Daniele Passeri

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SHORT CV

Daniele Passeri was born in Perugia, Italy on December 31, 1967. He is currently Associate Professor of Electronics (IINF-01/A - Electronics) at the University of Perugia, Italy. In August 2018 he received the qualification "National Scientific Endorsement" (ASN) for the Full Professor position (09/03 - ING/INF/01 Electronics).
The scientific activity of Daniele Passeri has developed along some main research topics, correlated and chronologically developed, in particular physical modelling and numerical analysis of semiconductor devices; TCAD numerical modelling of radiation damage effects in semiconductors; VLSI design and characterization of radiation detectors based on active pixel sensors integrated in CMOS sub-micrometer technology and CMOS vertical scale (3D) technology; TCAD numerical modelling of diamond and silicon on diamond (SoD) device/circuits; numerical modelling of amorphous silicon devices.
Since 2000, Daniele Passeri has been teaching courses in Microelectronics, Nanometer IC CMOS Design, Electronic Devices and Technologies and Digital Electronic Systems.
He has been tutor/supervisor of more than 150 B.Sc. and M.Sc. degrees students' theses, as well as supervisor and co-supervisor of several Ph.D. students.
He was involved in leading roles as Principal Investigator or Research Unit Responsible in several Italian and international research projects.
He was involved in several institutional duties and services, in particular as Technical-Scientific Area Coordinator for the University of Perugia for orientation and guidance of prospective students.
Since 2017 is IEEE Senior Member. Since 1996 he has been associated with the CERN (European Organization for Nuclear Research) and the INFN (Italian National Institute for Nuclear Physics).
He is first author or co-author of more than 230 scientific papers, in particular 140 papers in peer reviewed journals and 90 proceedings on international conferences (Citation 48154; H-index 33; i10-index 104 - source Google Scholar Daniele Passeri). He has also presented more than 30 papers at international conferences as invited talks and oral contributions.

BIOGRAPHICAL and EDUCATIONAL NOTES

Daniele Passeri was born in Perugia, Italy on December 31, 1967. In March 1994 he received the Laurea Degree in Electronic Engineering from the University of Perugia, Italy with "magna cum laude". In June, 1994 he was admitted to the Italian Engineers professional association with a score of 100/100. From December 1986 to November 1987 he served in the Italian Army.

- He is currently Associate Professor of Electronics (IINF-01/A - Electronics) at the University of Perugia, Italy.
- In **August 2018** he received the qualification "National Scientific Endorsement" (ASN) for the Full Professor position (09/03 - ING/INF/01 Electronics).
- In **November 2016** he was appointed as **Associate Professor** of Electronics (09/E3 – ING-INF/01) at the Department of Engineering, University of Perugia, Italy.
- In 2012 he received the qualification "National Scientific Endorsement" (ASN) for the Associate Professor position (09/03 - ING-INF/01 Electronics).
- In **November 2000** he was appointed as **Assistant Professor** of Electronics (K01X) at the Department of Electronics and Information Engineering, University of Perugia.
- In November 1998 he won the public competition for a Research Fellowship position at the Faculty of Engineering, University of Perugia, concerning the "Analysis and design of solid state radiation sensors fabricated in low resistivity silicon substrates".
- In **August 1998** he received the degree of Doctor of Philosophy (**Ph.D.**) in Electrical Engineering from the University of Perugia, Italy, discussing a thesis on "Numerical analysis of microstrip radiation sensors integrated in silicon".
- Since **1996** he is associated with **CERN** (European Organization for Nuclear Research) and **INFN** (Italian National Institute for Nuclear Physics).

SCIENTIFIC ACTIVITES

The scientific activities of Daniele Passeri have been developed along some main research topics, correlated and chronologically developed as follows and summarised in the picture:

1. Physical modeling and numerical analysis of semiconductor devices.
2. Optimization of geometry and fabrication technology of solid state radiation detectors.
3. Numerical modeling of radiation damage effects in semiconductor devices.
4. VLSI design and characterization of radiation detectors based on active pixel sensors integrated in CMOS sub-micron technology.
5. Design and characterization of CMOS VLSI vertical scale integrated circuits (3D IC).
6. Development of an integrated dosimeter for medical application in interventional radiology domain.
7. TCAD numerical modeling of diamond and silicon on diamond (SoD) device/circuits.
8. TCAD combined bulk and surface radiation damage effects modelling at high fluences/doses.
9. Numerical modelling of Hydrogenated amorphous Silicon (a:Si-H) devices.
10. Modelling and Optimization of Low Gain Avalanche Diode (LGAD) for particle detection.

