CURRICULUM VITAE

Alfio Lorenzo Torrisi

PERSONAL INFO:

Birth date: September 1st, 1983, Catania, Italy

Nationality: Italian

LinkedIn: https://www.linkedin.com/in/atorrisi/

Website: https://atorrisi83.wixsite.com/thescientist

EDUCATION:

04/09/2014 - 10/04/2017:

Ph.D. in Technical Sciences, in the discipline of Electronics, specialty in Optoelectronics, at the Institute of Optoelectronics, Military University of Technology (IOE - MUT), Warsaw, Poland

Ph.D. in Applications of Natural Sciences, in the study field of Physical Engineering at the faculty of Nuclear Sciences and Physical Engineering, Czech Technical University of Prague (CTU), Prague, Czech Republic.

Joint Agreement between MUT and CTU under the EXTATIC (Extreme-ultraviolet and X-ray Training in Advanced Technologies for Interdisciplinary Cooperation) ERASMUS MUNDUS PROGRAMME.

Title of the Thesis: "*SXR and EUV nanoscale imaging using compact laser plasma light sources and Fresnel optics*". Supervisor: Prof. P. W. Wachulak (MUT); Co-Supervisor: Prof. L. Pina (CTU).

01/07/2013 - 16/10/2014:

2nd Level Master Degree - Dept. of hygiene and public health, University of Catania, Italy.
Title of the Master: "*Environmental Monitoring and mutagenic, carcinogenic and teratogenic risk assessment*".

Title of the Project: "*Monitoring and evaluation of greenhouse gases and heavy metals in the industrial pole of Priolo (SR, Italy)".*

01/10/2009 - 27/03/2013:

M.Sc. in Physics – Dept. of Physics and Astronomy, University of Catania, Italy.

Title of the Thesis: "*Characterization and Analysis of Artistic-Cultural artifacts for their provenance and dating*". Advisor: Prof. O. Troja and Prof. A. Gueli.

01/10/2002 - 15/07/2009:

B.Sc. in Physics – Dept. of Physics and Astronomy, University of Catania, Italy.

Title of the Thesis: "*Laser ablation and mass spectrometry (LAMQS) for application in the field of Cultural Heritage*". Advisor: Prof. O. Troja.

SCIENTIFIC CAREER:

16/07/2023 – Up to now:

Senior Researcher – Lecturer (RTD-B) at the University of Enna "Kore" – Department of Medicine and Surgery

03/07/2023 – 15/10/2023:

Researcher at the Italian National Research Council, Institute for Microelectronics and Microsystems (CNR-IMM), Catania (Italy).

- Design and development of power devices and radiation detectors.

27/02/2023 – 02/06/2023:

Junior Researcher (RTD-A) at University of Bari – Dept. of Physics "M. Merlin".

- Design and implementation of a new generation of quantum-enhanced imaging devices based on quantum optical correlations.

01/01/2023 – 02/06/2023:

INFN (National Institute of Nuclear Physics) associated, Bari Section Group. V, on the project "QUISS - Quantum Imaging with novel sources and sensors. Referent: Prof. M. D'Angelo (University of Bari, Bari, Italy).

16/09/2022 – 27/03/2023:

Research Fellow at the University of Bari "Aldo Moro" (Bari, Italy), Dept. of Physics "M. Merlin", Quantum Optics Technologies Lab. (https://www.quotlab.uniba.it). Title of the Project: "INTERGLIO - Interdisciplinary approach for a multiscale study of the neurophysiology of brain gliomas".
Referent: Prof. M. D'Angelo.

- Imaging with incoherent sources.
- Correlation Plenoptic Imaging (CPI).
- Correlation Plenoptic Microscopy (CPM).
- Correlation and autocorrelation measurements.
- Imaging elaboration and Optical Simulation by software *Mathematica* and *Python* programming.

