


	Personal Details	
Full Name	Marco Mandurrino	
Birth Place and Date	Pinerolo, January 1984	
Personal Website	www.marcomandurrino.com	
Email address	info (at) marcomandurrino (dot) com	
	Education	
UNIVERSITY		
Graduation Date	27/03/2017	
Degree	Ph.D. in Electronic Engineering – program in Electronic Devices	
Institution	Politecnico di Torino, Department of Electronics and Telecommunications	
Thesis	<i>“Advances in Quantum Tunneling Models for Semiconductor Optoelectronic Device Simulation”</i>	
Graduation Date	09/12/2013	
Degree	M.Sc. in Engineering Physics	
Institution	Politecnico di Torino, Faculty of Information Engineering (ICTs)	
Thesis	<i>“TCAD Models for Tunneling Processes in Narrow-Gap Semiconductors”</i>	
Grade	109/110	
Graduation Date	07/10/2009	
Degree	B.Sc. in Physics	
Institution	Università degli Studi di Torino, Faculty of Scienze Matematiche, Fisiche e Naturali	
Thesis	<i>“Nuove tecniche per il posizionamento automatico del Volume Campione nella flussimetria tramite EcoColorDoppler. Algoritmo per la ricostruzione dei profili di velocità”</i>	
Info	My thesis introduces an innovative method for measurement improvement and optimization in the field of diagnostic ultrasounds, fully conceived by myself and already mentioned in scientific papers	
ADVANCED COURSES		
Period	05/09/2016 – 07/09/2016	
Title	SIMDET 2016, <i>“2nd School on Silicon Detectors Simulation”</i>	
Place	LPNHE – Paris	
Period	09/12/2015 – 11/12/2015	
Title	<i>“Introduction to Parallel Computing with MPI and OpenMP”</i>	
Place	CINECA, Casalecchio di Reno (Bologna)	
Period	30/08/2015 – 04/09/2015	
Title	9° Scuola Estiva Nazionale SCS2015 - Scienza, Comunicazione, Società: <i>“Il ricercatore visibile. Nuovi modi di fare e comunicare la ricerca”</i>	
Place	Università di Scienze Gastronomiche, Pollenzo (Bra - CN, Italy)	
Note	selected curriculum by reason of only 40 available positions	
Date	27/07/2015	
Title	<i>“Simulation of 2D-materials for electronic applications”</i> , G. Fiori, G. Iannaccone (Università di Pisa) - <i>“Nanotechnology pathways to next-generation photovoltaics”</i> , S. M. Goodnick (Arizona State University) - <i>“Using NanoHub.org in research and education”</i> , G. Klimeck (Purdue University) - <i>“Multiscale atomistic simulations with atomistic toolkit: from electronic transport calculations to classical molecular dynamic simulations”</i> , U. M. Pozzoni (QuantumWise)	
Place	Angelicum Congress Center, Pontificia Università S. Tommaso d’Aquino, Roma	

Period	29/06/2015 – 01/07/2015
Title	“ <i>GaN and advanced silicon technology for power electronics</i> ”, Dr. G. Curatola (Infineon Technologies Austria)
Place	Information Engineering Department, Università di Pisa
Period	08/06/2015 – 12/06/2015
Title	“ <i>Computational methods for nanostructure modeling</i> ”, Prof. J. Grossman (MIT, Massachusetts Institute of Technology, Boston)
Place	Applied Science e Technology Department, Politecnico di Torino
Period	28/10/2014 – 31/10/2014
Title	Scuola “F. Bonaudi”, XXIV Giornate di Studio sui Rivelatori
Place	INFN, Turin section
HIGH SCHOOL	
Graduation Date	July 2002
School	Liceo Scientifico Statale “M. Curie”, Pinerolo (TO)
Degree	Maturità Scientifica - Progetto Sperimentale <i>Brocca</i> a indirizzo scientifico
Grade	91/100
CONSERVATORY	
Graduation Date	June 2001
School	“Conservatorio di Musica G. Verdi”, Turin
Titolo	Licenza di Teoria e Solfeggio
Grade	9/10
Personal Skills	
LANGUAGES	
Mother Tongue	Italian
English	IELTS certification (British Council) with score 6.0
French	Good - High School level
INFORMATICS	
C++ language	Very Good (including parallelization with OpenMP and MPI)
Objective-C, C# languages	Fairly Good
HTML	High
L ^A T _E X	High
S.O. Windows/Unix-Linux	High (Win 95, 98, ME, XP, 7 / KDE, Ubuntu)
Mathematica, MATLAB	High
Synopsys Sentaurus, Comsol	High
Tanner L-Edit	High
MS-Office	High (Excel, Word, FrontPage, PowerPoint)
Internet Browsers	High (IE, Mozilla, Firefox, Netscape)
DICOM Softwares	Very Good
Graphics	High (InkScape, Adobe Photoshop, Adobe Photo Deluxe, ImageJ)
Audio/Video	High (Microsoft Movie Maker / Wavelab)
Music Notators	High (Sibelius, Finale)
Professional Information	
CURRENT POSITIONS	
Period	April 2023 – present
Place	INFN, Turin section
Role	Senior Research Fellow for the development of monolithic CMOS sensors

