

Curriculum Vitae, Dr. Antonino Picciotto, PhD

First Name: Antonino

Family Name: Picciotto



➤ Actual position and research interests in brief – 2006/2025

Since 2006, Dr. Antonino Picciotto has been working at Fondazione Bruno Kessler (FBK) in the Micro-Nano Fabrication Facility division (MNF) as R&D researcher and clean room process engineer.

From 2021 to 2025 he coordinated the research and development activity of the MNF clean rooms as Senior Researcher.

In this role, he was working on the realization and microfabrication of particle and radiation detectors for scientific and industrial applications, participating and leading national and international projects with research institutes as the Italian National Institute of Nuclear Physics (INFN), Italian National Institute of Astrophysics (INAF), universities as Politecnico di Milano and many others, and private international companies.

In the MNF group, **since 2006**, he was R&D responsible for PECVD (plasma enhancement chemical vapor deposition), LPCVD (low-pressure chemical vapor deposition), ion implantation and ellipsometry systems.

From 2010, Dr. Picciotto was leading and coordinating for FBK, a pioneering activity in the design and realization of advanced materials, based and non-based on silicon technology, for application to non-conventional particles acceleration systems (laser-driven) and to the clean nuclear fusion reaction processes in collaboration with European partners as the Prague Asterix Laser System (PALS) facility, the HILASE Institute and in particular with the pan-European project defined as, Extreme Light Infrastructure institute (ELI-ERIC), in Prague, Czech Republic.

In this framework in 2013, winning an international Laser Lab European project by the, he led as PI an international teams of scientists from several countries in a pioneering experiment in the field of the ultra-clean laser driven boron proton nuclear fusion, demonstrating for the first time the feasibility of the latter by an advanced boron-hydrogen silicon target produced in the Micro-Nano Facility clean room of FBK. The above experiment was carried on at the at the PALS laboratory (Czech Republic).

The success of these kinds of experiments has led to the publication of several works in high impact journals **and in 2016** to the publication in the journal called Fusion, in collaboration with the Nobel Prize winner for physics professor Gerard Morou.

He is involved, as Fondazione Bruno Kessler proponent, in a series of preliminary experiments on the possibility to enhance the efficacy of the standard proton-therapy techniques, by the injection of the ultra-clean boron-proton fusion, in collaboration with the INFN-LNS Institute, the ELI-ERIC Institute and many others.

Together with scientific activities, Dr. Picciotto **since 2012** worked and coordinated the activity of scouting, tenders writing and systems acquisition and acceptance for FBK and for the MNF facility like the FESR_1 and FESR_2 (Fondo Europeo di Sviluppo Regionale) projects as well as the IPCEI_ME/CT (Importanti Progetti di Comune Interesse Europeo) and the WBG_Chips Act JU (Wide Band Gap, Chips Act Joint Undertaking) for the development and realization of new laboratories and new technologies in the framework of the silicon carbide based processes, germanium of silicon devices and integration. In this framework **since 2024**, Dr. Picciotto is coordinating the total acquisition of the systems and machinery for FBK.

➤ Education

2006: PhD in Nuclear Physics at the University of Messina and at the Italian National Institute of Nuclear Physics, with a thesis work titled: “*Temperature characterization of plasmas generated by high power pulsed lasers*”. This work was supported by the INFN projects named as *PLAIA (Plasma Laser Ablation for Ion Acceleration)* and *PLATONE (Plasma Laser Ablation to Obtained Near Electrical field)*. During the PhD course, he worked also at the National Institute of Nuclear Physics (INFN) in Catania, and he carried out a Marie Curie Fellowship stage for 6 months (contract N°: 434/53/04) at the Institute of Physics of the Czech Republic Science Academy (ASCR) and PALS Laser Centre in Prague, Czech Republic.

2002: Master’s degree in applied physics: in the field of laser plasma systems at University of Messina and at Italian National Institute of Nuclear Physics-South National Laboratories (INFN-LNS) in Catania, with a thesis title: “*A study of non-equilibrium plasmas generated by infrared pulsed laser*”. This work was supported by the INFN project *ECLISSE*.

1996/1997: Diploma from the State Nautical Technical Institute “Caio Duilio” of Messina, “captains” specialization

➤ Main results achieved on detectors realization:

Since August 2006: Dr. Picciotto was involved at Fondazione Bruno Kessler, as class A clean room process engineer in the realization of several kinds of particles and radiations silicon detectors, like silicon solar cells, phototransistors, silicon photo multiplier (SiPM) and very low noise silicon drift detectors (SDD). In this last sector, Dr. Picciotto contributed directly on the realization of many type of large areas detectors in the framework of the INFN-REDSOX project and the ESA (European Space Agency) – ASI (Italian Space Agency) – CNSA (Chinese National Space Agency) projects, define first as LOFT (Large Observatory For X-ray Timing) and then as *eXTP (enhanced X-ray Timing and Polarimetry)* where in 2016 his group, MNF, realized the largest monolithic silicon drift detectors fully functional in the world.

Dr. Picciotto was visited researcher in 2013 and in 2016, at the Horiba ltd Company in Kyoto, Japan, as micro technology expert consultant for the Horiba personnel in the framework of silicon drift detectors realization for the NEXRAY-Horiba project.

➤ Main national and international scientific and industrial projects in the field of the nano-micro technologies and on the radiation and particle detectors field from 2006 to today:

➤ ***NEXRAY project – Horiba ltd***

Description: Microfabrication of soft X-ray detectors (silicon drift detectors) for spectroscopic applications.

▪ ***Nano On Micro project (NAOMI)***

Description: Fabrication of silicon waveguides.

▪ ***LANCER project***

Description: Fabrication of silicon waveguides in the infrared range.

- **High Concentration Solar Cells (HCSC) project**
Description: Creation of anti-reflective layers to optimize the efficiency of solar cells.
- **CNES-RHT-2 project**
Description: Microfabrication of near-infrared phototransistors for space applications.
- **Aculab – Cmut project**
Description: Development of low mechanical stress silicon nitride-like PECVD materials for the realization of acoustic sensors for ultrasound.
- **Intel project**
Description: Realization of MOS-FET type sensors for the detection of Hydrogen at low concentrations (Testing) for Varian Inc (Italy, United States).
- **NEMO project:** (“Nano-based capsule-Endoscopy with Molecular Imaging and Optical biopsy”)
Description: Realization of Fabry-Perot interferometers for nano devices operating inside the human body.
- **Surrey project:**
Description: Project in collaboration with the University of Surrey, UK, for the development of infrared waveguides.
- **ANNA project:** (“Analytical Network for Nanotechnology”)
Description: Project in collaboration with several European research centers for the development of devices for nano and microelectronics.
- **eXTP project (enhanced X-ray Timing and Polarimetry) B1/B2 phase**
Description: Realization of very large area silicon drift detectors for astrophysical applications
- **LOFT project (Large Observatory for X-ray Timing)**
Description: Realization of very large area silicon drift detectors for astrophysical applications
- **EXTENT project (Enhanced X-ray Timing with European New Technology)**
Description: Realization of very large area silicon drift detectors for astrophysical applications H2020-SPACE-2018-2020: SPACE 2018-2020 / Pillar 2: Industrial Leadership / Work Programme part: 5.iii. Leadership in Enabling and Industrial Technologies – Space
- **HERMES-SP project (High Energy Rapid Modular Ensemble of Satellites – Scientific Pathfinder)**
Description: Realization on constellation of nanosatellites for gamma ray burst detection
- **THESEUS project ESA (Transient High-Energy Sky and Early Universe Surveyor)**
Description: Realization of satellites for gamma ray burst detection
- **HERMES-SP project ESA-ASI (High Energy Rapid Modular Ensemble of Satellites – Scientific Pathfinder)**
Description: Realization on constellation of nanosatellites for gamma ray burst detection
- **ARDESIA project (Array of Detectors for Synchrotron radiation Applications)**

Description: *Development of a new detection system based on low-leakage monolithic arrays of Silicon Drift Detectors,*

- **BNA- private company project**

Description: *Realization of silicon drift detectors for spectroscopic applications*

- **BNA – XW- private company project**

Description: *Realization of free-standing membrane for silicon detectors applications*

- *Main national and international scientific and industrial projects in the field of nuclear fusion related applications from 2022 to today:*

- **FUSION – INFN- Project**

Description: (Fusion studies of proton boron neutron less reaction in laser-generated plasma)

Local Responsible for the TIFPA - INFN section in Trento and Work Package leader for the development of the “targetry” activity at FBK.

