Catalina Oana Curceanu
Curriculum Vitae

Personal data

Name:	**Catalina Oana Curceanu**
Sex:	F
Nationality:	Romanian - resident in Italy (since 1991)
Work address:	Laboratori Nazionali di Frascati dell'INFN, Via E. Fermi 40, 00044 Frascati (Roma), Italy phone: +39 – 06 – 94032321 e-mail: Catalina.Curceanu@lnf.infn.it
Present position:	Senior Researcher, group leader in experimental physics at LNF-INFN (Italy)

Studies and qualifications

- **1980 – 1984:** Scientific high-school (mathematics and physics), Bucharest, Romania.
- **1984 – 1988:** Faculty of Physics, University of Bucharest; specialization in Nuclear Physics and Elementary Particle Physics. **B. SC. Degree**, obtained with the highest qualification (10/10), having obtained mark 10 in all exams.
- **1988 – 1989:** Master of Science at the Faculty of Physics, University of Bucharest; specialization in Nuclear Physics and Elementary Particle Physics. **M. Sc. Degree**, obtained with the highest qualification (10/10), having obtained mark 10 in all exams.
- **1993 – 1999:** Ph.D. at the Institute of Physics and Nuclear Engineering of Bucharest, with a thesis entitled *"Study of exotic mesons in the antiproton-proton annihilation"*, with research activity in the framework of the OBELIX experiment at CERN (Geneva). **Ph.D. in Physics, *Summa cum Laude.***
- **July 2000: Degree in Physics** at the University of "Tor Vergata" of Roma (Italy), obtained with "110/110 e lode", with a thesis entitled "*Production and study of kaonic hydrogen at the DAΦNE electron-positron collider*".

Employment history

- **1989 – 1990: Researcher**, Nuclear Power Plant of Zero Power, Pitesti, Romania;
- **1990 – 1996: Associated Researcher,** staff, IFIN-HH, Bucharest, Romania;
- **1996 – 2003: Researcher, staff,** IFIN-HH, Bucharest, Romania;

- **1992 – 2003: Researcher,** Laboratori Nazionali di Frascati dell'INFN, LNF-INFN (Italy), with various types of contracts;
- **2004 – 2005: Researcher,** staff, Laboratori Nazionali di Frascati dell'INFN, LNF-INFN (Italy)
- **2006** – present: Experienced Researcher (**Primo Ricercatore**) and group leader, staff, Laboratori Nazionali di Frascati dell'INFN, LNF-INFN (Italy).

Research activity:

I) Professional experience and responsibilities
II) Formation and Dissemination activities
III) Organization of international conferences
IV) Invited talks
V) Editorial and scientifical review activities

I) *Professional experience and responsibilities*

I.1 International collaborations

- ***Research in the field of hadronic and nuclear physic: studies of kaonic atoms and of the antikaon-nucleon/nuclei interactions***

DEAR	Responsible of measurement strategy, of Monte Carlo and data analyses (1997 – 2003)
SIDDHARTA	*Responsible for INFN and LNF* (LNF-INFN) (2004-2010)
	Responsible for data analyses and measurement
SIDDHARTA-2	Spokesperson (2010-present)
AMADEUS	Co-spokesperson (2005-present)
KAONNIS	National responsible for INFN (2010-present)

- ***Experimental Quantum Physics***

VIP and VIP2	Spokesperson (2004-present)
	National responsible for INFN (2004-2017)
FQXi financed project	PI, 2015 - 2017
JTF financed project	PI, 2015 - 2018

I.2 European financed projects

- **January 2004 – December 2008:** LNF Responsible for the JRA10 SIDDHARTA activity within (I3) HadronPhysics project in EU FP6.
- **May 2008 – December 2008**: ***Coordinator of the Europan FP6 - Researchers' Night 2008 (Eyes on Scientists) project.***
- **January 2009 – March 2015**: INFN reponsible for the WP9 LEANNIS (Network: Low Energy Antikaon-Nucleon/Nuclei Interaction Studies), WP24 JointGEM (Joint Research Activity on TPC-GEM) and WP28 SiPM (Joint Research Activity on Silicon PhotoMultipliers) in the EU projects HadronPhysics2 e HadronPhysics3 of FP7.
- **January 2009 - March 2015:** Responsible with dissemination activities for the HadronPhysics2 e HadronPhysics3 EU projects in FP7.
- **June 2011 – June 2015:** Italian representative for the project: EU COST MP1006 (European Cooperation in Science and Technology): Fundamental Problems in Quantum Physics; STSM (Short Time Scientific Missions) and Gender Balance responsible.
- **since October 2016:** Italian Respesentative, STSM responsible Managing Committee member for the project: EU COST Action (European Cooperation in Science and Technology): CA15220, Quantum Technologies in Space.
- **January 2018 - present:** PI for the FETOPEN financed project: TEQ project in quantum technologies (Testing the Large Scale Limit of Quantum Mechanics), Deputy Coordinater

I.3 International project/grants

- **1 September 2015 – 31 August 2017** PI for the project: ""Events" as we see them: experimental test of the collapse models as a solution of the measurement-problem" financed by the Foundational Question Institute (FQXI).
- **2 November 2015 – 1 August 2018**: PI for the project: "Hunt for the "impossible atoms": the quest for a tiny violation of the Pauli Exclusion Principle. Implications for physics, cosmology and philosophy" financed by the John Templeton Foundation.
- **July 2013 – June 2018:** ***INFN participant in the project financed by the Croatian Science Foundation***, HRZZ 1680, on hadron physics.
- **Four mini-grants from FQXi: 2017, two in 2018 and one in 2019**

I.4 Italian financed projects

- **January 2010 – December 2011**: LNF-INFN responsible in the project PRIN2008 "*Problemi aperti in meccanica quantistica: aspetti teorici e sperimentali della transizione dal microscopico al macroscopico" (Quantum Mechanics)*
- **January 2012 – December 2015:** INFN coordinator for the industrial leadership projects PED4PV– Pulsed Electron Deposition for Photovoltaic, and CIGS Thin Films.

- **January 2012 – December 2015:** Project coordinator "Problemi Aperti della Meccanica Quantistica – Sistemi di Rivelatori SSD e Modelli di Riduzione Dinamica" (Open problems in quantum mechanics), financed by Centro Fermi, Roma, Italy.
- **January 2016 — *present:*** Project coordinator "Problemi aperti della Meccanica Quantistica – Nuovi sviluppi teorici, ricerche sperimentale innovative"(Open problems in quantum mechanics – 2) financed by Centro Fermi, Roma (Italy).
- **January 2017 – *present:*** Project coordinator for the Italy-Japan project of big relevance, StrangeMatter, Financed by the Italian Ministry for Foreign Affairs
- **November 2018 – *present*:** PI for the Italian project SICURA financed by Regione Lazio per Progetti di Gruppi di ricerca

Financial management

During the last 10 years I managed funding for research activities related to various projects (see above) for more than 5 Million Euro.

II) *Educational and Dissemination activities (main activities only)*

- **Tutor/coordinator** of 10 B. Sc. theses, 5 M. Sc. Theses and 12 Ph D theses for italian Universities and International Universities. Coordinator of Post Doc researchers: 10 post-docs
- **January 2010 – present:** ***Coordinator Winter Stage at*** LNF for high-school students (http://www.lnf.infn.it/edu/stagelnf/2015/invernali/)
- **January 2011 – present:** ***Scientific Responsible*** with formation activities at LNF-INFN for schools (http://www.lnf.infn.it/edu/percorsi-formativi/2014/)
- **2011 – present:** ***LNF-INFN responsible*** for the exchange students with the DOE (USA), within the DOE/INFN studets exchange program
- **March 2011 – present:** ***Director of the course***: *Incontri di Fisica* (IdF), for high-school science teachers, at LNF-INFN (http://www.lnf.infn.it/edu/incontri/2017/)
- **March 2011 – presente:** ***Scientific coordinator*** for the International Masterclass INSPYRE at LNF-INFN (es: http://edu.lnf.infn.it/inspyre2018/)
- **10-12 July 2013:** ***Organizer of the Summer Camp*** "Ballando con le particelle. La fisica moderna per ragazzi curiosi" (http://www.lnf.infn.it/edu/stagelnf/2013/prog_AISTAPsumcamp13.html)
- **4-5 August 2014:** ***Organizer of the*** Mini-stage in Modern Physics: Challenges and Opportunities (http://www.lnf.infn.it/edu/stagelnf/2014/summer-mini-stage/)
- **Since 2015**: ***Scientific Director*** of the international school: INSPYRE "INternational School on modern PhYsics and Research" at the LNF-INFN– for 2017 edition: http://edu.lnf.infn.it/inspyre-2017/

- **"International Year of Light", LNF-INFN, 21/06/2015 presentation:** http://edu.lnf.infn.it/programma-seminari-divulgativi-2015/gennaio/ and video at: https://www.youtube.com/watch?v=JRAig1qShMg – more than 19000 visualizations
- **Organizer of formation stage on electronics design for silicium based detectors:** 12-14 Ottobre 2015 (LNF-INFN)
- **2015 – present: Science Cnferences for elementary and medium schools:** *Le Meraviglie dell'Universo per ragazzi curiosi. Magic Kids*, at the Casa di Pia library in Frascati
- **2015, 2016, 2017, 2018 : Lectures on** *Relatività, meccanica quantistica e cosmologia*, for l'Associazione Tuscolana di Astronomia, Livio Gratton, http://lnx.ataonweb.it/wp/2016/01/2451/ (for 2016)
- **25 Nov. 2015: FISICAST Radio Scienza: –** interview on: Chi ha "rubato" l'antimateria?: http://www.radioscienza.it/2015/11/25/chi-ha-rubato-lantimateria and on Schroedinger's cat: http://www.radioscienza.it/2017/04/18/il-gatto-di-schroedinger/
- **25 Novembre 2015: Conference:** *Dai Buchi Neri all'Adroterapia. Un viaggio nella Fisica Moderna,* within the event: Nelle stanze segrete: http://www.libreriaassaggi.it/2015/11/06/nelle-segrete-stanze-v-con-barucca-caminiti-curceanu/, Libreria Assaggi, Roma
- **Tens of lectures in scchools in Italy, Romania, Australia**
- **26 February 2016: Speaker at** Congress "Una rivoluzione copernicana nel XX secolo: la fisica quantistica", organized by Rotary Roma Sud Est and Club Rotary Roma Centenario.
- **9 April 2016: speaker at the event: TEDxRoma, Game Changers,** http://tedxroma.com/ e http://tedxroma.com/portfolio-items/catalina-curceanu/ with a talk on: Sinfonia quantistica nei computer di domani: dal bit al qubit
- **Science blog: http://scientia.ro/blogurile-scientia/blog-catalina-curceanu.html** with hunderds of scientific articles published
- **Videoconference for ScienceHub, 16 April 2016,** https://www.youtube.com/watch?v=ucZu_lPoaKk&feature=youtu.be - 7 mysteries of modern physics
- **Speaker in various events organized by MENSA Lazio;** the last talk: "La ricerca delle onde gravitazionali: la storia, la scoperta e il futuro", 30 april 2016, Roma.
- **Mattinees di scienza:** ***Bim-Bum-Bang: Dal Big Bang alla terapia dei tumori con gli acceleratori di particelle,*** **15 April 2016, LNF-INFN;** *Circuitiamo? Dietro le quinte delle grandi scoperte della Fisica Moderna,* LNF-INFN, **6 may 2016.**
- **Video Lecture on Parallel Universes:** https://www.youtube.com/watch?v=lBs-N5SnJfw with more than 30000 views
- **Speaker at the TEDxBrasov event:** May 2017: http://tedxbrasov.com/catalina-oana-curceanu/

III) *Conferences, Workshops, Training Schools organizer – last 5 years*

- International Workshop "*Strangeness in the Universe? Theoretical and experimental progress and challenges*", ECT* Trento, 21-25 October 2013 (**Chair**);
- International Workshop "*Quantum mechanics tests in Particle Atomic, Nuclear and Complex Systems: 50 years after Bell's renowned theorem*" ECT*, Trento (Italy) 24-25 February 2014, (**Organizer**);
- 13th International Workshop on *Meson Production, Properties and Interaction* MESON 2014, KRAKÓW, POLAND, 29 May - 3 June 2014 (**Organizer**);
- Workshop "*Questioning fundamental physics principles*", CERN, 6-9 May 2014 (**Organizer**);
- Workshop *"Achievements and Perspectives in Low-Energy QCD with Strangeness"*, ECT*, Trento (Italy), 27-31 October 2014 (**Chair**)
- Workshop "*Fundamental Problems in Quantum Physics*", Erice (Italy), 23-27 March 2015, (**Chair**);
- Workshop "*Is quantum theory exact? The endeavor for the theory beyond standard quantum mechanics*" – FQT2015, Frascati (Italy), 23-25 September 2015, (**Chair**);
- Workshop "*Frontiers in hadron and nuclear physics with strangeness and charm*", ECT*, Trento (Italy), 19-23 October 2015, (**Chair**);
- *12th International Conference on Hypernuclear and Strange Particle Physics, HYP2015*, Sendai (Japan), 7-12 September 2015 (**IAC member**);
- 14th International Workshop on *Meson Production, Properties and Interaction* MESON 2012, Krakow, POLAND, 2-7 June 2016 (**Organizer**);
- Meeting "*Strangeness, Gravitational waves and neutron stars*", Frascati (Italy), 10 June 2016 (**Organizer**);
- Workshop "*Testing the limits of the quantum superposition principle in nuclear, atomic and optomechanical systems*", ECT*, Trento (Italy), 11-16 September 2016, (**Organizer**).
- Training school for graduating students, PhD students and young researchers. *"Are spin-statistics connection and quantum theory exact? The endeavor for the theory beyond the standard quantum mechanics"* , 19-21 December 2016, LNF-INFN, Frascati (Italy) (**Chair**)
- Workshop Quantum Foundations, *"The physics of "what happens" and the measurement problem"*, 24-26 May 2017, LNF-INFN Frascati, Italy (**Chair**)
- Conference "Is quantum theory exact? The quest for spin-statistics connection and related items", 2-6 July 2018, Frascati, Italy (**Chair**)
- HYP2018. The 13th International Conference on Hypernuclear and Strange Particle Physics, 24-29 June 2018, Portsmouth, VA – USA (**IAC Member**)

I am member of Local Organizing Committee and member of IAC for:

Channeling 2004, Frascati, Italia; *DAΦNE2004: Physics at Meson Factories*, Frascati, Italia; *Comunicare Fisica 2005*, Frascati, Italia; *Channeling 2006*, Frascati, Italia; *Frascati Spring School 2007*, Frascati, Italia; *HADRON07,* Frascati, Italia; *Comunicare Fisica 2010*, Frascati, Italia; *Channeling 2010*, Ferrara, Italia; *Channeling 2012*, Alghero, Italia; *Channeling 2014*, Capri, Italia; *EDIT2015,* Frascati; *Channeling 2016*, Desenzano del Garda.

