CURRICULUM VITAE DI ANGELO RIVETTI

Generalità

- Nome: Angelo
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Posizione attuale

- Dirigente Tecnologo presso la Sezione di Torino dell'Istituto Nazionale di Fisica Nucleare (da dicembre 2015).

Posizioni precedentemente ricoperte

- Primo tecnologo presso la Sezione di Torino dell'Istituto Nazionale di Fisica Nucleare (dal 2009).
- Tecnologo presso presso la Sezione di Torino dell'Istituto Nazionale di Fisica Nucleare (dal 2001).
- Post-doc presso il Dipartimento di Fisica Sperimentale dell'Università di Torino (2000 - 2001).

Curriculum sudiorum

- 2000 - Dottorato in Ingegneria Elettronica e delle Comunicazioni presso il Politecnico di Torino (dal 1998 al 2000 doctoral fellow presso il gruppo di microelettronica del CERN).
- 1995 - Laurea in fisica presso l'Università degli studi di Torino (votazione 110/110 e Lode)
- 1989 - Diploma di maturità classica presso il Liceo-Ginnasio "General Govone" di Alba (votazione 60/60)

Attività scientifica

Angelo Rivetti è un fisico sperimentale che si occupa principalmente di strumentazione innovativa per la fisica nucleare e delle particelle. Attivo da quasi trent'anni nel campo della progettazione di circuiti integrati per la lettura di rivelatori di particelle cariche e fotoni, è stato uno dei fondatori del gruppo di microelettronica della Sezione INFN di Torino, che ha oggi numerose collaborazioni con istituzioni nazionali ed internazionali, quali Il CERN, BNL, PSI, ETH, IHEP, IN2P3, ed altri. Angelo Rivetti è attualmente membro delle collaborazioni scientifiche internazionali ALICE, BESIII Darkside, DUNE ed AIDAInnova. Sono di seguito sinteticamente riassunti i principali contributi scientifici e tecnologici.

- Dal 2020: convener per il sistema del Tempo di Volo (ToF) nell'ambito del progetto ALICE3. In questo quadro, ha promosso lo sviluppo di innovativi sensori CMOS con guadagno per misure con elevata risoluzione temporale.
- Dal 2021: Coordinatore del WorkPackage di microelettronica nell'ambito del progetto europeo AIDAInnova.
- Dal 2015: membro della collaborazione BESIII - Sviluppo di elettronica di front-end per il rivelatore CGEM, ora installato nell'esperimento.
- Dal 2017: membro della collaborazione Darkside - Sviluppo di elettronica integrata innovativa operante in condizioni criogeniche.
- 2019 - 2022: membro della collaborazione ARCADIA - Sviluppo di sensori innovativi CMOS per la rivelazione di particelle cariche e raggi X in tecnologia CMOS 110 nm.
- 2015 - 2018: responsabile nazionale della collaborazione SEED - La collaborazione ha sviluppato una nuova tecnologia brevettata per l'implementazione di sensori CMOS innovativi "fully depleted".
- 2014 - 2018: responsabile di un progetto di trasferimento tecnologico INFN in ambito microelettronico. Il progetto, interamente finanziato da fondi privati per un importo di 2.3 Meuro, ha sviluppato rivelatori a pixel innovativi con risoluzione temporale migliore di 50 ps.
- 2010 - 2013: responsabile nazionale del progetto INFN LePix: sviluppo di sensori CMOS su substrati ad alta resistività.
- 2010 - 2012: convener per l'upgrade del sistema di tracciamento interno dell'esperimento ALICE tramite l'utilizzo di sensori monolitici.
- 2008 - 2010: R&D di rivelatori a pixel ibridi di nuova generazione per applicazioni di tracciamento a bassa potenza (esperimento PANDA) e ad elevata risoluzione temporale (NA62).
- 2006 - 2008: Sviluppo dell'elettronica di front-end per il RICH dell'esperimento COMPASS al CERN.
- 2004 - 2008: Partecipazione all'installazione e commissioning del sistema di tracciamento al silicio dell'esperimento ALICE al CERN.
- 2001 - 2004: Progetto dell'elettronica integrata di front-end per i rivelatori a deriva al Silicio dell'esperimento ALICE al CERN.

Angelo Rivetti è autore o co-autore di oltre 700 pubblicazioni su riviste internazionali (h-index 69) ed autore del testo “CMOS Front-End for Radiation Sensors” pubblicato da Francys&Taylor. Svolge il ruolo di revisore per le riviste internazionali “Journal of Instrumentation (JINST), “Nuclear Instruments and Methods in Physics Research A”, “IEEE Transactions on Nuclear Science”.
Fa parte dei comitati scientifici internazionali delle conferenze “Topical Workshop on Electronics for Particle Physics (TWEPP) e “International Front-End Electronics Workshop”.

Principali ruoli nell’INFN

Dal 01/05/2016 al 30/04/2024 Angelo Rivetti ha ricoperto per due mandati consecutivi il ruolo di Direttore della Sezione di Torino dell’Istituto Nazionale di Fisica Nucleare ed è stato membro del Consiglio Direttivo dell’INFN.

Attività didattica

- Dal 2023: membro del collegio dei docenti del Dottorato Nazionale in Tecnologie per la Ricerca Fondamentale in Fisica e Astrofisica con sede amministrativa presso l’Università di Padova e coordinatore del Curriculum in Elettronica.

- Dal 2010: Professore di microelettronica presso il Dipartimento di Fisica dell’Università degli Studi di Torino.

- Dal 2015: membro del Collegio dei docenti del Dottorato in Ingegneria Elettrica, Elettronica e delle Comunicazioni con Curriculum in Dispositivi Elettronici in convenzione con l’INFN.

- Dal 2015: docente del corso di terzo livello “Microelectronics for Radiation Sensors” presso il Politecnico di Torino.

- Supervisore di 20 tesi di Dottorato in Fisica ed Ingegneria Elettronica.

Torino, 25/09/2025

Personal information

Surname(s) / First name(s)	**Giuseppe Gioacchino Neil Angilella**
Address(es)	Dipartimento di Fisica e Astronomia “Ettore Majorana”, Università di Catania, Via S. Sofia, 64, I-95123 Catania, Italy
Telephone(s)	+39 095 378 5305
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Nationality(-ies)	
Date of birth	
Gender	

Identifiers

ORCID	0000-0003-2687-9503
ResearcherID	AAH-8518-2019
Scopus	7004393118

Work experience

2006-present	Associate professor of Theoretical Condensed Matter Physics (*professore associato;* tenured, *confermato* since 2009) at Dipartimento di Fisica e Astronomia ‘Ettore Majorana’, Università di Catania, Italy (*s.s.d. PHYS-04/A – Fisica teorica della materia, modelli, metodi matematici e applicazioni; s.c. 02/B2 – Fisica teorica della materia*)
2001-2006	Assistant professor (*ricercatore universitario;* tenured, *confermato* since 2004) at Dipartimento di Fisica, Università di Catania, Italy (*s.s.d. FIS/03 – Fisica della materia*)
1996-2001	Various scholarships
1996-1999	PhD student in Physics at Dipartimento di Fisica, Università di Catania, Italy

Education and training

1999	PhD in Physics (*Dottorato di ricerca in Fisica*), grade: *con lode* (with honours), from Università di Catania, Italy
1994	MSc in Physics (*Laurea in Fisica*), grade: *110/110 e lode* (with honours), from Università di Catania, Italy

Awards

2003	European High Pressure Research Group: 2003 EHPRG Award
2000	Scuola Nazionale INFM: Best Poster Presentation
1999	Italian Physical Society: Young Researchers Award

Conference organization

2020	CEF2020: Cool Electrons in Flatlands, Catania (Italy), 2020/05/23–30: Co-Chairman
2019	FisMat2019: Italian National Conference on the Physics of Matter, Catania (Italy), 2019/09/30–10/04: member of the Scientific committee
2018	11th Italian Quantum Information Science conference (IQIS2018), Catania (Italy), 2018/09/17–20

