

Curriculum vitae

• PERSONAL INFORMATION

Family name, First name: Bisogni, Maria Giuseppina
Researcher unique identifier(s) (ORCID): 0000-0002-4886-8891
Nationality: Italian

• EDUCATION

2000 Specialist in Medical Physics, Final grade: “50/50 cum Laude” specialization school in medical Physics, Dept. of Physics, Univ. of Pisa, Italy
1999 PhD in Physics, Dept. of Physics, Univ. of Pisa, Italy, PhD supervisor: Prof. Arnaldo Stefanini
1994 Master Sc in Physics, Final grade: “110/110 cum Laude”, Dept. of Physics, Univ. of Pisa, Italy

• CURRENT POSITIONS

2014 – to date Associate professor, Department of Physics, University of Pisa, Italy
2002 – to date National Institute for Nuclear Physics (INFN) associate researcher Italy

• NATIONAL SCIENTIFIC QUALIFICATION

2020 - ASN Abilitazione I Fascia Bando D.D. 2175/2018 Settore Concorsuale 02/D1 Fisica Applicata, Didattica e Storia della Fisica

• PREVIOUS POSITIONS AND FELLOWSHIPS

2002-2014 Researcher with Tenure, Dept. of Physics, Univ. of Pisa, Italy
2001-2002 Post Doc in Medical Physics, Dept. of Physics, Univ. of Pisa, Italy
2000-2001 Professorship, Faculty of Science, Univ. of Sassari, Italy
1999-2000 Fellowship, Medical Physics School, Dept. of Physics, Univ. of Pisa, Italy
1995-1996 Fellowship, Medical Physics School, Dept. of Physics, Univ. of Pisa, Italy

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2008 – to date Number of Postdocs: **5**/ PhD: **3**/ Master Students: **16** at Department of Physics, University of Pisa, Italy/PhD: **1** at Department of physical sciences, University of Siena, Italy

• TEACHING ACTIVITIES

2019 – to date Professor of Radiation Dosimetry, Dept. of Physics, University of Pisa, Italy
2015 – 2020 Professor, Applied Physics, Master Degree in Dentistry, University of Pisa, Italy
2014 – to date Professor, Medical Physics, Master Degree in Medicine and Surgery, University of Pisa, Italy
2004 – to date Professor, Laboratory of Medical Physics, Master Degree in Physics, University of Pisa

• ORGANISATION OF SCIENTIFIC MEETINGS

2018, 2015, 2012 member of the Organizing committee of “PET/MR and SPECT/MR: New Paradigms for Combined Modalities in Molecular Imaging Conference” La Biodola, ~200 participants, Isola d'Elba, Italy
2018, 2015, 2012, 2009 and 2003 member of the Organizing committee and co-editor of proceedings (2015 edition) of “Pisa Meeting on Advanced Detectors”, ~400 participants La Biodola, Isola d'Elba, Italy
2014 member of the Organizing committee “100⁰ National Congress of the Italian Physics Society” (SIF), ~1000 participants, Pisa, Italy.
2013 member of the Organizing committee of “Status and future perspective of charged particle therapy workshop”, ~100 participants, CNAO, Pavia, Italy.

• INSTITUTIONAL RESPONSIBILITIES

2016 – to date vice-director of the specialization school in Medical Physics, University of Pisa, Italy
2015 – to date member of the council of the PhD school in Physics, University of Pisa, Italy
2002 – to date Member of Department of Physics, University of Pisa, Italy

• COMMISSIONS OF TRUST

2020 – to date member of the INFN National Scientific Committee 3 for reviewing, promoting and funding experimental research in Nuclear Physics at INFN.

2007-2015 and 2020 – to date member of the INFN Pisa executive board

2017– to date member of the Frontier Detectors for Frontier Physics board for promoting international conferences on particle detectors

2017 – 2020 member of the Scientific Committee for research funding - Physics area, University of Pisa, Italy

2016 – 2018 member of the reviewers panel of the INFN National Scientific Committee 5 calls for strategic research projects

2011-2015 member of the INFN Internal Evaluation Committee

2007-2015 member of the INFN National Scientific Committee 5 for reviewing, promoting and funding accelerator, detector and Interdisciplinary research activities at INFN.