23/04/2021 – 31/12/2021:

INFN (National Institute of Nuclear Physics) associated, Lecce Section Group. V, on the project "Carbon-Based Innovative Materials for Nuclear Physics Applications (C.I.M.A.)". Local Referent: Prof. D. Manno (University of Salento, Lecce, Italy).

30/12/2020 – 26/04/2022:

Junior Researcher (RTD-A) at University of Salento – Dept. of Mathematics and Physics "E. De Giorgi" and CEDAD (CEnter of applied physics DAting and Diagnostics).

- AMS (Accelerator Mass Spectrometry) for ^{14}C analysis.
- Stable isotope ratios analysis by IRMS (Isotopic Ratio Mass Spectrometry).
- Chemical treatments of organic samples for investigation by AMS and IRMS.
- Excimer Laser ablation and deposition of thin films of different materials at LEAS laboratory (Laboratory of Applied Electronics and Instrumentation).
- Characterization analyses by Scan Electron Microscope (SEM), Transmission Electron Microscopy (TEM), X-ray Diffraction (XRD) and Raman spectroscopy.

04/07/2019 – 31/03/2021:

INFN (National Institute of Nuclear Physics) associated, Catania Section Group. V, on the project project "Carbon-Based Innovative Materials for Nuclear Physics Applications (C.I.M.A.)", under the supervision of Dr. M. De Napoli.

01/04/2018 – 30/12/2020:

Postdoc Researcher at Ústav jaderné fyziky AV ČR - Nuclear Physics Institute of the Czech Academy of Sciences, Řež, Hlavní Město, Czech Republic (Referent: Dr. J. Vacík).

- Material Sciences applications;
- Nanoparticle productions by laser ablation and their characterization;

- Plasma produced by Laser-target and by Particle beams-target interactions;
- Characterization of Silicon Carbide (SiC) detectors;
- Cultural heritage investigations;
- UV-VIS-IR spectrophotometric measurements;
- Chemosensor preparation and characterization;
- Neutron sources controlled by high-intensity pulsed laser generating plasma;
- Ion Beam Analyses (IBA): PIXE (Particle-induced X-ray emission), PIGE (Particle-induced gamma-ray emission), RBS (Rutherford Back Scattering) and ERDA (Electron Recoil Detection Analysis) at the NPI-Tandetron laboratory of the CANAM infrastructure.

04/09/2017–16/03/2018:

Research Associate (appointed at Grade 7), AXIm (Advances X-ray Imaging) group for X-ray Phase Contrast Imaging experiments - UCL University College of London, Dept. of Medical Physics & Biomedical Engineering, London, United Kingdom (Referent: Prof. S. Olivo).

- Development of a micrometric phase-contrast microscope equipment investigating oesophageal human tumors.

26/06 – 31/08/2017:

CNR-IOM (Italian National Research Council - Istituto Officina dei Materiali), TASC laboratory, Science Park Elettra Sychrotron, Basovizza (Trieste), Italy (Referent: Dr. M. Coreno, Dr. M. De Simone).

- Scientific consultant for the project entitled: "*Feasibility and design of a table-top source in the XUV, based on gaseous plasma induced by IR laser radiation*".

09/2014 – 2021:

Military University of Technology (MUT), Institute of Optoelectronics, Laser Matter Interaction Laboratories (LMI), Warsaw, Poland (Referent: Prof. H. Fiedorowicz, Prof. P.W. Wachulak).

- Development and optimizazion of a monochromatic soft X-rays (SXR) microscope, operating at 2.88 nm wavelength.
- Soft X-ray (SXR) microscopy in the "water window" spectral range using a ns laser plasma SXR source based on a double stream nitrogen/helium gas-puff target and Fresnel zone plate optics with spatial resolution of 60nm.
- Development and optimizazion of a quasi-monochromatic, compact, table-top extreme ultraviolet (EUV) microscope operating at 13.8nm wavelength: optimization and characterization.
- High resolution imaging (sub-50nm spatial resolution) employing EUV radiation and diffractive optics.