	Period	2006 – present
	Role	Professional Musician
	Activity	Composer, Conductor, Pianist (see the section <i>Short Artistic Curriculum</i>)
PAST POSITIONS		
	Period	June 2020 – May 2022
	Place	INFN, Turin section
	Role	Research Fellow for the design and development of ultra-fast particle detectors
	Period	March 2018 – February 2020
	Place	INFN, Turin section
	Role	Researcher, Grant Holder and Principal Investigator of the RSD project
	Period	June – September 2019
	Place	SSD-Lab (EP-DT Department), CERN, Geneva, Switzerland
	Role	Visiting Researcher: RSD1 testing coordinator and supervisor
	Period	February 2017 – February 2018
	Place	INFN, Turin section
	Role	Post-Doctoral Researcher in the field of fast silicon particle detectors
COMMISSIONS OF TRUST		
	Period	2021 – present
	Role	Associate Editor of the Section “Radiation Detectors and Imaging” and of the Special Topics “ <i>High-performance silicon sensors for particle tracking in 4 dimensions: achievements and future challenges</i> ” and “ <i>Physics-based Numerical Modeling and Design of Particle Detectors</i> ” (until 2023) of Frontiers in Physics
	Period	2017 – present
	Role	Reviewer for Applied Physics Letters, Journal of Computational Electronics, IEEE Transactions on Nuclear Science, Physica Status Solidi A, Frontiers in Physics, Micromachines
	Date	16-18 May 2018
	Role	Local Committee Member at the 11th Workshop on Picosecond Timing Detectors for Physics and Applications
RESPONSIBILITY ROLES		
	Period	2018 – present
	Place	INFN, Turin Section
	Role	Reference person for modeling, simulation and layout design of particle detectors and for process simulation
	Period	May 2019 – May 2022
	Place	INFN, Turin Section
	Role	Stage/Thesis Supervisor of undergraduate students in Physics
	Activity	RSD1 devices characterization
	Period	March 2018 – May 2022
	Place	INFN, Turin Section
	Role	Researcher, Principal Investigator, Grant Holder
	Activity	Head of the RSD project (Resistive AC-coupled Silicon Detectors)
	Period	2018 – May 2022
	Place	INFN, Turin Section
	Role	Reference person of the Torino INFN Computational Cloud for RSD, UFSD and ARCADIA experiments