2016	Correlations in condensed matter under extreme conditions: A tribute to Renato Pucci on the occasion of his 70th birthday, Catania (Italy), 2016/09/23
2014	Graphene Day, Workshop on *Graphene and Graphene-related materials,* Catania (Italy), 2014/02/07
2007	Joint 21st AIRAPT and 45th EHPRG International Conference on *High Pressure Science and Technology,* Catania (Italy)
2007	International Workshop on *Many-body theory of inhomogeneous superfluids,* Centro di Ricerca Matematica “Ennio De Giorgi”, Scuola Normale Superiore, Pisa (Italy)
2005	91st Conference of the Italian Physical Society, Catania (Italy)
1998	36th EHPRG Meeting on *Molecular and Low Dimensional Solids under High Pressure,* Catania (Italy)

Scholarly societies

1995-present	Società Italiana di Fisica (SIF)
2009-present	Referente Locale per la Sede di Catania
2012-present	European Physical Society (EPS)
1995-present	European High Pressure Research Group (EHPRG)
1998-2001	Elected member of the EHPRG Scientific Committee
2004-2007	Elected member of the EHPRG Scientific Committee
2002-present	Webmaster of www.ehprg.org
2006-2009	Elected Secretary of the EHPRG
2009-2012	Elected Chairman of the EHPRG
1995-present	Association Internationale pour l’Avancement de la Recherche et de la Technologie aux Hautes Pressions (The International Association for Research and Technology at High Pressure, AIRAPT)
2005-2011	Elected member of the AIRAPT Executive Committee
2007-2013	Elected Secretary of the AIRAPT
2007-present	Webmaster of www.airapt.org
200x-present	*Ex officio* member of the AIRAPT Executive Committee
1995-2005	Istituto Nazionale di Fisica della Materia (INFM)
2005-present	Consorzio Nazionale Interuniversitario per le Scienze Fisiche della Materia (CNISM)
2011-present	Elected Coordinator for the Unit of Catania
2007-present	Istituto Nazionale di Fisica Nucleare (INFN), Sezione di Catania
2006-present	Interuniversity Research Centre “Fraunhofer-Levi Civita”
2004-2022	Istituto Nazionale di Alta Matematica (INdAM)
2004-present	Associazione “Angelo Marcello Anile” (AssoAMA)
2012-present	Associazione Alumni Scuola Superiore di Catania
2012-life member	Elected Honorary Member
2019-present	Accademia Gioenia
2020-present	Elected Socio Effettivo
2019-2020	Elected Socio Corrispondente Residente

Teaching

2025/2026:	
SSP	**Solid state physics**
MBT	**Many-body theory**
MNF	**Numerical methods for physics**
SM	**Struttura della materia** *(Structure of matter)*
FG2	**Fisica generale 2** *(Electromagnetism)*
ANM	**Advanced Numerical Methods for Physics**
Past years:	
MMF	**Metodi matematici per la fisica** *(Mathematical methods for physics)*
EM	**Complementi di elettrodinamica classica** *(Classical electrodynamics)*

SC **Superconductivity and superfluidity**
SFT **Statistical field theory**

PhD advisor

2018 A. Platania (PhD in Physics, Università di Catania, Italy; with A. Bonanno, R. Lolle, and F. Sauressig)

2017 M. Agati (PhD in Physics, Università di Catania, Italy; with S. Boninelli and M. A. El Khakani)

2012 F. M. D. Pellegrino (PhD in Physical Sciences of Matter, at CNISM, University of Roma 3, Italy)

MSc, BSc, SSC advisor

2002-present Advisor of several MSc, BSc theses in Physics and Mathematics at the University of Catania, and of MSc and BSc diploma theses at the Scuola Superiore di Catania. See www.angilella.it for details.

Roles

2019- Dean of the Class of experimental sciences (Coordinatore della Classe di scienze sperimentali), Scuola Superiore di Catania, Italy

2019-2023 Deputy Director of the Dipartimento di Fisica e Astronomia “Ettore Majorana”, University of Catania, Italy

2018-2019 Deputy Director of the Dipartimento di Fisica e Astronomia “Ettore Majorana”, University of Catania, Italy

2018-2019 Deputy Director of the Dipartimento di Fisica e Astronomia “Ettore Majorana”, University of Catania, Italy

2011-present Scientific advisor for the Catania node of the European Physical Society (EPS) Young Minds project

2012-present Scientific advisor for the *Archimedes* chapter (Catania) of the Optical Society of America (OSA)

Books

[B.3] N. H. March and G. G. N. Angilella.
Exactly solvable models in many-body theory (World Scientific, Singapore, 2016).
ISBN 9789813140141.
doi:10.1142/10048

[B.2] G. G. N. Angilella.
Esercizi di Metodi matematici della fisica (Springer, Milano, 2011).
ISBN 9788847019522

[B.1] F. Siringo and G. G. N. Angilella.
Concetti fisici e applicazioni della Meccanica quantistica (Aracne, Roma, 2005).
ISBN 9788854803282

Edited volumes

[C.5] G. G. N. Angilella and C. Amovilli, editors.
Many-body approaches at different scales: a tribute to Norman H. March on the occasion of his 90th birthday (Springer, New York, 2018).
ISBN 9783319723747.
doi:10.1007/978-3-319-72374-7

[C.4] G. G. N. Angilella and A. La Magna, editors.
Correlations in condensed matter under extreme conditions: a tribute to Renato Pucci on the occasion of his 70th birthday (Springer Verlag, New York, Berlin, Heidelberg, 2017).
ISBN 9783319536637.
doi:10.1007/978-3-319-53664-4.
Ebook: 9783319536644

[C.3] N. H. March and G. G. N. Angilella, editors.
Many-body theory of molecules, clusters, and condensed phases (World Scientific, Singapore, 2009).
ISBN 9789814271776.
doi:10.1142/7270

[C.2] G. G. N. Angilella, R. Pucci, and F. Siringo, editors.
Proceedings of the Joint 21st AIRAPT and 45th EHPRG International Conference on High Pressure Science and Technology, volume 121 of *J. Phys.: Conf. Series* (Institute of Physics, Bristol, 2008)

[C.1] G. G. N. Angilella, R. Pucci, G. Piccitto, and F. Siringo, editors.
Molecular and Low Dimensional Systems under Pressure. Proceedings of the XXXVI EHPRG Meeting, volume 265 of *Physica B* (North Holland, Amsterdam, 1999)

Invited articles in peer-reviewed journals

[D.4] L. Parisi, G. G. N. Angilella, I. Deretzis, R. Pucci, and A. La Magna.
Role of H distribution on coherent quantum transport of electrons in hydrogenated graphene.
Condens. Matter **2**, 37 (2017).
doi:10.3390/condmat2040037.
Special issue on *Control and enhancement of quantum coherence in nanostructured materials,* guest editors: A. Perali and A. Ricci

[D.3] N. H. March, G. G. N. Angilella, and R. Pucci.
Insights gained from solvable models into a variety of phase transitions, including emergent assemblies plus isoelectronic series of atomic ions.
Int. J. Mod. Phys. B **28**, 1430019 (2014).
doi:10.1142/S0217979214300199

[D.2] N. H. March, G. G. N. Angilella, and R. Pucci.
Natural orbitals in relation to quantum information theory: from model light atoms through to emergent metallic properties.
Int. J. Mod. Phys. B **27**, 1330021 (2013).
doi:10.1142/S0217979213300211

[D.1] G. G. N. Angilella.
Pressure-induced electronic topological transitions in low dimensional superconductors.
J. Phys.: Cond. Matter **16**, S953 (2004)

Articles in peer-reviewed journals

[E.117] F. M. D. Pellegrino, F. Buccheri, and G. G. N. Angilella.
Localized surface plasmons in a Weyl semimetal nanosphere.
Phys. Rev. B **112**, 075431 (2025).
doi:10.1103/7b1l-gkjy

[E.116] I. Vacante, F. M. D. Pellegrino, G. G. N. Angilella, G. A. Falci, and E. Paladino.
Local analysis of a single impurity on a graphene Josephson junction.
Phys. Rev. Res. **7**, 013189 (2025).
doi:10.1103/PhysRevResearch.7.013189

[E.115] M. F. Bontorno, G. G. N. Angilella, and D. Zappalà.
Higher-derivative four-dimensional sine–Gordon model.
Ann. Phys. (N. Y.) **471**, 169840 (2024).
doi:10.1016/j.aop.2024.169840