- Investigations of influence of object thickness and source emission bandwidth on spatial resolution in EUV microscopy based on Fresnel zone plates.
- Development of a method based on Signal-to-Noise Ratio (SNR) measurements for optimization and characterization of SXR microscopy images and for characterization and benchmarking of various SXR imaging systems.
- SXR/EUV optical simulation.
- Collaboration with several International Institutes for the preparation of biological samples to observe: Faculty of Biomedical Engineering, Czech Tecnical University of Prague (Prof. Šárka Vondrová and Prof. Miroslava Vrbová), PSI (Paul Scherrer Institute) Villigen, Switzerland (Dr. Michal Ostrčil), Università degli Studi di Messina (Prof. M. Maesano e Prof. A.M. Sciortino), Università Tor Vergata di Roma e AlgaRes srl (dr. E. Viaggiu).
- Characterization of laser-plasma sources employing Silicon detectors and Silicon Carbide detectors.
- Tomography experiments in the SXR range.
- Near edge X-ray absorption fine structure (NEXAFS) spectroscopy.

20/01/2014 – 31/05/2014:

Internship at the *Industrial Consortium Environmental Protection (Consorzio IIndustriale Protezione Ambiente, C.I.P.A., Ex S.S.114 Km. 139 c.p. 102 96010 Priolo (SR), Italy).*

- Monitoring of environmental pollution by Radio acoustic sounding system (RASS) and Sound detection and raging (SODAR).
- Detection of chemical compounds emitted to the ground and study of the relative atmospheric parameters.
- SKYNET simulation - predictive models of the pollutants distribution.

2012 – 2013:

University Internship:

Laser-Plasma Physics Laboratory, Dept. of Physics and Earth Sciences, University of Messina, Messina, Italy.

- LAMQS investigations (Laser Ablation coupled with a Mass Quadrupole Spectrometry).
- Analysis of Characteristic X-Ray using compact X-ray Fluorescence instrumentation (XRF).
- Optical microscopy and Scan Electron Miscroscope (SEM).

2011 – 2013:

University Internship:

PH3DRA Laboratory (PHysics for Dating Diagnostic Dosimetry Research and Applications), Dept. of

Physics and Astronomy, University of Catania, Catania, Italy (Referent: Prof. A. M. Gueli).

- Characterization measurements using Raman, XRF and Colorimetry technique.
- Advanced study of Scan Electron Microscope (SEM).

PRACTICES, STUDIES, EXCHANGES, and EXPERIMENTS ABROAD:

20-22/12/2022: Microcity of the École Polytechnique Fédérale de Lausanne (EPFL) / Advanced Quantum Architecture Lab – Neuchâtel (Switzerland).

- Visiting Scientist for: Characterization, Synchronization and Calibration of SPADs (Silicon Photon Avalanche Diodes) for correlation imaging.

2016 – 2020:

University of Messina (Messina, Italy) – Dept. MIFT (Dept. of Mathematics and Computer Sciences, Phisical Sciences and Earth Sciences, Referent: Prof. L. Torrisi)) and Dept. of Biology and Earth Sciences (Referent: Prof. S. Guglielmino).
Nuclear Physics Institute of the Czech Academy of Sciences (Řež, Czech Republic, Referent: Prof. A. Mackova).

- Biocompatible nanoparticle production, irradiation, and characterization by laser ablation, for biomedical applications.

2015 - 2016:

- Joint experiment between Military University of Technology, Warsaw (Poland) and the CTU, Czech Technical University of Prague (Czech Republic):

  Employment of a capillary discharge source for SXR Imaging Applications (Duration of the experiment at CTU: 6 months).

- Czech Technical University (CTU), Faculty of Biomedical Engineering, Kladno, Czech Republic.

  Preparation of Biological samples for SXR/EUV imaging (Referents: Prof. Šárka Vondrová and Prof. Miroslava Vrbová) (3 months).

