4. Testing of electrically conductive cotton fabric coatings

The activity was pursued together with "A. J. Zaninoni" textile technology laboratory at the University of Bergamo.

The research work consists in performing high-precision, low-current measurement on different types of cotton coatings – based on carbon nanotubes and tungsten selenide – in order to check their conductivity properties against different temperature, humidity levels, and their reversibility after repeated test cycles.

SCIENTIFIC PUBLICATIONS

Paolo Lazzaroni is author or co-author 22 scientific publications, specifically 10 papers on international scientific journals, 12 conference proceedings, and one book. More details are found in the ORCID profile at the link:

 <https://orcid.org/0000-0002-8443-1101>

Metrics updated to the date of the document (Scopus):

- **h-index:** 3
- **Citations:** 33

The list of publications is given in the appendix.

ORAL COMMUNICATIONS AT SCIENTIFIC CONFERENCES

Paolo Lazzaroni gave oral communication at 4 international scientific conferences.

- 2025 | “Characterisation of a mixed-signal readout ASIC for continuous-wave x-ray applications,” *2025 IEEE Nuclear Science Symposium, Medical Imaging Conference and Room Temperature Semiconductor Detector Conference*, Yokohama (Japan), 01 – 08 November 2025
- 2023 | “Characterisation of the pFREYA16 ASIC for low-noise ptychography applications,” *2023 IEEE Nuclear Science Symposium, Medical Imaging Conference and Room Temperature Semiconductor Detector Conference*, Vancouver (Canada), 04 – 11 November 2023
- 2022 | “A low-noise readout channel for x-ray ptychography applications,” *2022 IEEE Nuclear Science Symposium, Medical Imaging Conference and Room Temperature Semiconductor Detector Conference*, Milano (Italy), 05 – 12 November 2022
- 2022 | “FALCON readout channel for x-ray ptychography applications,” *2022 17th Conference on Ph.D Research in Microelectronics and Electronics (PRIME)*, Villasimius (Italy), 12 – 15 June 2022

REVIEWER ACTIVITY FOR JOURNALS AND ASIC DESIGN

Paolo Lazzaroni serves as reviewer for journals and conferences in the field of microelectronics and electronics:

- IEEE Nuclear Science Symposium (NSS)
- IEEE Transactions on Nuclear Science (TNS)
- Journal of Instrumentation (JINST)
- Nuclear Science and Techniques (NST)
- Microelectronics Journal (MEJ)
- International Conference on Applications in Electronics Pervading Industry, Environment, and Society (ApplePies)
- International Conference on Modern Circuits and Systems Technologies on Electronics and Communications (MOCAS)

He also served as an ASIC reviewer for Cornell University Detector Group in 2023.

SCIENTIFIC INTERNATIONAL PROJECTS

Paolo Lazzaroni has been involved in different international projects together with different universities and research institutes. The list includes, but is not limited to:

- AlpRay** | (2025 – today) DECTRIS, UniPV, and UniBG collaboration.
Design of a high-dynamic-range pixel to be used in hybrid pixel detector in 110 nm CMOS technology
- CMS** | (2023 – today) CMS collaboration at CERN.
Characterisation of integrated circuits and modules developed for hybrid pixel readout at the CMS inner tracker.
- DSSC** | (2021 – today) EuXFEL, DESY, and INFN collaboration.
Testing and verification of the performance of the DEPFET sensors and ASICs.

- GAPS** | (2020 – today) GAPS collaboration.
Characterisation of the Si(Li) tracker of the experiment (based on an ASIC in 180 nm CMOS technology) and design of the second-flight prototype in 65 nm CMOS technology.
- FALCON** | (2020 – today) ANL, UniPV, and UniBG collaboration.
Design of a pixel readout processor for nano-meter resolution x-ray ptychography in 65 nm CMOS technology.