- **RECENT RESEARCH PROJECTS COORDINATION**

-2018-2020 PETRA PET monitoRing in Adroterapia – (regione Toscana POR FESR 2014 – 2020), Clinical validation of the INSIDE PET monitoring system at CNAO. Partners: INFN Pisa, CNAO – *Principal Investigator*

-2018-to Date INSIDE 2 Innovative solutions for Dosimetry in Hadrontherapy – (Fondazione CNAO), Clinical validation of the INSIDE bi-modal monitoring system at CNAO. Partners: University of Pisa, Sapienza University of Rome, INFN, CNAO – *Scientific coordinator*

-2018-2019 SPECTRON (University Of Pisa, bando Dimostratori Tecnologici)- Dimostratore In-beam PET in adroterapia- *Principal Investigator*

-2017- to date FOOT Fragmentation Of target – (INFN CSN3). Nuclear Fragmentation cross section measurements in hadrontherapy and space radioprotection. International Collaboration among INFN, GSI, Nagoya University, Aachen University, University of Strasbourg. *Representative of INFN Pisa In the Institutional Board*

-2016-2018 NEOLITE Nuove tecnologie elettroniche di alimentazione in ambiente ostile (Regional Funding POR FESR 2014 – 2020, 1.88 M€) Project coordinator: CAEN spa, Italy- *University of Pisa scientific coordinator*

-2013-2016 INSIDE Innovative solutions for Dosimetry in Hadrontherapy (National Funding –ministry of research, MIUR PRIN2010-2011, PN. 2010P98A75, 1M€) Collaboration: Uni Pisa, Uni Torino, Politecnico Bari, Uni Roma La Sapienza, INFN and CNAO - *Principal Investigator*

-2011-2013 4DMPET "4D-MPET Four Dimension Magnetic Compatible PET module" (National Funding INFN, 120 k€) Collaboration: INFN di Pisa, Bari, Perugia, Torino *Principal Investigator*

- **SCIENTIFIC JOURNALS EDITOR AND REVIEWER**

-2019 - to date European Journal of Medical Physics – Physica Medica - Associate editor

-2018 - to date IEEE Transaction on Radiation and Plasma Medical Sciences – Associate editor

-Regular reviewer of Nuclear Instruments and Methods A, IEEE Transactions on Nuclear Sciences, IEEE Transactions on Radiation and Plasma Medical Sciences, Journal of Instrumentation, Medical Physics.

- **RECENT INVITED ORAL PRESENTATIONS**

[1] "The INSIDE system: a review of past and recent results", international workshop "Innovative Nuclear instrumentation and measurements in the imaging medical field" (N. 4), International ANIMMA Conference, Portorose, Slovenia, 17/6/2019

[2] "Un sistema multimodale per il monitoraggio in vivo del range delle particelle cariche in adroterapia", 105 congresso della Societa' Italiana di Fisica dal titolo: L'Aquila, 27/9/2019

[3] "Particle range monitoring and verification methods in hadrontherapy", International Workshop on Radiation Imaging Detectors, 4/6/2017, Krakow, Poland.

- **TECHNOLOGY TRANSFER ACHIVEMENTS**

-International industrial patent (Universita' di Pisa (80%) and INFN (20%), inventors sportelli giancarlo; bisogni Maria giuseppina; kostara eleftheria; morrocchi matteo; camarlinghi Niccolò), title:"Method and apparatus for the acquisition of data for positron emission tomography in hadrontherapy with beam on". Italian n. 102018000000867 (A1) - 15.01.2018. International n. WO2019138384 (A1) 18/7/2019

-Co-Founder and board member of the start-up IRIDAE

- **REASEARCH ACTIVITY**

My research activity has always been at the cross-border of fundamental research and application, having the characteristic trait of the study of radiation detectors and their application to medical physics. This allowed me, since the earliest years of my career, to receive funding and create a series of networks involving academia, medical centers and industries.