2014– 2020:

IPPLM (Instute of Plasma Physics, Laser and Microofusion) (Referent. Dr. M. Rosinski).

- Protons acceleration in the TNSA (target normal sheath acceleration) regime by fs laser
- Study of laser-matter interaction employing new materials (hybrid-graphene based, carbon foils with gold films and nanoparticles, reduced graphene oxide targets).

16/02/2013 – **01/03/2013:**

- Intensive Erasmus Programme "*Safe Applications of Radiation and Radionuclides – SARA 2014*" (2 weeks) in Belgium - Cooperation in Higher Education on Radiological and Nuclear Engineering (CHERNE) Network.

  Project coordinators: Czech Technical University of Prague (Czech Republic), SCK-CEN (Belgian Nuclear Research Centre, Mol, Belgium), JRC-IMM (Joint Research Centre Institute for Reference Materials and Measurements, Geel - Belgium), Hasselt University (Diepenbeek - Belgium).

UNIVERSITY ACTIVITIES:

- Organizer member and Member of the Scientific Committee for the *"Physics and Engineering Workshop"*, organized by University of Messina (Italy), MIFT Department, 21 November 2022.

- Organizer member of the *QUANTUM 2022* Summer School, organized by University of Bari, Dept. of Physics and held at Trani (Italy), 18-24 September 2022.

- External Reviewer for ANVUR (National Agency for Evaluation of the University Sistem and Research), from September 2021 to May 2022.
- Organizer member and co-operator for the development of the web platform of the *PPLA2017 conference* (Plasma Physics by Laser Application 2017), held at Messina University (Italy), 5-7 July 2017.

- Organizer member of the *ALPS workshop* (I workshop on Application of Laser-Plasma X-ray and EUV sources) held at the Institute of Optoelectronics, Military University of Technology, Warsaw (Poland) 6-9 July 2015.

- Organizer member of the *EXTATIC workshop* (Extreme-ultraviolet and X-ray Training in Advanced Technologies for Interdisciplinary Cooperation) held at the Institute of Optoelectronics, Military University of Technology, Warsaw (Poland) 20-24 October 2015.

SCIENTIFIC PROJECTS FUNDED BY INTERNATIONAL AND NATIONAL AGENCIES:

1. *PNRR SAMOTHRACE – SiciliAn MicronanOTecH Research And Innovation CEnter,* funded by the Italian Ministry of Education.
   Role: Member of the Research Team from July 2023.
   Scientific Referent: Dr. F. La Via, Italian National Research Council, Instutute for Microelectronics and Microsystems (CNR-IMM) of Catania (Italy).

2. *PNRR PE NQSTI - National Quantum Science and Technology Institute,* funded by the Italian Ministry of Education. Coordinator: Thales, 2023-2025.
   Role: Member of the Research Team from March to June 2023 (3 months).
   Scientific Referent: Prof. M. D'Angelo, Università di Bari (Bari, Italy).

3. *QUISS - Quantum Imaging with novel sources and sensors,* funded by INFN group V (Bari section), 2023-2025.
   Role: Member of the Research Team from January to June 2023 (6 months).

Scientific Referent: Prof. M. D'Angelo, Università di Bari (Bari, Italy).

4. *Qu3D – Quantum 3D imaging at high speed and resolution*, (grant 20QT21) under the QuantERA program, funded by the European Union's Horizon 2020 research and innovation program, 2021-2023.
   Role: Member of the Research Team from September 2022 to June 2023 (9 months).
   Scientific Referent: Prof. M. D'Angelo, Università di Bari (Bari, Italy).

5. *INTERGLIO - Interdisciplinary approach for a multiscale study of the neurophysiology of brain gliomas*, funded by European Union – NextGenerationEU Programma MUR- Fondo promozione e sviluppo-DM 737/2021- CUP: H99J21017480006, 2021-2023.
   Role: Co-investigator from September 2022 to February 2023 (6 months).
   Scientific Referent: Prof. M. D'Angelo, Università di Bari (Bari, Italy).