	<p>Period 2-5 April 2019 Place València, Spain Role Representative of the RD50 Collaboration at CERN Activity Plenary talk on the Collaboration's R&D status at the CTD/WIT 2019</p>
TEACHING & DISSEMINATION	
	<p>Date 05/06/2020 Activity CERN Detector Seminar Description “<i>Innovative Silicon sensors for future trackers</i>” seminar presenting the RSD project and results</p>
	<p>Period January 2019 – March 2019 Place Physics Department, Università di Torino Activity PhD course on “<i>Numerical simulation of silicon particle detectors</i>” for Doctoral students in Physics (11 students, 16 hours)</p>
	<p>Date 29/05/2018 and 09/05/2019 Place Physics Department, Università di Torino Activity Seminar “<i>From the pn junction to the UFSD design. The role of numerical simulation</i>” for Master's students in Physics</p>
	<p>Period April 2014 – June 2014 Place Politecnico di Torino Activity Numerical simulation laboratories of the “<i>Microelectronic Devices</i>” course for <i>Electronic Engineering</i> and <i>Nanotechnologies for ICT</i> Master's students (21 hours)</p>
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	Scientific Publications
PATENTS	
[PT1]	N. Cartiglia, <u>M. Mandurrino</u> , G. Borghi, “ <i>Dispositivo a semiconduttore per la rivelazione di radiazione ionizzante dotato di elettrodi di lettura a gabbia</i> ” (transl.: <i>semiconductor device for the detection of ionizing radiation with framed read-out electrodes</i>), industrial patent granted by the Italian Ministry of Economic Development (MISE), patent no. 102021000011444, 5 May 2021
BOOKS	
[B1]	M. Ferrero, R. Arcidiacono, <u>M. Mandurrino</u> , V. Sola, N. Cartiglia, “ <i>An Introduction to Ultra-Fast Silicon Detectors. Design, Tests and Performances</i> ” (1st ed.), CRC Press, 2021; pp 196, DOI: 10.1201/9781003131946
JOURNAL & PREPRINT PAPERS	
[P1]	F. Siviero, R. Arcidiacono, G. Borghi, M. Boscardin, N. Cartiglia, M. Costa, G. F. Dalla Betta, M. Ferrero, F. Ficorella, <u>M. Mandurrino</u> , L. Markovic, L. Pancheri, G. Paternoster, V. Sola, M. Tornago, “ <i>Design optimization of the UFSD inter-pad region</i> ”, Nucl. Inst. Meth. A 1061 , 169153 (2024), DOI: 10.1016/j.nima.2024.169153
[P2]	Muon Collider Collaboration, “ <i>Erratum: Towards a Muon Collider</i> ”, Eur. Phys. J. C 84 , 36 (2024), DOI: 10.1140/epjc/s10052-023-12257-5
[P3]	Muon Collider Collaboration, “ <i>Towards a Muon Collider</i> ”, Eur. Phys. J. C 83 , 864 (2023), DOI: 10.1140/epjc/s10052-023-11889-x
[P4]	F. Carnesecchi, S. Strazzi, A. Alici, R. Arcidiacono, G. Borghi, M. Boscardin, N. Cartiglia, M. Centis Vignali, D. Cavazza, G. F. Dalla Betta, S. Durando, M. Ferrero, F. Ficorella, O. Hammad Ali, <u>M. Mandurrino</u> , A. Margotti, L. Menzio,