INTERNATIONAL SCIENTIFIC COLLABORATIONS

Paolo Lazzaroni has collaborated with different universities and research institutes. The list includes, but is not limited to:

- ANL** | Argonne National Laboratory, Chicago, US
- CERN** | European Organization for Nuclear Research, Geneva, Switzerland
- UH** | University of Hawaii, Honolulu, US
- UCLA** | University of California, Los Angeles, US
- CU** | Columbia University, New York, US
- DESY** | Deutsches Elektronen-Synchrotron, Hamburg, Germany
- DECTRIS** | Baden-Daettwil, Switzerland

AWARDS AND RECOGNITIONS

- 2023** | Bosch SensorTec “Making SensorTec!” challenge winner
First prize awarded to the University of Bergamo microlab team for the development of an intelligent IoT infrastructure for boiler monitoring, alert managing, and data analysis. The team was invited to present the work both at Bosch SensorTec (BST) in Milan, Italy, and at the BST headquarters in Reutlingen, Germany.
- 2022** | PRIME 2022 Bronze Leaf Certificate
Certificate awarded to the paper “FALCON readout channel for x-ray ptychography applications” as one of the top 30% paper of the PRIME 2022 conference.

ACADEMIC ACTIVITY

TEACHING ACTIVITY

Starting from 2021, Paolo Lazzaroni has carried out teaching assistant activities for Computer Engineering and Mechanical Engineering degrees at the University of Bergamo and Medicine and Surgery degree at the University of Milano-Bicocca. A detailed list of the aforementioned activities, with the corresponding academic year, follows:

- 2025 – 2026** | “Sensors,” lecturer (ENG, 3 CFU).
“Sensors,” teaching assistant (ITA, 6 CFU).
“Prosthesis and Rehabilitation in Practice,” lecturer (ENG, 1 CFU).
- 2024 – 2025** | “Fundamentals of Electronics,” teaching assistant (ITA, 9 CFU).
“Sensors,” teaching assistant (ITA, 6 CFU).
“Electronics and Elaboration of Biomedical Signals,” teaching assistant (ITA, 6 CFU).
“Prosthesis and Rehabilitation in Practice,” lecturer (ENG, 1 CFU).

2023 – 2024	“Fundamentals of Electronics,” teaching assistant (ITA, 9 CFU). “Sensors,” teaching assistant (ITA, 6 CFU). “Electronics and Elaboration of Biomedical Signals,” teaching assistant (ITA, 6 CFU). “Prosthesis and Rehabilitation in Practice,” lecturer (ENG, 1 CFU).
2022 – 2023	“Fundamentals of Electronics,” teaching assistant (ITA, 9 CFU). “Sensors,” teaching assistant (ITA, 6 CFU). “Prosthesis and Rehabilitation in Practice,” lecturer (ENG, 1 CFU).
2021 – 2022	“Fundamentals of Electronics,” teaching assistant (ITA, 9 CFU). “Electronics and Elaboration of Biomedical Signals,” teaching assistant (ITA, 6 CFU). “Sensors,” teaching assistant (ITA, 6 CFU). “Prosthesis and Rehabilitation in Practice,” lecturer (ENG, 1 CFU).
2020 – 2021	“Fundamentals of Electronics,” teaching assistant (ITA, 9 CFU). “Electronic Instrumentation,” teaching assistant (ITA, 6 CFU).

TUTORING ACTIVITY

Paolo Lazzaroni has been the co-advisor for 3 M.Sc. theses and for 7 B.Sc. theses at the University of Bergamo.

He has also been scientific responsible or tutor for 2 scholarship:

2025 – 2026	“Design and simulation of mixed-signal blocks in CMOS technology,” bachelor’s level, founded by a collaboration between Università degli Studi di Bergamo and DECTRIS.
2024 – 2025	“Study of radar solution for telemetry on track and dynamic vital signs monitoring,” bachelor’s level, founded by the italian PNRR and part of the MOST, Spoke 5 project.

MEMBERSHIPS

2020 – today	INFN Istituto Nazionale di Fisica Nucleare, Pavia INFN CSN5 group member as Technological Ph.D., section of Pavia.
2020 – today	IEEE Institute of Electrical and Electronics Engineers, Italy IEEE member, section of Italy.
2020 – today	IEEE NPSS Institute of Electrical and Electronics Engineers, Italy Nuclear & Plasma Sciences Society member, section of Italy.
2020 – today	SIE Società Italiana di Elettronica, Bergamo SIE member, section of Bergamo.