6. *C.I.M.A. – Carbon-Base Innovative Materials for Nuclear Physics Applications*, funded by INFN Group V, 2020-2022. Role: Co-investigator from January 2021 – December 2022 (36 months)
   National Referent: Prof. L. Torrisi, INFN Catania (Catania, Italy).

7. *ITHACA - Isotopes for THe Apulian CulturAl heritage* - POR PUGLIA FESR-FSE 2014/2020 European Social Fund approved with decision C(2015)5854 on 13/08/2015 Asse X – Azione 10.4. "Research for Innovation – REFIN", 2021-2023.
   Role: Principal Investigator from January 2021 to April 2022 (16 months)
   Scientific Referent: Prof. L. Calcagnile, University of Salento (Lecce, Italy).

8. *HASPIDE* - (*HAmorphous Silicon Pixel Detector for ionizing radiation*) funded by INFN Group V, 2022-2025. Role: Co-investigator from January to April 2022 (4 months).
   National Referent: Prof. L. Servoli, INFN Perugia (Perugia, Italy).

9. *FTM-NEXT (Fast Timing Micro-Pattern Gas Detectors)*, funded by INFN Group V, 2021-2022.
   Role: Co-investigator from January 2021 to April 2022 (16 months).
   National Referent: Dr. Piet Verwilligen, INFN Bari (Bari, Italy).

10. *Nanostructured heteroprocesses for chemiresistors*, funded by GAČR (Grant National Agency of the Czech Republic), grant number *19-02804S*, 2019-2021.
    Role: Member of the Research Team from January 2019 to December 2020 (24 months).
    Principal Investigator: Prof. M. Vrňata, Czech Academy of Sciences, University of Chemistry and Technology, Prague (Czech Republic).

11. *Janus nanoparticles for catalysis and membrane processes,* funded by GAČR (Grant National Agency of the Czech Republic), grant number *18-07619S*, 2018-2020:
    Role: Member of the Research Team from April 2018 to December 2020 (33 months).
    Principal Investigator: Dr. J. Vacík, Czech Academy of Sciences, Nuclear Physics Institute, Řež (Czech Republic).

12. *Preparation, modification and characterization of materials by radiation,* funded by GAČR (Grant National Agency of the Czech Republic), grant number *P108/12/G108*, 2012-2018.
    Role: Member of the Research Team from June to December 2018 (8 months).
    Principal Investigator: Prof. A. Mackova, Czech Academy of Sciences, Nuclear Physics Institute, Řež (Czech Republic).

13. *Improving the outcomes of oesophageal interventions through novel x-ray based imaging methods*, funded by *EPSRC* (*Engineering and Physical Science Research Council, UK*), Grant N. EP/P023231/1, 2017 – 2021.
    Role: Co-investigator from September 2017 to March 2018 (7 months).
    Principal Investigator: Prof. A. Olivo, UCL, University College of London, London (United Kingdom).

14. *X-ray and EUV nanoscale imaging using compact laser plasma light sources and Fresnel optics*, funded by the *European Union*, under the framework *EXTATIC* (Extreme-ultraviolet and X-ray Training in Advanced Technologies for Interdisciplinary Cooperation) - Erasmus Mundus PhD Programme, 501-125/AT. Role: Executor, i.e. Principal Investigator as PhD candidate, 2014-2017 (36 months).
    Supervisor: Prof. P.W. Wachulak, WAT, Warsaw (Poland);
    Co-supervisor: Prof. L. Pina, Czech Technical University, Prague (Czech Republic).

15. *"Water window" radiation for nanoimaging of biological objects and three-dimensional electron density reconstruction in bioengineering and material science applications*, funded by the Polish National Centre for Science (Narodowe Centrum Badań i Rozwoju) *OPUS 9* framework, funding number UMO-2015/17/B/ST7/03718, 2015-2017.
    Role: Co-investigator from January 2015 to December 2017 (36 months).
    Principal Investigator: Prof. P. W. Wachulak, Military University of Technology, Warsaw (Poland).