In 2006, I started a new research activity consisting on the development and application to medical imaging of a brand-new photodetector, the Silicon Photomultiplier (SiPM). I was one of the proponents of the INFN DASIPM (2006 -2010) experiment which was the first in our country to explore the application of SiPMs in astrophysics, high energy physics and medical imaging. I was coordinator of the medical imaging group and the major result achieved was the production and test of the first Italian SiPM devices. This has been done in collaboration with the research institute FBK-irst that, at the time, was among the leading manufacturers of SiPMs.

In the following years (2011-2013) I have been principal investigator of the INFN 4DMPET project whose aim was the development of innovative PET detectors based on monolithic scintillator crystals and silicon-photomultipliers. The success of the experiment allowed me to propose the 4DMPET approach to other projects. Suitably adapted 4DMPET module versions are being used in a PET/MR scanner dedicated to investigations of psychiatric diseases (EU FP7 project TRIMAGE) and in the INSIDE project. Triggered by the request of MR compatible instrumentation from the TRIMAGE project, I have proposed and coordinated for UNIFI the project NEOLITE, funded by Tuscany region through EU funds for developing innovative power supplies able to operate in magnetic fields of an MR scanner (up to 7 T). The project was carried out in collaboration with CAEN and AGE scientific, two Italian SMEs very active in nuclear instrumentation and digital electronics.

In the years 2013-2016, I have been principal investigator of the most important research project of my career. INSIDE (INnovative Solutions for dosImetry in hadronthErapy) was funded for 1M€ by the Italian Ministry for Research under a national program aimed at funding projects most relevant for the Italian research system (INSIDE MIUR PRIN2010-2011 PN. 2010P98A75). Aim of INSIDE was the development of an imaging system based on PET and charged particle trackers to monitor the quality of the cancer treatments during hadrontherapy sessions. The system INSIDE is currently in operation at CNAO, the largest hadrontherapy facility in Italy, and I am responsible for the follow-up and clinical validation of the system with the projects PETRA and INSIDE2. A trial is currently underway on 40 cancer patients treated at CNAO with protontherapy and carbon ion therapy to verify INSIDE's performance in a clinical environment.

In 2017 I have joined the FOOT (Fragmentation of Target) international collaboration aimed at measuring nuclear fragmentation cross section of biological targets for hadrontherapy and space radioprotection. In the FOOT experiment I have been coordinator of the Time of Flight (TOF) Wall, a plastic scintillator based detector devoted to the charge identification of the nuclear fragments.

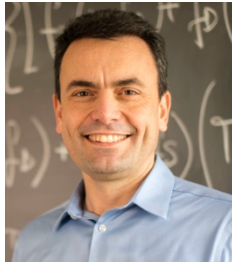
- **RECENT OUTREACH ACTIVITIES**

- [1] Bisogni M et al.: SiPM Technology Increases the Safety of Charged Particle Therapy through Improved Beam Range Verification , Application Report, Hamamatsu news 2020/1
- [2] “Observe the real-time radiation to make the oncological therapies even more precise” INFN Press Release, 3 September 2019
- [3] “Hadrontherapy”, Interview for INFN facebook web direct, <https://www.facebook.com/IstitutoFisicaNucleare/videos/10155130883727579>
- [4] “Virtual Man - physics explores the body”, exhibition, <http://home.infn.it/en/media-outreach/mostre/exhibitions/2095-virtual-man-physics-explores-the-body>, member of the organizing committee, March – June 2017, Palazzo Blu, Pisa, Italy, 4000 visitors.

Viareggio, 15/1/2022

Maria Giuseppina Bisogni





Giuseppe Iannaccone



✉ giuseppe.iannaccone@unipi.it

Sex M | Date of birth | Nationality Italian

WORK EXPERIENCE

January 2017 – Present

President of the Italian InterUniversity Consortium on Nanoelectronics (IUNET)

Consortium of 13 Italian Universities in the field on nanoscale electronics, microelectronic components and systems.