- R. Nania, L. Pancheri, G. Paternoster, G. Scioli, F. Siviero, V. Sola, M. Tornago, G. Vignola, “*Beam test results of 25 and 35 μm thick FBK ultra-fast silicon detectors*”, Eur. Phys. J. Plus **138**, 99 (2023), DOI: [10.1140/epjp/s13360-022-03619-1](https://doi.org/10.1140/epjp/s13360-022-03619-1)
- [P5] R. Arcidiacono, G. Borghi, M. Boscardin, N. Cartiglia, M. Centis Vignali, M. Costa, G. F. Dalla Betta, M. Ferrero, F. Ficorella, G. Gioachin, L. Lanteri, M. Mandurrino, L. Menzio, R. Mulargia, L. Pancheri, G. Paternoster, A. D. Martinez Rojas, H. F.-W. Sadrozinski, A. Seiden, F. Siviero, V. Sola, M. Tornago, “*High-precision 4D tracking with large pixels using thin resistive silicon detectors*”, Nucl. Inst. Meth. A **1057**, 168671 (2023), DOI: [10.1016/j.nima.2023.168671](https://doi.org/10.1016/j.nima.2023.168671)
- [P6] F. Siviero, R. Arcidiacono, G. Borghi, M. Boscardin, N. Cartiglia, M. Centis Vignali, M. Costa, G. F. Dalla Betta, M. Ferrero, F. Ficorella, G. Gioachin, M. Mandurrino, S. M. Mazza, L. Menzio, L. Pancheri, G. Paternoster, H. F.-W. Sadrozinski, A. Seiden, V. Sola, M. Tornago, “*Optimization of the gain layer design of Ultra-Fast Silicon Detectors*”, Nucl. Inst. Meth. A **1033**, 166739 (2022), DOI: [10.1016/j.nima.2022.166739](https://doi.org/10.1016/j.nima.2022.166739)
- [P7] F. Siviero, R. Arcidiacono, N. Cartiglia, M. Costa, M. Ferrero, F. Legger, M. Mandurrino, V. Sola, A. Staiano, M. Tornago, “*First application of machine learning algorithms to the position reconstruction in Resistive Silicon Detectors*”, J. Inst. **16**(3), P03019 (2021), DOI: [10.1088/1748-0221/16/03/P03019](https://doi.org/10.1088/1748-0221/16/03/P03019)
- [P8] M. Tornago, R. Arcidiacono, N. Cartiglia, M. Costa, M. Ferrero, M. Mandurrino, F. Siviero, V. Sola, A. Staiano, A. Apresyan, K. F. Di Petrillo, R. Heller, S. Los, G. Borghi, M. Boscardin, G. F. Dalla Betta, F. Ficorella, L. Pancheri, G. Paternoster, H. F.-W. Sadrozinski, A. Seiden, “*Resistive AC-Coupled Silicon Detectors principles of operation and first results from a combined laser-beam test analysis*”, Nucl. Inst. Meth. A **1003**, 165319 (2021), DOI: [10.1016/j.nima.2021.165319](https://doi.org/10.1016/j.nima.2021.165319)
- [P9] S. M. Mazza, E. Estrada, Z. Galloway, C. Gee, A. Goto, Z. Luce, F. McKinney-Martinez, R. Rodriguez, H. F.-W. Sadrozinski, A. Seiden, B. Smithers, Y. Zhao, V. Cindro, G. Kramberger, I. Mandić, M. Mikuž, M. Zavrtnik, R. Arcidiacono, N. Cartiglia, M. Ferrero, M. Mandurrino, V. Sola, A. Staiano, M. Boscardin, G. F. Dalla Betta, F. Ficorella, L. Pancheri, G. Paternoster, “*Properties of FBK UFSDs after neutron and proton irradiation up to $6 \cdot 10^{15}$ neq/cm 2* ”, J. Inst. **15**(4), T04008 (2020), DOI: [10.1088/1748-0221/15/04/t04008](https://doi.org/10.1088/1748-0221/15/04/t04008)
- [P10] R. Padilla, C. A. Labitan, Z. Galloway, C. Gee, S. M. Mazza, F. McKinney-Martinez, H. F.-W. Sadrozinski, A. Seiden, B. Schumm, M. Wilder, Y. Zhao, H. Ren, Y. Jin, M. Lockerby, V. Cindro, G. Kramberger, I. Mandić, M. Mikuž, M. Zavrtnik, R. Arcidiacono, N. Cartiglia, M. Ferrero, M. Mandurrino, V. Sola, A. Staiano, “*Effect of deep gain layer and Carbon infusion on LGAD radiation hardness*”, J. Inst. **15**(10), P10003 (2020), DOI: [10.1088/1748-0221/15/10/P10003](https://doi.org/10.1088/1748-0221/15/10/P10003)
- [P11] M. Mandurrino, N. Cartiglia, M. Tornago, M. Ferrero, F. Siviero, G. Paternoster, F. Ficorella, M. Boscardin, L. Pancheri, G. F. Dalla Betta, “*High performance picosecond- and micron-level 4D particle tracking with 100% fill-factor Resistive AC-Coupled Silicon Detectors (RSD)*”, [arXiv:2003.04838](https://arxiv.org/abs/2003.04838) (2020)
- [P12] M. Mandurrino, R. Arcidiacono, M. Boscardin, N. Cartiglia, G. F. Dalla Betta, M. Ferrero, F. Ficorella, L. Pancheri, G. Paternoster, F. Siviero, V. Sola, A. Staiano, A. Vignati, “*Analysis and numerical design of Resistive AC-Coupled Silicon Detectors (RSD) for 4D particle tracking*”, Nucl. Inst. Meth. A **959**, 163479 (2020), DOI: [10.1016/j.nima.2020.163479](https://doi.org/10.1016/j.nima.2020.163479)
- [P13] M. Mandurrino, R. Arcidiacono, M. Boscardin, N. Cartiglia, G. F. Dalla Betta,