[E.114] G. Naselli, V. Könye, S. K. Das, G. G. N. Angilella, A. Isaeva, J. van den Brink, and C. Fulga.
Nontrivial gapless electronic states at the stacking faults of weak topological insulators.
Phys. Rev. B **106**, 094105 (2022).
doi:10.1103/PhysRevB.106.094105

[E.113] R. Pucci and G. G. N. Angilella.
Density functional theory, chemical reactivity, and the Fukui functions.
Found. Chem. **24**, 59 (2022).
doi:10.1007/s10698-022-09416-z

[E.112] R. Pucci and G. G. N. Angilella.
Leonardo da Vinci, scientist.
Bull. Gioenia Acad. Nat. Sci. (Catania) **52**, FP12 (2019).
doi:10.35352/gioenia.v52i382.77.
URL http://bollettino.gioenia.it/index.php/gioenia/article/view/77

[E.111] A. Sciuto, A. La Magna, G. G. N. Angilella, R. Pucci, G. Greco, F. Roccaforte, F. Giannazzo, and I. Deretzis.
Extensive Fermi-level engineering for graphene through the interaction with aluminum nitrides and oxides.
physica status solidi (RRL) Rapid Research Letters **14**, 1900399 (2020).
doi:10.1002/pssr.201900399.
URL https://onlinelibrary.wiley.com/doi/abs/10.1002/pssr.201900399

[E.110] E. Martello, G. G. N. Angilella, and L. Pollet.
Grassmannization of the Ising model.
Proceedings (MDPI) **12**, 20 (2019).
doi:10.3390/proceedings2019012020

[E.109] A. Campo, S. F. Lombardo, I. Deretzis, G. Garozzo, G. G. N. Angilella, and A. La Magna.
Atom by atom simulation of nano-materials manipulation: the plasma etching case.
IEEE Trans. Nanotechnol. **16**, 7956208 (2017).
doi:10.1109/TNANO.2017.2719281

[E.108] L. Parisi, R. Di Giugno, I. Deretzis, G. G. N. Angilella, and A. La Magna.
Kinetic Monte Carlo simulations of vacancy evolution in graphene.
Mater. Sci. Semicond. Process. **42, Part 2**, 179 (2016).
doi:10.1016/j.mssp.2015.07.033.
E-MRS Spring Meeting 2015 Symposium Z: Nanomaterials and processes for advanced semiconductor CMOS devices

[E.107] N. H. March and G. G. N. Angilella.
Towards the extrapolation of the valence-valence electron partial structure factor for liquid Mg near freezing from a combination of theory and experiment.
Phys. Chem. Liq. **53**, 553 (2015).
doi:10.1080/00319104.2015.1046208

[E.106] I. Deretzis, G. Calogero, G. G. N. Angilella, and A. La Magna.
Role of basis sets on the unfolding of supercell band structures: From tight-binding to density functional theory.
Europhys. Lett. **107**, 27006 (2014).
doi:10.1209/0295-5075/107/27006

[E.105] G. Forte, G. G. N. Angilella, N. H. March, and R. Pucci.
Structure of a low-lying isomer of $BOSi_2$, as a free-space planar cluster, using the Hartree-Fock method plus second order perturbations.
Chem. Phys. Lett. **608**, 269 (2014).
doi:10.1016/j.cplett.2014.06.020

[E.104] A. Grassi, G. M. Lombardo, G. G. N. Angilella, N. H. March, R. Pucci, D. J. Klein, and A. T. Balaban.
Fingerprints of antiaromaticity in the negative ion $(Li_3Al_4)^-$ via an *ab initio* quantum-chemical study of the equilibrium structure of the inhomogeneous electron liquid.
Phys. Chem. Liq. **52**, 354 (2014).
doi:10.1080/00319104.2014.862058

[E.103] G. Forte, G. G. N. Angilella, N. H. March, and R. Pucci.
The nuclear structure and related properties of some low-lying isomers of free-space O_n clusters ($n = 6, 8, 12$).
Phys. Lett. A **377**, 801 (2013).
doi:10.1016/j.physleta.2013.01.036

[E.102] A. Akbari, N. H. March, A. Rubio, G. G. N. Angilella, and R. Pucci.
Recent progress in low-order density matrix theory of inhomogeneous electron liquids by exact solution of two- and four-electron model atoms.
Phys. Chem. Liq. **51**, 1 (2013).
doi:10.1080/00319104.2013.753506

[E.101] R. Pucci and G. G. N. Angilella.
Scienza e religione: un rapporto difficile.
Il Regno **...**, ... (2012).
doi:...

[E.100] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Resonant modes in strain-induced graphene superlattices.
Phys. Rev. B **85**, 195409 (2012).
doi:10.1103/PhysRevB.85.195409

[E.99] N. H. March, G. G. N. Angilella, and R. Pucci.
Equation of motion of the correlated first-order density matrix for the ground-state of the Hookean atom with two electrons.
J. Math. Chem. **50**, 914 (2012).
doi:10.1007/s10910-011-9934-0

[E.98] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Effect of uniaxial strain on plasmon excitations in graphene.
J. Phys.: Conf. Ser. **377**, 012083 (2012).
doi:10.1088/1742-6596/377/1/012083

[E.97] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Ballistic transport properties across nonuniform strain barriers in graphene.
High Press. Res. **32**, 18 (2011).
doi:10.1080/08957959.2011.653686

[E.96] G. Forte, G. G. N. Angilella, V. Pittalà, N. H. March, and R. Pucci.
Neutral and cationic free-space oxygen-silicon clusters SiO_n $(1 < n \leq 6)$, and possible relevance to crystals of SiO_2 under pressure.
Phys. Lett. A **376**, 476 (2012).
doi:j.physleta.2011.11.049

[E.95] G. Forte, G. G. N. Angilella, V. Pittalà, N. H. March, and R. Pucci.
Inhomogeneous electron liquid in the free-space building block Li_2C_2 plus its dimer and trimer.
Phys. Chem. Liq. **50**, 46 (2012).
doi:10.1080/00319104.2010.544019

[E.94] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Transport properties of graphene across strain-induced nonuniform velocity profiles.
Phys. Rev. B **84**, 195404 (2011).
doi:10.1103/PhysRevB.84.195404

[E.93] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Linear response in the correlation functions of strained graphene.
Phys. Rev. B **84**, 195407 (2011).
doi:10.1103/PhysRevB.84.195407

[E.92] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Effect of uniaxial strain on the Drude weight of graphene.
High Press. Res. **31**, 98 (2011).
doi:10.1080/08957959.2010.525705

[E.91] N. H. March and G. G. N. Angilella.
Molecular theory of water and aqueous solutions. Part I: Understanding water, by A. Ben-Naim (book review).
Phys. Chem. Liq. **49**, 560 (2011).
doi:10.1080/00319100903539058

[E.90] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Dynamical polarization of graphene under strain.
Phys. Rev. B **82**, 115434 (2010).
doi:10.1103/PhysRevB.82.115434

[E.89] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Strain effect on the optical conductivity of graphene.
Phys. Rev. B **81**, 035411 (2010).
doi:10.1103/PhysRevB.81.035411

[E.88] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Pairing symmetry of superconducting graphene.
Eur. Phys. J. B **76**, 469 (2010).
doi:10.1140/epjb/e2010-00228-9

[E.87] G. Forte, G. G. N. Angilella, N. H. March, and R. Pucci.
Ab initio quantum mechanics of a cluster of SiH_4 and two H_2 molecules, together with its dimer and trimer.
Phys. Lett. A **374**, 580 (2010).
doi:10.1016/j.physleta.2009.11.039

[E.86] N. H. March and G. G. N. Angilella.
Coexistence curves in monatomic fluids: the contrast between insulating argon and metallic assemblies.
Phys. Chem. Liq. **48**, 561 (2010).
doi:10.1080/00319104.2010.493012

[E.85] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Effect of uniaxial strain on the reflectivity of graphene.
High Press. Res. **29**, 569 (2009).
doi:10.1080/08957950903421701

[E.84] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Effect of impurities in high-symmetry lattice positions on the local density of states and conductivity of graphene.
Phys. Rev. B **80**, 094203 (2009).
doi:10.1103/PhysRevB.80.094203

[E.83] N. H. March and G. G. N. Angilella.
Low-coordination phases of both crystalline and fluid states of alkali metals under extreme conditions of high and low density respectively.
Phys. Chem. Liq. **47**, 698 (2009).
doi:10.1080/00319100903225955