- **PROBONO-European Cost Action project**

Description: (*Proton Boron Nuclear Fusion from energy production to medical applications*)

Networking, experiments and related activities

Work Package leader for the development of the “targetry” activity at FBK.

- *Project Leader for international experiments from 2012 to today:*

- **2019:** Project leader and international experiment leader at the HiLASE Institute of the science academy of the Czech Republic, Prague titled: “Laser driven ion implantation for nano structures creation in silicon and germanium materials.”

- **2018:** Project leader and international experiment leader at the HiLASE Institute of the science academy of the Czech Republic, Prague titled: “Generation of nanovoids in germanium by laser driven ion implantation.”

- **2012:** Project leader and international experiment leader for the European commission proposal defined Laser Lab Europe N°PALS001770 titled: “High energy proton acceleration by thin hydrogenated-doped silicon dielectric targets using a sub-nanosecond laser” PALS laboratory, Prague, Czech Republic

- *Editorial Activities for Scientific Journals*

- ❖ **Guest Associate Editor for Interdisciplinary Physics and Topic Editor 2020** of “*Advanced Targets for Laser-Based Particle Acceleration and Nuclear Reactions in Plasma*” *Frontiers in Physics* – <https://www.frontiersin.org/research-topics/18392>
- ❖ **Guest Editor for Sensors on the topic:** “*Special Issue Advanced Micro and Nano Technologies for Gas Sensing*” *Sensors* - <https://www.mdpi.com/>
- **Reviewer Activities for the following Scientific Journals**
Journal of Instrumentation, *Frontiers in Physics*, *Nuclear Instruments and Methods A and B*, *Review of Scientific Instruments*, *Applied Radiation and Isotopes*, *Laser and Particle Beams* and many others
- **Inventor or Co-Inventor of International Patents**
 - ✓ D.Margarone, G.Korn, **A.Picciotto**, P.Bellutti, “*Nuclear fusion fixed target, device to generate nuclear fusion and method of generating nuclear fusion*” CZ20130596 (A3)—2015-02-18- published and granted in Czech Republic on 01/12/2016
 - ✓ D.Margarone, G.Korn, **A.Picciotto**, P.Bellutti, “*Laser Fusion System and Methods*” EP2833365 (A1) published and granted
 - ✓ L.Giuffrida, D.Margarone, G.Korn, G.A.P Cirrone, **A.Picciotto**
“*Device and method for imaging and enhanced proton-therapy treatment using nuclear reactions*” submitted to EPO (2016), EP3266470A1, in collaboration with INFN LNS – ELI
 - ✓ P.Bellutti, M.Boscardin, **A.Picciotto**, D.Matsunaga, N.Zorzi, “*Semiconductor detector, radiation detector and radiation detection apparatus*” published and granted US10094939 (B2) 2018-10-09
 - ✓ G.Borghi, F.Ficorella, G.Giacomini, D.Matsunaga **A.Picciotto**, N.Zorzi: “*Radiation detection element, radiation detector and radiation detection apparatus*” published and granted US10379231 (B2) 2019-08-13
 - ✓ **A.Picciotto**, F.Ficorella, D.Matsunaga, K.Yasui, N.Zorzi: “*Radiation detector and radiation detector device*” WO2018225563 (A1) published 2019-01-09
- **Invited talks to international conferences.**
 - *EMN Light- Matter Interactions Meeting* taking place in Singapore, from May 10 to 13, 2016
 - *EMN Meeting on Energy and Sustainability* 2016 during November 28 to December 2, 2016, in Osaka
 - *Laser lab-Europe User Meeting*, 27-29 October 2019, Coimbra, Portugal
 - *Nano Innovation Conference and School of Nanotechnology* - 18 – 23 September 2023, Rome, Italy
 - *Nano Innovation Conference and School of Nanotechnology* - 9 – 13 September 2024, Rome, Italy
 - *Nano Innovation Conference and School of Nanotechnology* 15– 19 September 2025, Rome, Italy
 - *Conference on Research and Applications of Plasmas PLASMA-2025*, Warsaw Poland
(<https://plasma2025.ipplm.pl/>)

➤ Oral Communications to international conferences

- PPLA_2003 *Plasma Production by Laser Ablation* 18-19/09/2003
- 2nd Workshop *Production of Intense Beams of Highly charged Ions* and 2nd Workshop *Plasma Production by Laser Ablation* 08-11/06/2005
- SIF_2005 *Congresso Nazionale - Società Italiana di Fisica* 26/09/2005 - 01/10/2005
- *Plasma Production by Laser Ablation* PPLA 2007 14-16/06/2007
- 2nd ELIMED Workshop and Panel 18-19/10/2012
- Società Italiana di Fisica_2014 22-26/09/2014
- Mini Workshop and Meeting *Towards Proton Boron Capture Therapy* 05-06/04/2018
- *TREDI_2019_14th* Trento Workshop on Advanced Silicon Radiator Detectors 25-27/02/2019
- TARG4: *4th Targetry for High Repetition Rate Laser-Driven Sources Workshop* 09-12/06/2019
- *Laserlab-Europe User Meeting*, 27-29 October 2019, Coimbra, Portugal
- *The Third International Workshop on Proton Boron Fusion* October 2-5, 2023, Prague and Dolny Brezani, Czech Republic
- ENRIS 2023 (EURONANO LAB), Paris, 15-17 May, 2023

➤ Scientific awards

- **2006:** Winner of one-year contract at the Italian Institute for Energy and Environment (ENEA) in Frascati, for a project connected to the realization of a “*Thomson parabola spectrometer for the determination of the ions distribution velocities*” in the framework of the inertial fusion confinement studies. He refused the position to move at Fondazione Bruno Kessler, in Trento.
- **2005:** Kiwanis Junior Club award for scientific divulgation, Messina, Italy.
- **2004:** Marie Curie Fellowship winner for 6 months (contract N°: 434/53/04) at the Institute of Physics of the Czech Republic Science Academy (ASCR) and PALS Laser Centre in Prague, Czech Republic.

➤ Memorandum of Understanding

2020-2023: Dr. Picciotto was also promoter and creator of the following MoU's between FBK and the ELI-ERIC pan European Consortium and the HILASE facility of the Czech Republic. The goal of these agreements is the progressing on science and technology activities, ideas and personal exchanging and collaboration in the European project framework,

➤ Conferences organization and scientific committee

- **2024:** Workshop: “A first step on Silicon Carbide technologies for incoming projects at FBK”
Local Organizer and Scientific committee member , Trento, Italy
- **2022-2024:** Workshop: “International Workshop of Proton Boron Fusion”, Catania INFN-LNS - Italy (2022), Prague ELI ERIC- Czech Republic (2023), Frascati-ENEA (2024).
Scientific committee member
- **2018:** Workshop: “Towards Proton Boron Capture Therapy”, FBK , Povo, Trento, Italy
Local Organizer and Scientific committee member , Trento, Italy

➤ Scientific Associations

2015: INFN and TIFPA (Trento Institute for Fundamental Physics and Applications)

2010: SIF (Società Italiana di Fisica)