IV) Representative *invited talks during last 10 years*

I have given about 80 talks (at least 40 invited), among these in the last 10 years the most representatives ones are:

1) **Towards Ultimate Quantum Theory, "***Quantum Mechanics Underground***",** Vaxjo, 11-14 June 2018, Sweden

2) **Quantum 2017, From Foundations of Quantum Mechanics to Quantum Information and Quantum Metrology & Sensing Conference**, *"Quantum mechanics under X Rays in the Gran Sasso underground laboratory"*, 7-13 May 2017, Torino (Italy)

3) ***Gravitational decoherence Conference***, *Hereaus, "Whispers in the cosmic silence. Underground experiments to chart the landscape of (gravity induced?) collapse models"*, Bad Honnef, Germany, 26-28 June 2017

4) **Precision Physics, Quantum Electrodynamics and Fundamental Interactions,** *"Stars, gravity and quantum mechanics investigations from the exotic atoms studies to theimpossible atoms hunting"* IESC Cargese (France), 1-5 May 2017

5) **Eighth International Workshop DICE2016**, *"Underground tests of quantum mechanics. Whispers in the cosmic silence?"*, Castello Pasquini/Castiglioncello (Tuscany, Italy), September 12-16, 2016

6) **KITPC**, Beijing - China, Clustering effects of nucleons in nuclei and quarks in multiquark states, *"From strange atoms and strange nuclei to the stars. Experiments with low-energy kaons at the DAFNE Collider in Italy"*, Beijing (China), 6 April 2016 (22 March – 22 April)

7) 2) **HYP2015** – XII International Conference on Hypernuclear and Strange Particle Physics, *"Strangeness in the Universe? Low-energy kaon-nuclei interactions studies with AMADES at DAFNE"*, Sendai (Japan), 7-12 September 2015.

8) **QTFT 2015** Conference, *"The X-ray machine for the Quantum Mechanics examination"*, Vaxjo (Sweden), 8-11 June 2015.

9) **Quantum 2014** Workshop, "*Hunting the impossible atoms: Pauli Exclusion Principle Violation and spontaneous collapse of the wave function at test*", Torino (Italy), 25 – 30 May 2014.

10) **Hadrons in Nuclei, YITP** Conference, "*Advances and perspectives in the low-energy kaon-nucleon/nuclei interactions studies at the DA□NE Collider*", Kyoto (Japan) 30 October – 2 November 2013.

11) **INPC2013**, International Nuclear Physics Conference, "*Unveiling the strangeness secrets: low-energy kaon-nucleon/nuclei interaction studies at DAFNE*", Firenze (Italy), 3-7 May 2013.

12) **HYP2012-XI** International Conference on Hypernuclear and Strange Particle Physics, "*Unlocking the secrets of the antikaon-nucleon/nuclei interactions at low energies. The SIDDHARTA and the AMADEUS experiments at the DAΦNE Collider*", Barcelona (Spain), 1-5 October 2012.

13) **NDIP2011**, 6th International Conference Nouveaux Développements En Photodétection, "*Experimental tests of the trigger prototype for the AMADEUS experiment based on SciFi read by SiPM*", Lyon (France), 4 – 8 July 2011.

14) **EFB21**, European Few Body Conference, "*Low energy kaon-nucleon/nuclei interaction studies at DAFNE (SIDDHARTA and AMADEUS)*", Salamanca (Spain), 29 August - 3 September 2010.

V) *Editorial and scientifical review activities*

- **Editor proceedings various conferences**
- **Rapporteur for various conferences**
- **Referee for:** *European Journal of Physics* and *Foundation of Physics.*
- **Scientific referee** (international projects evaluation boards) for: Austrian Academy of Sciences; Czech Academy od Sciences; Roumanian Ministry of Education and Science; MIUR – Italy; Ministry of education and sciences of Kazakistan; PSI (Switzerland)
- **Scientific referee for the *National Science Foundation*** (NSF), USA.
- **Scientific Referee and member in academic council for Ph D:** *Jagiellonian University, Cracovia (Polonia); Vienna University (Austria), Technical University (Vienna, Austria)*

International Awards

- ***The 2010 Celebrity of the year in science***, awarded by Accademia di Romania.
- **2012:** ***The American Romanian Academy of Arts and Sciences "Prof. Dr. Mircea Sabau ARA Award" for Excellence in Physics/Chemistry*** in the recognition of the distinguished contribution to the advancement of the Arts and Sciences in the spirit of the free exchange of values and ideas, Bari, Italy, June 2012.
- **2015***: Third prize of the 50[a] Edizione "Carnevale della Fisica" per disseminazione scientifica (Genova)*
- **2015***: The American Romanian Academy of Arts and Sciences "ARA Award for Excellence in Science"*, Frascati (Roma, Italy)
- **September 2015:** ***Award from the Foundational Question Institute (FQXI) for the project:*** *" "Events" as we see them: experimental test of the collapse models as a solution of the measurement-problem"* (1 September 2015 – 31 August 2017) http://fqxi.org/grants/large/awardees/view/__details/2015/curceanu
- **November 2015**: ***Award from the John Templeton Foundation for the project:*** *"Hunt for the "impossible atoms": the quest for a tiny violation of the Pauli Exclusion Principle. Implications for physics, cosmology and philosophy"* https://www.templeton.org/grant/hunt-for-the-impossible-atoms-the-quest-for-a-tiny-violation-of-the-pauli-exclusion-principle-implications-for-physics-cosmology-and-philosophy
- **2016**: ***Australian Institute of Physics (AIP) Women in Physics Lecturer award for 2016.***
- **March 2016**: ***The 7[th] Technology Incentive Award in RIKEN*** (with TES group)
- **2017** ***Visiting International Scholar Awards (VISA),*** *University of Wollongong (Australia), http://www.uow.edu.au/research/researchgrants/visaprogram/UOW190234.html*
- **2017 and 2018**: Mini-grant from the FQXi http://fqxi.org/grants/mini/winners
- **2017**: EPS, European Physical Society **Emmy Noether Distinction for Women in Physics**
- **December 2017: 2017 "Tuscolanae Science award" prize,** by the Associazione Tuscolana di Astronomia
- **June 2018: Award 100** from the Ministry for Romanians abroad
- **2018: Thomas Lyle Award** from Melbourne University (Australia)
- **2018: George Southgate Fellowships** from the Adelaide University (Australia)
- **November 2018:** Order of Knight of Romania for Cultural Merit
- **2019 Fundamental Physics Innovation Award** of the American Physics Society, Gordon and Betty Moore Foundation

Member of Academies and Associations

- **Since 2014**: ***member of the scientific council of ATA*** (Associazione Tuscolana di Astronomia Livio Gratton).
- Since **January 2016**: ***member of the Foundational Question Institute*** (FQXi).
- **January 2016 – December 2017**: ***member of the NUPECC per Long Range Plan board*** (Working Group 5 – Fundamental Interactions and Symmetries).

Visiting Scientist

- **Visiting Scientist at RIKEN** (Wako, Saitama Giappone), 18 Gennaio 2010 – 18 Febbraio 2010
- **Visiting Scientist a RIKEN** (Wako, Saitama Giappone), 12 Marzo 2016 – 29 Marzo 2016
- **Visiting Scientist a IKTP (Kavli Institute for Theoretical Physics), Chinese Academy of Science** (Beijing, China), 29 Marzo 2016 – 7 Aprile 2016
- **2016 Women in Physics Lecturer, Australian Institute of Physics:** 8 – 31 August 2016, Australia.
- **15 July – 15 September 2017: Visiting International Scholar** (VISA), University of Wollongong (Australia)
- **1-10 August 2018 Visiting researcher** at Osaka University, RIKEN and Sendai University
- **11 August – 4 September 2018: Lyle Fellow at** University of Melbourne (Australia)
- **1 – 26 December 2018: George Southgate** fellow at the Adelaide University (Australia)

Languages skills

- **Italian:** fluent
- **English:** fluent
- **French:** intermediate
- **German:** beginner
- **Hungarian:** beginner
- **Rumanian** mother tongue

Other activities

- I am author/coauthor of more than 350 publications in refereed journals (some under name Petrascu): for the full list see: http://inspirehep.net/search?ln=it&ln=it&p=find+a+curceanu+or+petrascu%2C+c&of=hb&action_search=Cerca&sf=earliestdate&so=d&rm=&rg=25&sc=0
- I have organized more than 40 international workshops and conferences (about 12 at ECT*)
- I gave more than 50 invited talks and colloquia in international workshops and conferences
- I realize intensive dissemination and educational activities
- I am author of a dissemination book published with Springer Editor (Dai Buchi Neri all'Adroterapia. Un Viaggio nella fisica moderna - http://www.springer.com/fr/book/9788847052406

List of publications in the last 5 years

1) **C. Curceanu** *et al.,* ``Experimental Tests of Quantum Mechanics: Pauli Exclusion Principle and Spontaneous Collapse Models", Springer Proc. Phys. **145** (2014) 181.

2) A. Scordo, **C. Curceanu** *et al.,* ``Study of the Λ(1405) Resonance Through its Neutral and Charged Decay Channels by AMADEUS at DAFNE", Few Body Syst. **55** (2014) 741.

3) M. Cargnelli, **C. Curceanu** *et al.,* ``X-ray spectroscopy of kaonic atoms at SIDDHARTA", EPJ Web Conf **73** (2014) 05009.

4) M. Bazzi, **C. Curceanu** *et al.,* ``L-series X-ray yields of kaonic 3He and 4He atoms in gaseous targets", Eur. Phys. J. **A50** (2014) 91.

5) H. Ohnishi, **C. Curceanu** *et al.,* ``A Search for Phi Meson Nucleus Bound State Using Antiproton Annihilation on Nucleus", Acta Phys. Polon. **B45** (2014) 3, 819.

6) T. Ishiwatari, **C. Curceanu** *et al.,* ``Kaonic Atoms – Results of the SIDDHARTA Experiment", Acta. Phys. Polon. **B45** (2014) 3, 787.

7) F. Sakuma, **C. Curceanu** *et al.,* ``A Search for Deeply-bound Kaonic Nuclear States by in-flight 3He(K-,n) Reaction at J-PARC", Acta Phys. Polon. **B45** (2014) 3, 767.

8) **C. Curceanu** *et al.,* ``Unprecedented Studies of the Low-energy Negatively Charged Kaons Interactions in Nuclear Matter in AMADEUS", Acta Phys. Polon **B45** (2014) 3, 753.

9) H. Shi, **C. Curceanu** *et al.,* ``The yield of kaonic hydrogen X-rays in the SIDDHARTA experiment", EPJ Web Conf. **66** (2014) 09016.

10) T. Hashimoto, **C. Curceanu** *et al.,* ``A search for the K-pp bound state in the 4He(K-in-flight,n) reaction at J-PARC", EPJ web Conf. **66** (2014) 09008.

11) **C. Curceanu** *et al.,* ``Unveiling strangeness secrets: low-energy kaon-nucleon/nuclei interactions studies at DAΦNE", EPJ web Conf **66** (2014) 09004.

12) T. Ishiwatari, **C. Curceanu** *et al.,* ``New precision era of experiments on strong interaction with strangeness at DAΦNE/LNF-INFN", EPJ Web Conf. **66** (2014) 05016.

13) O. Vazquez Doce, **C. Curceanu** *et al.,* ``Studies of the Λ(1405) antikaon-nucleon interactions with the KLOE Drift Chamber", PoS Hadron2013 (2013) 183.

14) M. Ferrario, **C. Curceanu** *et al.,* ``IRIDE: Interdisciplinary research infrastructure based on dual electron linacs and lasers", Nucl. Instrum. Meth. **A740** (2014) 138.

15) V.V. Barmin, **C. Curceanu** *et al.*, ``Observation of a narrow baryon resonance with positive strangeness forms in K+ Xenon collisions", Phys. Rev. **C89** (2014) 045204.

16) H. Shi, **C. Curceanu** *et al.*, ``Testing the Pauli Exclusion Principle for electrons at LNGS", Phys.Procedia **61** (2015) 552.

17) Y. Sada, **C. Curceanu** *et al.*, ``Search for the $K^- pp$ bound state via the in-flight 3 $He(K^-,n)$ reaction", EPJ Web Conf. **81** (2014) 02016.

18) J. Marton, **C. Curceanu** *et al.*, ``Kaonic atoms - studies of the strong interaction with strangeness", EPJ Web Conf. **81** (2014) 01017.

19) T. Hashimoto, **C. Curceanu** *et al.*, ``Search for the $K^- pp$ bound state via the $^3He(K^-,n)$ reaction at 1 GeV/c", J.Phys.Conf.Ser. **569** (2014) no.1, 012080.

20) M. Iliescu, **C. Curceanu** *et al.*, ``Progress and perspectives in the low-energy kaon-nucleon/nuclei interaction studies at the DAΦ ΦNE collider, J.Phys.Conf.Ser. **569** (2014) no.1, 012004

21) **C. Curceanu** *et al.*, . "Strangeness in the Universe? Advances and perspectives in the low-energy kaon-nucleon/nuclei interaction studies at the DAΦNE collider", DOI: 10.3204/DESY-PROC-2014-04/21 ; Conference: C14-08-24 (2014) 269.

22) T. Hashimoto, **C. Curceanu** *et al.*, ``Search for the deeply bound $K^- pp$ state from the semi-inclusive forward-neutron spectrum in the in-flight K^- reaction on helium-3",PTEP **6** (2015) 061D01.

23) A. Pichler, **C. Curceanu** *et al.*, ``Search for a violation of the Pauli Exclusion Principle with electrons", PoS EPS-HEP2015 (2015) 570.

24) T. Yamaga, **C. Curceanu** *et al.*, ``Spectroscopic Study of Hyperon Resonances below \(\bar{K}N\) Threshold via the \(\left(K^{ - },n \right)\) Reaction on Deuteron", JPS Conf.Proc. **8** (2015) 021016.

25) L. Gruber, **C. Curceanu** *et al.*, ``Recovery Time Measurements of Silicon Photomultipliers Using a Pulsed Laser", PoS EPS-HEP2015 (2015) 249.

26) M. Poli Lener, **C. Curceanu** *et al.*, ``Performances of an Active Target GEM-Based TPC for the AMADEUS Experiment", Mod.Instrum. **4** (2015) 32.

27) **C. Curceanu** *et al.*, ``X rays on quantum mechanics: Pauli Exclusion Principle and collapse models at test", J.Phys.Conf.Ser. **631** (2015) no.1, 012068.

28) **C. Curceanu** *et al.*, ``Experimental search for the "impossible atoms" Pauli Exclusion Principle violation and spontaneous collapse of the wave function at test", J.Phys.Conf.Ser. **626** (2015) no.1, 012027.

29) K. Piscicchia, **C. Curceanu** *et al.*, ``Investigation of the low energy kaons hadronic interactions in light nuclei by AMADEUS", Hyperfine Interact. **234** (2015) no.1-3, 9.

30) J. Remillieux, **C. Curceanu** *et al.*, ``High energy channelling and the experimental search for the internal clock predicted by Louis de Broglie", Nucl.Instrum.Meth. **B355** (2015) 193.