[E.82] N. H. March and G. G. N. Angilella.
Basic theory and some applications concerning the ratio of shear viscosity to entropy density in dense fluids.
Phys. Chem. Liq. **47**, 344 (2009).
doi:10.1080/00319100902822703

[E.81] N. H. March and G. G. N. Angilella.
The importance of the three-particle correlation function in the theory of monatomic classical liquids like argon.
Phys. Chem. Liq. **47**, 340 (2009).
doi:10.1080/00319100902822695

[E.80] N. H. March and G. G. N. Angilella.
The nature of the transition from supercooled liquid metal Si to the disordered solid phase, with possible implications for B.
Phys. Chem. Liq. **47**, 111 (2009).
doi:10.1080/00319100802654297

[E.79] N. H. March and G. G. N. Angilella.
Electronic states in ordered and disordered quantum networks: with applications to graphene and to boron nanotubes.
J. Math. Chem. **46**, 532 (2009).
doi:10.1007/s10910-008-9477-1

[E.78] G. Forte, A. Grassi, G. M. Lombardo, G. G. N. Angilella, N. H. March, and R. Pucci.
Quantum-chemical modelling of the structural change of water due to its interaction with nanographene.
Phys. Chem. Liquids **47**, 599 (2009).
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In P. Finocchiaro and M. Alberghina, editors, *Idee, cultura e storia per la Città della Scienza*, p. 38 (G. Maimone, Catania, 2007)

[F.6] G. G. N. Angilella, I. A. Howard, N. H. March, R. Pucci, and C. Van Alsenoy.
Atomic and molecular neutral and charged clusters built from light atoms: H to si.
In F. Columbus, editor, *Atomic and molecular clusters: new research*, volume 1, p. ... (Nova Science, New York, 2004)

[F.5] G. G. N. Angilella, S. Bartalini, F. S. Cataliotti, I. Herrera, N. H. March, and R. Pucci.
The Gross-Pitaevskii equations and beyond for inhomogeneous condensed bosons.
In A. V. Ling, editor, *Trends in Boson Research*, volume 1, p. 35 (Nova Science, New York, 2006).
ISBN 1-59454-521-9.
Preprint cond-mat/0410287

[F.4] G. G. N. Angilella, F. Bartha, F. Bogár, D. J. Klein, N. H. March, R. Pucci, and F. Siringo.
Electronic structure of condensed phases of some light elements subjected to high pressure.
In S. G. Pandalai, editor, *Recent Research Developments in Physics*, volume 4, p. 861 (Transworld Research Network, Trivandrum, India, 2003)

[F.3] G. G. N. Angilella, F. E. Leys, N. H. March, and R. Pucci.
Characteristic energies entering superconducting transition temperatures in high-T_c cuprates, heavy Fermion materials and doped fullerites.
In G. Mondio and L. Silipigni, editors, *Progess in Condensed Matter Physics. 'Festschrift' in honour of Vincenzo Grasso*, p. 523 (Società Italiana di Fisica, Bologna, 2003)

[F.2] G. G. N. Angilella, F. E. Leys, N. H. March, and R. Pucci.
Evidence of nodal properties of the superconducting gap in impurity effects and tunnelling conductance for the high-T_c materials.
In F. Columbus, editor, *Horizons in Superconductivity Research* (Nova Science, Hauppage, NY, 2003)

[F.1] G. G. N. Angilella, A. Grassi, G. M. Lombardo, N. H. March, and R. Pucci.
Bond-order, stretched chemical bonds and electron correlation.
In S. G. Pandalai, editor, *Recent Research Developments in Quantum Chemistry*, volume 2, p. 9 (Transworld Research Network, Trivandrum (India), 2001)

Articles in peer-reviewed conference proceedings

[G.8] I. Deretzis, F. Giannazzo, G. G. N. Angilella, L. Parisi, and A. L. Magna.
Atom by atom simulations of nano-materials processing.
In *2016 IEEE Nanotechnology Materials and Devices Conference (NMDC)*, pp. 1–2 (2016).
doi:10.1109/NMDC.2016.7777113

[G.7] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Transport properties of graphene across strain-induced nonuniform velocity profile.
In S. Scalese and A. L. Magna, editors, *Proceedings of Carbomat 2011. Wokshop on Carbon-based low-dimensional materials*, p. ... (CNR-IMM, Catania, 2012).
ISBN ..

[G.6] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Strain effect on the electronic and plasmonic spectra of graphene.
In L. Ottaviano and V. Morandi, editors, *GraphITA 2011. Selected papers from the Workshop on Fundamentals and Applications of Graphene*, volume ... of *Carbon Nanostructures*, p. 165 (Springer, Berlin, 2012).
ISBN 9783642206436.
doi:10.1007/978-3-642-20644-3_19

[G.5] F. M. D. Pellegrino, G. G. N. Angilella, and R. Pucci.
Strain effects on the electronic properties of graphene.
In V. Raineri and F. Roccaforte, editors, *Proceedings of the 35th Workshop on Compound Semiconductor Devices and Integrated Circuits (WOCSDICE 2011)*, p. 65 (CNR-IMM, Catania, 2011).
ISBN 9788880801238

[G.4] R. Citro, G. G. N. Angilella, M. Marinaro, and R. Pucci.
Pressure dependence of the phase-diagram of the ruthenocuprates.
In E. Dinjus, editor, *Proceedings of the Joint 20th AIRAPT and 43rd EHPRG International Conference on High Pressure Science and Technology. Karlsruhe, Germany, June 27 – July 1, 2005* (Forschungszentrum Karlsruhe, Karlsruhe, 2005)

[G.3] G. G. N. Angilella, E. Piegari, R. Pucci, and A. A. Varlamov.
Anisotropic low-dimensional superconductors close to an electronic topological transition.
In H. D. Hochheimer, B. Kuchta, P. K. Dorhout, and J. L. Yarger, editors, *Frontiers of high pressure research II: Application of high pressure to low-dimensional novel electronic materials*, volume 48 of *NATO Science Series* (Kluwer, Dordrecht, 2001).
doi:10.1007/978-94-010-0520-3_27

[G.2] G. G. N. Angilella, R. Pucci, F. Siringo, and A. Sudbø.
k-space gap anisotropy within the interlayer pair-tunneling model of high-T_c superconductivity.
In M. Ausloos and S. Kruchinin, editors, *Symmetry and pairing in superconductors. Proceedings of the NATO Advanced Research Workshop. Yalta, Ukraine, 1998*, p. 259 (Kluwer Academics, Dordrecht, 1999)

[G.1] G. G. N. Angilella, R. Pucci, and F. Siringo.
On the dependence of the critical temperature on pressure in the bipolaron model of high T_c superconductors.
In W. A. Trzeciakowski, editor, *High Pressure Science and Technology. Proceedings of the Joint XV AIRAPT and XXXIII EHPRG International Conference*, p. 685 (World Scientific, Singapore, 1996)

Miscellanea

[H.2] G. Di Bona, A. Fiorentino, A. Moscariello, and G. G. N. Angilella (proposers).
Problem no. 4164.
Crux Mathemat. **42**, 314 (2016)

[H.1] G. G. N. Angilella (solver).
The Contest Corner, no. CC122.
Crux Mathemat. **41**, 195 (2016)

Catania, September 29, 2025

Laura Silvia Monaco

Curriculum vitae

EDUCATION AND TRAINING

- Graduated Maxima cum Laude in Physics at Università degli studi di Milano - Dipartimento di Fisica on 26/03/2001, title "*Misura dell'energia cinetica degli elettroni fotoemessi da catodi in Cs_2Te mediante un analizzatore a tempo di volo*"