➤ National Scientific Qualification for University Teaching 2020

- **June 2020:** National Scientific Qualification as **Associate Professor** (II°) for the following academic field: 02/B1, Experimental Physics of Matter; validation from 06/07/2020 to 06/07/2029
- **July 2020:** National Scientific Qualification as **Associate Professor** (II°) for the following academic field: 02/A1, Experimental Physics of Fundamental Interactions (Nuclear and Particles Physics); validation from 10/07/2020 to 10/07/2029

➤ Academic activities

- **April 2019:** Member of the faculty board of the Doctorate course (PhD) on Industrial Innovation at the University of Trento, Italy
- **June 2019:** Member of the executive board of the Doctorate course (PhD) on Industrial Innovation at the University of Trento, Italy

➤ Didactical Experience as Professor Assistant at the Physics Department of University of Messina (2002-2006):

- Physics – Biological Sciences master degree course;
- Physics of Ionizing and Non Ionizing Radiation – Analysis of Natural and Anthropological Risks master degree course;
- Informatics- Veterinary Medicine master degree course;
- Physics- Informatics master degree course;
- Experimental Physics Laboratory: Biological Sciences master degree course;
- Experimental Physics Laboratory: Biology and Marine Ecology master degree course; (BEM);

- Didactical Experience as Professor for the 2° Master level on nano and microtecnology at Trento University Physics Department and at Fondazione Bruno Kessler (2009)
- Theory on LPCVD and PECVD deposition of dielectric materials for microelectronic applications
- Theory on wet and dry etching materials techniques for microelectronic applications
 - University tutor and co-tutor of the following PhD thesis
- **2024:** “Design of a small particle accelerator on a chip” TIFPA and Trento University
- **2025:** “Characterization and banding silicon strips for high energy particle bunches deflection” University of Ferrara
- Knowledge of languages:
 - ✓ English: (fluently) B2
 - ✓ B1_ PET certification received during university degree course
 - ✓ Italian: (mother tongue)
- Peer Review Publications

Dr. A.Picciotto is author or co-author, of **153 papers** on international scientific peer review journals and conference proceedings (Scopus source). **Currently, his h-index is 26 with 2728 citations** (May_2025)

- *Functional tests of detector assembly demonstration model of the eXTP wide field monitor: system description and results*
Antonelli M, Zampa G., Bonvicini V., Cirrincione D., Orzan G., Rachevski A, Rashevskaya I, Zampa N., Aitink-Kroes G., de la Rie R., in 't Zand J.J.M., Laubert P., Zwart F., Tacken R., Ceraudo F., Della Casa G., Evangelista Y., Feroci M., Gálvez J.-L., Hernanz M., Baudin D., Meuris A., Bellutti P., Borghi G., Centis Vignali M., Demenev E. Ficorella F., Pepponi G., **Picciotto A.**, Samusenko A., Zorzi N
Journal of Instrumentation, Volume 20, Issue 41, 04/2025, C04010
- *Alpha particle production from novel targets via laser-driven proton-boron fusion*
Molloy D.P., Orecchia D., Tosca M., Milani A., Valt M., McNamee A., Fitzpatrick C.R.J., Kantarelou V., Kennedy J.P., Martin P., Nersisyan G., Biliak K., Protsak M., Nikitin D., Borghesi M., Choukourov A., Giuffrida L., Kar S., Maffini A., Passoni M., **Picciotto A.**, Margarone D.
Physical Review Research, Volume 7, Issue 1, 0/1 2025, 013230
- *Ammonia borane-based targets for new developments in laser-driven proton boron fusion*
A.Picciotto, M. Valt, D.P. Molloy, A. Gaiardo, A. Milani, V. Kantarelou, L. Giuffrida, N. Gagik, A. McNamee, J.P. Kennedy, C. Fitzpatrick, M. Philip, D. Orecchia, A. Maffini, P. Scauso, L. Vanzetti, T.I.C. Turcu, L. Ferrario, R. Hall-Wilton, D. Margarone

- *Spectroscopic Time-Resolving Observatory for Broadband Energy X-ray high-energy modular array*
Hutcheson, A. L., Feroci, M., Argan, A., Antonelli, M., Barbera M., Bayer J., Bellutti, P., Bertuccio, G., Bonvicini, V., Cadoux, F., Campana, R., Vignali C.M., Ceraudo, F., Christophersen, M., Cirrincione, D., D'Anca, F., De Angelis, N., De Rosa, A., Della Casa, G., Del Monte, E., Dilillo, G., Evangelista, Y., Favre, Y., Ficorella, F., Fiorini, M., Ford, Jeremy J., Heddermann, P., Grassi, M., Grove, J. E., Guzman, A., Kole, M. R., Lo Cicero, U., Lombardi, G., Malcovati, P., Michalska, M., Meuris, A., Minervini, G., Nowosielski, W., Nuti, Alessio., Pacciani, L., Pepponi, G., Persyn, S. C., **Picciotto, A.**, Pliego, S., Rachevski, A., Rashevskaya, I., Ray, Paul S., Samusenko, A., Santangelo, A., Schanne, S., Schwendeman, C. L., Sleator, C., Smith, J. R., Sveda, L., Svoboda, J., Tenzer, C., Todaro, M., Trois, A., Vacchi, Andrea, Xiong, Hao
Journal of Astronomical Telescopes, Instruments, and Systems Volume 10, Issue 41 October 2024 Article number 042503
- *HERMES: Gamma-ray burst and gravitational wave counterpart hunter*
Ghirlanda G., Nava L., Salafia O., Fiore F., Campana R., Salvaterra R., Sanna A., Leone W., Evangelista Y., Dilillo G., Puccetti S., Santangelo A., Trenti M., Guzmán A., Hedderman P., Amelino-Camelia G., Barbera M., Baroni G., Bechini M., Bellutti P., Bertuccio G., Borghi G., Brandonisio A., Burderi L., Cabras C., Chen T., Citossi M., Colagrossi A., Crupi R., De Cecio F., Dedolli I., Del Santo M., Demenev E., Di Salvo T., Ficorella F., Gačnik D., Gandola M., Gao N., Gomboc A., Grassi M., Iaria R., La Rosa G., Lo Cicero U., Malcovati P., Manca A., Marchesini E.J., Maselli A., Mele F., Nogara P., Pepponi G., Perri, **Picciotto A.**, Pirrotta S., Prinetto J., Quirino M., Riggio A., Řípa J., Russo F., Selčan D., Silvestrini S.
Astronomy and Astrophysics Volume 6891 09/2024 Article number A175
- *Multi-cycle Chamber Conditioning for Plasma Etching of SiO₂: From Optimization to Stability in Lot Processing*
A. Nawaz, A. Cian, L. Ferrario, **A. Picciotto**
Plasma Chemistry and Plasma Processing, 2024, 090-024-10493-5
- *Borane ($BmHn$), Hydrogen rich, Proton Boron fusion fuel materials for high yield laser-driven Alpha sources*, I.C.E Turcu, D. Margarone, L. Giuffrida, **A. Picciotto**, C. Spindloe, A.P.L. Robinson, and D. Batani. *Journal of Instrumentation*, 2nd International Workshop on Proton-Boron Fusion, Catania, Italy 5–8 September 2022, published 2024.
- *A Platform for Laser-Driven Ion Sources Generated with Nanosecond Laser Pulses in the Intensity Range of 10¹³–10¹⁵ W/cm²*.
Giuffrida L., Istokskaia V., **Picciotto A.**, Kantarelou V., Barozzi M., Dell'Anna R., Divoky M., Denk O., Giubertoni D., Grepl F., Hadjikyriacou A., Hanus M., Krasa J., Kucharik M., Levato T., ; Navratil P., Pilar J., Schillaci F., Stancek S., Tosca M., Tryus M., Velyhan A., Lucianetti A., Mocek T., Margarone D.
Quantum Beam Science, 2024, 8, 1
- *A multi-MeV alpha particle source via proton-boron fusion driven by a 10-GW tabletop laser*
Istokskaia, V., Tosca, M., Giuffrida, L., **Picciotto, A.**, ...Mocek, T., Margarone, D.
Communications Physics, 2023, 6(1), 27