December 2012- Present

Full Professor of Electrical Engineering

Department of Information Engineering, University of Pisa, Italy

- Coordination of European and National research projects in the field of systems for the internet of things, micro/nano electronics, power management, nanoscale electronics
- Chair of the Quantum Engineering and Physical Electronics Laboratory
- President of the Technical Council on Patent and IP of the University of Pisa (up to 2016).
- **Teaching activity:**
 - Electronics (12 ECTS, undergraduate course in BSEE)
 - Power and control electronics (6 ECTS, from 2012, graduate course in MSEE)
 - Electronic Systems (3 ECTS, from 2015, graduate course in MSCE)

Founder of Quantavis s.r.l.,

Spin out company of the FP5 project NanoTCAD (2007-2014) dedicated to technologies and systems for the Internet of Things.

January 2007 – Present

January 2001- December 2012

Associate Professor of Electrical Engineering

Department of Information Engineering, University of Pisa, Italy

- Coordination of International and National research projects in the field of systems for the internet of things, micro/nano electronics, power management.
- Teaching activity: Electronics (12 ECTS, undergraduate course in BSEE)
 - Electronic Infrastructures (6 ECTS, from 2005 to 2012, graduate course in MSEE)

May 1996- December 2000

Assistant Professor of Electrical Engineering

Department of Information Engineering, University of Pisa, Italy

- P.I. and co-P.I. in project related to nanoelectronics and quantum transport

January 1996 – May 1996

Scientist (Nanoelectronics)

Italian National Research Council (CNR) - Pisa, Italy

EDUCATION AND TRAINING

May 1996

PhD Degree in Information Engineering (excellent)

University of Pisa, Thesis on "Transport and noise phenomena in quantum effect devices"

April 1992

MSEE in Electrical Engineering (summa cum laude)

University of Pisa, Concentration on Microelectronics

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

UNDERSTANDING	SPEAKING	WRITING

	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

Communication skills

Public communication and scientific dissemination:

- 24 year of University lectures with a number of students ranging from 10 to 350.
- 140 talks in international conferences and schools, on themes related to the research activity
- ~30 seminars and speeches to the general public about scientific issues.
- Coordinator of several research projects with multiple (international) partners.
- Participation of several technical committee (of international conferences, summer schools, research projects).

Organisational / managerial skills

Management and coordination of international research projects including multiple partners and multiple researchers:

Consortium Coordinator of 5 EUROPEAN Projects

- o European Project NANOTCAD (FP5 - V Framework Programme) [2000-2003]
- o European Project DEWINT (European Science Foundation & FP6) [2007-2010]
- o European Project SHINE (FP7 – Researcher’s Night)[2013]
- o European Project QUEFORMAL (h2020 – FET OPEN) [2019-2021]
- o European Project AUTOCAPSULE (h2020 – FET PROACTIVE) [2020-2023]

Consortium coordinator of 3 National Projects

- o Project PRIN 2004 “Advanced architectures and models for nanoMOSFETs” [2005/6]
- o Project of Ministry of Economic Development (FAR/FAS) “CleverHome” [2012-2014]
- o Project PRIN 2017 “FIVE2D” [2019-2021]

Co-PI for the 18 European coordinated projects (FP6, FP7, ECSEL-JU):

- o 9 EC Framework Programme Projects: FinFLASH (FP6) [2005-2007], SINANO (FP6) [2004-2007], PullNano (FP6),[2006-2009], OneLab (FP6)[2008-2010], Nanosil (FP6) [2008-2010], Onelab2 (FP7)[2010-2012], STEEPER (FP7)[2010-2013], GRADE (FP7)[2012-2014], WASP (h2020)[2019-2021].
- o 9 ENIAC/ECSEL JU Projects: MODERN [2009-2012], ERG [2011-2013], E2SG [2012-2014], LAB4MEMS [2013:2015], LAB4MEMS2 [2015-2018], CONNECT [2017-2019], REACTION [2018-2021], PROGRESSUS [2020-2022], CHARM [2020-2022].