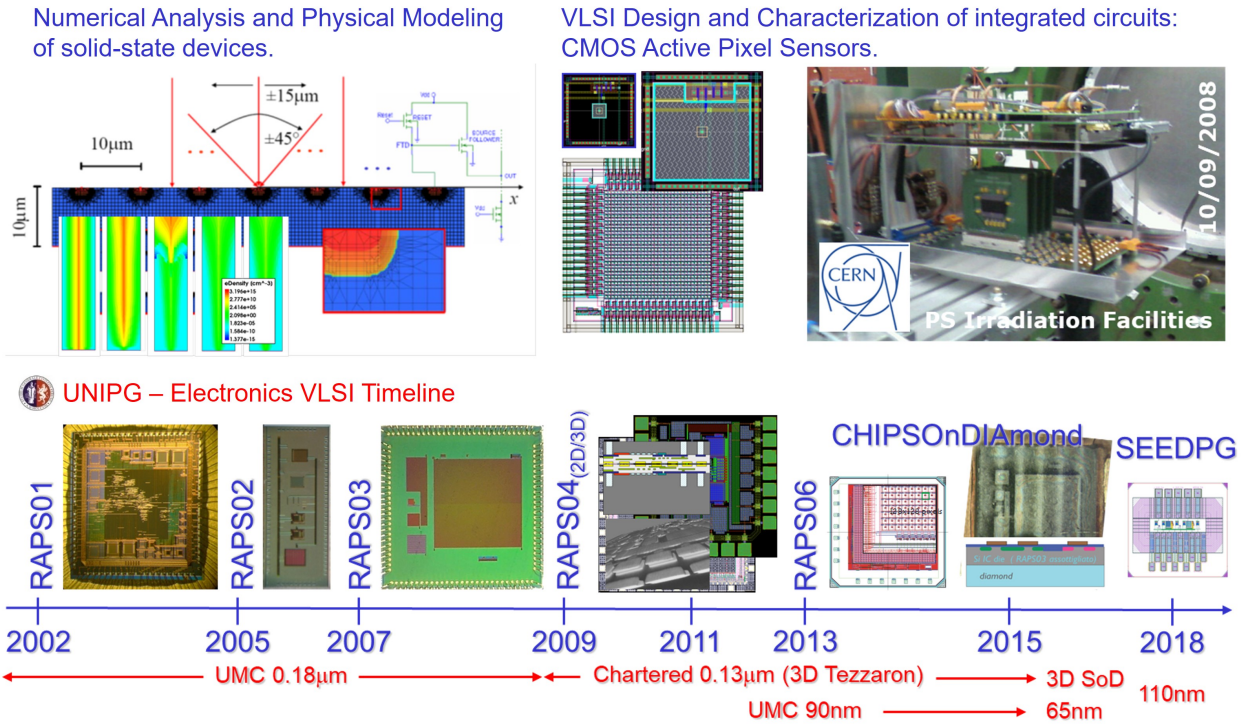

Figure 1: TCAD simulations, CMOS VLSI design and characterization of solid-state radiation sensors: timeline of the fabricated chips.

1. Physical modelling and numerical analysis of semiconductor devices.

The first steps of his Ph.D. activities focused on the **numerical analysis and physical modelling of semiconductor devices**, aiming at the development and testing of TCAD simulation tools, mainly at the device level. In particular, in collaboration with researchers from the Universities of Bologna and Trento, he contributed to the development of a simulation program for electrochemical sensors based on electrolyte-insulator-semiconductor structure (EIS). The solution of the characteristic equations of such structures, obtained by appropriate discretization techniques and coupled to the solution of the transport equations in the semiconductor, enabled the analysis of ion-sensitive devices such as **ISFET** (Ion-Sensitive Field Effect Transistor) and **LAPS** (Light Addressable Potentiometric Sensors), and to correlate their transduction characteristics to the fabrication technological parameters.
Afterwards, in collaboration with the **National Institute for Nuclear Physics (INFN)** and with the **European Organization for Nuclear Research (CERN)**, Geneva (Switzerland) he collaborated in the research experiment **Compact Muon Solenoid (CMS)** being defined at **Large Hadron Collider (LHC)** at CERN. In this framework, his work was focused on the extension of numerical analysis techniques, usually applied to "conventional" microelectronic devices, to the analysis of peculiar devices used in High Energy Physics (HEP) experiments, in particular radiation sensors/particle detectors. Indeed, the transduction mechanisms exploited by solid-state particle detectors are not considered in the analysis of standard electronic devices. It has therefore been necessary to develop and adapt specific numerical models to account for the effects of a single ionizing particle interacting with semiconductor devices, with particular attention to the charge generation of a high-energy particle crossing a semiconductor substrate.