31) I. Tucakovic, **C. Curceanu** *et al.*, ``Low-energy kaon-nucleon/nuclei interaction studies at DAΦNE by AMADEUS", EPJ Web Conf. **95** (2015) 04072.

32) A. Pichler, **C. Curceanu** *et al.*, ``VIP 2: Experimental tests of the Pauli Exclusion Principle for electrons", Hyperfine Interact. **233** (2015) no.1-3, 121.

33) J. Marton, **C. Curceanu** *et al.*, ``High sensitivity tests of the Pauli Exclusion Principle with VIP2", J.Phys.Conf.Ser. **631** (2015) no.1, 012070.

34) **C. Curceanu**, B.C. Hiesmayr, K. Piscicchia, "X-rays help to unfuzzy the concept of measurement", Journal of Advanced Physics, **4** Number 3 (2015) 263.

35) **C. Curceanu** *et al.*, ``Unprecedented studies of the low-energy negatively charged kaons interactions in nuclear matter by AMADEUS", Acta Phys.Polon. **B46** (2015) no.1, 203.

36) J. Zmeskal, **C. Curceanu** *et al.*, ``Measurement of the strong interaction induced shift and width of the 1*s* state of kaonic deuterium at J-PARC", Acta Phys.Polon. **B46** (2015) no.1, 101.

37) K. Piscicchia, **C. Curceanu** *et al.*, ``Beyond Quantum Mechanics? Hunting the 'Impossible' Atoms - Pauli Exclusion Principle Violation and Spontaneous Collapse of the Wave Function at Test", Acta Phys.Polon. **B46** (2015) no.1, 147.

38) J. Marton, **C. Curceanu** *et al.*, ``Strong interaction studies with kaonic atoms", EPJ Web Conf. **113** (2016) 03009.

39) P. Moskal, **C. Curceanu** *et al.*, ``Potential of the J-PET detector for studies of discrete symmetries in decays of positronium atom - a purely leptonic system", Acta Phys.Polon. **B47** (2016) 509.

40) M. Bazzi, **C. Curceanu** *et al.*, ``*K*-series X-ray yield measurement of kaonic hydrogen atoms in a gaseous target", Nucl.Phys. **A954** (2016) 7.

41) **C. Curceanu** *et al.*, ``Spontaneously emitted X-rays: an experimental signature of the dynamical reduction models", Foundations of Physics, **46** (2016) 263.

42) J. Marton, C. Curceanu et al., Low-energy Antikaon Interaction with Nuclei: The AMADEUS Challenge, JPS Conf.Proc. **18** (2017) 011034

43) M. Bazzi, **C. Curceanu** *et al.*, ``Absolute Energy Calibration of X-ray TESs with 0.04 eV Uncertainty at 6.4 keV in a Hadron-Beam Environment", J.Low.Temp.Phys. **184** (2016) no.3-4, 930-937

44) R. Kaltenbaek, **C. Curceanu** *et al.*, ``Macroscopic quantum resonators (MAQRO): 2015 Update", EPJ Quantum Technology (2016) 3:5, DOI 10.1140/epjqt/s40507-016-0043-7.

45) O. Vazquez Doce, **C. Curceanu** *et al.*, ``K − absorption on two nucleons and ppK − bound state search in the Σ^0 p final state", Phys.Lett. **B758** (2016) 134-139

46) H. Shi, **C. Curceanu** *et al*, ``Precision X-ray spectroscopy of kaonic atoms as a probe of low-energy kaon-nucleus interaction" , EPJ Web Conf. **126** (2016) 04045.

47) H. Shi, **C. Curceanu** *et al*, ``Searches for the Violation of Pauli Exclusion Principle at LNGS in VIP(-2) experiment", J.Phys.Conf.Ser. **718** (2016) no.4, 042055.

48) Y. Sada, **C. Curceanu** *et al*, ``Structure near K−+ p threshold in the in-flight 3He (K−,Λp)n reaction", PTEP 2016 (2016) no.5, 051D01.

49) A. Pichler, **C. Curceanu** *et al,*, ``Application of photon detectors in the VIP2 experiment to test the Pauli Exclusion Principle", J.Phys.Conf.Ser. **718** (2016) no.5, 052030.

50) **C. Curceanu** *et al.*, ``The X-ray machine for the examination of quantum mechanics", Int.J.Quant.Inf. **14** (2016) no.04, 1640017.

51) T. Yamaga, **C. Curceanu** *et al.*, ``Study of the elementary (K−,n) reactions to search for the K^- NN bound state via the 3He(K−,n) reaction at J-PARC, AIP Conf.Proc. **1735** (2016) 040007.

52) J. Marton, **C. Curceanu** *et a.l*, ``SIDDHARTA results and implications of the results on antikaon-nucleon interaction", AIP Conf.Proc. **1735** (2016) 080014.

53) K. Piscicchia, S. Wycech and **C. Curceanu**, `` On the K −4 He→ Λ π −3 He resonant and non-resonant processes", Nucl. Phys. **A954** (2016) 75.

54) M. Bazzi, **C. Curceanu** *et al.*, K -series X-ray yield measurement of kaonic hydrogen atoms in a gaseous target, Nucl. Phys. **A954** (2016) 7

55) D. Kaminska, **C. Curceanu** *et al.*, ``A feasibility study of ortho-positronium decays measurement with the J-PET scanner based on plastic scintillators", Eur. Phys. J. **C76** (2016) 445.

56) A. Scordo, **C. Curceanu** *et al,* "Shedding New Light on Kaon-Nucleon/Nuclei Interaction and Its Astrophysical Implications with the AMADEUS Experiment at DAFNE", AIP Conf.Proc. **1735** (2016) 080015.

57) S. Okada, **C. Curceanu** *et al.*, ``First application of superconducting transition-edge-sensor microcalorimeters to hadronic-atom x-ray spectroscopy", PTEP 2016 (2016) no.9, 091D01.

58) A. Scordo, **C. Curceanu** *et al.*, ``Investigation of the low-energy kaons hadronic interactions in light nuclei by AMADEUS", EPJ Web Conf. **130** (2016) 01016.

59) P. Moskal, **C. Curceanu** *et al,,* ``Studies of discrete symmetries in a purely leptonic system using the Jagiellonian Positron Emission Tomograph", EPJ Web Conf. **130** (2016) 07015.

60) M. Pawlik-Niedźwiecka, **C. Curceanu** *et al,,* ``J-PET detector system for studies of the electron-positron annihilations", EPJ Web Conf. **130** (2016) 07020.

61) H. Tatsuno, **C. Curceanu** *et al.*, ``Future projects of light kaonic atom X-ray spectroscopy", EPJ Web Conf. **130** (2016) 01018.

62) M. Iliescu, **C. Curceanu** *et al.*, ``Kaonic atoms and strangeness in nuclei: SIDDHARTA-2 and AMADEUS experiments", J.Phys.Conf.Ser. **770** (2016) no.1, 012034.

63) M. Skurzok, **C. Curceanu** *et al.*, "Search for Deeply Bound Kaonic Nuclear States with AMADEUS", EPJ Web Conf. **165** (2017) 010461125

64) K. Piscicchia, **C. Curceanu** *et al.*, Low-energy Antikaon-Nucleon Absorption Studies by AMADEUS, Acta Phys.Polon.Supp. **10** (2017) 1125

65) **C. Curceanu** *et al.*, "Quantum mechanics under X-rays in the Gran Sasso underground laboratory", Int.J.Quant.Inf. **15** (2017) no.08, 1740004.

66) K. Piscicchia, **C. Curceanu** *et al.*, "Low-energy Antikaon-Nucleon/Nuclei Interaction Studies by AMADEUS", Acta Phys.Polon. **B48** (2017) 1875.

67) M. Mahhomed, **C. Curceanu** *et al.*, "A Method to Produce Linearly Polarized Positrons and Positronium Atoms with the J-PET Detector", Acta Phys.Polon. **A132** (2017) 1486.

68) L. Rahzynski, **C. Curceanu** *et al.*, Introduction of total variation regularization into filtered backprojection algorithm, Acta Phys.Polon. **B48** (2017) 1611.

69) S. Niedzwiecki, **C. Curceanu** *et al.*, "J-PET: a new technology for the whole-body PET imaging", Acta Phys.Polon. **B48** (2017) 1567.

70) E. Czerwinski, **C. Curceanu** *et al.*, "Commissioning of the J-PET detector for studies of decays of positronium atoms", Acta Phys.Polon. **B48** (2017) 1757.

71) K. Dulski, C. **Curceanu** *et al.*, "Analysis procedure of the positronium lifetime spectra for the J-PET detector", Acta Phys.Polon. **A132** (2017) no.5, 1637.

72) M. Skurzok, **C. Curceanu** *et al.*, "Time calibration of the J-PET detector", Acta Phys.Polon. **A132** (2017) no.5, 1641.

73) A. Scordo, **C. Curceanu** *et al.*, "VOXES, a new high resolution X-ray spectrometer for low yield measurements with diffused sources", Acta Phys.Polon. **B48** (2017) 1715.

74) O. Vazquez Doce, **C. Curceanu** *et al.*, "Study of the Σ 0 p Final State from K − Absorptions", JPS Conf.Proc. **17** (2017) 082001.

75) **C. Curceanu** *et al.*, "Strangeness in the Universe? Low-Energy Kaon-Nuclei Interaction Studies with AMADEUS at the DAΦNE Collider", JPS Conf.Proc. **17** (2017) 081003.

76) K. Inoue, **C. Curceanu** *et al.*, "Spectroscopic Study of Hyperon Resonace Below $\bar{K}$ N Threshold via the d(K − ,n) Reaction"., JPS Conf.Proc. **17** (2017) 072003.

77) J. Zmeskal, **C. Curceanu** *et al.*, "Probing Strong Interaction with Kaonic Atoms — from DAΦNE to J-PARC", JPS Conf.Proc. **17** (2017) 071001.

78) R. Del Grande, **C. Curceanu** *et al.*, "Investigating the low-energy K − interactions in nuclear matter with AMADEUS", J.Phys.Conf.Ser. **841** (2017) no.1, 012023.

79) **C. Curceanu** *et al.*, "Underground tests of quantum mechanics. Whispers in the cosmic silence?", J.Phys.Conf.Ser. **880** (2017) no.1, 012045.

80) J. Marton, C. **Curceanu** *et al.*, "VIP-2 at LNGS: An experiment on the validity of the Pauli Exclusion Principle for electrons", J.Phys.Conf.Ser. **873** (2017) no.1, 012018.

81) T. Hashimoto, **C. Curceanu** *et al.*, "Beamline Test of a Transition-Edge-Sensor Spectrometer in Preparation for Kaonic-Atom Measurements", IEEE Trans.Appl.Supercond. **27** (2017) no.4, 2100905.

82) S. Kawasaki, **C. Curceanu** *et al.*, "Spectroscopic Experiment of Λ(1405) via the In-flight d(K−, n) Reaction at J-PARC K1.8BR", JPS Conf.Proc. 13 (2017) 020018.

83) H. Shi, **C. Curceanu** *et al.*, ``Experimental studies of the kaon-nucleus interaction at low energy with x-ray spectroscopy of kaonic atoms", J.Phys.Conf.Ser. 800 (2017) no.1, 012007.

84) K. Piscicchia, **C. Curceanu** *et al.*, ``Investigation of the low-energy kaons hadronic interactions in light nuclei by AMADEUS", EPJ Web Conf. **137** (2017) 09005.

85) O. Vazquez Doce, **C. Curceanu** *et al.*, ``Experimental results on multi-nucleonic K− absorptions in light nuclei", EPJ Web Conf. **137** (2017) 09010.

86) L. Raczyński, **C. Curceanu** *et al,*, ``Calculation of time resolution of the J-PET tomograph using the Kernel Density Estimation", Phys.Med.Biol. **62** (2017) 5076.

87) R. Del Grande, **C. Curceanu** *et al.*, ``Investigating the low-energy K(−) interactions in nuclear matter with AMADEUS", Phys.Conf.Ser. **841** (2017) no.1, 012023.

88) **C. Curceanu** *et al.*, ``Test of the Pauli Exclusion Principle in the VIP-2 Underground Experiment", Entropy 2017, **19**(7), 300.

89) K. Piscicchia, **C. Curceanu** *et al.*, ``CSL Collapse Model Mapped with the Spontaneous Radiation", Entropy 2017, **19**(7), 319

90) **C. Curceanu** *et al.*, "Quantum mechanics under X-rays in the Gran Sasso underground laboratory", Int.J.Quant.Inf. **15** (2017) no.08, 1740004.

91) **C. Curceanu** *et al.*, "Low-energy Kaon--Nuclei Interaction Studies at DAΦNE: SIDDHARTA-2 and AMADEUS", Acta Phys.Polon. **B48** (2017) 1855.

92) B. Jasinska, **C. Curceanu** *et al.*, "Human Tissues Investigation Using PALS Acta Phys.Polon. **B48** (2017) 1737

93) K. Piscicchia, **C. Curceanu** *et al.*, "First measurement of the $K^- n \to \Lambda \pi^-$ non-resonant transition amplitude below threshold", Phys.Lett. **B782** (2018) 339.

94) H. Shi, **C. Curceanu** *et al.*, "Experimental search for the violation of Pauli Exclusion Principle", Eur.Phys.J. **C78** (2018) no.4, 319.

95) M. Skurzok, **C. Curceanu** *et al.*, "Search for Deeply Bound Kaonic Nuclear States in the AMADEUS Experiment", Acta Phys.Polon. **B49** (2018) 705.

96) A. Scordo, **C. Curceanu** *et al.*, "VOXES: a high precision X-ray spectrometer for diffused sources with HAPG crystals in the 2–20 keV range", JINST **13** (2018) no.04, C04002.

97) K. Piscicchia, **C. Curceanu** *et al.*, "Low energy interaction studies of negative kaons in light nuclear targets by AMADEUS", EPJ Web Conf. **181** (2018) 01005.

98) Eryk Czerwinski, **C. Curceanu** *et al.*, "Studies of discrete symmetries in decays of positronium atoms", EPJ Web Conf. **181** (2018) 01019.

99) A. Scordo, **C. Curceanu** *et al.*, "The kaonic atoms research program at DAΦNE: from SIDDHARTA to SIDDHARTA-2", EPJ Web Conf. **181** (2018) 01004.

100) K. Piscicchia, **C. Curceanu** *et al.*, "Low-energy antikaon-nuclei interactions studies by AMADEUS: from QCD with strangeness to neutron stars", EPJ Web Conf. **166** (2018) 00020.

101) A. Gajos, **C. Curceanu** *et al.*, "Feasibility Study of the Time Reversal Symmetry Tests in Decay of Metastable Positronium Atoms with the J-PET Detector", Adv.High Energy Phys. **2018** (2018) 8271280.

102) K. Piscicchia, **C. Curceanu** *et al.*, "Experimental constrains on the Continuous Spontaneous Localization model from spontaneous radiation emission", PoS CORFU2017 (2018) 201.

103) E. Milotti, **C. Curceanu** *et al.*, "On the Importance of Electron Diffusion in a Bulk-Matter Test of the Pauli Exclusion Principle", Entropy **20** (2018) no.7, 515.