WORK EXPERIENCE

- 16/9/2001 - 15/3/2002: Fellowship, INFN
- 6/5/2002 - 5/5/2004: Fellowship, CE fund (PDS-XADS)
- 9/7/2004 - 8/1/2005: 2222 art., CE fund (CARE)
- 14/2/2005 - 4/3/2005: Invited Scientific Visitor at DESY
- 21/3/2005 - 20/11/2005: 2222 art., CE fund (SFS)
- 1/2/2006 - 31/1/2008: Technological Research Grant, CE fund (CARE)
- 1/4/2008 - 31/10/2008: 23 art., CE fund (IA-SFS)
- 1/11/2008 - 6/2/2009: 23 art., MIUR-SPARX fund
- 3/4/2009 - 31/3/2010 : 23 art., CE fund (EUROTRANS)
- 3/5/2010 - 31/1/2012 : 23 art., CE fund (ILC-HiGrade)
- 5/4/2012 - 4/4/2015: 23 art., XFEL fund
- 5/4/2018 - 4/4/2018: 36 art., XFEL fund
- 5/4/2018 - 30/9/2018: 36 art., ESS-MIUR fund
- 1/10/2018 – 31/12/2020: Permanent position as Technology Scientist at INFN Milano – LASA laboratory (Segrate)
- 1/1/2022 – today: Senior Technology Scientist at INFN Milano – LASA laboratory (Segrate)

ASSIGNMENTS AND RESPONSIBILITIES

- 2002-today: Co-advisor of bachelors and master thesis
- 2006: member of the Local Organizing Committee of "*Workshop on High QE Photocathodes*", INFN Milano lab. LASA, 2006
- 2010-2015: deputy of the Italian co-leader of work package WP04 (800 13 GHz cavities production) for European XFEL
- 2012-2015: Quality Control Manager for the 20 3.9 GHz cavity production for European XFEL
- 2015-today: Member/President of several INFN selection for temporary or permanent position (17366/2015; 17365/2015; MI/C6/696; MI/C6/20165; 20975/2019; MI/C6/21526; MI/C6/22285; 23861/2021, LNF/C6/24667)
- 2016: invited by JLab for presenting European-XFEL cavities production results
- 2017-today: Member/President of several INFN tenders (disp. 18960, 13/4/2017; disp. 20478, 15/11/2018; disp. 20586, 07/12/2018; del. 12168, 11/9/2019; disp. 22184, 5/6/2020; disp. 23873, 3/12/2021; disp. 24100, 8/2/2022; disp. 26306, 11/1/2024; disp. 26939, 8/7/2024; disp. 27294, 6/11/2024)
- 2018-today: Quality Engineer of the QC for the 36 704.42 MHz cavity production, and responsible of the production cycle for the 38 ESS medium beta cavities
- 2018: member of the Local Organizing Committee of "TESLA Technology Collaboration (TTC) Meeting", Feb 2018 (Unimi)
- 2018: external expert for the DUNE PIP-II Cryomodules, STFC's Projects Peer Review Panel (PPRP), June 5th 2018
- 2019: invited by SHINE for presenting QC/QA experience in large scale productions
- 2020-today: member of WG2 (Accelerator Design) for the ILC International Development Team (IDT), since Nov 2020
- 2021-today: member of PIP-II Quality Control Coordination Group (QCCG) for 36 SRF low β (PIP-II) cavities production
- 2022: member of the ML&SRF Steering Panel in the frame of the ILC pre-lab whose mission was the identification of the R&D activity relative to SRF key technology, Jan-Mar 2022
- 2022-today: member of the INFN CSN5 "Accelerator" sub-panel, external referee of CSN5 projects (Crown, SuperMad, Vaporada)
- 2022: member of the Local Organizing Committee of "European Workshop on Photocathodes for Particle Accelerator Applications (EWPAA2022)", Unimi, Sep. 2022
- 2022-today: member of TESLA Technology Collaboration (TTC) Technical Board (TB) for Cavity and Coupler topics, since Oct 2022
- 2022-today: member of the WG1 "RF Bulk" in the RF Panel of the ESPP Accelerator R&D Roadmap, since Nov 2022
- 2023-today: member of the LCWS2024 Program Committee
- 2023-today: national INFN PI of the Eu staff exchange program EAJADE and of the WP2 (high perform. RF systems), since Mar 2023
- 2023-today: national INFN PI of R&D program on SRF HighQ/HighG (CSN1), since 2023
- 2023: member of the Program Committee of the LCWS2024 in Tokyo, Sep. 2023
- 2024-today: member of the Coordination Group of LCVision team, since Sep. 2024
- 2025: member of the Program Committee of the LCWS2025 in Valencia, Mar. 2025

RESEARCH AND TECHNOLOGICAL ACTIVITY

Photocathodes for High brightness RF gun (2001-today)

- R&D activity on metal (Cu, Ag) and semiconductor (Cs_2Te in UV range and KCsSb in visible range) photocathodes. Characterization of photoemissive and optical properties: thermal emittance measurement at different ls with a low energy Time-Of-Flight spectrometer that I developed and characterized at LASA, angle-resolved optical measurements (n, k), pollution measurements, measurement of Eg + Ea and study of the films photoemissive threshold, determination of reliable recipes in view of the photocathodes usage in the High Brightness RF guns.
- Since 2004, responsible of the photocathode production (mainly Cs_2Te) used as electron sources in several labs and user facilities: TTF (now FLASH) and PITZ at DESY, APEX at LBNL, A0 and FAST at FNAL, LCLS-II at SLAC. Results: about 150 Cs_2Te films produced, QE

@ 254 nm 11.7% with spatial uniformity > 90%, dark current reduced by optical polishing (roughness < 10 nm), operative lifetime (24/24h, 7/7d) increased from 3 months to the actual 4 years (at FLASH).

- Improvement of the diagnostic during film deposition with the "Multiwavelength" technique, for better reliability and characterization during growth and after production (also post-usage), managing of the web-accessible SQL database (http://wwwlasa.mi.infn.it/ttfcathodes) that collects both the parameters of the produced photocathodes and their performance in RF guns, managing of the relationships between LASA and the various international laboratories
- Development, installation and characterization of a new photocathode production system dedicated to green films (KCsSb) at LASA. The first three KCsSb photocathodes produced in 2021 were then tested in the RF Gun at PITZ (DESY Zeuthen), the second batch with optimized films growth have been produced and tested in PITZ RF Gun in 2024.
- Contribution to the CDR ("Injectors" section) of MariX (Multidisciplinary Advanced Research Infrastructure with X-rays), an interdisciplinary machine for X-ray radiation generation by both Compton backscattering and SASE FEL radiation, contribution for the TDR ("Injector section") of BriXSinO (MariX demonstrator). I'm collaborating to the experimental set-up for stress-testing Cs_2Te photocathodes grown at LASA for robustness studies at the operating conditions required by the project (repetition rate of 100 MHz), and since January 2023 I'm the responsible for photocathode that will be used in the DC Gun for HB^2TF (CSN5 call).

SRF cavities and ancillaries (2002-today)