16. *LASERLAB-EUROPE IV – The Integrated Initiative of European Laser Research Infrastructures.* Grant agreement number 654148, PRUE 31-375, European Union's Horizon 2020 research and innovation program, EU Framework Programme, 2015-2017.
    Role: Co-investigator from from January 2015 to December 2017 (36 months).
    Principal Investigator: Prof. P. W. Wachulak, Military University of Technology, Warsaw (Poland).

17. *Extreme ultraviolet (EUV) Microscope with nanometer spatial resolution for applications in modern science and technology*, funded by the Polish National Centre for Research and Development (Narodowe Centrum Badań i Rozwoju) *LIDER*, 4th edition programme – Award number LIDER/004/410/L-4/12/NCBR/2013, 36 months, 2013-2016.
    Role: Co-investigator from September 2014 to November 2016 (26 months).
    Principal Investigator: Prof. P. W. Wachulak, Military University of Technology, Warsaw (Poland).

18. *Microscopy in the extreme ultraviolet (EUV) and soft X-ray (SXR) region*, funded by the Polish National Centre for Science (Narodowe Centrum Badań i Rozwoju), *SONATA* framework, award number DEC-2011/03/D/ST2/00296, 2012-2015.
    Role: Co-investigator from September 2014 to December 2015 (15 months).
    Principal Investigator: Prof. P. W. Wachulak, Military University of Technology, Warsaw (Poland).

19. *LASERLAB-EUROPE III – The Integrated Initiative of European Laser Research Infrastructures.I* Grant agreement number 284464, PRUE 31-089, European Union, EU Framework Programme, 2012-2015.
    Role: Co-investigator from September 2014 to November 2015 (14 months).
    Principal Investigator: Prof. H. Fiedorowicz, Military University of Technology, Warsaw (Poland).

TEACHING ACTIVITIES:

Academic Year 2024-2025

- Lecturer of APPLIED PHYSICS for Nursing Science students, at the Faculty of Medicine and Surgery of Kore University of Enna (Enna, Italy) [20 hours of Lectures].

- Lecturer of APPLIED PHYSICS for Nursing Science students, at the Faculty of Medicine and Surgery of Kore University of Enna (Second Site, Located in Caltagirone, Italy) [20 hours of Lectures].

- Lecturer of APPLIED PHYSICS for Medicine students, at the Faculty of Medicine and Surgery of Kore University of Enna (Enna, Italy) [72 hours of Lectures].

Academic Year 2023-2024

- Lecturer of APPLIED PHYSICS for Nursing Science students, at the Faculty of Medicine and Surgery of Kore University of Enna (Enna, Italy) [20 hours of Lectures].

- Lecturer of APPLIED PHYSICS for Medicine students, at the Faculty of Medicine and Surgery of Kore University of Enna (Enna, Italy) [72 hours of Lectures].

- Lecturer of an Intensive Course for Nursing Science Students and for Medicine and Surger students at Kore University of Enna (Enna, Italy). The aim of the course was to fill the students' gaps in Mathematics, Logical and Physics principles [12 hours of Lectures].

Academic Year 2021-2022

- Examination board for the subject of PHYSICS (SSD FIS/07), at Dipartimento di scienze e tecnologie biologiche e ambientali (Dept. of biological and environmental sciences and technologies), Salento University, for the degree courses of: "Scienze e tecnologie per l'ambiente" (Sciences and technology for the environment), "Scienze Biologiche" (Biology) and "Medicina e Chirurgia" (Medicine and Surgery).
- Lecture for the XXXVII cycle of Ph.D. in Physics at Messina University (Messina, Italy) "X-rays and UV detection for plasma diagnostics and nano-imaging", June 23th 2022.