104) J. Raj, **C. Curceanu** *et al.*, "A feasibility study of the time reversal violation test based on polarization of annihilation photons from the decay of ortho-Positronium with the J-PET detector", Hyperfine Interact. **239** (2018) no.1, 56.

105) K. Dulski, **C. Curceanu** *et al.*, "Commissioning of the J-PET detector in view of the positron annihilation lifetime spectroscopy", Hyperfine Interact. **239** (2018) no.1, 40.

106) P. Moskal, **C. Curceanu** *et al.*, "Feasibility studies of the polarization of photons beyond the optical wavelength regime with the J-PET detector", Eur.Phys.J. **C78** (2018) no.11, 970.

107) K. Piscicchia, **C. Curceanu** *et al.*, "Low Energy Antikaon-Nucleon/Nuclei Interaction Studies by AMADEUS", Acta Phys.Polon.Supp. **11** (2018) 609-616.

108) K. Shi, **C. Curceanu** *et al.*, "Search for the violation of Pauli Exclusion Principle at LNGS", EPJ Web Conf. **182** (2018) 02118.

109) R. Del Grande, **C. Curceanu** *et al.*, "Studies of low-energy K- nuclear interactions by AMADEUS", EPJ Web Conf. **182** (2018) 02035.

110) **C. Curceanu** *et al.*, "The kaonic atoms research program at DAΦNE: overview and perspectives", J.Phys.Conf.Ser. **1138** (2018) no.1, 012011.

111) M. Tuchler, **C. Curceanu** *et al.*, "A charged particle veto detector for kaonic deuterium measurements at DAΦNE", J.Phys.Conf.Ser. **1138** (2018) no.1, 012012.

112) C. Trippl, **C. Curceanu** *et al.*, "A New Silicon Drift Detector System for Kaonic Atom Measurements", J.Phys.Conf.Ser. **1138** (2018) no.1, 012013.

113) S. Ajimura, **C. Curceanu** *et al.*, ""K – pp" a K^--Meson Nuclear Bound State, Observed in 3He(K – ,Λp)n Reactions", Phys.Lett. **B789** (2019) 620-625.

114) C. Broggini, **C. Curceanu** *et al.*, "Experimental nuclear astrophysics in Italy", Riv.Nuovo Cim. **42** (2019) 3.

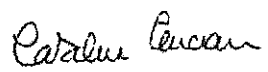
115) R. Del Grande, **C. Curceanu** *et al.*, "Λp correlated production from low energy K −12 C interactions by AMADEUS", EPJ Web Conf. **199** (2019) 03010.

116) K. Piscicchia, **C. Curceanu** *et al.*, "Low Energy Antikaon-nucleon/nuclei interaction studies by AMADEUS", EPJ Web Conf. **199** (2019) 01014.

117) R. Del Grande, **C. Curceanu** *et al.*, "K − multi-nucleon absorption cross sections and branching ratios in Λp and Σ0 p final states", Eur.Phys.J. **C79** (2019) no.3, 190.

118) P. Mokal, **C. Curceanu** *et al.*, "Feasibility study of the positronium imaging with the J-PET tomograph", Phys.Med.Biol. **64** (2019) no.5, 055017.

Frascati, April 17th, 2019 Catalina Oana Curceanu



Dr. Roberto Bedogni
Researcher
INFN - LNF
Laboratori Nazionali di Frascati
Via E. Fermi 40 - 00044 Frascati (Roma)

Nuclear Physicist. Expert in radiation detection, dosimetry and metrology of ionizing radiation

Born in Correggio (Reggio Emilia, Italy) 28-05-1974
roberto.bedogni@lnf.infn.it

Languages

Italian (mother tongue). Spanish, English, French: good command oral and written.

Education

2003 – 2006	Universidad Autónoma de Barcelona (Spain). *Titulo de doctor en fisica* (07-07-2006) - Ph.D. in Physics
1998 – 2000	University of Bologna (Italy). Medical Physics post-graduate Specialization Diploma (30-06-2000)
2000	CEA-INSTN (Paris). Diploma of the European Radiation Protection Course, ERPC. Oct.-Dec. 2000.
1994 – 1998	University of Bologna (Italy). Degree in Physics (21-03-1998)

Professional certifications

Since 2001
Italian ministry of Labour (Ministero del Lavoro). Certification "Esperto qualificato di terzo grado n. 400" - Qualified Expert for Radiation Protection with highest qualification degree (3rd degree).
- Aug. 2004- Feb. 2015: Qualified expert of the INFN-LNF DAΦNE accelerator complex
- 2005-2007: Qualified expert of INFN-Pisa Labs (50 sealed sources and various X-ray equipments)
- 2019 - present: Qualified expert of INFN-Tor Vergata Section (Rome).

Employed in Governmental Research Agencies

Since March 2015
INFN-LNF (Frascati). Head, Laboratory for Environmental and Medical Radiation Physics.
- Development of new measurement techniques and instruments for detection of ionizing radiation.
- Technology Transfer actions with private industries in the field of radiation measurements and radiation protection.

Aug. 2004 to Feb. 2015
Qualified expert in charge of the radiation protection and ambient/personal dosimetry of the high-energy accelerator DAΦNE. Responsible of the INFN-LNF calibration laboratory with ISO reference photon and neutron fields. Supervisor of four technicians. Research activity in metrology, dosimetry and spectrometry of complex radiation fields.

June 1999 - July 2004
ENEA Italian National Agency for the New Technologies, the Energy and the Environment
Bologna Secondary Standard Dosimetry Laboratory (the main dosimetry and calibration service in Italy). Researcher in the Personal Dosimetry Service and the Secondary Standard Calibration Laboratory.

Reesearch projects

As general project leader

2017	leader, NEPED (neutron electronic personal dosemeter)
2015-2016	leader, INNOREMC (innovative rem counter)
2014-2016	leader, NEURAPID (single-moderator neutron spectrometers for pulsed and cosmis fields)
2011-2013	leader, NESCOFI@BTF (Developing single-moderator neutron spectrometers).
2012	leader, "Measurement of the energy spectrum from the new neutron source planned for IGISOL" EU programme EU-FP-7 SUPPORT ACTION ERINDA Ref. PAC 3/9 2012.
2011	leader, "Characterisation of a novel neutron spectrometer based on a single moderating sphere using mono-energetic high-energy neutron beams" EU programme EU-FP-7 SUPPORT ACTION ERINDA Ref. PAC 1/3 2011.
2011	leader, "Characterisation of a novel neutron spectrometer based on a single moderating sphere using mono-energetic neutron beams below 20 MeV" EU programme EU-FP-7 SUPPORT ACTION ERINDA Ref. PAC 1/8 2011.
2010	Leader, "Validating the response matrix of the INFN-LNF extended range Bonner Sphere spectrometers in quasi-monoenergetic high-energy neutron fields and spectrometric characterization of the neutron beam in the ANITA facility" EU programme EU-FP-6 EFNUDAT Integrated Infrastructure Initiative Ref. PAC 5/7 2010.

2009-2016 leader, "Comparison of neutron spectra of reference sources for the improvement of ISO-8529 standard series". EURAMET - European Association of National Metrology Institutes.

2006 leader, "Experimental validation of a multi-sphere spectrometric system used for radiation protection applications around high energy electron accelerators and medical LINACs". EU programme NUDAME (Neutron Data Measurements at IRMM) - Specific Support Action - Transnational Access EURATOM. PAC 1/4.

As leader of one party, or participants, 20+ projects since 2006.

Teaching activity

01-10-2018 to 31-12-2018
Dipartimento di Fisica of Universita di Torino. Dottorato di Ricerca in Fisica e Astrofisica. 8 h course (1 CFU) "Experimental techniques for neutron detection".

01-09-2012 to 04-10-2012
Universidad Autónoma de Barcelona (Spain). Programa oficial de doctorado en Fisica (Ref. MHE2011-00155, BOE num. 12 of 14/01/2012 (Anexo I). "Movilidad de profesores en programas de doctorado con mención hacia la excelencia". Course "Radiation protection in external exposure", duration 40 h.

2006-2009
Roma. Università di Tor Vergata. Master "Basi fisiche e tecnologiche dell'adroterapia e della radioterapia di precisione", 8 h. course "Radioprotezione e dosimetria".

10+ Short training events (< 1 week) on specific topics (neutron dosimetry, spectrum unfolding, radiation protection) at national and international institutions.

Supervisor of 20+ undergraduate / Ph.D. students, national and international, in the field of radiation dosimetry.

Oral or poster contributions to conferences

90+ oral/poster contributions to international conferences in radiation dosimetry, metrology and sepctrometry

Invited Seminars

20+ invited seminar at scientific Institutions and universities in radiation dosimetry, metrology and sepctrometry.

Publications

110+ papers in perr reviewed international journals in the field of radiation measurements and dosimetry.

International Standardization Organization (ISO)

As international expert in ISO working group ISO/TC85/SC2/WG2 (reference radiation fields) and convenor of the neutron subgroup (ISO/TC85/SC2/WG2 / SG3): partecipation and/organization of 10+ ISO meetings.

Prizes

2007 4th edition of the "Sara Cucchi" scientific award - Italian national association of the qualified experts for radiation protection (ANPEQ)

2004 3rd edition of the "Sara Cucchi" scientific award.

1998 Awarded the 1998 grant of the Bologna University Medical Physics post-graduate Specialization school.

Reviewer for scientific journals

Radiation Measurements, Radiation Protection Dosimetry, Nuclear Instruments and Methods A, Nuclear Technology, Applied Radiation and Isotopes, Journal of Instrumentation, Nuclear Engineering and Design, Radiation Physics and Chemistry, Fusion Engineering and Design, Physica Medica: European Journal of Medical Physics.

Curriculum Vitae

Antonino Pietropaolo

Personal data

Date of birth: 14 July 1968
Place of birth: Reggio Calabria
Nationality: Italian

Education

PhD: Physics.
University: Università degli Studi di Roma "Tor Vergata" (2005).
Thesis title: Research and development of gamma detectors for neutron scattering at electron Volt energies on the VESUVIO spectrometer.
Place of work: University of Rome "Tor Vergata" and ISIS facility (Rutherford Appleton Laboratory, United Kingdom).

Laurea: Physics.
University: Università degli Studi di Roma "La Sapienza" (1994).
Thesis title: Temperature, density and potential fluctuations measurements in the edge plasma of the FTU Tokamak and study of their correlations.
Place of work: ENEA-Frascati Research Centre.

Professional data

Present Position: Researcher
Present work address: ENEA Frascati Research Centre, Fusion and Nuclear Safety Technologies Department, Via E. Fermi 45, 00044 Frascati, Roma Italy
Office: +39 0694005013
email: antonino.pietropaolo@enea.it
Activity: 1) Staff member operating the Frascati Neutron Generator (FNG) at the ENEA Frascati Research Centre; 2) Development of fast neutron detectors for plasma diagnostics; 2) Measurement of neutron cross sections for fusion materials; 3) development of He-free thermal neutron detectors; 4) Study of H-storage and H producing system characterized by means of neutron scattering techniques; 5) development of neutron instrumentation for large neutron facilities; 6) Advisory board member or the Molybdenum project at the ENEA's TRIGA and TAPIRO reactors ; 7) Study of the processes involving 14 MeV fusion neutrons for radioisotope production within the SORGENTINA-RF project.

I am the Italian Delegate at **OECD** (Organisation for Economic Co-operation and Development) in the High Level Group for Medical Radioisotopes (**HLG-MR**)

Previous Research experiences

2011-2012: Researcher at Consiglio Nazionale delle Ricerche at the Plasma Physics Institute (Milano), with main activity related to: 1) development of neutron and gamma detectors for plasma diagnostics; 2) development of high-energy neutron detectors and He-free thermal neutron detectors based on Gas Electron Multiplier (GEM) devices and single crystal diamonds; 3) Investigation of Silicon Photomultipliers as detector readout for neutron counters and investigation of their damaging upon neutron irradiation.

2010-2011: Researcher at the NAST Centre of the University of Roma Tor Vergata with main activities related to: ***1)*** development of compact high-energy neutrons beam monitors for the chip irradiation beam line ChipIr, under construction at the second target station (TS2) at the ISIS spallation neutron source (Rutherford Appleton Laboratory, UK); ***2)*** development of detectors for thermal and epithermal neutron scattering at ISIS spallation neutron source; ***3)*** study of H-bonded systems by means of deep inelastic neutron scattering technique; 4) development of He-free neutron counters for neutron scattering applications.

2009-2010: Researcher of the CNISM (Consorzio Nazionale Interuniversitario per le Scienze Fisiche della Materia) at the University of Roma Tor Vergata (Physics Department) with main activities related to: ***1)*** development of compact high-energy neutrons beam monitors for the chip irradiation beam line ChipIr, under construction at the second target station (TS2) at the ISIS spallation neutron source (Rutherford Appleton Laboratory, UK); ***2)*** development of detectors for thermal and epithermal neutron scattering at ISIS spallation; ***3)*** study of H-bonded systems by means of deep inelastic neutron scattering technique.

2008-2009: Researcher of the CNISM (Consorzio Nazionale Interuniversitario per le Scienze Fisiche della Materia) at the University of Milano-Bicocca (Physics Department) with main activities related to: ***1)*** development of compact high-energy neutrons beam monitors for the chip irradiation beam line ChipIr, under construction at the second target station (TS2) at the ISIS spallation neutron source (Rutherford Appleton Laboratory, UK); ***2)*** development of detectors for thermal and epithermal neutron scattering at ISIS spallation and for gamma spectroscopy on fusion plasmas at EFDA-JET (Culham, UK), ***3)*** study of H-bonded systems by means deep inelastic neutron scattering technique.

2006-2007: Researcher of the University of Rome Tor Vergata" (Physics Department) with main activities related to: ***1)*** development of detectors for neutron tomography and imaging at ISIS, applied to the study of cultural heritages, ***2)*** study of H-bonded systems by deep inelastic neutron scattering.

2004-2006: Researcher of the CNR (Consiglio Nazionale delle Ricerche) with main activities related to: ***1)*** study of water in both bulk and confined geometry by deep inelastic neutron scattering, ***2)*** development of the Very Low Angle Detector bank (VLAD) for small angle epithermal neutron scattering at ISIS, ***3)*** Irradiation of electronic chips with high energy (MeV) neutrons for the measurements of the so-called Single Event Upsets (SEU) at ISIS.

2002-2004: Associate researcher of the CNR-INFM (Consiglio Nazionale delle Ricerche-Istituto Nazionale per le Scienze Fisiche della Materia) with activities related to: ***1)*** development of detectors and instrumentation for small angle epithermal neutron scattering at ISIS, for the study of the electronic excitations in magnetic materials, rare earths and semiconductors; ***2)*** study of H-bonded systems by deep inelastic neutron scattering.

2000-2002: Associate researcher at the university of Rome "Tor Vergata" (Physics Department) with main activities related to the development of detectors for deep inelastic neutron scattering for the VESUVIO spectrometer at ISIS.

1998-2000: Collaboration with the Istituto Nazionale di Fisica Nucleare (**INFN**-Rome) at the University of Rome "La Sapienza" for the project MUEGAMMA aiming at the study of the rare muon decays at the Paul Sherrer Institute (Villigen, Switzerland).