- *Extended characterization of alpha particles via laser-induced $p\text{-}^{11}\text{B}$ fusion reaction in silicon hydrogenated boron-doped thin targets*
Milluzzo, G., Belloni, F., Petringa, G., **Picciotto, A.**, ...Margarone, D., Cirrone, G.
Journal of Instrumentation, 2023, 18(7), C07022
- *A new collimated multichannel modular detection system based on Silicon Drift Detectors*
Cirrincione, D., Antonelli, M., Aquilanti, G., **Picciotto, A.**, ...Zorzi, N., Vacchi, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2023, 1049, 168118
- *eXTP Large Area Detector: Qualification procedure of the mass production*
Rachevski, A., Antonelli, M., Bellutti, P., **Picciotto, A.**, ...Zorzi, N., Vacchi, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2023, 1046, 167750
- *Corrigendum: Plasma polymers as targets for laser-driven proton-boron fusion* (Frontiers in Physics, (2023), 11, (1227140), 10.3389/fphy.2023.1227140) Tosca, M., Molloy, D., McNamee, A., **Picciotto, A.**, ...Margarone, D., Choukourov, A.
Frontiers in Physics, 2023, 11, 1319966
- *Plasma polymers as targets for laser-driven proton-boron fusion*
Tosca, M., Molloy, D., McNamee, A., **Picciotto, A.**, ...Margarone, D., Choukourov, A.
Frontiers in Physics, 2023, 11, 1227140
- *A Methodology for the Discrimination of Alpha Particles from Other Ions in Laser-Driven Proton-Boron Reactions Using CR-39 Detectors Coupled in a Thomson Parabola Spectrometer* Kantarelou, V., Velyhan, A., Tchórz, P., ...Margarone, D., Giuffrida, L.
Laser and Particle Beams, 2023, 2023, 3125787
- *Timing Performances of SDD as Photodetector Candidate for Proton Therapy Application*
Di Giacomo, S., Utica, G., Carminati, M., ...**Picciotto, A.**, Fiorini, C.
IEEE Transactions on Radiation and Plasma Medical Sciences, 2022, 6(7), pp. 811–819
- *Radiation-induced effects on the RIGEL ASIC*
Ceraudo, F., Dedolli, I., Cirrincione, D., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2022, 1037, 166903
- *In-Target Proton–Boron Nuclear Fusion Using a PW-Class Laser*
Margarone, D., Bonvalet, J., Giuffrida, L., **Picciotto, A.**, ...Habara, H., Batani, D.
Applied Sciences (Switzerland), 2022, 12(3), 1444
- *Study of radiation-induced effects on the RIGEL ASIC*
Ceraudo, F., Dedolli, I., Ambrosino, F., **Picciotto, A.**, ...Zampa, N., Zorzi, N.

- Proceedings of SPIE - The International Society for Optical Engineering, 2022, 12191, 121912L
- *PixDD: a multi-pixel Silicon Drift Detector for high-throughput spectral-timing studies*
Ceraudo, F., Ambrosino, F., Bellutti, P., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2022, 1219116
 - *Recent progress in high resolution X-ray customised detection systems*
Vacchi, A., Cirrincione, D., Altissimo, M., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Journal of Physics: Conference Series, 2022, 2380(1), 012095
 - *Design, integration, and test of the scientific payloads on-board the HERMES constellation and the SpIRIT mission*
Evangelista, Y., Fiore, F., Campana, R., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2022, 121811G
 - *The Large Area Detector onboard the eXTP mission*
Feroci, M., Ambrosi, G., Ambrosino, F., **Picciotto, A.**, ...Zhou, Y., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2022, 121811X
 - *The enhanced X-ray Timing and Polarimetry mission – eXTP: an update on its scientific cases, mission profile and development status*
Zhang, S.-N., Santangelo, A., Xu, Y., **Picciotto, A.**, ...Zorzi, N., Zwart, F.
Proceedings of SPIE - The International Society for Optical Engineering, 2022, 12181, 121811W
 - *ORION, multichip readout electronics for satellite wide energy range X-/γ-ray imaging spectroscopy: Design and characterization of the analog section*
Mele, F., Dedolli, I., Gandola, M., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
IEEE Transactions on Nuclear Science, 2021, 68(12), pp. 2801–2809
 - *Trace-element XAFS sensitivity: A stress test for a new XRF multi-detector* Carlomagno, I., Antonelli, M., Aquilanti, G., . **Picciotto, A.**, ..Zorzi, N., Meneghini, C.
Journal of Synchrotron Radiation, 2021, 28, pp. 1811–1819
 - *ARDESIA-16: A 16-channel SDD-based spectrometer for energy dispersive X-ray fluorescence spectroscopy*
Utica, G., Fabbrica, E., Carminati, M., **Picciotto, A.**, ...Falkenberg, G., Fiorini, C.
Journal of Instrumentation, 2021, 16(7), P07057
 - *Carbon nanotubes embedded in a polyimide foil for proton acceleration with a sub-ns laser* **Picciotto, A.**, Margarone, D., ...Tomarchio, E., Ganci, F.
Journal of Instrumentation, 2021, 16(7), P07008
 - *Energetic α-particle sources produced through proton-boron reactions by high-energy high-intensity laser beams*
Bonvalet, J., Nicolăi, Ph., Raffestin, D., **Picciotto, A.**, ...Habara, H., Margarone, D.
Physical Review E, 2021, 103(5), 053202
 - *MEMS membranes with nanoscale holes for analytical applications*

- Bagolini, A., Correale, R., **Picciotto, A.**, Di Lorenzo, M., Scapinello, M.
Membranes, 2021, 11(2), pp. 1–13, 74
- *Optimization of a low power chemoresistive gas sensor: Predictive thermal modelling and mechanical failure analysis*
Gaiardo, A., Novel, D., Scattolo, E., **Picciotto, A.**, ..Lugli, P., Bagolini, A.
Sensors (Switzerland), 2021, 21(3), pp. 1–19, 783
 - *Assessment of Silicon Drift Detector Timing Performance for Proton Therapy Application*
Di Giacomo, S., Utica, G., Carminati, M., ...**Picciotto, A.**, Fiorini, C.
IEEE Nuclear Science Symposium and Medical Imaging Conference Record, NSS/MIC 2021 and 28th International Symposium on Room-Temperature Semiconductor Detectors, RTSD 2022, 2021
 - *Generation of α -Particle Beams With a Multi-kJ, Peta-Watt Class Laser System* Margarone, D., Morace, A., Bonvalet, J., **Picciotto, A.**, ...Korn, G., Batani, D.
Frontiers in Physics, 2020, 8, 343
 - *X-/ γ -Ray Detection Instrument for the HERMES Nano-Satellites Based on SDDs Read-Out by the LYRA Mixed-Signal ASIC Chipset*
Grassi, M., Gandola, M., Mele, F., **Picciotto, A.**, ...Fiore, F., Burderi, L.
I2MTC 2020 - International Instrumentation and Measurement Technology Conference, Proceedings, 2020, 9129520
 - *Strengthening of wood-like materials via densification and nanoparticle intercalation*
Novel, D., Ghio, S., Gaiardo, A., **Picciotto, A.**, ...Bellutti, P., Pugno, N.M.
Nanomaterials, 2020, 10(3), 478
 - *Pixel Drift Detector (PixDD) – SIRIO: an X-ray spectroscopic system with high energy resolution at room temperature*
Sammartini, M., Gandola, M., Mele, F., **Picciotto, A.**, ...Zorzi, N., Vacchi, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 953, 163114
 - *High-current stream of energetic α particles from laser-driven proton-boron fusion* Giuffrida, L., Belloni, F., Margarone, D., **Picciotto, A.**, ...Korn, G., Cirrone, G.A.P.
Physical Review E, 2020, 101(1), 013204
 - *The XGIS instrument on-board THESEUS: The detection plane and on-board electronics*
Fuschino, F., Campana, R., Labanti, C., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2020, 11444, 114448
 - *An innovative architecture for a wide band transient monitor on board the HERMES nano-satellite constellation*
Fuschino, F., Campana, R., Labanti, C., **Picciotto, A.**, ...Lu, F., Xu, Y.
Proceedings of SPIE - The International Society for Optical Engineering, 2020, 11444, 114441S