Co-PI for the 2 national coordinated projects

- o 1 PRIN MIUR Project 2001 “Single Electron Devices” [2002-2003]
- o 1 FIRB Project “Advanced technologies for high-density non-volatile memories”

Principal Investigator of 10 research and technology transfer grants from companies [e.g. NXP, Infineon, Dialog Semiconductors, Silvaco International, ENEL]

ADDITIONAL INFORMATION

Awards

Fellow of the American Physical Society (APS) for “contributions to the theory of quantum transport and noise in mesoscopic and nanoelectronic devices and to their application in electronics” (2015).

Fellow of the Institute of Electrical and Electronics Engineers (IEEE) for “contributions to modeling of transport and noise in nanoelectronic devices” (2015).

Italian Naval Academy “Mariponave Sabre” Award (1st among 416 in officer cadet class of 1992).

Publications and bibliographic data

Database Source	Num. Docs.	Total citations	h factor
Google Scholar*	329 (336)	9192 (14020)	42 (47)
Scopus	315	7131	36
Web of Science	285	6434	35

*the number in () includes pubs. within high-energy physics collab. (large n. of authors).

I, the undersigned, hereby declare that the above is authentic and genuine. I further declare that I am available to work for the period(s) foreseen for the position for which my CV has been included in the event that this application is successful.

I authorize the processing of my personal data pursuant to Legislative Decree 30 June 2003, n. 196 "Code regarding the protection of personal data" and the GDPR (EU Regulation 2016/679)".

Curriculum Vitae – Dr. Fabrizio Palla, PhD

CURRENT POSITION

Dirigente di Ricerca at Istituto Nazionale di Fisica Nucleare (INFN) Pisa

WORKING POSITIONS

Post-Doc, INFN Pisa	1993-1994
Post-Doc, Institut de Fisica d'Altes Energies (IFAE), Barcelona, Spain	1994-1995
Ricercatore (Staff) INFN, Pisa	1996-2006
Scientific Associate, CERN, Geneve, Switzerland	1999-2000
Primo Ricercatore INFN, Pisa	2007-2015
Scientific Associate, CERN, Geneve, Switzerland	2013-2014
Dirigente di Ricerca INFN, Pisa	2015-now

EDUCATION

Liceo Scientifico Ulisse Dini, Pisa, 60/60	1983
<i>Laurea</i> in Physics, University of Pisa, 110/110 <i>cum laude</i>	March 2nd, 1989
PhD Student, Scuola Normale Superiore di Pisa	1990-1992
PhD degree in Physics, Scuola Normale Superiore of Pisa, 70/70 <i>cum laude</i>	1994

ITALIAN NATIONAL SCIENTIFIC QUALIFICATION

Full Professor qualification for 01/A2 (General Physics)	2014-2023
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ACADEMIC RECORDS

Lecturer of Physics at Faculty of Medicine - University of Pisa	1992-1993
Contract Professor, Faculty of Engineering - University of Pisa	1996-1997
M.Sc. Thesis co-advisor T. Boccali, University of Florence (Physics)	1997
M.Sc. Thesis co-advisor A. Giammanco, University of Catania (Physics)	1999
PhD. Thesis co-advisor Zhen Xie, Scuola Normale Pisa (Physics)	2001
Lecturer of "Experimental apparatus", Physics Dept. - University of Pisa	2003-2007
Member of the scientific committee of the School of Physics - Martignano	2004-2006
PhD. Thesis co-advisor Zongchang Yang, PKU, Peking, China (Physics)	2009
PhD. Thesis co-advisor Shuang Guo, PKU, Peking, China (Physics)	2011
M.Sc. Thesis advisor Alberto Vesentini, University of Pisa (Physics)	2011
PhD. Thesis advisor Luca Martini, University of Siena (Physics)	2013
Member of the CMS Data Analysis School (CMSDAS) Committee	2013-2020
PhD. Thesis advisor Stamatis Poullos, University of Siena (Physics)	2017
M.Sc. Thesis advisor Simone Cammarata, University of Pisa (Photonics)	2019
Chair of the CMS Upgrade school Committee	2013-2020