1996-1998: Collaboration with the Istituto Nazionale di Fisica Nucleare (INFN, Rome) by joining the H1 experiment at the Deutsches Elektronen Synchrotron (**DESY**) in Hamburg (Germany) for the study of the internal structure of the protons using deep inelastic positron scattering off protons.

1994-1996: Scientific collaboration with Prof. E. Ferrari (University of Rome "La Sapienza") for a research activity on the phenomenology of elementary particles and in particular the investigation of the nuclear rescattering phenomenon in deep inelastic electron scattering on Xenon.

Awards

2001: "Young Researchers award" of the University of Rome "Tor Vergata"

Academic teaching activity

2019 1) Tutor of a student for her dissertation in Physics on medical radioisotopes.
2) Lectures on Neutron Physics at the course of Medical Physics at the University of Roma La Sapienza

2018: 1) Tutor of a student for her dissertation in Physics.
2) Lectures on Neutron Physics at PhD course in accelerator Physics (La Sapienza University of Rome).
3) Lectures on Neutron Physics at the course "Nuclear Science and Applications" (University of Tor Vergata, Rome)

2017: Lectures on Neutron Physics at PhD course course in accelerator Physics (La Sapienza University of Rome).
3) Lectures on Neutron Physics at the course "Nuclear Science and Applications" (University of Tor Vergata, Rome)

2016: Tutor of a student from for his dissertation in Physics at the Tor Vergata Univesity.

2016: Lectures on Neutron Physics at the course "Nuclear Science and Applications" (University of Tor Vergata, Rome)

2015: Lectures on Neutron Physics at the course "Nuclear Science and Applications" (University of Tor Vergata, Rome)

2014: Lectures on Neutron Detectors at the Master in Fusion Energy Science and Engineering (University of Tor Vergata).

2013: Lectures on Neutron Detectors at the Master in Fusion Energy Science and Engineering (University of Tor Vergata).

2011: Lectures and exercitations in Physics for undergraduates at the Physics Department of the University of Milano-Bicocca

2010: Lectures in Neutron Spectroscopy for undergraduate students at the Physics Department of the University of Roma Tor Vergata.

2008-2009: Contracted Professor for Lectures and exercitations in general Physics at the faculty of Environmental Sciences of the University of Milano-Bicocca.

2000-2007: Lectures and exercitations in general Physics at the faculties of Biotechnology and Physics of the University of Rome "Tor Vergata".

Further teaching activities and invited lectures

1. Professor of Mathematics and Physics at the scientific secondary high school "Liceo Scientifico Sperimentale G. Falletti di Barolo" in Rome in the years **1999-2000 and 2000-2001**. I lectured in the classes of the last two years of the scholar cycle, composed of more than 20 students. I was member of the evaluation committee, nominated by the Italian Ministry of the Education, for the final examinations (diploma) in both **1999 and 2000**.
2. Professor of Mathematics and Physics at the Scientific Secondary High School "Liceo Scientifico sperimentale V. Bachelet" in Rome, in charge as vice-director of the school in the years **1997-1998 and 1998-1999**.
3. "Neutron production and instrumentation at spallation neutron sources", invited lecture at the Scuola Scuola Nazionale "Rivelatori ed Elettronica per Fisica delle Alte Energie, Astrofisica ed Applicazioni Spaziali" INFN-Laboratori Nazionali di Legnaro, INFN Laboratori Nazionali di Legnaro-Italy 26-30 March 2007.
4. "Neutron instrumentation and analysis techniques for pulsed neutron sources", invited lectures, jointly to tutorial activity, at the international school of neutron scattering held in Palau (Italy) 21 Sept. – 2 Oct. 2004.
5. Lectures in atomic and nuclear physics at the Masters "Nuclear techniques for industry, environment and cultural heritages", organized by University of Rome "Tor Vergata" and the Istituto Nazionale di Fisica Nucleare (INFN)-Rome in the Academic Years 2002-2003 and 2003-2004.

Research interests and achievements

1. **Investigation of single proton dynamics in hydrogen containing systems with the use of the Deep Inelastic Neutron Scattering (DINS) technique.**
   I investigated the ultra fast proton dynamics in water in both its stable and metastable phase. To this aim, I proposed, designed and performed DINS measurements at ISIS spallation neutron source (Rutherford Appleton Laboratory, UK) by which it has been possible to find a maximum in the mean kinetic energy of the proton correlated to the density maximum of water (277 K) and to recognize the presence of a second maximum in the mean kinetic energy of the proton, related to possible quantum effects occurring in the metastable phase. Recently I designed and performed DINS measurements on silica xerogels to study the dynamics of the structural protons (sylanols) as a function of the pore's topology and temperature. These studies allowed to confirm that the dynamical properties of the structural protons play an important role in the dynamics of the confined systems (especially hydrogenated ones). Recently I have investigated the dynamical properties of water in the liquid phase from room temperature to the supercritical phase in order to investigate the effects of the H-bond modifications on the short time proton dynamics. I performed DINS measurements on a globular protein, namely Lysozime, to investigate the proton dynamics of the hydration protons below and above the crossover temperature. With this experimental work it has been possible to demonstrate that the mean kinetic energy of the water hydrogen shows no temperature dependence, but indicate a sensible change of momentum distribution line shape and thus of the effective potential felt by protons, compatible with the transition from a single to a double potential well. I setup collaboration with the Chemistry department of the Cambridge University, with the CNR-Firenze and the Material Science Department of the University of Milano-Bicocca for the investigation of the single proton dynamics in lithium imide (Li_2NH), a very useful aspect to be studied for H storage purposes.

a. Daniele Colognesi, **Antonino Pietropaolo**, Aníbal Javier Ramírez-Cuesta, Michele Catti, Angelo Claudio Nale,Marco Zoppi, "Proton vibrations in lithium imide and amide studied through incoherent inelastic neutron scattering", Adv. Sci. Tech. **72**, 158 (2010).

b. Michele Ceriotti, Giacomo Miceli, **Antonino Pietropaolo**, Daniele Colognesi, Angeloclaudio Nale, Michele Catti, Marco Bernasconi, and Michele Parrinello, "Nuclear quantum effects in ab initio dynamics: Theory and experiments for lithium imide", Phys. Rev. B **82**, 174306 (2010).

c. S. E. Pagnotta, F. Bruni, R. Senesi, **A. Pietropaolo**, "Quantum Behavior of Water Protons in Protein Hydration Shell", Biophys. Journ **96**, 1939 (2009).

d. **A. Pietropaolo**, C. Andreani, R. Senesi, A. Botti, M.A. Ricci and F. Bruni, "Excess of proton mean kinetic energy in supercooled water", Phys. Rev. Lett. **100**, 127801 (2008);

e. **A. Pietropaolo**, D. Fernadez-Canoto, E. Perelli-Cippo, A. Dirè, P. Proposito, "Sub-femtosecond dynamics of structural protons in silica xerogels", Phys. Rev. B **77**, 014202 (2008);

f. C. Pantalei, **A. Pietropaolo**, R. Senesi, S. Imberti, C. Andreani, J. Mayers, C. Burnham and G. F. Reiter, "Proton momentum distribution of liquid water from room temperature to the supercritical phase", Phys. Rev. Lett. **100**, 177801 (2008);

g. R. Senesi, **A. Pietropaolo**, A. Bocedi, S.E. Pagnotta, F. Bruni, "Proton Momentum distribution in a protein hydration shell", Phys. Rev. Lett. **98**, 138102 (2007);

2. Research and development of gamma ray detectors for electron Volt neutron scattering at pulsed neutron source.

I developed new gamma detectors to perform deep inelastic neutron scattering experiment on the inverse geometry spectrometer VESUVIO at ISIS for the so-called Resonance Detector (RD) technique. A RD detectors array was designed and installed on VESUVIO in 2008 that is currently used to perform DINS measurements for the user program of the instrument.

a. **A. Pietropaolo**, C. Andreani, A. Filabozzi, R. Senesi, G. Gorini, E. Perelli-Cippo, M. Tardocchi, N. J Rhodes and E. M Schooneveld, "DINS measurements on VESUVIO in the Resonance Detector configuration: proton mean kinetic energy in water", JINST 1 P04001 (2006);

b. **Pietropaolo**, C. Andreani, A. Filabozzi, E. Pace, R. Senesi, "Resolution function in Deep Inelastic Neutron Scattering using the Foil Cycling Technique", Nuclear Instruments and Methods in Physics Research A **570** (2007) 498;

c. **A. Pietropaolo** and R. Senesi, "Deep inelastic neutron scattering measurements on ^{207}Pb and $NaHF_2$ as a test of a detectors array at the VESUVIO spectrometer", Nuclear Instruments and Methods in Physics Research A **584** (2008) 377.

d. **A. Pietropaolo** and R. Senesi, "electron Volt neutron Spectrometers, Physics Reports, 508, 45 (2011).

e. A. Filabozzi, E. Pace, **A. Pietropaolo**, "Enhancing the performances of a resonance detector spectrometer for deep inelastic neutron scattering measurements", Nucl. Instr. Meth. A **673**, 1 (2012).

3. Development of novel instrumentation for neutron spectroscopy for applications to fundamental and applied research.

I have been working on: *1)* development of a beam line dedicated to chip irradiation with high energy neutrons at ISIS (ChipIr), *2)* development of miniaturized detectors readouts, based on the use of the Silicon Photomultipliers (SiPM), to be used for thermal neutron counters on neutron diffractometers; *3)* development single crystal diamond detectors for high energy (E > 1 MeV) embedded neutrons beam monitors and thermal neutron beam monitors and Bragg's edges recognition.

In 2005 I performed, in collaboration with engineers from the University of Padova, a series of tests on the irradiation of electronic devices to measure the rate of the so-called Single Event Upsets (SEU) at ISIS. These tests demonstrated that the ISIS facility is suitable for this kind of measurements and the ChipIr beam line, devoted to chip irradiation, is going to be built on the second target station at ISIS.

SiPM are robust, cheap and compact devices mostly used in high energy physics. I am investigating the possibility to develop new epithermal and thermal neutron counters based on SiPM technology. I designed and realized a Neutron Resonance Capture Analysis measurement as a detector test to assess the suitability of a SiPM readout for this kind of application at spallation neutron source. This tests demonstrated that SiPM are effective detector readout for neutron detection.
Concerning diamond detectors, I proposed this detector technology to build compact (1-2 mm^2 area) high energy neutron counters or, using a LiF coating, small size thermal neutrons beam monitors for instruments operating at high flux spallation sources (for example TS2 at ISIS or SNS at Oak Ridge). To this aim, I proposed, designed and performed (July 2009) a detector test on diamond detectors at ISIS using a biparametric acquisition (time of flight vs pulse height) to measure the energies (in the MeV range) effectively accessed with these detectors. In this context, I proposed and initiated a scientific collaboration with the University of Central Lancashire and the Engineering Department of the University of Rome Tor Vergata in order to investigate the possibility of a multiple detector configuration using diamond and silicon pin diodes detectors to detect high energy neutrons in complementary energy regions. I performed a test on LiF-coated diamond detectors, assessing that these device may be used at spallation neutron sources as thermal neutron beam monitors, being also capable of recognizing Bragg's Edges useful in stress and strain investigation in materials using neutron transmission techniques.

a. C. Andreani, **A. Pietropaolo**, A. Salsano, G. Gorini, M. Tardocchi, A. Paccagnella, S. Gerardin, S. Ansell, C. D. Frost, S. Platt, "Facility for fast neutron irradiation tests of electronics at the ISIS spallation neutron source", Appl. Phys. Lett. **92**, 114101 (2008); **DOI:10.1063/1.2897309**;

b. M. Violante, L. Sterpone, A. Manuzzato, S. Gerardin, P. Rech, M. Bagatin, A. Paccagnella, C. Andreani, G. Gorini , **A. Pietropaolo**, G. Cardarilli, S. Pontarelli, C. Frost, "Testing soft error sensitivity of FPGAs through a new hardware/software platform", IEEE Trans. Nucl. Sci. **54**, 1184 (2007);

c. **A. Pietropaolo**, G. Gorini, G. Festa, C. Andreani, M. P. De Pascale, E. Reali, F. Grazzi, and E. M. Schooneveld, "A silicon photomultiplier readout for time of flight neutron spectroscopy with gamma-ray detectors", Rev. Sci. Instr. **80**, 095108 (2009).

d. **A. Pietropaolo**, "The Silicon photomultipliers for inelastic neutron scattering at high energy transfers", Nuclear Instruments and Methods in Physics Research A **612**, 345 (2010).

e. G. Festa, **A. Pietropaolo**, E. Reali, F. Grazzi and E. M. Schooneveld, "A γ-ray detector with a silicon photomultiplier (SiPM) readout for neutron diffraction experiments at spallation neutron sources", Meas. Sci. Technol. **21**, 035901 (2010).

f. **A. Pietropaolo**, G. Verona Rinati, C. Verona, E.M. Schooneveld, M. Angelone, M. Pillon, "A single crystal diamond-based thermal neutron beam monitor for instruments at pulsed neutron source", Nucl. Instr. Meth. A **610**, 677 (2009).

g. **A. Pietropaolo**, "On the possibility of using $^{235}U(n,f)$ resonance reactions for localized pulsed neutrons beams monitoring in the epithermal energy region at the ISIS spallation source", Nucl. Insrt. Meth. A **675**, 24 (2012).

4. Development of He-free thermal neutron detectors for applications at large scale facilities and of multitask neutron beamlines

Since 2010 I am working in the research and development of He-free thermal neutron detectors for applications on scattering techniques at large scale neutron facilities (spallation as well as reactor-based neutron sources). The global shortage of ^3He for neutron detection purposes triggered an intense and interesting research and development activity worldwide to find out effective solutions. I proposed two different approaches based on the use of Gas Electron Multipliers in the so-called sideon configuration and of radiative capture gamma-rays detection systems. These two detection systems are under investigation and they showed promising results. Together with the activity on neutron detectors, together with researchers from

Italian and international research institutes, I am developing a new concept of neutron beam-lines relying on the possibility to perform simultaneously different and complementary neutron-based analyses exploiting different spectroscopic techniques.

a. G. Claps, F. Murtas, **A. Pietropaolo**, G. Celentano, A. Vannozzi, A. Santoni, L. Quintieri, R.A. Riedel, "3He-free triple GEM thermal neutron detector", Europhys. Lett. **105**, 22002 (2014).

b. **A. Pietropaolo**, F. Murtas, G. Claps, L. Quintieri,1, D.Raspin, G.Celentano, A.Vannozzi, O.Frasciello, "A new 3He-free thermal neutrons detector concept based on the GEM technology", Nucl. Instr. Meth. A **729**, 117 (2013).

c. G. Festa, **A. Pietropaolo**, F. Grazzi, E. Barzagli, A. Scherillo, E.M. Schooneveld, "Neutron diffraction measurements at the INES diffractometer using a neutron radiative capture based counting technique, "Nucl. Instr. and Meth. A **654**, 373 (2011).

d. V. Merlo, M. Salvato, M. Cirillo, M. Lucci, I. Ottaviani, A. Scherillo, G. Celentano and **A. Pietropaolo**, "Hybrid Superconducting Neutron Detectors", Appl. Phys. Lett. **106**, 113502 (2015).