2. Optimization of geometry and fabrication technology of solid-state radiation detectors.

Within the R&D phase of the CMS experiment, Daniele Passeri has developed a simulation program aiming at the **optimization of the geometry and fabrication technology of solid state radiation detectors** used in the CMS inner tracker. In particular, silicon microstrip detectors were analyzed, by applying numerical modeling techniques to the evaluation of the parasitic components, critical for what concerns the signal/noise ratio, depending on the manufacturing process. The effect of different contact geometries on "critical" electric field have been simulated, aiming at reducing early breakdown effect. Transient simulations were used to model the mechanism of collection of the charge generated by incident radiation using multiple parallel microstrips. Within this context, he spent several months at the **Centre d'Electronique et de Microtechnique (CSEM)**, Neuchâtel, Switzerland (candidate production center of the detectors used in the CMS) and numerous periods of time at CERN, being involved in the definition and validation of design specifications of the CMS detector. In particular, he was a member of the group whose goal was to analyze and define some geometrical and physical parameters of the detection subsystem of the CMS tracker based on silicon microstrip detectors (CMS Silicon "Task Force"). The outcomes of this activity contributed in defining some design parameters of microstrip sensors of the CMS experiment, as detailed in the CMS Technical Design Report. He also contributed to the research activities of the international **ROSE** collaboration **(R & d On Silicon for future Experiments)** whose purpose was to develop integrated silicon particle detectors "radiation resistant", e.g. capable to operate beyond the limits of current devices, providing good performance for a long period (several years) in hostile environments subjected to high fluences/doses of radiation. Actually, the next generation of experiments in High Energy Physics impose the radiation resistance as a primary design concern.

3. Numerical modeling of radiation damage effects in semiconductor devices.

An effective **numerical modeling of radiation damage effects in semiconductor devices** has been obtained by introducing deep energy level traps or recombination centers. The net generation/recombination rate within the charge continuity equations have been then properly generalized according to the Shockley-Read-Hall statistics based on multiple levels. The simulation environment developed, validated through comparison with experimental data, helped to understand the behavior of "irradiated" devices, at the same

time allowing a predictive insight within the electrical properties of particle detectors under different environmental conditions and, in particular, in conditions of progressive damage. Further model improvements allowed to model even the direct interaction of deep level defects where a standard SRH statics can no longer be applied and to extend the analysis to non-conventional operating conditions, for example at **cryogenic temperatures** to reduce the effect of radiation damage. He was a member of the EU Horizon 2020 - CERN AIDA-2020 collaboration (Advanced European Infrastructures for Detectors at Accelerators) as co-responsible of Task WP7.2 (TCAD Simulation). The main outcome was the development of a **combined bulk and surface radiation damage modelling** scheme at device level. More recently, he worked on the further development of the so called "Perugia Radiation Damage Model" toward its application in high fluences environments and for the design and optimization of innovative, 4D tracking devices such as Low Gain Avalanche Diode (LGAD).

4. VLSI design and characterization of radiation detectors based on active pixel sensors integrated in CMOS sub-micron technology.