- Application of "reliability" concepts right from the design stage of a waste transmutation complex powered by a SuperConducting proton accelerator, experimental studies of the windowless coupling scheme between the accelerator and the reactor (PDS-XADS).
- Study and realization of the inner magnetic shield for the Superconducting RF proton cavity TRASCO (EUROTRANS)
- Characterization of the cavity flange systems at cryogenic conditions, with different material and geometry (CARE).
- Deep analysis of the cavity production steps. In particular: evolution of defect in Nb during cleaning and polishing processes (BCP and EP); in collaboration with industry, study and optimization of the Electron Beam Welding parameters during the mechanical production of Nb cavities obtaining a decrease of the overall process and production costs (CARE, E-XFEL).
- European XFEL (2007-2016).
  800 1.3 GHz cavities production: deputy of the Italian co-leader of the E-XFEL work package WP04 for the 800 1.3 GHz cavities production; member of the team of experts for Quality Control (QC) of the RF surface treatments of cavities; analysis of performance of cold RF tests, to highlight their correlations with the parameters of the various production processes; in collaboration with DESY, "know-how" transfer to industries (before present only in the research laboratories) of the entire production process (from the material selection to the cavity preparation ready to be cold tested).
  20 3.9 GHz cavities: construction of cavity prototypes and optimization of treatments at the industry; participation of the specifications definition of the full production cycle of series cavities and managing the whole QC cycle of the cavities (both in industry and in the LASA laboratory).
- European Spallation Source (ESS) (2015 – today).
  36 704.42 MHz medium β cavities production: Quality Engineer of the QC (Quality Control) of series production; definition of the production cycle of the prototypes and series cavities; reference person towards different collaborating institutes (INFN, industry, DESY for qualification tests, CEA for the integration of cavities in the cryomodule, ESS). All cavities were successfully installed in cryomodules and in March 2025 the first Beam On Dump was achieved at ESS. We are now under the production of further 4 ESS cavities that will be installed in the spare cryomodule as requested by ESS.
- Proton Improvement Plan II (PIP-II) (2017 – today).
  Since 2017, I'm working on the quality control plan definition for the future production of 38 low β cavities at 650 MHz for the PIP-II project, and since 2021 I'm member of PIP-II Quality Control Coordination Group (QCCG). The activity started with the first prototypes, used to both highlight criticalities on the production process and to develop the surface treatment recipe needed for reaching the required high Q_0. Thanks to the experience gained with prototypes, we settled-up the full cavity production process and QC plan for the series cavity production at industry, and in 2025 the 2 pre-series cavity production have been launched.
- R&D activities on HQ/HG SRF Cavities: ILC Technology Network (ITN) and ESPP_A_SRF_HQ and (2023 – today).
  In 2023 two R&D "synergic" activities started on the development of High Q / High Gradient (HQ/HG) SRF cavity performances to reach high sustainability needed for the construction of large future machines (as requested by the ESPP). Both R&Ds aim to develop the best cavity production process (with 1.3 GHz single-cell), and to prove the industrialization process (with 1.3 GHz 9-cells). While ITN R&D activities are targeted to ILC requirements (ILC in Japan), the ESPP_A_SRF_HQ R&D scope is to gain an in-depth understanding of the effect of annealing and surface treatments on cavity performances (in term of HQ and HG), essential skills needed for the realization of future large machines (p.es. ILC, FCC, Muon-collider, etc.). Between the on-going activities, single-cell cavities production, surface treatments, material studies, pressure vessel code harmonization (PED, HPGS, ASME), design and realization of a new cryostat with insert for R&D measurements at 2 K at LASA (including magnetic shield, active magnetic hygiene, diagnostics, VT modernization of the acquisition system, etc.). These R&D activities are done in collaboration with international labs (CEA, CERN, KEK, FNAL, DESY, JLab, etc.), and also with the support of EU EAJADE staff-exchange program of which I'm the INFN PI.

5 September 2025

Curriculum Vitae

INFORMAZIONI PERSONALI

Nunzio Randazzo

INFN – Sezione di Catania - Via S. Sofia 64. I-95123 Catania, Italia

nunzio.randazzo@ct.infn.it

POSIZIONE ATTUALE

2019 – oggi

Dirigente Tecnologo

Istituto Nazionale di Fisica Nucleare - Sezione dii Catania - Via S. Sofia 64. I-95123 Catania, Italia

RUOLI DI RESPONSABILITA'

2004 – 2012	Rappresentante del personale ricercatore per la Sezione di Catania dell'INFN
2016 – 2020	Membro del Management Team di Km3NeT come Site Manager - Infrastruttura italiana d Portopalo
2017 – 2019	Membro dell'International Review Commette - Esperimento BESII presso IHEP - Beijing - Cina
2017 – 2020	Chair del panel della CSN5 per la valutazione delle grandi iniziative (CALL)
2017 – 2018	Responsabile del WP1 del progetto ELECTRODE finanziato nel programma R4I dell'INFN.
2019 – Oggi	Project Manager Junction box – Nodi sottomarini di distribuzione elettro/ottica esperimento km3net

PROGETTI SCIENTIFICI

2002 – 2003	Responsabile Nazionale - Esperimento "MARE DEL SUD"
2003– 2005	Responsabile del sistema di posizionamento acustico sottomarino Esperimento "NEMO R&D"
2005 – 2007	Responsabile Locale - Esperimento "MOPI"
2007 – 2009	Responsabile Locale - Esperimento "PRIMA"
2010 – 2012	Responsabile Locale - Esperimento "PRIMA+"
2010 – 2012	Responsabile Nazionale - Esperimento "TO_ASIC"
2010 – 2012	Responsabile Locale - Esperimento "DIAPIX"
2013 – 2015	Responsabile Locale Esperimento "RDH"
2014 – 2015	Responsabile Locale Progetto "IRPT "
2013 – 2016	Responsabile Locale Esperimento "JLAB12"
2013 – Oggi	Responsabile Locale Esperimento "KM3"

COMITATI SCIENTIFICI, GRUPPI DI LAVORO E COMITATI DI CONTROLLO

2001 –2015 Membro della Commissione Scientifica Nazionale 5 dell'INFN

2002 – 2004 Membro della Commissione Nazionale Trasferimento Tecnologico e Formazione Esterna dell'INFN

2004 – 2012 Membro del "Gruppo di Lavoro per la Valutazione" dell'INFN

1997 – Oggi Referee per le riviste internazionali: Nuclear instruments e Method (NIM A)
IEEE Transaction on Nuclear Science, Journal of Instrumentation

2013 Member of organizing committee X Seminar on Software for Nuclear, Subnuclear and Applied Physics

2013 Member of organizing committee International workshop on the Status and future perspectives of charged particle therapy Pavia – Italy

2017 Member of International Advisory Committee International Workshop Light Dark Matter @ Accelerator LDMA 2017) - Isola D'Elba – Italy

2018 Member of organizing committee 8th international workshop on Acoustic and Radio EeV Neutrino Detection Activities (ARENA 2018) - Catania - Italy

POSIZIONI/CONTRATTI NELL'AMBITO DELLA RICERCA

2006 - 2018
Primo Ricercatore
Istituto Nazionale di Fisica Nucleare (INFN)
Contratto a tempo indeterminato

2001 - 2005
Primo Ricercatore
Istituto Nazionale di Fisica Nucleare (INFN)
Contratto a tempo indeterminato

1999 - 2001 Assegno di ricerca c/o Università degli Studi di Catania - B01A - FISICA GENERALE

1998 Borsa di perfezionamento C.S.F.N.S.M.

1997 Contratto CERN per attività ITS - ALICE

ISTRUZIONE E FORMAZIONE

1996
Dottorato di Ricerca in Fisica (cum laude)
Università di Catania

1993
Laurea in Fisica Voto: 110/110 (cum laude)
Università di Catania

CAPACITA' E COMPETENZE PERSONALI

Lingua madre: Italiano

Inglese

COMPRENSIONE		PARLATO		SCRITTO
Ascolto	Lettura	Capacità di conversazione	Capacità di esprimersi	
C1	C1	C1	C1	C1

ULTERIORI COMPETENZE MANAGERIALI

RUP e DEC di diverse procedure sopra soglia

Dal 2010 al 2013
Professore a contratto Dipartimento di Fisica e Astronomia UNICT
Corsi: Elettronica e Elettronica Applicata

Relatore di oltre 20 tesi di Laurea e dottorato in Fisica e Ingegneria.

Revisore di altre 50 esperienti INFN

PRESENTAZIONI SCIENTIFICHE

Indici e numeri bibliometrici

Articoli: 347
Citazioni: 4697
h-index: 33
Sorgente: Scopus

PUBBLICAZIONI SCIENTIFICHE

(selezione recente di max. 15 pubblicazioni)

Observation of an ultra-high-energy cosmic neutrino with KM3NeT
The KM3NeT Collaboration
Nature - 2025

Differential Sensitivity of the KM3NeT/ARCA detector to a diffuse neutrino flux and to point-like source emission: Exploring the case of the Starburst Galaxies
S Aiello, A Albert, M Alshamsi, SA Garre, Z Aly, A Ambrosone, F Ameli, et al.
Astroparticle Physics – 2024

The HPS electromagnetic calorimeter
Balossino, et al.
NIM A - 2017

Aging characterization on large area photo-multipliers
Aiello, S; Lo Presti, D; Leonora, E; Randazzo, N; Russo, GV; Leanza, R
NIM A - 2013

Proton radiography for clinical applications
Talamonti, et al.
NIM A - 2010

YAP(Ce) crystal characterization with proton beam up to 60 MeV
Randazzo,et al
NIM A - 2008

A VLSI ASIC front end for the optical module of the NEMO underwater neutrino detector
Presti, D; Randazzo, N; Caponetto, L
IEEE Transaction on Nuclear Science - 2006

Scientific application of advanced underwater positioning techniques
N. Randazzo, C. Bechaz
Oceans - 2005

Design study of a low-power, low-noise front-end for multianode silicon drift detectors
Caponetto, L; Lo Presti, D; Randazzo, N; Russo, GV; Leonora, E; Lo Nigro, L; Petta, C; Reito, S; Sipala, V
NIM A - 2005