5. Production of medical radioisotopes by means of 14 MeV neutrons

Since 2015 I am working to inveatigate the possibility of producing medical radioisotopes for nuclear medicine in an alternaive way to fission reactors and cyclotrons, namely 9^{9}Mo for SPECT and ^{64}Cu for theranostic applications.

a. M. Capogni, **A. Pietropaolo**, L. Quintieri et al., 14 MeV Neutrons for 99Mo/99mTc Production: Experiments, Simulations and Perspectives, Molecules **23,** 1872 (2018); doi:10.3390/molecules23081872

Memberships

1- Member of the Mediterranean Institute of Fundamental Physics;
2- Member of the Italian Society of Neutron Spectroscopy (**SISN**).

Peer reviewing activity:

I served as referee for the following journals:

- Physical Review Letters
- Applied Physics Letters
- Applied Radiation and Isotopes
- Nuclear Instrument and Methods A
- Review of Scientific Instruments
- Physical Review B
- Journal of Chemical Physics
- Fusion Engineering and Design
- Journal of Nuclear Engineering and Radiation Science.

I have been acknowledged Referee by **Review of Scientific Instrument** and **Nuclear Instruments and Methods A**.

List of publications

Peer reviewed publications

1. E. Ferrari and **A. Pietropaolo**, "Deep Inelastic Scattering on xenon as a test of a phenomenological rescattering model", Il Nuovo Cimento **III A, N. 10**, 1163 (1998).
2. V. Pericoli-Ridolfini, A. Pietropaolo, R. Cesario, F. Zonca, "Density, temperature and potential fluctuations in the edge plasma of the FTU tokamak", Nuclear Fusion **12** 1745 (1998).
3. **A. Pietropaolo**, C. Andreani, A. D'Angelo, R. Senesi, G.Gorini, S. Imberti, M. Tardocchi, N. J. Rhodes, E. M. Schooneveld, "γ Detectors for Deep Inelastic Neutron Scattering in the 1-100 eV region", Applied Physics A **74**, S189 (2002).
4. C. Andreani, **A. Pietropaolo**, R. Senesi, G. Gorini, M. Tardocchi, A. Bracco, N. Rhodes, E. Schooneveld, "Electron Volt spectroscopy at a pulsed neutron source using a resonance detector technique", Nuclear Instruments and Methods A **481**, 509 (2002).
5. C. Andreani, D. Colognesi, E. Degiorgi, A. Filabozzi, M. Nardone, E. Pace, **A. Pietropaolo**, R. Senesi, "Double difference method in Deep Inelastic Neutron Scattering on the VESUVIO spectrometer", Nuclear Instruments and Methods A **497**, 535 (2003).
6. **A. Pietropaolo**, C. Andreani, A. D'Angelo, G. Gorini, S. Imberti, N. J. Rhodes, E. M. Schooneveld, R. Senesi, M. Tardocchi, "The resonance detector spectrometer for neutron spectroscopy in the eV energy region", in Capture Gamma-Ray Spectroscopy And Related Topics, Proceedings of the Eleventh International Symposium, J. Kvasil, P. Cejnar and M. Krticka eds., pag. 555 World Scientific (2003).
7. C. Andreani, G. Gorini, E. Perelli-Cippo, **A. Pietropaolo**, N. Rhodes, E. M. Schooneveld, R. Senesi, M. Tardocchi, "A resonant detector for high-energy inelastic neutron scattering experiments", Applied Physics Letters **75**, 5454 (2004).
8. M. Tardocchi, **A. Pietropaolo**, C. Andreani, G. Gorini, E. Perelli-Cippo, N. Rhodes, E. M. Schooneveld, R. Senesi, "Development of new instrumentation for epithermal neutron scattering at very low angles", Nuclear Instruments and Methods A **535**, 121 (2004).
9. M. Tardocchi, **A. Pietropaolo**, C. Andreani, G. Gorini, N. Rhodes,E. M. Schooneveld, R. Senesi, "YAP scintillators for resonant detection of epithermal neutrons at pulsed neutron sources", Review of Scientific Instruments **75**, 4880 (2004).
10. C. Andreani, A. D'Angelo, G. Gorini, S. Imberti, **A. Pietropaolo**, N. J. Rhodes, E. M. Schooneveld, R. Senesi, M. Tardocchi, "CdZnTe detector for Deep Inelastic Neutron Scattering on the VESUVIO spectrometer.", Applied Physics A **78,** 903 (2004).
11. G. Gorini, E. Perelli-Cippo, M. Tardocchi, C. Andreani, A. D'Angelo, **A. Pietropaolo**, R. Senesi, S. Imberti, A. Bracco, E. Previtali, G. Pessina, N. J. Rhodes, E. M. Schooneveld, "The resonant detector and its application to epithermal neutron spectroscopy", Nuclear Instruments and Methods A **529**, 293 (2004).
12. M. Tardocchi, **A. Pietropaolo**, R. Senesi, C. Andreani, G. Gorini, "Development of resonant detectors for epithermal neutron spectroscopy at pulsed neutron sources", Nuclear Instruments and Methods A **518/1-2**, 259 (2004).
13. M. Tardocchi, **A. Pietropaolo**, C. Andreani, A. Bracco, A. D'Angelo, G. Gorini, S. Imberti, N. J. Rhodes, R. Senesi, E. M. Schooneveld, "Cadmium-Zinc-Telluride photon detector for epithermal neutron spectroscopy: pulse height response characterization", Nuclear Instruments and Methods A **526**, 477 (2004).
14. J. Tomkinson, J. Mayers, N. Rhodes, E. Schooneveld, R. J. Newport, T. Abdul-Redah, C. Andreani, A. D'Angelo, S. Imberti, **A. Pietropaolo**, R. Senesi, G. Gorini, M. Tardocchi, "Recent developments of the eVerdi Project at ISIS", Physica B **350**, e837 (2004).
15. M. Tardocchi, C. Arnaboldi, G. Gorini, S. Imberti, G. Pessina, E. Previtali, C. Andreani, **A. Pietropaolo**, R. Senesi, "Assessment of a silicon detector for pulsed neutron scattering experiments", Physica B **350**, e853 (2004).

16. **A. Pietropaolo**, C. Andreani, A. D'Angelo, G. Gorini, E. Perelli Cippo, S. Imberti, N. J. Rhodes, E. M. Schooneveld, R. Senesi, M. Tardocchi, "Photon detectors for epithermal neutron scattering at high-ω and low-q.", Physica B **350**, e857 (2004).
17. R. Senesi, D. Colognesi, **A. Pietropaolo**, T. Abdul-Redah, "Deep inelastic neutron scattering from orthorhombic ordered HCl: short-time proton dynamics and anomalous neutron cross-sections", Physical Review B **72**, 054119 (2005).
18. E. Perelli-Cippo, G. Gorini, O. Cremonesi, M. Tardocchi, C. Andreani, **A. Pietropaolo**, R.Senesi, N. Rhodes,E. M. Schooneveld, " Development of the Very Low Angle Detector for epithermal neutron scattering at low momentum transfers", IEEE Transactions on Nuclear Science **52**, (2005) 1092.
19. S. Imberti, C. Andreani, V. Garbuio, G. Gorini, **A. Pietropaolo**, R. Senesi and M. Tardocchi, "Resolution of the VESUVIO spectrometer for High energy Inelastic Neutron Scattering experiments", Nuclear Instruments and Methods A **552** (2005) 463.
20. A. Filabozzi, C. Andreani, M.P. De Pascale, **A. Pietropaolo**, R. Senesi, G. Gorini, E. Perelli-Cippo, M. Tardocchi, P.G. Radaelli, W. Kockelmann, "Texture and structure studies on marbles from Villa Adriana via neutron diffraction technique", Journal of Neutron Research **14(1)**, (2006).
21. M. Tardocchi, C. Andreani, O. Cremonesi, G. Gorini, E. Perelli-Cippo, **A. Pietropaolo**, N. J. Rhodes, E. M. Schooneveld, R. Senesi, "Development of the Very Low Angle Detector (VLAD) for detection of epithermal neutrons at low momentum transfers", Nuclear Physics B (Proc. Suppl.) **150** (2006) 421.
22. **Antonino Pietropaolo**, Carla Andreani, Alessandra Filabozzi, Roberto Senesi, Giuseppe Gorini, Enrico Perelli-Cippo, Marco Tardocchi, Nigel J Rhodes and Erik M Schooneveld, "DINS measurements on VESUVIO in the Resonance Detector configuration: proton mean kinetic energy in water", JINST **1** P04001 doi:10.1088/1748-0221/1/04/P04001 (2006).
23. M. Tardocchi, G. Gorini, E. Perelli-Cippo, C. Andreani, S. Imberti, **A. Pietropaolo**, R. Senesi, N. R. Rhodes, E. M. Schooneveld, "VLAD for epithermal neutron scattering experiments at large energy transfers, Journal of Physics: conference series **41**, (2006) 451.
24. M. Tardocchi, **A. Pietropaolo**, C. Andreani, G. Gorini, S. Imberti, E. Perelli- Cippo, R. Senesi, N. Rhodes, E. M. Schooneveld, "Comparison of Cadmium-Zinc-Telluride semiconductor and Yttrium-Aluminium-Perovskite scintillator as photon detectors for epithermal neutron spectroscopy", Nuclear Instruments and Methods A **567**, 337 (2006).
25. E. M. Schooneveld, J. Mayers, N. J. Rhodes, **A. Pietropaolo,** C. Andreani, G. Gorini, E. Perelli-Cippo, R. Senesi, M. Tardocchi, "Foil Cycling Terchnique for the VESUVIO spectrometer operating in the Resonance Detector configuration", Review of Scientific Instruments **77**, 095103 (2006).
26. E. Perelli-Cippo, C. Andreani, M. Casalboni, S. Dirè, D. Fernndez-Canoto, G. Gorini, S. Imberti, **A. Pietropaolo**, P. Prosposito, S. Schutzmann, R. Senesi, M. Tardocchi, "Investigation of High Energy Inelastic Neutron Scattering from liquid water confined in silica xerogel", Physica B **385–386** (2006) 1095.
27. A. Filabozzi, **A. Pietropaolo**, C. Andreani, M.P. De Pascale, G. Gorini, W.A.Kockelmann, L.C. Chapon, "Non invasive neutron diffraction analyses of marbles from the Edificio con Tre Esedre in Villa Adriana", Il Nuovo Cimento C **29**, 237 (2006).
28. **A. Pietropaolo**, M. Tardocchi, E. M. Schooneveld, R. Senesi, "Characterization of the γ background in epithermal neutron scattering measurements at pulsed neutron sources", Nuclear Instruments and Methods in Physics Research A **568** (2006) 826.
29. E. Perelli-Cippo, G. Gorini, M. Tardocchi, C. Andreani, **A. Pietropaolo**, R. Senesi, N. J. Rhodes, E. M. Schooneveld, "The O-H stretching band in ice Ih derived via eV neutron spectroscopy on VESUVIO using the new Very Low Angle Detector bank", Applied Physics A **83**, 453 (2006).

30. **A. Pietropaolo**, C. Andreani, A. Filabozzi, E. Pace, R. Senesi, "Resolution function in Deep Inelastic Neutron Scattering using the Foil Cycling Technique", Nuclear Instruments and Methods in Physics Research A **570** (2007) 498.
31. A. Botti, F. Bruni, M. A. Ricci, **A. Pietropaolo**, R. Senesi, C. Andreani, "Structure and single particel dynamcs of bulk supercooled Water", Jour. Mol. Liq. **136** (2007), 236.
32. V. Garbuio, C. Andreani, S. Imberbi, **A. Pietropaolo**, G.F. Reiter, M.A. Ricci, R. Senesi, "Proton quantum coherence observed in Water confined in silica nanopores", J. Chem. Phys. **127**, 154501 (2007).
33. G. Gorini and the Ancient Charm collaboration, "Ancient Charm: a research project for neutron-based investigation of cultural heritage objects", Il Nuovo Cimento C **30,** 47 (2007).
34. M. Violante, L. Sterpone, A. Manuzzato, S. Gerardin, P. Rech, M. Bagatin, A. Paccagnella, C. Andreani, G. Gorini , **A. Pietropaolo**, G. Cardarilli, S. Pontarelli, C. Frost, "A new hardware/software platform and a new 1/E neutron source for soft error studies:testing FPGAs at the ISIS facility", IEEE Trans. Nucl. Sci. **54**, 1184 (2007).
35. R.Senesi, **A. Pietropaolo**, A. Bocedi, S.E. Pagnotta, F. Bruni, "Proton Momentum distribution in a protein hydration shell", Phys. Rev. Lett. **98**, 138102 (2007) – IF: 6.944.
36. D. Colognesi, **A. Pietropaolo**, R. Senesi, A. J. Ramirez Cuesta, "Neutron Compton scattering as a molecular characterization technique: a study on $NaHF_2$", Phys. Rev. B **76**, 174206 (2007).
37. Zs. Kasztovszky, Z. Kis, T. Belgya, W. Kockelmann, S. Imberti, E. M. Schooneveld, G. Festa, A. Filabozzi, C. Andreani, A. Kirfel, K. T. Biró, K. Dúzs, Zs. Hajnal, P. Kudejova, M. Tardocchi and the **Ancient Charm Collaboration**, "Prompt gamma activation analysis and time of flight neutron diffraction on 'black boxes' in the 'Ancient Charm' project", Journal of Radioanalytical and Nuclear Chemistry, Vol. 278, No.3 (2008) 661.
38. **A. Pietropaolo** and R. Senesi, "Deep inelastic neutron scattering measurements on 207Pb and NaHF2 as a test of a detectors array at the VESUVIO spectrometer", Nuclear Instruments and Methods in Physics Research A **584** (2008) 377.
39. **A. Pietropaolo** and the Ancient Charm collaboration, "Ancient Charm: a project for the development of neutron-based elemental imaging", Scienza e Beni Culturali, Atti del V Congresso Nazionale di Archeometria Siracusa 26-29 Febbraio 2008, A. Gueli editore, p 17-34.
40. E. Perelli Cippo, G. Gorini, M. Tardocchi, C. Andreani, **A. Pietropaolo**, R. Senesi, N. Rhodes, E. Schooneveld, "Advances on detectors for low-angle scattering of epithermal neutrons", Meas. Sci. Technol. **19**, 047001 (2008) **DOI:10.1088/0957-0233/19/4/047001**.
41. E Perelli Cippo, G Gorini, M Tardocchi, R Cattaneo, N J Rhodes, E M Schooneveld, T Nakamura, P Radaelli, WA Kockelmann, **A Pietropaolo** and the ANCIENT CHARM Collaboration, "Simulations and design of detectors for imaging with epithermal neutrons", Meas. Sci. Technol. **19,** 034027 (2008).
42. **A. Pietropaolo**, D. Fernadez-Canoto, E. Perelli-Cippo, A. Dirè, P. Proposito, "Sub-femtosecond dynamics of structural protons in silica xerogels", Phys. Rev. B **77**, 014202 (2008).
43. T. Belgya, Z. Kis, L. Szentmiklósi, Zs. Kasztovszky, P. Kudejova, R. Schulze, T. Materna, G. Festa, P. A. Caroppi, and **the Ancient Charm Collaboration**, "First elemental imaging experiments on a combined PGAI and NT setup at the Budapest Research Reactor", Journal of Radioanalytical and Nuclear Chemistry, Vol. 278, No.3 (2008) 751–754.
44. E. Perelli Cippo, G. Gorini, M. Tardocchi, **A. Pietropaolo**, C. Andreani , R. Senesi , N. J. Rhodes, E. M. Schooneveld, "The Very Low Angle Detector for High-energy Inelastic Neutron Scattering on the VESUVIO spectrometer", Nuclear Instruments and Methods in Physics Research A **589** (2008) 296.