SCHOLARSHIPS AND CERTIFICATES

2020 – 2023	Ph.D. Scholarship Università degli Studi di Bergamo, Bergamo
2016 – 2019	TOP 10 Student Program 2015/2016, 2016/2017, 2017/2018, 2018/2019 Università degli Studi di Bergamo, Bergamo Fee exemption awards issued by Università degli Studi di Bergamo to best students.
2018	C1 Advanced (Grade B) Cambridge Assessment English, Cambridge

OTHER WORK EXPERIENCES

03/2019 – 03/2020	Computer Engineer at ASST Papa Giovanni XXIII, Genetics Department, Bergamo <i>System administrator and programmer</i> Winner of a scholarship given by ASST Papa Giovanni XXIII to a computer engineer for RARE (Rapid Analysis for Rapid carE) project.
01/2017 -- 08/2018	Apprentice Computer Engineer at ASST Papa Giovanni XXIII, Genetics Department, Bergamo <i>System administrator and programmer</i> Administrator of 2 Linux-based servers (Ubuntu, Redhat). Software development on Linux and Windows (mainly Python, Java, bash scripting).

LANGUAGES

ITALIAN:	Mother tongue	JAPANESE:	Beginner (A2)
ENGLISH:	Fluent (C1)	SPANISH:	Beginner (A2)
FRENCH:	Intermediate (B2)	GERMAN:	Beginner (A1)
RUSSIAN:	Intermediate (B2)		

INTERESTS AND ACTIVITIES

Technology, Electronics, Space, Nuclear Physics.
Music, Books, Travels.

COMPLETE LIST OF PUBLICATIONS

JOURNAL ARTICLES

- [J1] L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi, L. Ghislotti, P. Lazzaroni, M. Manghisoni, and E. Riceputi, "Design of the ANTARES4 Readout ASIC for the Second Flight of the GAPS Experiment: Motivations and Requirements," *Particles*, vol. 8, no. 4, Nov. 2025, ISSN: 2571-712X. DOI: [10.3390/particles8040089](https://doi.org/10.3390/particles8040089). [Online]. Available: <https://www.mdpi.com/2571-712X/8/4/89> (visited on 01/13/2026).
- [J2] M. Manghisoni, L. Ghislotti, P. Lazzaroni, V. Re, E. Riceputi, L. Ratti, L. Fabris, M. Boezio, G. Zampa, and M. Xiao, "X-Ray and Particle Detection With the Si(Li) Tracker Module of the GAPS Experiment," *IEEE Transactions on Nuclear Science*, vol. 72, no. 11, pp. 3578–3586, Nov. 2025, ISSN: 1558-1578. DOI: [10.1109/TNS.2025.3616408](https://doi.org/10.1109/TNS.2025.3616408). [Online]. Available: <https://ieeexplore.ieee.org/abstract/document/11187355> (visited on 01/13/2026).
- [J3] P. Lazzaroni, M. Hammer, M. Manghisoni, A. Miceli, L. Ratti, V. Re, and H. Shi, "Analog Readout Channel for Continuous-Wave X-Ray Science Applications," *IEEE Transactions on Nuclear Science*, vol. 72, no. 6, pp. 1959–1968, Jun. 2025, ISSN: 1558-1578. DOI: [10.1109/TNS.2025.3565911](https://doi.org/10.1109/TNS.2025.3565911). [Online]. Available: <https://ieeexplore.ieee.org/abstract/document/10981433> (visited on 06/25/2025).