- M. Ferrero, F. Ficorella, L. Pancheri, G. Paternoster, F. Siviero, M. Tornago, “*Demonstration of 200-, 100-, and 50- μm pitch Resistive AC-Coupled Silicon Detectors (RSD) with 100% fill-factor for 4D particle tracking*”, IEEE Electron Device Lett. **40**(11), 1780-1783 (2019), DOI: [10.1109/LED.2019.2943242](https://doi.org/10.1109/LED.2019.2943242)
- [P14] M. Mandurrino, R. Arcidiacono, M. Boscardin, N. Cartiglia, G. F. Dalla Betta, M. Ferrero, F. Ficorella, L. Pancheri, G. Paternoster, F. Siviero, M. Tornago, “*First demonstration of 200, 100, and 50 μm pitch Resistive AC-Coupled Silicon Detectors (RSD) with 100% fill-factor for 4D particle tracking*”, [arXiv:1907.03314](https://arxiv.org/abs/1907.03314) (2019)
- [P15] Z. Galloway, V. Fadeyev, P. Freeman, E. Gkougkousis, B. Gruey, C. A. Labitan, Z. Luce, F. McKinney-Martinez, H. F.-W. Sadrozinski, A. Seiden, E. Spencer, M. Wilder, N. Woods, A. Zatserklyaniy, Y. Zhao, N. Cartiglia, M. Ferrero, M. Mandurrino, A. Staiano, V. Sola, R. Arcidiacono, V. Cindro, G. Kramberger, I. Mandić, M. Mikuž, M. Zavrtanik, K. Yamamoto, S. Kamada, A. Ghassemi, K. Yamamura, “*Properties of HPK UFSD after neutron irradiation up to 6e15 n/cm²*”, Nucl. Inst. Meth. A **940**, 19-29 (2019), DOI: [10.1016/j.nima.2019.05.017](https://doi.org/10.1016/j.nima.2019.05.017)
- [P16] M. Ferrero, R. Arcidiacono, M. Boscardin, N. Cartiglia, G. F. Dalla Betta, Z. Galloway, M. Mandurrino, S. Mazza, G. Paternoster, F. Ficorella, L. Pancheri, H. F.-W. Sadrozinski, V. Sola, A. Staiano, A. Seiden, F. Siviero, M. Tornago, Y. Zhao, “*Radiation resistant LGAD design*”, Nucl. Inst. Meth. A **919**, 16-26 (2019), DOI: [10.1016/j.nima.2018.11.121](https://doi.org/10.1016/j.nima.2018.11.121)
- [P17] A. Apresyan, S. Xie, C. Pena, R. Arcidiacono, N. Cartiglia, M. Carulla, G. Derylo, M. Ferrero, D. Flores, P. Freeman, Z. Galloway, A. Ghassemi, H. Al Ghoul, L. Gray, S. Hidalgo, S. Kamada, S. Los, M. Mandurrino, A. Merlos, N. Minafra, A. Ronzhin, G. Pellegrini, D. Quirion, C. Royon, H. F.-W. Sadrozinski, A. Seiden, V. Sola, M. Spiropulu, A. Staiano, L. Uplegger, K. Yamamoto, K. Yamamura, “*Studies of uniformity of 50 μm low-gain avalanche detectors at the Fermilab test beam*”, Nucl. Inst. Meth. A **895**, 158-172 (2018), DOI: [10.1016/j.nima.2018.03.074](https://doi.org/10.1016/j.nima.2018.03.074)
- [P18] N. Cartiglia, A. Staiano, V. Sola, R. Arcidiacono, A. Bellora, R. Cirio, F. Cenna, S. Durando, M. Ferrero, V. Monaco, R. Mulargia, M. M. Obertino, F. Ravera, R. Sacchi, N. Minafra, M. Mandurrino, V. Fadeyev, P. Freeman, Z. Galloway, E. Gkougkousis, H. Grabas, B. Gruey, C. A. Labitan, R. Losakul, Z. Luce, F. McKinney-Martinez, H. F.-W. Sadrozinski, A. Seiden, E. Spencer, M. Wilder, N. Woods, A. Zatserklyaniy, G. Pellegrini, S. Hidalgo, M. Carulla, D. Flores, A. Merlos, D. Quirion, V. Cindro, G. Kramberger, I. Mandić, M. Mikuž, M. Zavrtanik, “*Beam test results of a 16 ps timing system based on ultra-fast silicon detectors*”, Nucl. Inst. Meth. A **850**, 83-88 (2017), DOI: [10.1016/j.nima.2017.01.021](https://doi.org/10.1016/j.nima.2017.01.021)
- [P19] C. De Santi, M. Meneghini, M. La Grassa, B. Galler, R. Zeisel, M. Goano, S. Dominici, M. Mandurrino, F. Bertazzi, D. Robidas, G. Meneghesso, E. Zanoni, “*Role of defects in the thermal droop of InGaN-based Light Emitting Diodes*”, J. Appl. Phys. **119**, 094501 (2016), DOI: [10.1063/1.4942438](https://doi.org/10.1063/1.4942438)
- [P20] M. La Grassa, M. Meneghini, C. De Santi, M. Mandurrino, M. Goano, F. Bertazzi, R. Zeisel, B. Galler, G. Meneghesso, E. Zanoni, “*Ageing of InGaN-based LEDs: effects on internal quantum efficiency and role of defects*”, Microelectron. Reliability, **55**(9-10) 1775-1778 (2015), DOI: [10.1016/j.microrel.2015.06.103](https://doi.org/10.1016/j.microrel.2015.06.103)
- [P21] M. Vallone, M. Mandurrino, M. Goano, F. Bertazzi, G. Ghione, W. Schirmacher, S. Hanna, H. Figgemeier, “*Numerical Modeling of SRH and Tunneling Mecha-*

nisms in High Operating Temperature MWIR HgCdTe Photodetectors", J. Electron. Mater. **44**(9) 3056-3063 (2015), DOI: [10.1007/s11664-015-3767-8](https://doi.org/10.1007/s11664-015-3767-8)