The extensive use of technology CAD (TCAD) tools along with the gained expertise in the field of solid-state radiation sensors merged in the research activity focused on **VLSI design and characterization of radiation detectors based on Active Pixel Sensors integrated in CMOS submicron technology**. This approach represented a breakthrough in the particle detection application, thanks to the possibility of the simultaneous integration on a standard CMOS substrate of the sensitive element and the related local amplification and conditioning electronics (on-pixel). This allows to compensate for the reduced sensitivity of the standard CMOS substrates to the charge generation, when compared to substrates with high resistivity. The extensive use of technology CAD (TCAD) tools along with the gained expertise in the field of solid-state radiation sensors merged in the research activity focused on **VLSI design and characterization of radiation detectors based on Active Pixel Sensors integrated in CMOS submicron technology**. This approach represented a breakthrough in the particle detection application, thanks to the possibility of the simultaneous integration on a standard CMOS substrate of the sensitive element and the related local amplification and conditioning electronics (on-pixel). This allows to compensate for the reduced sensitivity of the standard CMOS substrates to the charge generation, when compared to substrates with high resistivity. In this context, Daniele Passeri was the **national coordinator** of the **RAPS** project funded by the National Institute of Nuclear Physics (INFN) - Group V for the years 2001 to 2004 and whose aim was to exploit the progress recently achieved in the CMOS sensor applications in the field of visible radiation, extending their use to the detection of single particles. To this purpose, a proper re-design and optimizing the of the pixel sensing element as a function of specific operational and functional characteristics of the ionizing radiation has been carried out. In particular, it is possible to obtain significant benefits (compared to similar classes of sensors) in terms of resolution and signal / noise ratio by integrating "local" processing electronics associated with each sensor element (pixel). Moreover, the use of commercial advanced CMOS technologies will allow "smart" read-out mode of an entire array of pixels based on innovative architectures specifically dedicated to the detection of individual particles, speeding up the read-out operations with respect to classical schemes used in charge-coupled devices. The first prototype chip was fabricated in spring 2003 in **CMOS UMC 0.18µm technology (RAPS01)** and the first test results were particularly encouraging, demonstrating the validity of the principle of revelation and the innovative approach followed. The project was then developed and a second prototype chip was implemented, including advanced reading and operating procedures (RAPS02). Along the same research line, he was **national responsible** of the project **SHARPS** (Self-resetting high-gain Radiation Pixel Sensor) funded by the National Institute of Nuclear Physics (INFN) - V group dealing with the design and implementation of **radiation detectors systems based on matrix of active pixel sensors integrated in CMOS technology**. Innovative architectures of pixel matrices have been proposed and implemented, aiming at the detection of ionizing particles both within HEP experiments than medical "imaging" using soft X-rays. At the same time, the functionality of the third generation of active pixel chip integrated in standard 0.18um CMOS technology

(RAPS03) have been evaluated through the development of a sophisticated **optical test-bench based on monochromatic laser at different wavelengths with micrometric focusing and positioning capabilities**. The latter activity in particular has led to a collaboration with **Micron Technology** Italy on related issues, in particular the **characterization of advanced image sensors fabricated in CMOS technology** for visible imaging and the development of a micro-radiographic sensor for medical applications.

5. Design and characterization of CMOS VLSI vertical scale integrated circuits (3D IC)

Afterwards, Daniele Passeri's research interests have focused on the **design of microelectronic devices integrated on a vertical scale**, leveraging the evolution of high-density microelectronic technologies. These technologies have seen a growing interest in vertical interconnection processes in recent years. These processes allow in fact the manufacture of three-dimensional integrated circuits (**3DIC**), which enable an effective addressing of the fundamental problems of "scaling" of the CMOS technologies (length of interconnections, integration density) and to design different layers (tiers) of the integrated circuit according to different criteria, optimized for a specific application (analog layer, digital layer, sensitive layer, ...). Within this research framework different collaborations have been started, e.g. participating in an international consortium (http://3dic.fnal.gov/) led by **Fermi National Accelerator Laboratory (FNAL)** and in a dedicated national project (VIPIX) funded by INFN, in collaboration with the **University of Pavia** and the **University of Bergamo**, aimed at exploiting the potential of this technology for the realization of high-performance multilayer particle sensors, capable to measure both coordinate and direction of the trajectory of a single ionizing particle. In particular, the adoption of the **130nm Tezzaron/Chartered GlobalFoundries** technologies enabled the fabrication of an innovative integrated multi-layers detector based on monolithic active pixel sensors (VIPIX01/RAPS04). The two tiers version of the detector has been tested on the SPS proton beam at CERN. The good results proved the suitability of the innovative approach to the simultaneous detection of a particle position and direction with multi-tier monolithic pixel sensors.