- *The scientific payload on board the HERMES-TP and HERMES-SP CubeSat missions*
Evangelista, Y., Fiore, F., Fuschino, F., **Picciotto, A.**, ...Werner, N., Zanutti, G.
Proceedings of SPIE - The International Society for Optical Engineering, 2020, 11444, 114441T
- *The X/Gamma-ray Imaging Spectrometer (XGIS) on-board THESEUS: Design, main characteristics, and concept of operation*
Labanti, C., Amati, L., Frontera, F., **Picciotto, A.**, ...Trois, A., Piazzolla, R. Proceedings of SPIE - The International Society for Optical Engineering, 2020, 11444, 114442K
- *Towards Efficiency and Count-Rate Enhancement of X-ray ARDESIA Spectrometer* Utica, G., Gugiatti, M., Carminati, M., **Picciotto, A.**, ...Welter, E., Fiorini, C.
2019 IEEE Nuclear Science Symposium and Medical Imaging Conference, NSS/MIC
- *ARDESIA: A fast silicon drift detector X-ray spectrometer for synchrotron applications*
Hafizh, I., Bellotti, G., Carminati, M., **Picciotto, A.**, ...Bombelli, L., Fiorini, C. X-Ray Spectrometry, 2019, 48(5), pp. 382–386
- *XRF topography information: Simulations and data from a novel silicon drift detector system*
Kourousias, G., Billè, F., Cautero, G., **Picciotto, A.**, ...Vacchi, A., Gianoncelli, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, pp. 80–81
- *HERMES: An ultra-wide band X and gamma-ray transient monitor on board a nano-satellite constellation*
Fuschino, F., Campana, R., Labanti, C., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, pp. 199–203
- *High precision mapping of single-pixel Silicon Drift Detector for applications in astrophysics and advanced light source*
Cirrincione, D., Ahangarianabhari, M., Ambrosino, F., **Picciotto, A.**, ...Zorzi, N., Vacchi, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, pp. 239–241
- *The XAFS fluorescence detector system based on 64 silicon drift detectors for the SESAME synchrotron light source*
Rachevski, A., Ahangarianabhari, M., Aquilanti, G., **Picciotto, A.**, ...Zorzi, N., Vacchi, A.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 936, pp. 719–721
- *Development of MEMS MOS gas sensors with CMOS compatible PECVD inter-metal passivation*
Bagolini, A., Gaiardo, A., Crivellari, M., **Picciotto, A.**, ...Guidi, V., Bellutti, P.
Sensors and Actuators, B: Chemical, 2019, 292, pp. 225–232

- *Investigation of charges-driven interaction between graphene and different SiO₂ surfaces*
Pantano, M.F., Iacob, E., **Picciotto, A.**, ...Pugno, N.M., Speranza, G. *Carbon*, 2019, 148, pp. 336–343
- *Characterization of Ardesia: A 4-channel sdd x-ray spectrometer for synchrotron measurements at high count rates*
Hafizh, I., Bellotti, G., Carminati, M., **Picciotto, A.**, ...Bombelli, L., Fiorini, C. *Journal of Instrumentation*, 2019, 14(6), P06027
- *The enhanced X-ray Timing and Polarimetry mission—eXTP*
Zhang, S.N., Santangelo, A., Feroci, M., **Picciotto, A.**, ...Zorzi, N., Zwart, J.F. *Science China: Physics, Mechanics and Astronomy*, 2019, 62(2), 29502
- *Large solid angle and high detection efficiency multi-element silicon drift detectors (SDD) for synchrotron based x-ray spectroscopy*
Bufon, J., Altissimo, M., Aquilanti, G., **Picciotto, A.**, ...Zorzi, N., Vacchi, A. *AIP Conference Proceedings*, 2019, 2054, 060061
- *First experimental proof of Proton Boron Capture Therapy (PBCT) to enhance protontherapy effectiveness*
Cirrone, G.A.P., Manti, L., Margarone, D., **Picciotto, A.**, ...Cuttone, G., Korn, G. *Scientific Reports*, 2018, 8(1), 1141
- *Qualification of ARDESIA SDD X-ray Spectrometer in Synchrotron Measurements*
Hafizh, I., Utica, G., Gugiatti, M., **Picciotto, A.**, ...Bombelli, L., Fiorini, C. *2018 IEEE Nuclear Science Symposium and Medical Imaging Conference, NSS/MIC 2018 - Proceedings*, 2018, 8824414
- *Characterization of a novel pixelated Silicon Drift Detector (PixDD) for high-throughput X-ray astrophysics*
Evangelista, Y., Ambrosino, F., Feroci, M., **Picciotto, A.**, ...Zorzi, N., Vacchi, A. *Journal of Instrumentation*, 2018, 13(9), P09011
- *A new large solid angle multi-element silicon drift detector system for low energy X-ray fluorescence spectroscopy*
Bufon, J., Schillani, S., Altissimo, M., **Picciotto, A.**, ...Zorzi, N., Vacchi, A. *Journal of Instrumentation*, 2018, 13(3), C03032
- *On the enhancement of $p^{11}\text{B}$ fusion reaction rate in laser-driven plasma by $\alpha \rightarrow p$ collisional energy transfer*
Belloni, F., Margarone, D., **Picciotto, A.**, Schillaci, F., Giuffrida, L. *Physics of Plasmas*, 2018, 25(2), 020701
- *Multi probes measurements at the PALS Facility Research Centre during high intense laser pulse interactions with various target materials*
De Marco, M., Krása, J., Cikhardt, J. **Picciotto, A.**, ...Limpouch, J., Korn, G. *EPJ Web of Conferences*, 2018, 167, 03009
- *The X-Gamma Imaging Spectrometer (XGIS) onboard THESEUS*
Campana, R., Fuschino, F., Labanti, C., **Picciotto, A.**, ...Zampa, N., Zorzi, N.

Memorie della Societa Astronomica Italiana - Journal of the Italian Astronomical Society, 2018, 89(2), pp. 137–147

- *The wide field monitor onboard the eXTP mission*
Hernanz, M., Brandt, S., Feroci, M., **Picciotto, A.**, ...Limousin, O., Meris, A.
Proceedings of SPIE - The International Society for Optical Engineering, 2018, 10699, 1069948
- *The Large Area Detector onboard the eXTP mission*
Feroci, M., Ahangarianabhari, M., Ambrosi, G., **Picciotto, A.**, ...Zhou, Y., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2018, 10699, 106991C
- *Fabrication of advanced targets for laser driven nuclear fusion reactions through standard microelectronics technology approaches*
Picciotto, A., Crivellari, M., Bellutti, P., **Picciotto, A.**, ...Ullschmied, J., Margarone, D.
Journal of Instrumentation, 2017, 12(10), P10001
- *Towards a multi-element silicon drift detector system for fluorescence spectroscopy in the soft X-ray regime*
Bufon, J., Gianoncelli, A., Ahangarianabhari, M., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
X-Ray Spectrometry, 2017, 46(5), pp. 313–318
- *Manipulation of laser-accelerated proton beam profiles by nanostructured and microstructured targets*
Giuffrida, L., Svensson, K., Psikal, J., **Picciotto, A.**, ...Wahlström, C.-G., Margarone, D.
Physical Review Accelerators and Beams, 2017, 20(8), 081301
- *Prompt gamma-ray emission for future imaging applications in proton-boron fusion therapy*
Petringa, G., Cirrone, G.A.P., Caliri, C., **Picciotto, A.**, ...Santonocito, D., Scuderi, V.
Journal of Instrumentation, 2017, 12(3), C03059
- *Study of gamma-ray emission by proton beam interaction with injected Boron atoms for future medical imaging applications*
Petringa, G., Cirrone, G.A.P., Caliri, C., **Picciotto, A.**, ...Santonocito, D., Scuderi, V.
Journal of Instrumentation, 2017, 12(3), C03049
- *Nano and micro structured targets to modulate the spatial profile of laser driven proton beams*
Giuffrida, L., Svensson, K., Psikal, J., **Picciotto, A.**, ...Wahlström, C.-G., Korn, G.
Journal of Instrumentation, 2017, 12(3), C03040
- *New silicon drift detectors and CMOS readout electronics for X-ray spectroscopy from room temperature to cryogenic operations*
Quaglia, R., Bellotti, G., Butt, A.D., **Picciotto, A.**, ...Piemonte, C., Zorzi, N.
2015 IEEE Nuclear Science Symposium and Medical Imaging Conference, NSS/MIC 2015, 2016, 7581853