- [P22] [SPECIAL ISSUE INVITED] M. Mandurrino, M. Goano, M. Vallone, F. Bertazzi, G. Ghione, G. Verzellesi, M. Meneghini, G. Meneghesso, E. Zanoni, "*Semiclassical simulation of trap-assisted tunneling in GaN-based light-emitting diodes*", J. Comput. Electron. **14**(2) 444–455 (2015), DOI: [10.1007/s10825-015-0675-3](https://doi.org/10.1007/s10825-015-0675-3)
- [P23] [SPECIAL ISSUE] M. Mandurrino, M. Goano, M. Vallone, F. Bertazzi, G. Ghione, G. Verzellesi, M. Meneghini, G. Meneghesso, E. Zanoni, "*Physics-based modeling and experimental implications of trap-assisted tunneling in In-GaN/GaN light-emitting diodes*", Phys. Status Solidi A **212**(5), 947–953 (2015), DOI: [10.1002/pssa.201431743](https://doi.org/10.1002/pssa.201431743)

CONFERENCE CONTRIBUTIONS
& ARTICLES *(speaker/presenter)

- *[C1] M. Mandurrino, "*Developments on ARCADIA. State of the art and future perspectives*", 2024 European Edition of the International Workshop on the Circular Electron-Positron Collider, Marseille (France) 8-11 Apr 2024 – [oral presentation]
- *[C2] M. Mandurrino, "*CMOS-LGAD for timing: update on sensor design and simulation*", 1st ALICE 3 Days, CERN, Geneva (Switzerland) 25-27 Mar 2024 – [oral presentation]
- [C3] U. Follo, G. Gioachin, C. Ferrero, S. Durando, T. Corradino, S. Bufalino, M. Mandurrino, L. Pancheri, A. Rivetti, M. Da Rocha Rolo, "*A monolithic CMOS sensor with gain: design and first results of MadPix*", 1st ALICE 3 Days, CERN, Geneva (Switzerland) 25-27 Mar 2024 – [oral presentation]
- *[C4] M. Mandurrino, "*Developments on ARCADIA. State of the art and future perspectives*", AIDAInnova 3rd Annual Meeting, Catania 18-21 Mar 2024 – [oral presentation]
- [C5] U. Follo, T. Corradino, S. Durando, C. Ferrero, G. Gioachin, S. Bufalino, M. Mandurrino, L. Pancheri, A. Rivetti, M. Rolo, "*First results on monolithic CMOS sensor with internal gain in 110nm technology node*", 19th "Trento" Workshop on Advanced Silicon Radiation Detectors, Torino 20-22 Feb 2024 – [oral presentation]
- *[C6] M. Mandurrino, "*CMOS LGAD for timing: overview on sensor simulation*", 4th ALICE Upgrade Week, Torino 4-7 Dec 2023 – [oral presentation]
- [C7] U. Follo, G. Gioachin, C. Ferrero, S. Durando, T. Corradino S. Bufalino, M. Mandurrino, L. Pancheri, A. Rivetti, M. Rolo, "*A Monolithic CMOS Sensor with Gain*", 4th ALICE Upgrade Week, Torino 4-7 Dec 2023 – [oral presentation]
- [C8] S. Strazzi, B. Sabiu, A. Alici, S. Bufalino, F. Carnesecchi, D. Cavazza, M. Colocci, C. Ferrero, U. Follo, G. Gioachin, G. Grossi Araujo de Souza, M. Mandurrino, R. Nania, "*LGADs and SiPMs: status and perspectives*", 4th ALICE Upgrade Week, Torino 4-7 Dec 2023 – [oral presentation]
- *[C9] M. Mandurrino, "*MAPS devices with internal gain for timing applications: state of the art and future developments*", 43rd **RD50 Workshop**, CERN, Geneva (Switzerland) 28 Nov - 1 Dec 2023 – [oral presentation]
- [C10] T. Corradino, C. Neubüser, G. Giovanazzi, G. Andriani, C. Ferrero, G. Gioachin, S. Durando, U. Follo, G. F. Dalla Betta, M. Mandurrino, L. Pancheri, "*Simu-*