45. C. Andreani, **A. Pietropaolo**, A. Salsano, G. Gorini, M. Tardocchi, A. Paccagnella, S. Gerardin, S. Ansell, C. D. Frost, S. Platt, "Facility for fast neutron irradiation tests of electronics at the ISIS spallation neutron source", Appl. Phys. Lett. **92**, 114101 (2008). **DOI:10.1063/1.2897309**.
46. **A. Pietropaolo**, C. Andreani, R. Senesi, A. Botti, M.A. Ricci and F. Bruni, "Excess of proton mean kinetic energy in supercooled water", Phys. Rev. Lett. **100**, 127801 (2008).
47. C. Pantalei, **A. Pietropaolo**, R. Senesi, S. Imberti, C. Andreani, J. Mayers, C. Burnham and G. F. Reiter, "Proton momentum distribution of liquid water from room temperature to the supercritical phase", Phys. Rev. Lett. **100,** 177801 (2008).
48. R. Senesi, **A. Pietropaolo**, C. Andreani, "Constant-q data representation of Neutron Compton profiles on the VESUVIO spectrometer, Nuclear Instruments and Methods in Physics Research A **594** (2008) 244 IF: 1.019.
49. D. Colognesi, **A. Pietropaolo** and R. Senesi, "The role of the electronic degrees of freedom in neutron Compton scattering from molecular systems", J. Phys.: Condens. Matter **20** (2008), 445225.
50. T. Belgya, Z. Kis, L. Szentmiklósi, Zs. Kasztovszky, G. Festa, L. Andreanelli, M. P. De Pascale, **A. Pietropaolo**, P. Kudejova, R. Schulze, T. Materna, **and the Ancient Charm Collaboration**, "A new PGAI-NT setup at the NIPS facility of the Budapest Research Reactor", Journal of Radioanalytical and Nuclear Chemistry, Vol. 278, No.3 (2008) 713.
51. S. E. Pagnotta, F. Bruni, R. Senesi, A. Pietropaolo, "Quantum Behavior of Water Protons in Protein Hydration Shell", Biophys. Journ **96**, 1939 (2009).
52. **A. Pietropaolo**, C. Andreani, R. Senesi, J. Mayers, "Quantum Effects in Water: Proton Kinetic Energy Maxima in Stable and Supercooled Liquid", Braz. Journ. Phys. **39**, 318 (2009).
53. **A. Pietropaolo,** E. Perelli Cippo, G. Gorini, M. Tardocchi, E.M. Schooneveld, C. Andreani, R. Senesi, "γ-ray background sources in the VESUVIO spectrometer at ISIS spallation neutron source", Nucl. Instr. Meth A **608**, 121 (2009).
54. **A. Pietropaolo**, C. Andreani, R. Senesi, A. Botti, M.A. Ricci and F. Bruni., reply to the comment by A.K. Soper on "Excess of proton mean kinetic energy in supercooled water", Phys. Rev. Lett. **103**, 069802 (2009).
55. R. Bedogni, A. Esposito,C. Andreani, R. Senesi, M. P. De Pascale, P. Picozza, **A. Pietropaolo**, G. Gorini, C. D. Frost, S. Ansell, "Characterization of the neutron field at the ISIS-VESUVIO facility by means of a Bonner sphere spectrometer", Nucl. Instr. Meth. A **612**, 143 (2009).
56. **A. Pietropaolo**, G. Gorini, G. Festa, C. Andreani, M. P. De Pascale, E. Reali, F. Grazzi, and E. M. Schooneveld, "A silicon photomultiplier readout for time of flight neutron spectroscopy with gamma-ray detectors", Rev. Sci. Instr. **80**, 095108 (2009).
57. **A. Pietropaolo**, G. Verona Rinati, C. Verona, E.M. Schooneveld, M. Angelone, M. Pillon, "A single crystal diamond-based thermal neutron beam monitor for instruments at pulsed neutron source", Nucl. Instr. Meth. A **610**, 677 (2009).
58. **A. Pietropaolo**, "The Silicon photomultipliers for inelastic neutron scattering at high energy transfers", Nuclear Instruments and Methods in Physics Research A **612**, 345 (2010).
59. G. Festa, **A. Pietropaolo**, E. Reali, F. Grazzi and E. M. Schooneveld, "A γ-ray detector with a silicon photomultiplier (SiPM) readout for neutron diffraction experiments at spallation neutron sources", Meas. Sci. Technol. **21,** 035901 (2010).
60. **A. Pietropaolo**, G. Gorini, G. Festa, E. Reali, F. Grazzi, E.M. Schooneveld, "A neutron resonance capture analysis experimental station at the ISIS spallation source", Applied Spectroscopy **64**, 1068 (2010).

61. G. Kiptily, G. Gorini, M. Tardocchi, P.C. de Vries, F.E. Cecil, I.N. Chugunov, T. Craciunescu, M. Gatu Johnson, D. Gin, V. Goloborod'ko, C. Hellesen, T. Johnson,K. Kneupner, A. Murari, M. Nocente, E. Perelli, **A. Pietropaolo**, S.D. Pinches, I. Proverbio, P.G. Sanchez, S.E. Sharapov, A.E. Shevelev, D.B. Syme, V. Yavorskij, V.L. Zoita and JET-EFDA contributors, "Doppler broadening of gamma ray lines and fast ion distribution in JET plasmas", Nucl. Fusion **50,** 084001 (2010).
62. Daniele Colognesi**, Antonino Pietropaolo,** Aníbal Javier Ramírez-Cuesta**,** Michele Catti**,** Angelo Claudio Nale,Marco Zoppi, "Proton vibrations in lithium imide and amide studied throughincoherent inelastic neutron scattering", Adv. Sci. Tech. **72**, 158 (2010).
63. E. Perelli Cippo, A.Borella, G. Gorini, W. Kockelman, **A. Pietropaolo**, H. Postma, N.J. Rhodes, P. Schillebeeckx, E.M. Schooneveld M. Tardocchi R. Wynants, The ANCIENT CHARM collaboration, "A detector system for neutron resonance capture imaging", Nucl. Instr. Meth. A **623**, 693 (2010).
64. Michele Ceriotti, Giacomo Miceli, **Antonino Pietropaolo**, Daniele Colognesi, Angeloclaudio Nale, Michele Catti, Marco Bernasconi, and Michele Parrinello, "Nuclear quantum effects in *ab initio* dynamics: Theory and experiments for lithium imide", Phys. Rev. B **82**, 174306 (2010)
65. M. Nocente, M. Tardocchi, I. Chugunov, R. C. Pereira, T. Edlington, A . M. Fernandes, D. Gin, G. Grosso, V. Kiptily, A. Murari, A. Neto, E. Perelli Cippo, **A. Pietropaolo**, I. Proverbio, A. Shevelev, J. Sousa, B. Syme, G. Gorini, and JET-EFDA Contributors, "Energy resolution of gamma-ray spectroscopy of JET plasmas with a LaBr3 scintillator detector and digital data acquisition", Rev. Sci. Instr. **81**, 10D321 (2010).
66. **A. Pietropaolo**, C. Andreani, M. Rebai, L. Giacomelli, G. Gorini, E. Perelli Cippo, M. Tardocchi, A. Fazzi, G. Verona Rinati, C. Verona, M. Marinelli, E. Milani, C. D. Frost and E. M. Schooneveld, Single-crystal diamond detector for time-resolved measurements of a pulsed fast-neutron beam, Europhys. Lett, **92,** 68003 (2010).
67. M. Tardocchi, M. Nocente, I. Proverbio, V. G. Kiptily, P. Blanchard, S. Conroy, M. Fontanesi, G. Grosso, K. Kneupner, E. Lerche, A. Murari, E. Perelli Cippo, **A. Pietropaolo**, B. Syme, D. Van Eester, and G. Gorini, Phys. Rev. Lett. "Spectral Broadening of Characteristic g-Ray Emission Peaks from $^{12}C(^{3}He,p\gamma)^{14}N$ Reactions in Fusion Plasmas", Phys. Rev. Lett. **107**, 205002 (2011).
68. **A. Pietropaolo**, C. Andreani, M. Rebai, L. Giacomelli, G. Gorini, E. Perelli Cippo, M. Tardocchi, A. Fazzi, G. Verona Rinati, C. Verona, Marco Marinelli, E. Milani, C. D. Frost and E. M. Schooneveld, "Fission diamond detectors for fast-neutron ToF spectroscopy Europhys. Lett. **94**, 62001 (2011).
69. G. Festa, **A. Pietropaolo**, F. Grazzi, E. Barzagli, A. Scherillo, E.M. Schooneveld, "Neutron diffraction measurements at the INES diffractometer using a neutron radiative capture based counting technique, "Nucl. Instr. and Meth. A **654,** 373 (2011).
70. L. Giacomelli, C. Andreani, A. Fazzi, C.D. Frost, G. Gorini, E. Perelli Cippo, **A. Pietropaolo**, M. Rebai, H. Schuhmacher, M. Tardocchi, C. Verona , G. Verona Rinati and A. Zimbal, "Diamond detectors for fast neutron irradiation experiments", Nuclear Physics B (Proc. Suppl.) **215**, 242 (2011).
71. **A. Pietropaolo** and R. Senesi, "electron Volt neutron Spectrometers, Physics Reports, **508**, 45 (2011)- Invited review paper.
72. **A. Pietropaolo**, "On the possibility of using $^{235}U(n,f)$ resonance reactions for localized pulsed neutrons beams monitoring in the epithermal energy region at the ISIS spallation source", Nucl. Insrt. Meth. A **675,** 24 (2012).
73. L. Quintieri, R. Bedogni, B. Buonomo, M. De Giorgi, M. Chiti, A. Esposito, L. Foggetta, A. Gentile, G. Mazzitelli, P. Valente, J.M. Gomez-Ros, G. Festa, **A. Pietropaolo**, E. Reali, Physics Procedia **26**, 249 (2012)

74. **A. Pietropaolo**, G. Festa, F. Grazzi, E. Barzagli, A. Scherillo, E. M. Schooneveld and F. Civita, Europhysics Letters **95,** 48007 (2011).
75. C. Andreani, D. Colognesi, **A. Pietropaolo**, R. Senesi, Ground state proton dynamics in stable phases of water, Chem. Phys. Lett. **518**, 1 (2011)
76. F. Romanelli, M. Laxåbacka on behalf of the JET EFDA Contributors, Overview of JET results, Nucl. Fusion **51**, 094008 (2011).
77. M. Rebai, C. Andreani, A. Fazzi, C.D. Frost, L. Giacomelli, G. Gorini, E. Milani, E. Perelli Cippo, A. Pietropaolo, G. Prestopino, E. Schooneveld, M. Tardocchi, C. Verona and G. Verona Rinati, "Fission diamond detector tests at the ISIS spallation neutron source", Nucl. Phys. B (Proc. Suppl.) **215,** 313 (2011).
78. A. Filabozzi, E. Pace, **A. Pietropaolo**, "Enhancing the performances of a resonance detector spectrometer for deep inelastic neutron scattering measurements", Nucl. Instr. Meth. A, **673**, 1 (2012).
79. **A. Pietropaolo**, D. Colognesi, M. Catti, A.-C. Nale, M. A. Adams, A. J. Ramirez-Cuesta, and J. Mayers, "Proton vibrational dynamics in lithium imide investigated through incoherent inelastic and Compton neutron scattering", J. Chem. Phys. 137, 204309 (2012).
80. A.N. Smirnov, **A. Pietropaolo**, A.V. Prokofiev, E.E. Rodionova , C.D. Frost, S. Ansell, E.M. Schooneveld, G. Gorini, "Application of thin-film breakdown counters for characterization of neutron field of the VESUVIO instrument at the ISIS spallation source", Nucl. Instr. Meth. A **687**, 14 (2012).
81. F. Murtas, G. Croci, **A. Pietropaolo**, G. Claps, C.D. Frost, E. Perelli Cippo, D. Raspino, M. Rebai, N.J. Rhodes, E.M. Schooneveld, M. Tardocchi and G. Gorini, "Triple GEM gas detectors as real time fast neutron beam monitors for spallation neutron sources", JINST **7** P07021 (2012).
82. F. Murtas, **A. Pietropaolo**, G. Claps, L. Quintieri, O. Frasciello, D. Raspino, G. Celentano, "Investigation on thermal neutron detectors based on the Gas Electron Multiplier technology", IEEE Nuclear Science Symposium Conference Record, art. no. 6551980, pp. 4301-4303 (2012).
83. G. Claps, G. Croci, F. Murtas, **A. Pietropaolo**, S. Puddu, C.T. Severino, M. Silari, "Performance test of a triple GEM detector at CERN n-TOF facility", IEEE Nuclear Science Symposium Conference Record, art. no. 6551373, pp. 1564-1566 (2012).
84. F. Murtas, G. Croci, **A. Pietropaolo**, G. Claps, C.D. Frost, E. Perelli Cippo, D. Raspino, M. Rebai, N.J. Rhodes, E. M. Schooneveld, M. Tardocchi, G. Gorini, "Triple GEM gas detectors as real time fast neutron beam monitors for spallation neutron Sources", Journal of Instrumentation, 7 (7), art. no. P07021 (2012).
85. M. Rebai, L. Giacomelli, C. Andreani, A. Fazzi, C.D. Frost, E. Perelli Cippo, A. **Pietropaolo**, N. Rhodes, M. Tardocchi, E. Schooneveld and G. Gorini, "Diamond detectors for fast neutron measurements at pulsed spallation sources", JINST **7** C05015 (2012).
86. **A. Pietropaolo**, F. Murtas, G. Claps, L. Quintieri,1, D.Raspin, G.Celentano, A.Vannozzi, O.Frasciello, "A new ^{3}He-free thermal neutrons detector concept based on the GEM technology", Nucl. Instr. Meth. A **729**, 117 (2013).
87. G. Croci, G. Claps, M. Cavenago, M. Dalla Palma, G. Grosso, F. Murtas, R. Pasqualotto, E. Perelli Cippo, **A. Pietropaolo**, M. Rebai, M. Tardocchi, M. Tollin, G. Gorini, "NGEM fast neutron detectors for beam diagnostics", Nucl. Instr. Meth. A **720**, 144 (2013).
88. F. Romanelli and JET EFDA Contributors, "Overview of the JET results with the ITER-like wall" Nucl. Fusion **53**, 104002 (2013).
89. Elisa Barzagli, Francesco Grazzi, Francesco Civita, Antonella Scherillo, **Antonino Pietropaolo**, Giulia Festa, Marco Zoppi "Non-invasive characterisation of SIX Japanese hand-guards (tsuba)", Appl. Phys. A **113**, 1143 (2013).