- *Prompt gamma ray diagnostics and enhanced hadron-therapy using neutron-free nuclear reactions*
Giuffrida, L., Margarone, D., Cirrone, G.A.P., **Picciotto, A.**, ...Cuttone, G., Korn, G.
AIP Advances, 2016, 6(10), 105204
- *First results of a novel Silicon Drift Detector array designed for low energy X-ray fluorescence spectroscopy*
Rachevski, A., Ahangarianabhari, M., Bellutti, P., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 824, pp. 452–454
- *A new detector system for low energy X-ray fluorescence coupled with soft X-ray microscopy: First tests and characterization*
Gianoncelli, A., Bufon, J., Ahangarianabhari, M., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2016, 816, pp. 113–118
- *Development and tests of a new prototype detector for the XAFS beamline at Elettra Synchrotron in Trieste*
Fabiani, S., Ahangarianabhari, M., Baldazzi, G., **Picciotto, A.**, ...Zampa, N., Zorzi, N.
Journal of Physics: Conference Series, 2016, 689(1), 012017
- *X-Ray Silicon Drift Detector-CMOS Front-End System with High Energy Resolution at Room Temperature*
Bertuccio, G., Ahangarianabhari, M., Graziani, C., **Picciotto, A.**, Piemonte, C., Zorzi, N.
IEEE Transactions on Nuclear Science, 2016, 63(1), pp. 400–406, 7407501
- *Avalanche boron fusion by laser picosecond block ignition with magnetic trapping for clean and economic reactor*
Hora, H., Korn, G., Eliezer, S., **Picciotto, A.**, ...Barty, C.P.J., Kirchhoff, G.J.
High Power Laser Science and Engineering, 2016, 4, e35
- *A programmable System-on-Chip based digital pulse processing for high resolution X-ray spectroscopy*
Cicuttin, A., Crespo, M.L., Mannatunga, K.S., **Picciotto, A.**, ...Piemonte, C., Zorzi, N.
2016 International Conference on Advances in Electrical, Electronic and Systems Engineering, ICAEES 2016, 2016, pp. 520–525, 7888100
- *A compact and modular X and gamma-ray detector with a CsI scintillator and double-readout Silicon Drift Detectors*
Campana, R., Fuschino, F., Labanti, C., ...Zampa, N., Zorzi, N.
Proceedings of SPIE - The International Society for Optical Engineering, 2016, 9905, 99056I
- *The LOFT mission concept - A status update*
Feroci, M., Bozzo, E., Brandt, S., **Picciotto, A.**, ...Zorzi, N., Zwart, F.
Proceedings of SPIE - The International Society for Optical Engineering, 2016, 9905, 99051R
- *EXTP: Enhanced X-ray Timing and Polarization mission*
Zhang, S.N., Feroci, M., Santangelo, A., **Picciotto, A.**, ...Zhou, P., Zhou, X.L.

Proceedings of SPIE - The International Society for Optical Engineering, 2016, 9905, 99051Q

- *PECVD silicon-rich nitride and low stress nitride films mechanical characterization using membrane point load deflection*
Bagolini, A., **Picciotto, A.**, Crivellari, M., Conci, P., Bellutti, P.
Journal of Micromechanics and Microengineering, 2015, 26(2), 025004
- *Surface wet-ability modification of thin PECVD silicon nitride layers by 40keV argon ion treatments*
Caridi, F., **Picciotto, A.**, Vanzetti, L., Iacob, E., Scolaro, C.
Radiation Physics and Chemistry, 2015, 115, pp. 49–54
- *Erratum: Fusion energy using avalanche increased boron reactions for block-ignition by ultrahigh power picosecond laser pulses*
Hora, H., Korn, G., Giuffrida, L., **Picciotto, A.**, ...Moustaizis, S., Mourou, G.
Laser and Particle Beams, 2015, 33(4), pp. 773
- *Fusion energy using avalanche increased boron reactions for block-ignition by ultrahigh power picosecond laser pulses*
Hora, H., Korn, G., Giuffrida, L., **Picciotto, A.**, ...Moustaizis, S., Mourou, G.
Laser and Particle Beams, 2015, 33(4), pp. 607–619
- *NUV silicon photomultipliers with high detection efficiency and reduced delayed correlated noise*
Acerbi, F., Ferri, A., Zappala, G., **Picciotto, A.**, ...Zorzi, N., Piemonte, C.
IEEE Transactions on Nuclear Science, 2015, 62(3), pp. 1318–1325, 7102791
- *Monolithic arrays of SDDs and low noise CMOS readout for X-ray spectroscopy measurements in nuclear physics experiments*
Quaglia, R., Fiorini, C., Bombelli, L., ...**Picciotto, A.**, Piemonte, C.
Journal of Instrumentation, 2015, 10(3), C03001
- *Silicon Drift Detectors and CUBE preamplifiers for high-resolution X-ray spectroscopy*
Quaglia, R., Bombelli, L., Busca, P., ...**Picciotto, A.**, Piemonte, C.
IEEE Transactions on Nuclear Science, 2015, 62(1), pp. 221–227, 7027255
- *Advanced scheme for high-yield laser driven proton-boron fusion reaction*
Margarone, D., **Picciotto, A.**, Velyhan, A., ...Bellutti, P., Korn, G.
Proceedings of SPIE - The International Society for Optical Engineering, 2015, 9345, 93450
- *A silicon drift detector-CMOS front-end system for high resolution X-ray spectroscopy up to room temperature*
Bertuccio, G., Ahangarianabhari, M., Graziani, C., ...**Picciotto, A.**, Piemonte, C.
Journal of Instrumentation, 2015, 10(1), P01002
- *PECVD low stress silicon nitride analysis and optimization for the fabrication of CMUT devices*
Bagolini, A., Savoia, A.S., **Picciotto, A.**, ...Lamberti, N., Caliano, G.
Journal of Micromechanics and Microengineering, 2015, 25(1), 015012
- *Advanced scheme for high-yield laser driven nuclear reactions*