MAJOR RESEARCH COORDINATIONS

P.I. INFN in European funded project RTN PRSATLHC HPRN-CT-2002-00326	2002-2006
Team Leader of CMS Pisa group	2009-2013
P.I. INFN in European funded project ITN INFIERI FP7 n°317446	2013-2017
Team Leader of Pisa group in CHIPIX65 (pixel readout chip) at INFN	2014-2017
Team Leader of Pisa group in RD53 (pixel readout chip) at CERN	2013-now
P.I. of PHOS4BRAIN (Optical Wireless and Silicon Photonics links) at INFN	2018-2020
P.I. INFN SiPhoSpace project (rad-hard optical links for space) of the European funded project H2020 Grant no. 777222	2019-2020
P.I. INFN of ASI (Agenzia Spaziale Italiana) funded project FOCS on optical wireless components for future space missions	2019-2021
P.I. INFN of ISHTAR University of Pisa funded project on rad-hard electronics	2019-2020

P.I. of FALAPHEL (Fast Links and Radhard Front-End with integrated photonics and electronics for Physics) at INFN 2021-2023

MAJOR SCIENTIFIC COORDINATION

Heavy Flavours convener of ALEPH experiment at CERN	1999-2002
Member of the LEP Heavy Flavor Steering Group at CERN	1999-2002
CMS Tracker Editorial Board Chair	2003-2010
Coordination of assembly and commissioning of the CMS Silicon Tracker	2004-2006
Editor of the Conference "Primo Workshop Italiano sulla fisica di ATLAS e CMS"	2004
Member of the IAC Workshops WIT (Workshop on Intelligent Trackers)	2010-now
Member of the IAC of the "Beauty" Conference Series	2013-now
Member of the IAC of the "Connecting the dots" Workshops Series	2015- now
Convener of the CMS B-Physics group	2013-2015
Co-Chair conference "Vertex2016"	2016
Member of the LHC Heavy Flavour Steering group	2015-now

MAIN SCIENTIFIC AND TECHNOLOGICAL RESEARCH TOPICS

Electroweak measurements, b-quark physics, Higgs boson discovery and properties (ALEPH and CMS experiments at CERN)
Gravitational wave interferometry detector R&D (Virgo)
Tracking and Trigger Technologies for High Energy Physics
Radiation tolerant 65 and 28 nm electronic circuits design
Silicon Photonics links developments

SCIENTIFIC PUBLICATIONS

More than 1200 papers, h-index 115 (Web of Science)
ORCID: <https://orcid.org/0000-0002-6361-438X>

PATENTS

"CIRCUITO INTEGRATO MIGLIORATO PER PILOTAGGIO DI LINK VELOCI IN APPLICAZIONI RADIATION-HARD", patent filed: 04 May 2020, Italian patent n 102020000009640

AWARDS AND HONORS

- The 2013 High Energy and Particle Physics European Physical Society Prize (to the ATLAS and CMS collaborations) "for the discovery of a Higgs boson, as predicted by the Brout-Englert-Higgs mechanism"
- Best Thesis Award (Conversi Prize of the INFN) for 2014 for PhD Thesis of L. Martini
- Best Thesis Award (Società Italiana di Fisica) for 2011 for the M.Sc. Thesis of A. Vesentini
- Best paper on Electronics, Circuits and Systems of MOCAST 2016 Conference (Sponsored by IEEE).

OUTREACH

Coordinator of the "Art & Science Across Italy" Pisa node, Editions 2018-2020 and 2020-2022

LANGUAGE SKILLS

Italian: mother tongue
English: fluent written and spoken
French: advanced written and spoken
Spanish: Intermediate written and spoken

Pisa, June 24th 2021

Signature