Academic Year 2020-2021

- Tutor for the subject of PHYSICS (SSD FIS/07), at Dipartimento di scienze e tecnologie biologiche e ambientali (Dept. of biological and environmental sciences and technologies), Salento University for the degree course of Scienze e tecnologie per l'ambiente" (Sciences and technology for the environment) and "Scienze Biologiche" (Biology). (60 hours)

- Examination board for the subject of PHYSICS (SSD FIS/07), at Dipartimento di scienze e tecnologie biologiche e ambientali (Dept. of biological and environmental sciences and technologies), Salento University, for the courses: "Scienze e tecnologie per l'ambiente" (Sciences and technology for the environment) and "Scienze Biologiche" (Biology).
- Referee for the Bachelor Thesis in Ottica e Optometria (Optics and Optometry) entitled: *"Abilità visive nello sport" (Visual skills in sport)*. Candidate: Mr. Dell'Anna Lorenzo, Supervisor: Prof. M. A. Gorgoni.
- Referee for the Bachelor Thesis in Physics entitled: *"Un sistema accoppiato di fotoni-magnoni in cavità" (A coupled photons-magnons system in cavity)*. Candidate: Mr. Cutrino Roberto Oronzo, Supervisor: Prof. L. Martina.
- Lecture for the XXXVI cycle of Ph.D. in Physics at Messina University (Messina, Italy) "Microscopy techniques and plasma diagnostics in the field of Soft X-Rays and Extreme Ultraviolet radiation employing gaseous sources, July 9th 2021.

Academic Year 2019-2020

- Seminars and Lectures at the NPI (Nuclear Physics Instutute) of the Czech Academy of Sciences, Řež (Czech Republic) about investigations of innovative materials (Graphene Oxide, Multilayers sensors, dosimeters) by IBA.
- Lecture for the XXXV cycle of Ph.D. in Physics at Messina University (Messina, Italy "Nanoscale imaging employing a compact laser plasma source based on a double stream gas-puff target", July 13th 2020.

Academic Year 2018-2019

- Seminars and Lectures at the NPI (Nuclear Physics Instutute) of the Czech Academy of Sciences, Řež (Czech Republic) about investigations of Cultural Heritages by IBA (Ion Beams Analysis).
- Lecture for the XXXIV cycle of Ph.D. in Physics at Messina University (Messina, Italy) "Silicon Carbide detectors for Laser-Plasma Diagnostics", October 15th 2019.

Academic Year 2017-2018

- Seminars and Lectures at the Institute of Optoelectronics (IOE) of the Military University of Technology, Warsaw (Poland) about short wavelengths microscopy sources and plasma detections employing double stream gas-puff targets.
- Seminars and Lectures at the IPPLM (Institute of Plasma Physics and Laser Microfusion), Warsaw (Poland) about Protons acceleration in the TNSA (target normal sheath acceleration) regime by fs lasers.

EDITORIAL EXPERIENCE:

- Member of the Editorial board for the peer-reviewed – Open Acces Journal "Open Physics" (De Gruyter) I.F. 1.9 – Section "Plasma physics" (from June 2021).
  Journal Indexed on SCOPUS and Web of Sciences (WOS).
  https://www.degruyter.com/journal/key/PHYS/html

- Member of the Editorial board for the peer-reviewed – SN Applied Sciences (Springer Nature) I.F. 2.6 – Section "Physics/Materials" (from February 2022).
  Journal Indexed on SCOPUS. https://www.springer.com/journal/42452

REVIEWER ACTIVITY:

Reviewer for the following peer-reviewed journals:

- Measurement (*Elsevier*) – I.F. (Impact Factor) 5.2
- Microchemical Journal (*Elsevier*) – I.F. 4.9
- Heliyon (*Cell Press*) – I. F. 3.4
- Optical Materials (*Elsevier*) – I.F. 3.8
- Journal of Physics D: Applied Physics (*IOPScience*) – I.F. 3.1
- Applied Sciences (*MDPI*) – I. F. 2.5
- Applied Physics A (*Springer*) – I. F. 2.6
- Photonics (*MDPI*) – I.F. 2.1
- Journal of Instrumentation (*IOPScience*) – I.F. 1.3
- Radiation Effects and Defects in Solids (*Taylor & Francis*) – I.F. 1.1
- Nano (*World Scientific*) – I. F. 1.0
- Results in Surfaces and Interfaces (*Elsevier*) - CiteScore 2.7
- Acta Polytechnica (*ČVUT*) – CiteScore 1.5
- Elsevier (Book Proposals)