- Margarone, D., **Picciotto, A.**, Velyhan, A., ...Bellutti, P., Korn, G.
 Plasma Physics and Controlled Fusion, 2015, 57(1), 014030
- *A novel multi-cell silicon drift detector for Low Energy X-Ray Fluorescence (LEXRF) spectroscopy*
 Bufon, J., Ahangarianabhari, M., Bellutti, P., **Picciotto, A.** ..Zampa, G., Zampa, N.
 Journal of Instrumentation, 2014, 9(12), C12017
 - *Characterization of the VEGA ASIC coupled to large area position-sensitive Silicon Drift Detectors*
 Campana, R., Evangelista, Y., Fuschino, F., ...**Picciotto, A.**, Zuffa, M.
 Journal of Instrumentation, 2014, 9(8), P08008
 - *Large-area linear Silicon Drift Detector design for X-ray experiments*
 Rachevski, A., Zampa, G., Zampa, N., **Picciotto, A.** ...Piemonte, C., Vacchi, A.
 Journal of Instrumentation, 2014, 9(7), P07014
 - *Boron-proton nuclear-fusion enhancement induced in boron-doped silicon targets by low-contrast pulsed laser*
Picciotto, A., Margarone, D., Velyhan, A., ...Kucharik, M., Korn, G.
 Physical Review X, 2014, 4(3), 031030
 - *Generation of secondary particles from sub-nanosecond laser irradiation of targets at intensities of $10^{16} \text{ W cm}^{-2}$*
 Krása, J., Margarone, D., Klír, D., **Picciotto, A.**, ...Parys, P., Ryc, L.
 IEEE Transactions on Plasma Science, 2013, 41(10), pp. 2819–2824, 6504780
 - *Advanced target fabrication*
Picciotto, A., Mangione, A., Perin, J.P., Prokupek, J., Margarone, D.
 AIP Conference Proceedings, 2013, 1546, pp. 26–33
 - *Silicon drift detectors for readout of scintillators in gamma-ray spectroscopy*
 Fiorini, C., Bombelli, L., Busca, P., **Picciotto, A.**, ...Nelms, N., Shortt, B.
 IEEE Transactions on Nuclear Science, 2013, 60(4), pp. 2923–2933, 6575206
 - *Microfabrication of MOS H_2 sensors based on Pd-gate deposited by pulsed laser ablation*
 Crivellari, M., Mattevi, M., **Picciotto, A.**, ...Gennaro, S., Gasparotto, A.
 Sensors and Actuators, B: Chemical, 2013, 186, pp. 180–185
 - *Proton driven acceleration by intense laser pulses irradiating thin hydrogenated targets*
 Torrisi, L., Cutroneo, M., Cavallaro, S., **Picciotto, A.**, ...Ryc, L., Szydlowski, A.
 Applied Surface Science, 2013, 272, pp. 2–5
 - *Proton emission from resonant laser absorption and self-focusing effects from hydrogenated structures*
 Cutroneo, M., Torrisi, L., Margarone, D., **Picciotto, A.**
 Applied Surface Science, 2013, 272, pp. 50–54
 - *Influence of the ablation threshold fluence on laser-driven acceleration*
 Margarone, D., Velyhan, A., Torrisi, L., **Picciotto, A.**, ...Proska, J., Novotny, F.

Applied Surface Science, 2013, 272, pp. 132–137

- *New developments of SDD-based X-ray detectors for the Siddharta-2 experiment*
Quaglia, R., Bombelli, L., Fiorini, C., ...**Picciotto, A.**, Piemonte, C.
IEEE Nuclear Science Symposium Conference Record, 2013, 6829023
- *Characterization of the VEGA ASIC dedicated to large area position-sensitive SDDs for space and medical applications*
Fuschino, F., Campana, R., Evangelista, Y., ...**Picciotto, A.**, Boscardin, M.
IEEE Nuclear Science Symposium Conference Record, 2013, 6829435
- *X-ray spectroscopic performance of a matrix of silicon drift diodes*
Rachevski, A., Zampa, G., Zampa, N., **Picciotto, A.**, ...Crespo, M.L., Tuniz, C.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, pp. 353–355
- *Functional test of a Radon sensor based on a high-resistivity-silicon BJT detector*
Dalla Betta, G.F., Tyzhnevyy, V., Bosi, A., **Picciotto, A.**, ...Penzo, S., Cardellini, F.
Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2013, 718, pp. 302–304
- *Development of a detector based on Silicon Drift Detectors for gamma-ray spectroscopy for astronomy applications*
Peloso, R., Fiorini, C., Bombelli, L., **Picciotto, A.**, ...Nelms, N., Shortt, B.
IEEE Nuclear Science Symposium Conference Record, 2012, pp. 918–921, 6551240
- *New development of Silicon Drift Detectors for gamma-ray spectroscopy*
Fiorini, C., Bombelli, L., Busca, P., **Picciotto, A.**, ...Piemonte, C., Zorzi, N.
IEEE Nuclear Science Symposium Conference Record, 2012, pp. 2068–2074, 6551477
- *Development of an automatic procedure for the characterization of silicon photomultipliers*
Piemonte, C., Ferri, A., Gola, A., **Picciotto, A.**, ...Tarolli, A., Zorzi, N.
IEEE Nuclear Science Symposium Conference Record, 2012, pp. 428–432, 6551141
- *New methods for high current fast ion beam production by laser-driven acceleration*
Margarone, D., Krasa, J., Prokupek, J., **Picciotto, A.**, ...Korn, G., Rus, B.
Review of Scientific Instruments, 2012, 83(2), 02B307
- *Proton emission from thin hydrogenated targets irradiated by laser pulses at 10^{16} W/cm²*
Torrise, L., Giuffrida, L., Cutroneo, M., **Picciotto, A.**, ...Badziak, J., Rosinski, M.
Review of Scientific Instruments, 2012, 83(2), 02B315
- *Microfabrication of silicon hydrogenated thin targets for multi-MeV laser-driven proton acceleration*
Picciotto, A., Margarone, D., Crivellari, M., ...Velhyan, A., Ullschmied, J.
Applied Physics Express, 2011, 4(12), 126401
- *High current, high energy proton beams accelerated by a sub-nanosecond laser*
Margarone, D., Krasa, J., **Picciotto, A.**, ...Ullschmied, J., Rus, B.

Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 653(1), pp. 159–163

- *Real-time diagnostics of fast light ion beams accelerated by a sub-nanosecond laser*
Margarone, D., Krása, J., **Picciotto, A.**, Prokupek, J.
Nukleonika, 2011, 56(2), pp. 137–141
- *Full characterization of laser-accelerated ion beams using Faraday cup, silicon carbide, and single-crystal diamond detectors*
Margarone, D., Krsa, J., Giuffrida, L., **Picciotto, A.**, ...Ullschmied, J., Rus, B.
Journal of Applied Physics, 2011, 109(10), 103302
- *Timing performance of large area SiPMs coupled to LYSO using dark noise compensation methods*
Piemonte, C., Gola, A., **Picciotto, A.**, ...Tarolli, A., Zorzi, N.
IEEE Nuclear Science Symposium Conference Record, 2011, pp. 59–63, 6154401
- *BJT detector for α -particle and Radon detection and monitoring*
Tyzhnevyy, V., Dalla Betta, G.-F., Verzellesi, G., ...Giacomini, G., **Picciotto, A.**
IEEE Nuclear Science Symposium Conference Record, 2011, pp. 1941–1945, 6154390
- *Protons' generation by laser irradiation at 5×10^9 W/cm² from silicon dielectric targets containing an excess of hydrogen*
Caridi, F., **Picciotto, A.**, Torrasi, L., Giuffrida, L., Bellutti, P.
Applied Surface Science, 2011, 257(7), pp. 2870–2874
- *Laser-driven acceleration of protons from hydrogenated annealed silicon targets*
Picciotto, A., Margarone, D., Krasa, J., ...Rus, B., Dapor, M.
EPL, 2010, 92(3), 34008
- *Silicon solar cells with nano-crystalline silicon down shifter: Experiment and modeling* Jestin, Y., Pucker, G., Ghulinyan, M., **Picciotto, A.**, ...Yuan, Z., Pavesi, L.
Proceedings of SPIE - The International Society for Optical Engineering, 2010, 7772, 77720B
- *Particle size determination of silver nanoparticles generated by plasma laser ablation using a deconvolution method*
Picciotto, A., Torrasi, L., Margarone, D., Bellutti, P.
Radiation Effects and Defects in Solids, 2010, 165(6-10), pp. 706–712
- *Comparison of Surface Modifications Induced by Ion Implantation in UHMWPE* Visco, A.M., Torrasi, L., Campo, N., **Picciotto, A.**
International Journal of Polymer Analysis and Characterization, 2010, 15(2), pp. 73–86
- *Surface plasmon resonance analysis of Ag nanoparticles generated by pulsed laser ablation*
Picciotto, A., Pucker, G., Lui, A., ...Margarone, D., Bellutti, P.
Proceedings of SPIE - The International Society for Optical Engineering, 2009, 7366, 73661V
- *Influence of interfaces density and thermal processes on mechanical stress of PECVD silicon nitride*
Picciotto, A., Bagolini, A., Bellutti, P., Boscardin, M.