- lation and first characterization of MAPS test structures with gain for timing applications*”, 16th Topical Seminar on Innovative Particle and Radiation Detectors (**IPRD**), Siena 25-29 Sept 2023, DOI: [10.1088/1748-0221/19/02/C02036](https://doi.org/10.1088/1748-0221/19/02/C02036) – [oral presentation + refereed proceeding paper]
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- [C142] C. De Santi, M. Meneghini, M. La Grassa, N. Trivellin, B. Galler, R. Zeisel, B. Hahn, M. Goano, S. Dominici, M. Mandurrino, F. Bertazzi, G. Meneghesso, E. Zanoni, “*Thermal droop in InGaN-based LEDs: physical origin and dependence on material properties*”, XX Conference on LEDs: Materials, Devices, and Applications for Solid State Lighting (**SPIE**, OPTO Photonics West), San Francisco (CA - USA) 15-18 Feb 2016, DOI: [10.1117/12.2210953](https://doi.org/10.1117/12.2210953) – [oral presentation + extended paper]

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- [C145] M. La Grassa, M. Meneghini, C. De Santi, M. Mandurrino, M. Goano, F. Bertazzi, R. Zeisel, B. Galler, G. Meneghesso, E. Zanoni, “*Ageing of InGaN-based LEDs: effects on internal quantum efficiency and role of defects*”, 26th European Symposium on Reliability of Electron Devices, Failure Physics and Analysis (**ESREF**), Toulouse (France) 5-9 Oct 2015 – [oral presentation]
- [C146] F. Bertazzi, S. Dominici, M. Mandurrino, D. Robidas, X. Zhou, M. Vallone, M. Calciati, P. Debernardi, G. Verzellesi, M. Meneghini, E. Bellotti, G. Ghione, M. Goano, “*Modeling challenges for high-efficiency visible light-emitting diodes*”, 1st International Forum on Research and Technologies for Society and Industry (**RTSI**), Torino 16-18 Sept 2015, DOI: [10.1109/RTSI.2015.7325090](https://doi.org/10.1109/RTSI.2015.7325090) – [oral presentation + proceeding paper]
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- *[C149] M. Mandurrino, G. Verzellesi, M. Goano, S. Dominici, F. Bertazzi, G. Ghione, M. Meneghini, G. Meneghesso, E. Zanoni, “*Defect-related tunneling contributions to subthreshold forward current in GaN-based LEDs*”, 2015 Fotonica AEIT Italian Conference on Photonics Technologies (**Fotonica 2015**), Torino 6-8 May 2015, DOI: [10.1049/cp.2015.0136](https://doi.org/10.1049/cp.2015.0136) – [oral presentation + proceeding paper + extended paper]
- [C150] M. Vallone, M. Mandurrino, M. Goano, F. Bertazzi, G. Ghione, W. Schirmacher, S. Hanna, H. Figgemeier, “*Contributions to the dark current in HOT MWIR HgCdTe photodetectors: experiments and numerical modeling*”, 42nd Freiburg Infrared Colloquium, Freiburg (Germany) 3-4 Mar 2015 – [oral presentation]
- [C151] M. Vallone, M. Mandurrino, M. Goano, F. Bertazzi, G. Ghione, W. Schirmacher, S. Hanna, H. Figgemeier, “*Numerical modeling of SRH and tunneling mechanisms in HOT MWIR HgCdTe photodetectors*”, 2014 **II-VI** US Workshop on the Physics and Chemistry of II-VI materials, Baltimore (MD - USA) 21-23 Oct 2014 – [oral presentation]

- *[C152] M. Mandurrino, G. Verzellesi, M. Goano, M. Vallone, F. Bertazzi, G. Ghione, M. Meneghini, G. Meneghesso, E. Zanoni, “*Tunneling elettronico in strutture LED in InGaN/GaN: analisi sperimentale e simulazioni numeriche*”, 100° Congresso Nazionale **SIF** - Società Italiana di Fisica, Pisa 22-26 Sept 2014 – [oral presentation]
- *[C153] M. Mandurrino, G. Verzellesi, M. Goano, M. Vallone, F. Bertazzi, G. Ghione, M. Meneghini, G. Meneghesso, E. Zanoni, “*Trap-assisted tunneling in InGaN/GaN LEDs: experiments and physics-based simulation*”, 14th International Conference on Numerical Simulation of Optoelectronic Devices (**NUSOD**), Palma de Mallorca (Mallorca - Spain) 1-4 Sept 2014, DOI: [10.1109/NUSOD.2014.6935332](https://doi.org/10.1109/NUSOD.2014.6935332) – [oral presentation + proceeding paper]
- [C154] M. Mandurrino, G. Verzellesi, M. Goano, M. Vallone, F. Bertazzi, G. Ghione, M. Meneghini, G. Meneghesso, E. Zanoni, “*Trap-assisted forward tunneling current in InGaN/GaN LEDs: experiments and physics-based simulation*”, International Workshop on Nitride Semiconductors (**IWN**), Wrocław (Poland) 24-29 Aug 2014 – [poster]