6. Development of an integrated dosimeter for medical applications in interventional radiology domain.

The adoption of CMOS active pixel sensor for the detection of different radiation spectra (e.g. apart from the visible light) fostered the application of this kind on sensors in medical application, in particular within the field of Interventional Radiology. A research activity aiming at the development of an **integrated prototype for individual dosimetry for x-rays** has been started. The added value of such an approach relies on the **real-time measure and transmission of the absorbed dose**. This is of utmost importance for intra-operational radiology, where doctors and operators (beside the patient) undergo long exposure times and therefore high radiation doses. On the long terms, this could result in severe diseases in particular for hands and eyes. The knowledge of the dosimetric information in real-time and over a broader spectrum (lower energies with respect to commercial dosimeters) would enable real-time counter-measurements, efficiently scheduling the different operators and doctors shifts, in any case within the allowed limits-

7. TCAD numerical modeling of diamond and silicon on diamond (SoD) device/circuits.

Looking at potential extensions of the commercial TCAD tool applications the research activity of Daniele Passeri is also focused on TCAD modelling and numerical simulation (device/circuit) of **diamond** and **silicon on diamond (SoD)** devices. This innovative class of devices conjugates the excellent stability and biocompatibility properties of synthetic diamond and CMOS VLSI integrated electronics functionalities. In particular, he contributed to the development of material libraries and simulation methodologies for mono- and poly-crystalline diamond, usually not included within the state-of-the-art commercial TCAD suite tools. Such a tools, once specified and with the new diamond material libraries, can be proficiently exploited for the development of innovative 2D and 3D sensors based on silicon/diamond structure as well as graphitic 3D detectors. Within the context of different INFN project (**3DSOD** and more recently

3DOSE), in collaboration with the **University of Firenze** and the **University of Manchester**, different Silicon-on-Diamond (SoD) (CHIPSOnDIAmond). chips have fabricated and tested in laboratory and on particle beam. Thanks to a unique laser bonding procedure, thinned silicon wafer where CMOS active pixel matrices have been integrated and mono- or poly-crystalline diamond substrates can be bonded together. This new kind of devices, conjugating the excellent properties of diamond substrates (carrier mobility, biocompatibility) with the CMOS electronics peculiar characteristics, drive the research activity towards innovative bio-sensing devices such as pixelated BioFET and Micro Electrode Arrays.

8. TCAD combined bulk and surface radiation damage effects modelling at high fluences/doses

The need for a comprehensive modelling of radiation damage effects on solid-state devices calls for the combination of the displacement damage (bulk effects) as well as ionizing effects (surface damage) typically localized at the silicon-silicon dioxide interfaces. An **advanced model combining oxide charge build-up and interface trap states formation as well as deep-level traps and/or recombination centres** creation for device-level simulations of radiation detectors operating at very high fluences (i.e. above 2×10E16 1 MeV neq/cm2) has been developed. In particular, a surface damage model has been developed by introducing the relevant parameters (oxide trapped charge, interface trap states densities) extracted from experimental measurements carried out on dedicated test structures after gamma irradiation. Morevover, an extended bulk model, by considering impact ionization and deep-level cross-sections variation, was included as well.

9. Numerical modelling of Hydrogenated amorphous Silicon (a:Si-H) devices

Aiming at the extension of commercial TCAD tools application to the analysis and design of non conventional solid-state devices, the research activity of Daniele Passeri recently focused on an innovative **simulation methodology for Hydrogenated amorphous silicon (a-Si:H)**. This material has emerged as an attractive alternative for particle detectors, driven by its high bandgap, which translates to minimal leakage current, and the potential for cost-effective large-area deposition on diverse substrates. Within the Synopsys Sentaurus TCAD a new material has been included, featuring the main parameters of a-Si:H (e.g. band-gap, density of states, e/h creation energy) and an articulated picture of energy of states of defects. Moreover, a **brand-new mobility model**, derived from the Pool- Frenkel one, has been developed and included as external addon, accounting for the influence on the mobility of the potential/electric field distribution inside the device and of the temperature.

10. Modelling and Optimization of Low Gain Avalanche Diode (LGAD) for particle detection

The development of detectors able to couple position resolution below 10 um with a timing resolution of about 10 ps (4D detectors) will represent a key aspect in the design of future 4D silicon trackers in HEP experiments beyond the HL-LHC timescale. Thanks to the introduction of controlled low gain and the optimization of the sensor design, the **Low-Gain Avalanche Diode (LGAD)** technology has become one of the choices for building 4D trackers. Indeed, it offers an intrinsic timing resolution of few tens of ps and, being a planar technology, it is accessible by many vendors. The major limitation to its use is radiation damage, manifested as initial acceptor removal, which causes the progressive loss of signal multiplication capability. The design of innovative LGAD devices with the specific constrain of the radiation hardness has been tackled thanks to ad-hoc advanced Technology CAD (TCAD) modelling, accounting for both technological issues, e.g. **sensitivity of the gain layer**, as well as physical aspects such as **different avalanche generation models** and **combined surface and bulk radiation damage effects** modelling at high fluences.