- [J4] V. Trovato, R. Konar, E. Teblum, P. Lazzaroni, V. Re, G. Rosace, and G. D. Nessim, "Humidity- and Temperature-Sensing Properties of 2D-Layered Tungsten Di-Selenide (2H-WSe₂) Electroconductive Coatings for Cotton-Based Smart Textiles," *Polymers (Basel)*, vol. 17, no. 6, p. 752, Mar. 2025, ISSN: 2073-4360. DOI: [10.3390/polym17060752](https://doi.org/10.3390/polym17060752).
- [J5] P. Lazzaroni, M. Hammer, M. Manghisoni, A. Miceli, L. Ratti, V. Re, H. Shi, and G. Torilla, "Experimental results of the pFREYA16 ASIC for x-ray ptychography in continuous wave light sources," *J. Inst.*, vol. 19, no. 12, pp. 1–6, Dec. 2024, ISSN: 1748-0221. DOI: [10.1088/1748-0221/19/12/C12001](https://doi.org/10.1088/1748-0221/19/12/C12001).
- [J6] L. Ghislotti, M. Boezio, L. Fabris, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, E. Riceputi, and G. Zampa, "Energy threshold calibration of the GAPS experiment Si(Li) tracker readout electronics," *Il Nuovo Cimento C*, vol. 47, no. 3, pp. 121–125, Apr. 2024, ISSN: 2037-4909. DOI: [10.1393/ncc/i2024-24121-1](https://doi.org/10.1393/ncc/i2024-24121-1).
- [J7] S. Botticini, E. Comini, S. Dello Iacono, A. Flammini, L. Gaioni, A. Galliani, L. Ghislotti, P. Lazzaroni, V. Re, E. Sisinni, M. Verzeroli, and D. Zappa, "Index Air Quality Monitoring for Light and Active Mobility," *Sensors*, vol. 24, no. 10, pp. 1–27, Jan. 2024, ISSN: 1424-8220. DOI: [10.3390/s24103170](https://doi.org/10.3390/s24103170).
- [J8] M. Manghisoni, L. Ghislotti, P. Lazzaroni, V. Re, E. Riceputi, L. Ratti, L. Fabris, M. Boezio, and G. Zampa, "A 32-Channel Readout ASIC for X-Ray Spectrometry and Tracking in the GAPS Experiment," *IEEE Transactions on Nuclear Science*, vol. 71, no. 1, pp. 96–105, Jan. 2024, ISSN: 0018-9499. DOI: [10.1109/TNS.2023.3336192](https://doi.org/10.1109/TNS.2023.3336192).
- [J9] M. Verzeroli, L. Gaioni, A. Galliani, L. Ghislotti, P. Lazzaroni, and V. Re, "Advancing Sustainable Mobility: A Data Acquisition System for Light Vehicles and Active Mobility," *Electronics*, vol. 13, no. 21, pp. 1–19, Jan. 2024, ISSN: 2079-9292. DOI: [10.3390/electronics13214249](https://doi.org/10.3390/electronics13214249).
- [J10] V. Re, L. Ghislotti, P. Lazzaroni, M. Manghisoni, E. Riceputi, L. Ratti, M. Boezio, G. Zampa, and L. Fabris, "A mixed-signal processor for X-ray spectrometry and tracking in the GAPS experiment," *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, vol. 1045, pp. 1–4, Jan. 2023, ISSN: 0168-9002. DOI: [10.1016/j.nima.2022.167617](https://doi.org/10.1016/j.nima.2022.167617).