90. L. Giacomelli, M. Rebai, A. Fazzi, E. Perelli Cippo, M. Tardocchi, C.D. Frost, A. Pietropaolo, N. Rhodes, E. Schooneveld, G. Gorini, "Pulsed neutron beam measurements with diamond detectors", Nucl. Instr. Meth. A A **720**, 125 (2013).

91. G Festa, **A Pietropaolo**, F Grazzi, L F Sutton, A Scherillo, L Bognetti, A Bini, E Barzagli4, E Schooneveld and C Andreani, "Simultaneous and integrated neutron-based techniques for material analysis of a metallic ancient flute", Meas. Sci. Technol. **24**, 095601 (2013).

92. M. Rebai, A. Milocco, L. Giacomelli, E. Perelli Cippo, M.Tardocchi, A. Fazzi, A. Pietropaolo and G. Gorini, "Response of a single-crystal diamond detector to fast neutrons", JINST **8**, P10007 (2013).

93. M. Ferrario, D. Alesini, M. Alessandroni, M.P. Anania, S. Andreas, M. Angelone, A. Arcovito, F. Arnesano, M. Artioli, L. Avaldi, D. Babusci, A.Bacci, A. Balerna, S. Bartalucci, R. Bedogni, M. Bellaveglia, F. Bencivenga, M. Benfatto, S. Biedron, V. Bocci, et al., **A. Pietropaolo**, M. Pillon, et al. , "IRIDE: Interdisciplinary research infrastructure based on dual electron linacs and lasers", Nucl. Instr. Meth. A **740**, 138 (2014).

94. G. Claps, F. Murtas, **A. Pietropaolo**, G. Celentano, A. Vannozzi, A. Santoni, L. Quintieri, R.A. Riedel, "^{3}He-free triple GEM thermal neutron detector", Europhys. Lett. **105**, 22002 (2014).

95. R. Faccini, A. Pilloni, A. D. Polosa, M. Angelone, E. Castagna3, S. Lecci, **A. Pietropaolo**, M. Pillon, M. Sansovini, F. Sarto, V. Violante, R. Bedogni, A. Esposito, "Search for neutron flux generation in a plasma discharge electrolytic cell", Eur. Phys. J. C **74**, 2894 (2014).

96. D. Alloni, P. De Felice, M. Palomba, **A. Pietropaolo**, M. Pillon, M. Prata, L. Quintieri, A. Santagata, and P. Valente, "Italian Neutron Sources", Eur. Phys. J. Plus **129**, 255 (2014).

97. M. Pillon, M. Angelone, A. Pizzuto, A. Pietropaolo, "Feasibility study of an intense D–T fusion source: The New Sorgentina" , Fus. Eng. Des. **89**, 2141 (2014).

98. G. Celentano, A. Vannozzi, A. Mancini, A. Santoni, **A. Pietropaolo**, G. Claps, E. Bemporad, M. Renzelli' F. Murtas, L. Quintieri, "^{10}B enriched film deposited by e-beam technique on Al_2O_3 substrates for high efficiency thermal neutron detector", Surface & Coatings Technology **265**, 160 (2015).

99. F. Sacchetti, N. Colonna, R. Faccini, B. Guerard, R. Hall-Wilton, F. Murtas, C. Petrillo, **A. Pietropaolo**, N. Rhodes, L. Quintieri, M. Tardocchi, and P. Valente, "^{3}He-free neutron detectors and their applications", Eur. Phys. J. Plus **130**, (2015) 53.

100. M. Girolami, A. Pietropaolo, A. Bellucci, P. Calvani, D. M. Trucchi, "High-resolution wide-range dynamic neutron monochromators", Europhys. Lett. **109**, 66001 (2015).

101. V. Merlo, M. Salvato, M. Cirillo, M. Lucci, I. Ottaviani, A. Scherillo, G. Celentano and A. Pietropaolo, "Hybrid Superconducting Neutron Detectors", Appl. Phys. Lett. **106**, 113502 (2015).

102. S. Loreti, **A. Pietropaolo**, "Assessment of the neutron emission anisotropy factor of a sealed AmBe source by means of measurements and Monte Carlo simulations", Nucl. Instr. Meth. A **797**, 201 (2015)

103. A. Pietropaolo, P. Console Camprini, P. Agostini, R. Amendola, M. Angelone, D. Bernardi, F. Bruni, M. Capogni, D. Colognesi, R. Faccini, A. Filabozzi, D. Flammini, F. Fiori, M. Frisoni, F. Grazzi, M. Pillon, A. Pizzuto, L. Quintieri, F. Sacchetti, P. Valente, The New Sorgentina Fusion Source-NSFS: 14 MeV neutron for fusion and beyond, IoP confernce series, VI European Conference on Neutron Scattering (ECNS2015) Journal of Physics: Conference Series 746 (2016) 012037IOP Publishing Journal of Physics: Conference Series 746 (2016) 012037.

104. R. Bedogni, A. Sperduti, **A. Pietropaolo**, M. Pillon, A. Pola, J.M. Gómez-Ros, Experimental characterization of HOTNES: A new thermal neutron facility with large homogeneity area, Nucl. Instr. Meth. A 843, 18 (2017).

105. R. Pilotti, M. Angelone, M. Marinelli, E. Milani, G. Verona-Rinati, C. Verona, G. Prestopino, R. M. Montereali, M. A. Vincenti, E. M. Schooneveld, A. Scherillo, and A. Pietropaolo, High-temperature long-lasting stability assessment of a single-crystal diamond detector under high-flux neutron irradiation, Europhys. Lett. 116 (2016) 42001.

106. E. M. Schooneveld, **A. Pietropaolo**, C. Andreani, E. Perelli Cippo, N. J. Rhodes, R. Senesi, M. Tardocchi and G. Gorini, Radiative neutron capture as a counting technique at pulsed spallation neutron sources: a review of current progress, Rep. Prog. Phys. **79**, 94301. (2016), **invited review paper**.

107. D. Flammini, R. Pilotti and **A. Pietropaolo**, A possible approach to 14 MeV neutron moderation: A preliminary study case, Applied Radiation and Isotopes **125**, 129 (2017).

108. V. Merlo, M. Salvato, M. Lucci, I. Ottaviani M. Cirillo, A. Scherillo, E. M. Schooneveld, A. Vannozzi, G. Celentano and **A. Pietropaolo**, Meta-material for nuclear particle detection, J. Phys. D: Appl. Phys. **50**, 045601 (2017).

109. M. Catti, O. Fabelo, A. Filabozzi, A. Pietropaolo, S. Tosti, A. Pozio, A. Santucci, Neutron diffraction study of the $Pd_{0.772}Ag_{0.228}D$ on membrane for hydrogen separation, Int. J. of Hydr. Energy **42**, 6787 (2017).

110. Luigi Lepore, Romolo Remetti, **Antonino Pietropaolo**, proposal for an alternative use of prompt-Self Powered Neutron Detectors: Online spectral-deconvolution for monitoring high-intensity neutron flux in LFRs, Fus. Eng. Des. 322, 536 (2017).

111. R. Bedogni, A. Sperduti, A. Pietropaolo, M. Pillon, A. Pola, J.M. Gómez-Ros, "Experimental characterization of HOTNES: A new thermal neutron facilitywith large homogeneity area", Nuclear Instruments and Methods in Physics Research A 843 (2017) 18–21.

112. A. Sperduti, **A. Pietropaolo**, et al. "Results of the first user program on the Homogeneous Thermal NEutron Source HOTNES (ENEA/INFN)", JINST **12,** 12029 (2017).

113. G. Festa, F. Grazzi, A. Pietropaolo, A. Scherillo, E.M. Schooneveld, "Thermal neutron radiative capture on cadmium as a counting technique at the INES beam line at ISIS: A preliminary investigation of detector cross-talk", Appl. Rad. Isot. **130,** 264 (2017).

114. M. Capogni, **A. Pietropaolo**, L. Quintieri, A. Fazio, P. De Felice, M. Pillon, A. Pizzuto, "^{99m}Tc by ^{99}Mo produced at the ENEA-FNG facility of 14 MeV neutrons", Appl. Rad. Isot. **134**, 105 (2018).

115. A. Santoni, G. Celentano, G. Claps, A. Fedrigo, C. Höglund, F. Murtas, F. Rondino, A. Rufoloni, A. Scherillo, S. Schmidt, A. Vannozzi, **A. Pietropaolo**, "Physical–chemical characterization of a GEM side-on 10B-based thermal neutron detector and analysis of its neutron diffraction performances", Nuclear Inst. Meth. A **906**, 83 (2018).

116. **A. Pietropaolo**, G. Claps, A. Fedrigo, F. Grazzi, C. Hoglund, F. Murtas, A. Scherillo, S. Schmidt and E. M. Schooneveld, "Neutron diffraction measurements on a reference metallic sample with a high-efficiency GEM side-on 10B-based thermal neutron detector", Europhys. Lett. **121** (2018) 62001

117. C. Verona, G. Verona-Rinati, S. Platt, E. M. Schooneveld and A. Pietropaolo, "Comparison between silicon and single-crystal diamond photodiodes for localized pulsed fast neutron detection", Europhys. Lett. **121**, 68002 (2018).

118. **A. Pietropaolo**, F. Andreoli, M. Angelone, U. Besi Vetrella, S. Fiore, S. Loreti, G. Pagano, R. Pilotti and M. Pillon, "The Frascati Neutron Generator: A multipurpose facility for physics and engineering", J. Phys. Conf. Ser. **1021** (2018) 012004.

119. Michele Catti, Oscar Fabelo, Alessandra Filabozzi, **Antonino Pietropaolo**, Alessia Santucci, Silvano Tosti, "Kinetics of deuteration of the Pd0.772Ag0.228 alloy with a/b phase transition by in-situ neutron diffraction", Journal of Alloys and Compounds **790,** 502 (2019).
120. R. Bedogni, J.M. Gómez-Ros, K. Alikaniotis, G. Pagano, M. Pillon, **A. Pietropaolo**, M. Costa, "CYSP-BEAM: A multi-detector directional spectrometer for in-beam neutron spectrometry", Nucl. Inst. Meth. A **927**, 151 (2019).
121. **A. Pietropaolo**, D. Flammini, F. Moro, G. Pagano, M. Pillon and R. Bedogni, "On the slowing-down of 14 MeV fusion neutrons: A spectrometry benchmark and perspectives on future neutron science facilities" Europhys. Lett. **126**, 12001 (2019).

Other Publications

1. **A. Pietropaolo** and M. Tardocchi, "Electron-volt neutron spectroscopy at a pulsed neutron source using a Resonant detector technique", Notiziario Neutroni e Luce di Sincrotrone **6**, 3 (2001).
2. **A. Pietropaolo**, R. Senesi, C. Andreani, G. Gorini, M. Tardocchi, "New perspectives for electron Volt neutron spectroscopy on inverse geometry instruments at pulsed sources", ICANS-XVI Proceedings of the 16th Meeting of the international collaboration on advanced neutron sources -2003, Dusseldorf-Neuss, Germany 12-15 May 2003, Vol III pag. 223 (2003).
3. C. Andreani, **A. Pietropaolo**, R. Senesi, G. Gorini, M. Tardocchi, N. Rhodes, E. M. Schooneveld, "Condensed matter studies with 20-100 eV neutrons: effective detection systems for high inelastic neutron scattering and deep inelastic neutron scattering", invited article in the Highlights of ISIS Science, The Rutherford Appleton Laboratory - ISIS Facility Annual Report 2003, **CCLRC Technical Report RAL-TR** (2003).
4. C. Andreani, **A. Pietropaolo**, R. Senesi, G. Gorini, E. Perelli Cippo, M. Tardocchi, N. Rhodes, E. M. Schooneveld, " Density of states in ICE measured using the new VLAD detector technology", articolo su invito in Highlights of ISIS Science, The Rutherford Appleton Laboratory - ISIS Facility Annual Report 2004, **CCLRC Technical Report RAL-TR** (2004).
5. C. Andreani, S. Imberti, **A. Pietropaolo**, R. Senesi, G. Gorini, E. Perelli Cippo, M. Tardocchi, T. Abdul-Redah, J. Mayers, N. J. Rhodes, E. M. Schooneveld, J. Tomkinson, "High Energy Inelastic Neutron Scattering on the VESUVIO spectrometer at ISIS", Neutron News **16**, 30 (2005).
6. R. Senesi, C. Andreani, D. Fernandez-Canoto, V. Garbuio, G. Gorini, S. Imberti, E. Perelli Cippo, **A. Pietropaolo**, N. J. Rhodes, E. M. Schooneveld, M. Tardocchi, "Neutron spectroscopy of High Energy Excitations on the VESUVIO spectrometer", Proceedings of the 17th Meeting of the international collaboration on advanced neutron sources (ICANS XVII) April 25-29, 2005 Santa Fe, New Mexico, United States of America, Vol. III, pag. 1009.
7. **A. Pietropaolo**, C. Andreani, D. Fernandez-Canoto, V. Garbuio,G. Gorini, S. Imberti, E. Perelli Cippo, R. Senesi, M. Tardocchi, "Resolution in High energy Inelastic Neutron Scattering using the VESUVIO spectrometer", Proceedings of the 17th Meeting of the International Collaboration on Advanced Neutron Sources (ICAN XVII) April 25-29, 2005 Santa Fe, New Mexico, United States of America, Vol III, pag. 698.

Notes and tecnical reports

1. C. Andreani, **A. Pietropaolo**, R. Senesi, G. Gorini, M. Tardocchi, A. Bracco, N. Rhodes, E. M. Schooneveld , "Electron Volt spectroscopy at a pulsed neutron source using a resonance detector technique", CCLRC Technical Report **RAL-TR-2002-015** (2002).
2. **Antonino Pietropaolo** and Viviana Garbuio, "Data analysis programs for Deep Inelastic Neutron Scattering data on the **VESUVIO** spectrometer", Internal Report- **ROM2F/2005/23** Dipartimento di Fisica, Università degli Studi di Roma "Tor Vergata" (2005).
3. **A. Pietropaolo**, C. Andreani, M. P. De Pascale, G. Festa and L. Andreanelli, G. Mazzenga, E. Reali, "Design and realization of a xyz-ω table for automated sample movements in PGAI/NT experiments", Internal Report- **ROM2F/2006/19,** Dipartimento di Fisica, Università degli Studi di Roma "Tor Vergata" (2006).
4. M. Capogni, **A. Pietropaolo**, L. Quintieri, 99mTc production via 100Mo(n,2n)99Mo reaction using 14 MeV neutrons from a D-T neutron source: discussion for a scientific case, **ENEA internal report RT/2016/32/ENEA.**