CERTIFICATIONS:

- 23/05/2023: **National Scientific Habilitation** (*Abilitazione Scientifica Nazionale*) to teach as Associate Professor **in the disciplinary field of *02/D1 – Applied physics, physics teaching and history of physics*** (Italian higher education system, Ministerial Decree n. 553/2021 and 589/2021).
- 30/05/2022: **National Scientific Habilitation** (*Abilitazione Scientifica Nazionale*) to teach as Associate Professor **in the disciplinary field of *02/B1 - Experimental Physics of Matter*** (Italian higher education system, Ministerial Decree n. 553/2021 and 589/2021).
- Certification of Training on Delta V + Conflo4 + Gasbench from TermoFisher scientific, February 2021.
- IT Security – Issued by INFN (Istituto Nazionale di Fisica Nucleare, National Institute of Nuclear Physics), Catania (Italy), September 2020.
- SARA 2014 (Safe Applications of RAdiation and radionuclides), Hasselt University (Belgium), February 2014.
- Training Course for Radiation Protection, INFN (Instituto Nazionale di Fisica Nucleare, National Nuclear Physics Institute), Catania (Italy), November 2013.
- Cambridge English Certificate (B1 Level) – License Number: 0041673866, Oxford University, September 2013.

AWARDS:

1. Best Poster Presentation Award at SNAIA 2018 (Smart Nanomaterial Advances, Innovations and Applications 2018), Paris, 10-13 Dec. 2018.
   Certificate + £ 50,00 prize from the Royal Academy of Chemistry.
   https://blogs.rsc.org/nr/2019/02/12/congratulations-to-the-prize-winners-at-snaia2018/?doing_wp_cron=1550177750.7013831138610839843750
2. Travel Grant (€ 250,00) from the European Microscopy Society to attend the Multinational Congress on Microscopy (MCM 2015), August 23-28, 2015, Eger, Hungary.
3. Travel Grant to attend at TriesteNext 2013, European Exhibition of Scientific Research, 27-29 September 2013, Trieste, Italy.

PROFESSIONAL SOCIETIES ASSOCIATIONS:

- **SIF** - Italian Physics Society, from 2010.
- **PSM** - Polish Society of Microscopy, from 2015 to 2017.
- **EMS** - European Microscopy Society, from 2015.
- **E-MRS** - European Materials Research Society, from 2019 to 2021.

- **JČMF** - Union of Czech Mathematicians and Physicists, from 2020 to 2021.
- **ČFS** - Czech Physical Society, from 2020 to 2021.
- **EPS** - European Physical Society, from 2020 to 2022.
- **ANEDbc** – Italian Association for Experts in Diagnostics, Sciences and Technologies applied to Cultural Heritage, from 2021 to 2022.
- **SISM** - Italian Society for Microscopy Sciences, 2021.
- **AIF** – Associazione per l'Insegnamento della Fisica, 2024-2'25.

METRICS ***(last update: 15/05/2025)***

GOOGLE SCHOLAR: 189 publications, 1640 citations, h-index 21

https://scholar.google.it/citations?hl=it&user=d-9zrLgAAAAJ

SCOPUS: 173 publications,1431 citations, h-index 18

https://www.scopus.com/authid/detail.uri?authorId=56519604100

WEB OF SCIENCES: 171 publications, 1320 citations, h-index 18

https://www.webofscience.com/wos/author/record/G-6649-2019

ORCID: https://orcid.org/0000-0003-2404-5062