Applied Surface Science, 2009, 256(1), pp. 251–255

- *Preparation and characterization of nanocrystals using ellipsometry and X-ray diffraction*
Petrik, P., Milita, S., Pucker, G., ...Vanzetti, L., **Picciotto, A.**
ECS Transactions, 2009, 25(3), pp. 373–378
- *Study of crystallization and phase mixing in SiO₂/SiO₂ superlattices through form birefringence measurements*
Ghulinyan, M., Wang, M., **Picciotto, A.**, Pucker, G.
Proceedings of SPIE - The International Society for Optical Engineering, 2008, 6996, 69960G
- *Evidence of plasmon resonances of nickel particles deposited by pulsed laser ablation*
Picciotto, A., Pucker, G., Torrisi, L., ...Caridi, F., Bagolini, A.
Radiation Effects and Defects in Solids, 2008, 163(4-6), pp. 513–518
- *Characterization of laser ablation of polymethylmethacrylate at different laser wavelengths*
Torrisi, L., Lorusso, A., Nassisi, V., **Picciotto, A.**
Radiation Effects and Defects in Solids, 2008, 163(3), pp. 179–187
- *Time-of-flight spectroscopy of ion currents emitted by laser produced plasmas*
Krása, J., **Picciotto, A.**, Gammino, S., ...Rohlena, K., Torrisi, L.
33rd EPS Conference on Plasma Physics 2006, EPS 2006, 2006, 1, pp. 272–275
- *Particle emission from tantalum plasma produced by 532 nm laser pulse ablation*
Torrisi, L., Caridi, F., **Picciotto, A.**, Margarone, D., Borrielli, A.
Journal of Applied Physics, 2006, 100(9), 093306
- *Energy distribution of particles ejected by laser-generated aluminium plasma*
Torrisi, L., Caridi, F., **Picciotto, A.**, Borrielli, A.
Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, 2006, 252(2), pp. 183–189
- *Energy distributions of particles ejected from laser-generated pulsed plasmas*
Caridi, F., Torrisi, L., Margarone, D., **Picciotto, A.**, ...Mezzasalma, A.M., Gammino, S.
Czechoslovak Journal of Physics, 2006, 56(SUPPL. 2)
- *Physical characterization of pulsed laser deposition of diamond-like nanostructures*
Mangione, A., Torrisi, L., **Picciotto, A.**, Caridi, F.
Czechoslovak Journal of Physics, 2006, 56(SUPPL. 2)
- *Carbon-plasma produced in vacuum by 532 nm-3 ns laser pulses ablation*
Torrisi, L., Caridi, F., Margarone, D., **A.Picciotto**,...Mangione, A., Beltrano, J.J.
Applied Surface Science, 2006, 252(18), pp. 6383–6389
- *Plasma temperature and ion current analysis of gold ablation at different laser power rates*
Picciotto, A., Krása, J., Láská, L., ...Mezzasalma, A.M., Caridi, F.
Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, 2006, 247(2), pp. 261–267
- *Temperature measurements in plasmas produced by high-power lasers interacting with solid targets*

- Torrise, L., Gammino, S., **Picciotto, A.**, ...Rohlena, K., Wolowski, J.
Review of Scientific Instruments, 2006, 77(3), 03B708
- *Measurements of gas diffusion in polyethylene irradiated by 5 MeV electron beams*
Torrise, L., Ilacqua, A., Caridi, F., **Picciotto, A.**, ...Trifirò, A., Auditore, L. Radiation Effects and Defects in Solids, 2006, 161(1), pp. 3–13
 - *Production of highly charged heavy ions by means of a hybrid source in dc mode and in afterglow mode*
Gammino, S., Ciavola, G., Torrise, L., **Picciotto, A.**, ...Shirkov, G.D., Hitz, D.
AIP Conference Proceedings, 2005, 749, pp. 15–18
 - *Temperature measurements in plasmas generated by using lasers at different intensities*
Picciotto, A., Torrise, L., Gammino, S., ...Laska, L., Wołowski, J.
Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 705–713
 - *Production of ion and electron streams by pulsed-laser ablation of Ta and Cu*
Margarone, D., Torrise, L., **Picciotto, A.**, Caridi, F., Gammino, S.
Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 515–524
 - *RBS analysis of ions implanted in light substrates exposed to hot plasmas laser-generated at PALS*
Torrise, L., Gammino, S., **Picciotto, A.**, ...Calcagnile, L., Quarta, G.
Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 685–695
 - *Carbon nanocrystals produced by pulsed laser ablation of carbon*
Mangione, A., Torrise, L., **Picciotto, A.**, ...La Mantia, A., Di Marco, G.
Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 655–662
 - *Neutrals' temperature in laser-generated plasma at LNS*
Caridi, F., Torrise, L., **Picciotto, A.**, ...Margarone, D., Krasa, J.
Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 639–645
 - *Retrieval of currents of multiply charged ions emitted from laser-produced carbon plasma*
Krása, J., Torrise, L., **Picciotto, A.**, ...Láska, L., Rohlena, K. Radiation Effects and Defects in Solids, 2005, 160(10-12), pp. 609–619
 - *Modification of materials by high energy plasma ions*
Lorusso, A., Belloni, F., Doria, D., **Picciotto A.**, ...Quarta, G., Bleiner, D.
Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, 2005, 240(1-2), pp. 229–233
 - *Production of highly charged heavy ions by means of a hybrid source in DC mode and in afterglow mode*
Gammino, S., Ciavola, G., Torrise, L., **Picciotto. A.**, ...Shirkov, G.D., Hitz, D. Plasma Processes and Polymers, 2005, 2(6), pp. 458–463

- *Measurements of equivalent ion temperature in plasma pulse laser-generated at infn-lns and pals*
Torrise, L., Gammino, S., **Picciotto, A.**, ...Rohlena, K., Wolowski, J.
32nd EPS Conference on Plasma Physics 2005, EPS 2005, Held with the 8th International Workshop on Fast Ignition of Fusion Targets - Europhysics Conference Abstracts, 2005, 2, pp. 794–797
- *The electron cyclotron resonance coupled to laser ion source for charge state enhancement experiment: Production of high intensity ion beams by means of a hybrid ion source*
Gammino, S., Torrise, L., Ciavola, G., **Picciotto, A.**...Hitz, D., Shirkov, G.D.
Journal of Applied Physics, 2004, 96(5), pp. 2961–2968
- *Pulsed laser ablation of gold at 1 064 nm and 532 nm*
Torrise, L., **Picciotto, A.**, Andó, L., ...Pfeifer, M., Krása, J.
Czechoslovak Journal of Physics, 2004, 54(SUPPL. 3)
- *Highly charged heavy ion generation by pulsed laser irradiation*
Gammino, S., Torrise, L., Ciavola, G., ...Krasa, J., **Picciotto, A.**
Nuclear Instruments and Methods in Physics Research, Section B: Beam Interactions with Materials and Atoms, 2003, 209, pp. 345–350

I authorize the use of my personal data in accordance with Italian Privacy Protection Law (art.13 D.Lgs 196/2003) and art. 13 GDPR 679/16.

Antonino Picciotto

Trento, lì 23.05.2025