Low power, low noise, integrated preamplifier-shaper for large area silicon detectors
Randazzo, N; Russo, GV; Caligiore, C; LoPresti, D; Panebianco, S; Petta, C; Reito, S; Bonvicini, V; Vacchi, A
NIM A - 1999

Integrated front-end for a large strip detector with E, Delta E and position measurements
N. Randazzo, et al
IEEE Transaction on Nuclear Science - 1999

A Four-Channel, Low-Power CMOS Charge Preamplifier for Silicon Detectors with Medium Value of Capacitance
N. Randazzo, et al
IEEE Transaction on Nuclear Science 1997

Light- pulse to photomultiplier tubes from extended scintillators
Albergo S. et al.
NIM A - 1995

Catania, 9 Maggio 2025

Curriculum - Dr. Calvo Daniela

Main academic and scientific degrees

1988 Master Degree in Nuclear Engineering at the Politecnico di Torino

1998 Master Degree in Physics at the Università di Torino

National qualification

1988 National qualification in Nuclear Engineering

Professional Positions

1988 – 1990 Professional collaborator of research institution, at INFN-Torino

1991 – 2000 Technology researcher (Tecnologo) at INFN-Torino

2001 – 2010 Senior Technology researcher (Primo tecnologo) at INFN-Torino

2011 - to date. Senior Researcher (Primo ricercatore) at INFN-Torino

Research activities in the following experiments:

- OBELIX (1988-1997) – *Meson spectroscopy, cross-section measurements of antiproton-proton, antineutron-neutron, antineutron-nuclei reactions at LEAR facility (CERN).*
  Involved deeply in designing and producing the time-of-flight system, its calibration system, and the antineutron beam line. I worked as a reference person for the trigger system for the selection of physics.
- TOFUS (1989-1996)– *Development of a detector for neutrons in the range of 1-3 MeV (INFN-Torino)*
  I have been deeply involved in every aspect of the detector development.
- FINUDA (1992-2009) – *Production and mesonic and non-mesonic decay of Λ ipernuclei and states antikaon-few nucleons at DAFNE (INFN-LNF)*
  Co-author of the proposal for this experiment. Deeply involved in the integration of this apparatus, I collaborated on the development of drift chambers filled with a gas mixture based on helium, and I developed the gas systems of the whole experiment. Fully involved in the data taking of the experiment, as a reference person for the drift chambers. I was the GLIMOS (Group Leader in Matter of Safety) of this experiment.
- ELAPP (2000-2001)–*Cross-section measurement of the antideuteron-proton reactions at AD (CERN)*

Co-author of the proposal for this experiment. In the R&D phase, I developed a scintillating fiber prototype.

- PANDA (2005-2022)– *Spectroscopy in the charm region, $\Lambda\Lambda$ double ipernuclei, iperons production, time-like form factors (FAIR).*
  Promoter of the Micro Vertex Detector (MVD) for tracking and especially able to detect secondary vertices of short-lived particles. I was deeply involved in its design and project. I was the coordinator of the R&D phase for thinned hybrid pixels, based on epitaxial silicon sensors and triggerless readout, that together with the double-sided silicon micro strips, compose the vertex detector.
- NUMEN_GR3 (2015 to date) – *Evaluation of the nuclear matrix elements of the double charge exchange reactions with ions to extract information on the lifetime of the double beta decay neutrino-less reaction (INFN-LNS)*
  At present, I am involved in the R&D phase for the upgrade of the MAGNEX apparatus to the new ion beam intensities foreseen at LNS with the new superconducting cyclotron. I am studying the new scattering chamber and I am working on the target development, and the Particle Identification detector based on SiC sensors. I am responsible for the integration of the whole MAGNEX. I collaborated on the pioneering runs with the pre-existing MAGNEX and cyclotron to demonstrate the feasibility of the proposed measurements.
- DES (2018 to date)- *Deposition of Elements on Substrate (INFN-LNL)*
  Spokesperson at LNL for this project to study substrates with high thermal conductivity, and useful for element vapor deposition. The application is for targets for nuclear physics.
- HASPIDE (2023 to date)- *Hydrogenated Amorphous Silicon Pixel Detectors*
  Development of electronics to read out the sensors. I am collaborating to set up a system at INFN-Torino.
- REST (2023 to date) *Development of readout for silicon micro-strips (INFN-Torino)*.
  Leader of this project to develop a triggerless readout for silicon microstrips.

Research activities in the following European projects:

- HYPERGAMMA (2007-2010)– *Study of HPGe for their applications inside magnetic fields*
  I contributed to the study of the behavior of a Germanium detector inside a magnetic field
- ULISI (2009-2011) – *Ultra-thin silicon trackers and vertex detectors for experiments developed for precise measurements*
  I proposed and developed the epitaxial silicon material for silicon devices in a hard radiation environment.

- ULISINT (2012-2014) – *Large silicon detector systems in the hadron physics field for high precision vertex reconstruction and tracking.*
  In this project, I proposed and developed a thin cable based on aluminum on Kapton for data transmission for experiments dedicated to hadron physics.
- EUROLABS (2022-2026)- *European Laboratories for Accelerator Based Sciences*
  Horizon EU
  In WP 2.5.2, I am working on nuclear target development for a high-intensity ion beam.

Activities in the following european networks:

- FAIRnet (2009-2011)-(FP7-Hadron Physics 2- WP7) *A worldwide research networking activity for experiments on QCD at FAIR*
- FAIRnet (2012-2014)-(FP7-Hadron Physics 3- WP7)
- FAIRnet (2019-2023) (Hadron Physics Horizon- Strong 2020-WP12/NA1) *QCD Physics at GSI/FAIR*

Main responsibilities in national and international experiments of INFN and European projects/networks:

- Calibration System for the Time Of Flight (TOF) detector, OBELIX(1989 -1997)
- Coordination for the installation of the anti-neutrons line, OBELIX (1989-1997);
- Neutron Detector, TOFUS (1989 al 1997)
- Characterization of the drift chamber prototype, FINUDA (1993 al 1995)
- Helium Chamber, FINUDA (1995-2009)
- Gas systems for He Chamber and Drift Chambers, FINUDA (1995-2009)
- Safety System for the hydrocarbon leakages, FINUDA, (1996-2009)
- GLIMOS of the FINUDA experiment, (1996- 2004)
- Coordination of the inner detector's installation, FINUDA(1998-1999)
- Responsible of Torino Group involved in PANDA, at INFN(2005-2016)
- Pixel Detector in the PANDA experiment (from 2005 until 2022)
- Contact Person for INFN-Torino in FAIRnet (HadronPhysics 2) (2009-2011)
- Activity Leader for INFN-Torino in FAIRnet (HadronPhysics 3) (2012-2014)
- Deputy chair (2010) and chair (2011) of the Speaker Committee, PANDA
- Leader of Micro Vertex Detector in the PANDA experiment (2013-2022)
- Member of Technical Board, PANDA (2005- 2022)
- Member of the Collaboration Board in PANDA for INFN-Torino (from 2005 till now)
- Responsible for the Torino Group in NUMEN, at INFN (from 2016 till now)
- Responsible for Target R&D for NUMEN (from 2016 to 2018)
- Spokesperson at LNL for DES (from 2018 to date)

- NUMEN Integration leader, NUMEN experiment (from 2016 till now)
- Member of the Publication Board of NUMEN experiment (from 2016 to 2024)
- Member of the Technical Board of NUMEN experiment (from 2016 until now)
- Chair of the Membership Committee, PANDA (from 2016 until 2018)
- Member of the Management Board of NUMEN experiment (from 2018 to date)
- Activity leader for INFN-Torino in FAIRnet WP12/NA1 (from 2019 to 2023)
- Activity leader of INFN-Torino for WP 2.5.2 (targets) of EURO-LABS (from 2022 to date)
- National responsible for the REST project at INFN (from 2023 to date)
- Member of the Speaker Board of NUMEN (2025)

Member of national and international committees

- 2012-2016 Nuclear Physics Board at INFN (CSN3)
- 2021-2025 LHCC at CERN

Reviewer of experiment

- 2012-2018 ALICE experiment in the Nuclear Physics Board, INFN
- 2012-2024 PRISMA-FIDES experiment for the Nuclear Physics Board, INFN
- 2021-2025 ALICE experiment at CERN into the LHC Committee, CERN