ORGANIZATION, DIRECTION AND MANAGEMENT OF RESEARCH PROJECTS

He was involved in leading roles, as Principal Investigator (**PI**) or research Unit Responsible (**UR**) in several Italian and international research projects, as detailed below (Years / Funding Institution / Project Title / Role / Approx Overall Budget).

2026 – Now **INFN Gr. V CALL**, *Space Time Tracker with Resistive LGAD Sensors*, UR, 760 k€.

2022 – Now **MUR / PNRR**, *Investimento 1.6 Orientamento attivo nella transizione Scuola Università*, sUR, 250 M€.

2019 – 2023 **MIUR / PRIN**, *4DInSide Innovative Silicon Detectors for particle tracking in 4D*, UR, 972 k€.

2019 – 2021 **MIUR / POT**, *INGEGNERIA.POT*, UniPG, UR.
2.35 M€

2018 – 2021 **INFN Gr. V CALL**, *Timespot TIME and SPace real-time Operating Tracker*, UR, 980 k€.

2015 – 2020 **EU Horizon 2020**, *AIDA-2020 Advanced European Infrastructures for Detectors at Accelerators*, Co-responsible Task WP7.2.

2015 – 2018 **INFN Gr. V**, *SEED Sensor with Embedded Electronics Development*, UR.

2015 – 2016 **UniPG**, *Sviluppo di modelli per la simulazione numerica di sensori di radiazione ad elevatissima fluenza*, PI.

2008 – 2012 **INFN Gr. V**, *VIPIX: Vertically Integrated PIXels*, UR.

2007 – 2008 **MIUR / PRIN**, *Un tomografo PET per piccoli animali ad altissima risoluzione spaziale basato su fotomoltiplicatori al silicio ad alta granularità*, UR.

2005 – 2008 **INFN Gr. V**, *SHARPS: Self-resetting High-gAin Radiation Pixel Sensors*, PI.

2001 – 2005 **INFN Gr. V**, *RAPS: Radiation Active Pixel Sensors*, PI.

1999 – 2000 **UniPG**, *Caratterizzazione e ottimizzazione della resistenza alla radiazione di rivelatori di particelle in silicio*, PI.

INSTITUTIONAL DUTIES, TEACHING AND SERVICES

Daniele Passeri was involved in several institutional duties and services, among which:

2025 – now Director Deputy of the Department of Engineering - University of Perugia.

2022 – now Technical-Scientific Area Coordinator for the University of Perugia for orientation and guidance of prospective students.

2004 – now Responsible for the TCAD and CMOS VLSI Laboratory at the Dipartimento di Ingegneria, UNIPG.

2001 – now EUROPRACTICE Responsible for UNIPG

2019 – 2025 Department of Engineering Deputy for Student's guidance and tutoring.

2018 – 2024 Representative for the Research Unit of Perugia within the Società Italiana di Elettronica (SIE)

2017 – 2023 EUROPRACTICE Responsible for the INFN - Perugia

2015 – 2018 Scientific Responsible for the collaborations between the Università degli Studi di Perugia and LFoundry S.r.L.

2014 – 2016 Assistant Researchers Representative within the restricted Council (Giunta) of the Engineering Department, UNIPG.

2005 – 2010 Scientific Responsible for the collaborations between the Università degli Studi di Perugia and Micron Technology Italia

2001 – 2006 Assistant Researchers Representative at the Consiglio della Facoltà di Ingegneria - UNIPG

Since his appointment as Assistant Professor in 2000, Daniele Passeri has been teaching courses in Microelectronics, Nanometer IC CMOS Design, Electronic Devices and Technologies and Digital Electronic Systems.