Further Information

GRANTS & AWARDS

Title	“2020 IEEE NSS-MIC Trainee Grant”
Date	November 2020
Funding Source	2020 IEEE NSS-MIC sponsors
Title	“2019 IEEE NSS-MIC Trainee Grant”
Date	November 2019
Funding Source	2019 IEEE NSS-MIC sponsors
Title	“2018 IEEE NSS-MIC Trainee Grant”
Date	November 2018
Funding Source	2018 IEEE NSS-MIC sponsors
Title	“Young Researchers INFN Funding Program”
Date	January 2018
Funding Source	INFN Commissione Scientifica Nazionale 5

AFFILIATIONS

INFN	associated from 2016 to present
CERN	associated from 2016 to present within CMS (until 2022), ALICE (from 2023) and RD50 Collaborations
S.I.A.E.	“Musica” and “Lirica” sections, with the title of Composer

SHORT ARTISTIC CURRICULUM

Marco Mandurrino was born in Pinerolo in 1984. At the Civic Music School of his city he undertakes, still young, the studies of Piano and Composition, then he continues the latter under the guidance of Maestro Gianni Possio at Conservatory “G. Verdi” in Turin. At the same time, he also dedicated to the study and practice of Orchestral Conduction.

His compositions range from Chamber Music to the Orchestral one, passing through the Ballet, Choral Music and Opera: it has already to his credit, in fact, an opera for soloists, orchestra, chorus and walk-on, and whose text has seen the supervision of the Italian librettist Marco Ravasini. He is highly engaged in concerts, with a large number of planned executions, almost always under the direction of his baton.

For the Turin Conservatory he has also performed as a pianist, tenor of the Chamber Choir directed by Dario Tabbia and had the honor to participate several times both as author and conductor at prestigious events such as the “XX Fiera Internazionale del Libro” (for the opening concert in presence of a representative of the Italian Ministry of Education, University and Research - MIUR), the inauguration of the Academic Year 2007/08 in Turin (as director and co-author of a ballet in collaboration with the National Academy of Dance in Rome - AND) and “Contemporary Art Torino Piemonte”.

His works have been performed, as well as in the agenda of the Musical Evenings of Conservatory, for Concerts in St. Pelagia, Orpheus Auditorium of Turin, for the Turin Artists Club, Polincontri Classica and for Aurore Musicali, thanks to the collaboration of important artists and musical formations including pianists Angiola Rocca and Eliana Grasso, violinists Marta Tortia, Cecilia Ziano and Carlo Bettarini (already among the first violins in RAI), the soprano Rossella Giacchero, violist Maurizio Redegoso Kharitian, cellist Eduardo Dell’Oglio and the Ensemble Orchestrale Giovanile of Turin.

Recently he conducted the Magister Harmoniae Orchestra and the pianist Eliana Grasso in the Concert for piano and orchestra No.9 K.271 by W.A. Mozart, for a funding event in favor of the Williams Syndrome Italian Association - AISW. He graduated in Physics at the University of Turin and in Engineering Physics (109/110) at the Polytechnic University of the same city, where he also received a Ph.D. in Electronic Devices in 2017.

Besides the composition and the career as concertist – which already accounts for the conduction and coordination of first performances, of him and contemporary authors – in the past he has also been active in teaching, working with music schools in Piedmont.

In October 2010, he also conducted at the Theatre of Poirino the first on-stage representation of his opera *Il Frutto Rapito*, “curious and intriguing” (Attilio Piovano, La Stampa, Turin), directed by Gianluigi Pizzetti and with the scenic help of Marco Viecca.

One of his last performances, in January 2016, involved the Fanfare of the Brigata Alpina “Taurinense” playing for the first time his new score “Anime”, expressly composed to commemorate the fallen of the Great War at Turin Polincontri Classica season. For the same organizer, he received the commission to write the music to accompany the first poetry competition awards “Téchne e Poësis” in June 2016.

PERSONAL INTERESTS

(Astro)Photography

Publication of some of my astronomical images and reportage by several Italian astronomical magazines (Coelum Astronomia, Nuovo Orione) and by the UAI (Italian Union of Astrophiles - Solar Section)

I authorize the treatment of my personal data according to the Italian law “D.Lgs 196/2003”. Update: April 9, 2024