BOOKS

- [B1] P. Lazzaroni, *Design of a Pixel Readout Processor for Nano-meter Resolution X-ray Ptychography* (Collana Della Scuola Di Alta Formazione Dottorale). Università degli Studi di Bergamo, Sep. 2025, ISBN: 9788897253211. [Online]. Available: <https://aisberg.unibg.it/handle/10446/307909> (visited on 01/13/2026).

CONFERENCE PROCEEDINGS

- [C1] M. Verzeroli, L. Gaioni, and P. Lazzaroni, "Assessing Low-Cost PM and MOx Sensors for Enhanced Outdoor Air Quality Monitoring," in *2025 IEEE Sensors Applications Symposium (SAS)*, Jul. 2025, pp. 1–6. DOI: [10.1109/SAS65169.2025.11105168](https://doi.org/10.1109/SAS65169.2025.11105168). [Online]. Available: <https://ieeexplore.ieee.org/abstract/document/11105168> (visited on 09/12/2025).
- [C2] S. N. Feldman and on behalf of the GAPS Collaboration, "The GAPS Time-of-Flight Detector," in *Proceedings of 38th International Cosmic Ray Conference – PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, pp. 1–6. DOI: [10.22323/1.444.0120](https://doi.org/10.22323/1.444.0120).
- [C3] R. Munini, A. Lenni, and on behalf of the GAPS Collaboration, "The identification of the cosmic-ray light nuclei with the GAPS experiment," in *Proceedings of 38th International Cosmic Ray Conference – PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, pp. 1–6. DOI: [10.22323/1.444.0179](https://doi.org/10.22323/1.444.0179).
- [C4] R. Munini and on behalf of the GAPS Collaboration, "Integration and Calibration of the GAPS Antarctic Balloon Payload," in *Proceedings of 38th International Cosmic Ray Conference – PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, p. 180. DOI: [10.22323/1.444.0180](https://doi.org/10.22323/1.444.0180).
- [C5] A. Stoessl and on behalf of the GAPS Collaboration, "The GAPS experiment - a search for light cosmic ray antinuclei," in *Proceedings of 38th International Cosmic Ray Conference – PoS(ICRC2023)*, vol. 444, SISSA Medialab, Sep. 2024, pp. 1–8. DOI: [10.22323/1.444.1440](https://doi.org/10.22323/1.444.1440).
- [C6] L. Ghislotti, P. Lazzaroni, M. Manghisoni, and E. Riceputi, "Low-Noise Wide Dynamic Range Charge Sensitive Amplifier in 65 nm CMOS Technology for the Second Flight of the GAPS Experiment," in *2024 19th Conference on Ph.D Research in Microelectronics and Electronics (PRIME)*, Jun. 2024, pp. 1–4, ISBN: 979-8-3503-8630-1. DOI: [10.1109/PRIME61930.2024.10559720](https://doi.org/10.1109/PRIME61930.2024.10559720).
- [C7] M. Verzeroli, A. Galliani, L. Ghislotti, L. Gaioni, P. Lazzaroni, and V. Re, "Empowering Smart Mobility with a Component-based Data Acquisition System for Multi-sensor Readout," in *2024 19th Conference on Ph.D Research in Microelectronics and Electronics (PRIME)*, Jun. 2024, pp. 1–4, ISBN: 979-8-3503-8630-1. DOI: [10.1109/PRIME61930.2024.10559671](https://doi.org/10.1109/PRIME61930.2024.10559671).
- [C8] E. Riceputi, M. Boezio, L. Fabris, L. Ghislotti, P. Lazzaroni, M. Manghisoni, L. Ratti, V. Re, and G. Zampa, "The 32 Analog Channels Readout for the Long-Flight GAPS Balloon Experiment Tracking System," in *Proceedings of SIE 2022*, G. Cocorullo, F. Crupi, and E. Limiti, Eds., vol. 1005, Cham: Springer Nature Switzerland, 2023, pp. 27–32, ISBN: 978-3-031-26066-7. DOI: [10.1007/978-3-031-26066-7_5](https://doi.org/10.1007/978-3-031-26066-7_5).
- [C9] P. Lazzaroni, M. P. Hammer, M. Manghisoni, A. Miceli, L. Ratti, V. Re, and G. Torilla, "Characterisation of the pFREYA16 ASIC for low-noise ptychography applications," in *2023 IEEE Nuclear Science Symposium, Medical Imaging Conference and International Symposium on Room-Temperature Semiconductor Detectors (NSS MIC RTSD)*, Nov. 2023, pp. 1–1. DOI: [10.1109/NSSMICRTSD49126.2023.10338652](https://doi.org/10.1109/NSSMICRTSD49126.2023.10338652).
- [C10] E. Riceputi, M. Manghisoni, V. Re, L. Ghislotti, P. Lazzaroni, L. Ratti, L. Fabris, M. Boezio, G. Zampa, M. Xiao, E. Cavazzuti, and V. Vagelli, "Experimental results from the characterization of a 32-channels mixed-signal processor for the GAPS experiment," in *2023 IEEE Nuclear Science Symposium, Medical Imaging Conference and International Sym-*

sium on Room-Temperature Semiconductor Detectors (NSS MIC RTSD), Nov. 2023, pp. 1-1. DOI: [10.1109/NSSMICRTSD49126.2023.10338321](https://doi.org/10.1109/NSSMICRTSD49126.2023.10338321).

- [C11] P. Lazzaroni, M. Hammer, M. Manghisoni, A. Miceli, L. Ratti, V. Re, and G. Torilla, "A Low-Noise Readout Channel for X-Ray Ptychography Applications," in *2022 IEEE Nuclear Science Symposium and Medical Imaging Conference (NSS/MIC)*, Nov. 2022, pp. 1-6, ISBN: 978-1-6654-8872-3. DOI: [10.1109/NSS/MIC44845.2022.10399156](https://doi.org/10.1109/NSS/MIC44845.2022.10399156).
- [C12] P. Lazzaroni, M. Hammer, M. Manghisoni, A. Miceli, L. Ratti, and V. Re, "FALCON readout channel for X-ray ptychography applications," in *2022 17th Conference on Ph.D Research in Microelectronics and Electronics (PRIME)*, Jun. 2022, pp. 193-196, ISBN: 978-1-6654-6700-1. DOI: [10.1109/PRIME55000.2022.9816837](https://doi.org/10.1109/PRIME55000.2022.9816837).