He has been tutor/supervisor of more than 150 B.Sc. and M.Sc. degrees students' theses, as well as supervisor and co-supervisor of several Ph.D. students, among whom:

2007 – 2010 Daniele Biagetti, *Characterization and development of radiation sensors in CMOS technology*, Università degli Studi di Perugia Dottorato di Ricerca in Ingegneria dell'Informazione XXII ciclo

2010 – 2013 Stefano Meroli, *Silicon pixel detectors for high precision measurements*, Università degli Studi di Perugia Dottorato di Ricerca in Fisica XXV ciclo

2014 – 2017 Arianna Morozzi, *Development and application of state-of-the-art device/circuit level TCAD simulation tools for the optimization of innovative Silicon-on-Diamond (SoD) semiconductor devices*, Università degli Studi di Perugia Dottorato di Ricerca in Ingegneria Industriale e dell'Informazione XXIX Ciclo

2018 – 2021 Gabriele Lombardi, *Development of an X-ray imaging/sensing system for industrial applications*, Università degli Studi di Perugia Dottorato di Ricerca in Ingegneria Industriale e dell'Informazione XXXIII Ciclo

2024 – now Tommaso Croci, *Innovative radiation-hard silicon particle detectors for 4D tracking in future high-energy physics experiments*, Università degli Studi di Padova, Dottorato di Ricerca Nazionale in Technologies for Fundamental Physics and Astronomy XXXIX Ciclo.

2025 – now Alessandro Fondacci, *TCAD design and optimization of silicon sensors for extreme radiation hard environments*, Università degli Studi di Perugia, Dottorato di Ricerca in Fisica XL Ciclo.

SCIENTIFIC COLLABORATIONS

Daniele Passeri has been a visiting researcher at the European Organisation for Nuclear Research (CERN) in Geneva, Switzerland, since 1996, working in different time slots.
He was and he is still involved in several research collaborations with the Italian Universities of Trento, Bologna, Parma, Pavia, Bergamo, Torino, Firenze and International research Institutions, in particular FNAL (Fermi National Accelerator Laboratory) Batavia, Illinois (USA), DESY (Deutsches Elektronen-Synchrotron) Hamburg (Germany), University of Manchester (UK), University of Wollongong (Australia).

NATIONAL AND INTERNATIONAL RESEARCH AWARDS

- Best oral paper 6th IEEE International Workshop in Sensors and Interfaces IWASI 2015, Gallipoli (Italy) 18-19 June 2015.
- Assipe - Fortronic Design-In Award - IV ed., Padova (Italy), 7-9 maggio 2003 – Mention for the Best Innovative applied research project Radiation Active Pixel Sensor (RAPS).
- 4th prize PicoQuant Application Gallery 2011 - CMOS Active Pixel Sensor chip layout scan with microfocused laser (driver PDL 800-B+ laser head LDH-P-780).

EDITORIAL, ORGANIZING COMMITTEE AND REVIEWER ACTIVITIES

- Associated Editor of IEEE Transactions on Nuclear Science since 2025.
- Guest Editor for 2022 Sensors, Special Issue "CMOS Sensors for Tracking Applications".
- Review Editor for Frontiers in Physics (Editorial Board of Radiation Detectors and Imaging) since 2019.
- Guest Editor for the review Nuclear Instruments and Methods in Physics Research, Section A (NIMA), special issue for the 15th Int. Workshop on Vertex Detection (Vertex 2006).
- Senior Member IEEE (40187080).
- Member of the TPC of the Conference on Ph.D. Research in Microelectronics and Electronics (PRIME) since 2013.
- Member of the LOC VI International Meeting on Front End Electronics (FEE2006), 17 - 20 May 2006, Perugia, Italy.
- Member of the LOC 15th International Workshop on Vertex Detectors (VERTEX2007), 25-29 September 2007, Perugia, Italy.
- Member of the LOC TWEPP 2013 Topical Workshop on Electronics for Particle Physics, 23-27 September 2013 - Perugia, Italy.

Since 2000 he has been serving as a reviewer for several international journals, among which:

- IEEE Transactions on Nuclear Science
- IEEE Electron Device Letters
- IEEE Sensors Journal
- IEEE Transactions on Circuits and Systems
- Sensors and Actuators: A. Physical
- Nuclear Instruments and Methods in Physics Research A
- Journal of Physics D: Applied Physics
- Semiconductor Science and Technology.

PUBLICATIONS

He is first author or co-author of more than 230 scientific papers, in particular 140 papers in peer reviewed journals and 90 proceedings on international conferences (Citation 48154; H-index 33; i10-index 104 - source Google Scholar Daniele Passeri). He has also presented more than 30 papers at international conferences as invited talks and oral contributions.