Reviewer of articles

- Member of the reviewer committee for the Proceedings of the CNNP 2017 Conference
- Chair of the reviewer board for the Proceedings of the EUNPC 2018 Conference

Member of the International Organizing Committee

- 2000 VII International Conference on Hypernuclear and Strange Particle Physics (HYP2000), October 2000, Torino, Italy
- 2013 International Workshop on Real-time, self-triggered front-end electronics for Multichannel Detectors, November 2013, Torino, Italy
- 2017 International Conference, Conference on Neutrino and Nuclear Physics-CNNP2017, October 2017, Catania, Italy
- 2018 International Conference, European Nuclear Physics Conference-EUNPC2018, September 2018, Bologna, Italy

As an advisory member of Workshop and Conference

- 2011 National workshops of INFN-Universita', 'Management systems – Auditors for securities: a new profession', October 2011, LNGS, in the Technical-Scientific Committee

- 2015 International Conference, Nucleus-Nucleus 2015, June 2015, Catania, in the Program Committee
- 2015 IFD2015-Workshop on Future Detectors, December 2015, Torino, in the Scientific Committee
- 2018 International Conference, EUNPC2018, September 2018, Bologna, Convener of the Instrumentation Field.

School, didactic activities…

- 2001-2004 Two Seminars on the safe use of detectors based on gas, for particle physics, three Seminars on safety in the construction of experiments
- 2004-2005 In two educational committees of INFN for the organization of the emergency teams
- 2004 Conference days on safety in INFN experimental and technological equipment, training days dedicated to safety in INFN experimental and technological systems for researchers, technologists, experiment responsible, and GLIMOS, October 2004, LNF
- 2009 Member of the organizing committee of the '12th HANUC Lecture Week on Hadron Physics, The Nucleon Structure', March 2009, Torino. Inside the 'European Graduate School 'Complex Systems of Hadrons and Nuclei'
- 2018 Director of the training course for researchers and engineers 'Optoelectronic conversion in the data transmission from detectors based on six modules, 18-20 June 2018.
- Co-supervisor of 18 master's theses of the Physics University of Torino and Politecnico of Torino.
- Tutor of fellowships at INFN, and for Helmholtz Graduate School

The contribution to the research activities is documented by:

- More than 40 communications to national conferences and presentations to international conferences/workshops.
- More than 300 publications
- 40 other papers: Letter of Intent, Proposal, Technical Reports, Annual Reports

Torino, September 24, 2025 Daniela Calvo

BREVE CURRICULUM DEI TITOLI E DELLE ATTIVITÀ DI RICERCA
DEL PROF. IVANO LOMBARDO

Il Dr. Ivano Lombardo è attualmente Professore Associato presso il Dip. di Fisica e Astronomia dell'Università di Catania dal 01/09/2025 (ssd PHYS-01/A).

In precedenza, è stato:

1) 2017 - 2022 Ricercatore a tempo determinato RTD-B pressol'Università di Catania;

2) 2017 - 2022 Ricercatore a tempo indeterminato presso la Sezione INFN di Catania;

3) 2016 - 2017 Ricercatore (RTD A) presso il Dipartimento di Fisica dell'Università di Napoli Federico II (ssd FIS-01);

4) 2011 - 2016 Assegnista di Ricerca presso il Dipartimento di Fisica dell'Università di Napoli Federico II;

5) 2011 Borsista Post Doc del CSFNSM, Catania

Ha inoltre effettuato il seguente percorsi degli studi:

1) Dottorato di Ricerca in Fisica: titolo conseguito con Lode presso l'Università di Catania nel febbraio 2011;

2) Laurea Specialistica in Fisica: titolo conseguito con 110/110 e Lode presso l'Università di Catania nel luglio 2007;

3) Laurea in Fisica: titolo conseguito con 110/110 e Lode presso l'Università di Catania nel luglio 2005;

4) Maturità scientifica: titolo conseguito con 100 e menzione presso il Liceo Scientifico Statale A. Volta di Caltanissetta nel luglio 2002.

Ha ricoperto i seguenti ruoli di responsabilità scientifica e didattica:

1) Responsabile Nazionale dell'esperimento NUCL-EX presso la Commissione Scientifica Nazionale 3 dell'INFN (Fisica Nucleare);

2) Referee di esperimento presso la Commissione Scientifica Nazionale 3 dell'INFN (Fisica Nucleare);

3) Spokesman di 14 esperimenti presso laboratori internazionali di fisica nucleare (LNS ed LNL dell'INFN, GANIL del CNRS, Francia);

4) Relatore di 22 tesi di laurea o dottorato in fisica, chimica o ingegneria;

5) Docente per incarico o per contratto di Fisica Generale e Sperimentale nei cdl di Fisica, Chimica e Ingegneria; di Elementi di Fisica Nucleare per Fisica; di cosri avanzati di Fisica Nucleare per il dottorato di ricerca in Fisica.

6) Coordinatore dello Users Committe dei Laboratori Nazionali del Sud dell'INFN.

Ha prodotto le seguenti pubblicazioni:

1) Più di 230 articoli su riviste inerenti il settore della fisica nucleare sperimentale; circa un terzo di primo nome/corresponding author. H-index 30, 2400 citazioni.

2) Due libri di didattica a livello universitario: Problemi di Fisica Generale (EdiSES, I e II Edizione, 2014 e 2022) e Problemi di Fisica Nucleare e Subnucleare (CEA - Zanichelli, 2021), adottati entrambi presso vari atenei italiani.

Ha partecipato a conferenze internazionali di fisica nucleare:

1) 15 volte come relatore su invito;

2) 37 volte come relatore di contributo orale o poster.

Ha organizzato le conferenze internazionali:

1) Segretario Scientifico e ***Co-organizzatore*** della Conferenza "*The 11th International Conference on Clustering Aspects on Nuclear reactions and Dynamics – CLUSTER16*", Napoli (Italia) 23-27 Maggio 2016.

2) Membro del ***Comitato Organizzatore Locale*** della conferenza: Asy-Eos 2010 – International Workshop on Nuclear Symmetry Energy at Medium Energies, Noto (Italia), 21-24 Maggio 2010.

3) Membro dello ***Organizing Committee*** del ciclo di Conferenze "*Nuclear Physics Mid-Term plan in Italy"*, tenute nel 2022 presso i Laboratori Nazionali dell'Istituto Nazionale di Fisica Nucleare.

E' stato Editor (per tre mandati) **della Revista Mexicana de Fisica** (organo ufficiale della Società Messicana di Fisica) e **Referee** delle segueti riviste scientifiche: ***Physical Review Letters, Physics Letters B, Physical Review C, European Physical Journal A, Nature Scientific Reports, Nuclear Physics A, Journal of Physics G: Nucl. Part. Physics, European Physical Journal Plus, Nuclear Instruments and Methods in Physics Research Sect. A, Nuclear Instruments and Methods in Physics Research Sect. B, Frontiers in Astronomy, Microchemical Journal, Acta Physica Polonica, Chemosphere, Defence technology, Revista Mexicana de Fisica.***

Ha conseguito i seguenti premi:

1) **Premio Villi** dell'Istituto Nazionale di Fisica Nucleare per la miglior tesi di dottorato in Fisica Nucleare discussa nel 2011 in Italia;

2) **Premio Quirino Majorana** della Società Italiana di Fisica per operosità scientifica di giovani laureati (2009).

*È stato **valutatore** della **Agenzia Nazionale delle Ricerche** della **Repubblica Francese** ed è attualmente **membro** del **GEV2** dell'**ANVUR** per la **VQR2020-2024.***

Attività di ricerca principali effettuate durante la carriera scientifica:

- *Dinamica e termodinamica nucleare nelle collisioni ad energie di Fermi*
- *Equazione di stato della materia nucleare e dipendenza dall'isospin delle forze nucleari*
- *Fenomeni di clustering nei nuclei leggeri*

- *Intelligenza artificiale per la trattazione di big data in fisica nucleare*
- *Sviluppo di rivelatori di particelle per studi di correlazioni nucleari*
- *Radiochimica e metodi di estrazione di radioisotopi*

Catania, 25/09/2025