

CURRICULUM VITÆ ET STUDIORUM

PERSONAL INFORMATION

First name and Surname: **Federico Picollo**
Date and place of birth: 08/08/1984, Turin
Nationality: Italian
Language: Italian (mother tongue)
English (medium)
French (scholastic)



Marital Status: Married

Home address: Via XXV Aprile 33, 10055 Condove (TO)
Work address: Via Pietro Giuria 1, 10125 Turin (TO)

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E-mail: picollo@to.infn.it

SCIENTIFIC CAREER AND RESEARCH

March 2017 – in course: **Post-Doc**

Post-Doctoral Fellowship (Selection n° A02.150/2016), “**Development of artificial diamond sensor for application in micro-radiobiology**” at the Department of Physics of the University of Turin, group of Solid State Physics, responsible dr. Paolo Olivero

Objective

Development of sensors for the simultaneous measurement of cellular activity and dosimetric signal for radiobiological application.

Achievements

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March 2016 – February 2017: **Post-Doc**

Post-Doctoral Fellowship (Selection n° 6420), "**Development of cellular biosensors in artificial diamond**" at the Department of Physics of the University of Turin, group of Solid State Physics, responsible dr. Paolo Olivero

Objective

Development and fabrication of devices in artificial diamond for cellular activity monitoring and analysis.

Achievements

I defined and realized multi-electrode sensors (60 channels) that allow detecting *in vitro* electrical activity (action potential) from neuronal culture of hippocampus.

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January 2014 – December 2015: **Post-Doc**

Post-Doctoral Fellowship (Selection n° 157660), "**Development of ion beam nanofabrication techniques in diamond for applications in bio-sensing**" at the Section of Turin of National Institute of Nuclear Physics (INFN), National Scientific Committee V, **responsible Dr. Federico Picollo**

Objective

Developing of a **high energy** (MeV) **ion beam** based **nanofabrication** technique devoted to biosensors realization.

Achievements

Definition of a **micro/nano fabrication protocol** of diamond by high-energy ion beams. The versatility of the developed technique, based on **masks** of metal or resists **realized with EBL or FIB**, enables its use also with different materials. The realized devices allowed the study neuroendocrine cells or tissue slices.

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February – December 2013: **Post-Doc**

Post-Doctoral Fellowship (n° A02.219/2012), "**Development of a cellular bio-sensor in diamond with ionic lithography techniques**" at the Department of Physics of the University of Turin, group of Solid State Physics, responsible Dr. Paolo Olivero

Objective

Implementation of a **bio-sensor in diamond** for the detection of the activity of cell's cultures.

Achievements

Two cellular biosensors for exocytosis measurement are realized. A multi-electrode device (16 electrodes) for simultaneous study from a cells culture. A multi-electrode device (16 electrodes with lateral dimension of 1 μm) for detection of catecholamine secretion from a single cell.

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June 01, 2013 – June 30, 2013: **occasional collaboration**

Advice contract (n° A02.121/2011), research project "Developing of lithographic technique in diamond for cellular biosensor", task "**Developing and characterization of single crystal diamond biosensors**", at the Department of Drug Science and Technology of the University of Turin, responsible Prof. Emilio Carbone

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January - December 2012: **Post-Doc**

Post-Doctoral Fellowship (n° A02.121/2011), "**Development of techniques for micro-fabrication of diamond for the construction of cellular bio-sensor**" at the Department of Physics of the University of Turin, group of Solid State Physics, responsible Prof. Ettore Vittone

Fellowship co-financed on funds two-year project (2011-2012) "MicroDiBi" ("Diamond Microchips for "drug screening" and biomedical applications"), active at the Regional Innovation Pole "BioPmed", coordinator: Prof. Emilio Carbone (University of Turin).

Objective

Realization of a **prototype of a bio-sensor** in diamond that allows the detection of the activity of cell cultures.

Achievements

I realized a biosensor for the detection of the cellular exocytosis from a cell culture.

EDUCATION AND TRAINING

22 – 26 May 2017: **Microbeam Training Course at RARAF**", at the Columbia University's Nevis Laboratory in Irvington (NY – USA)

January 2009 - December 2011: **PhD student**

Doctoral School of Science and High Technology XXIV cycle, address on Science and Technology of Materials and Nanosystems at the Department of Experimental Physics of University of Turin, at the group of Solid State Physics, supervisor Prof. Ettore Vittone

January 20, 2012: **PhD thesis discussion**,

thesis title "Single crystal diamond micro-fabrication by means of ion beams"
PhD examination commission: Dr. Marco Truccato (Dept. Physics, University of Turin),
Professor Etienne Gheeraert (Institut Neel, Grenoble, France), Prof. Luca Giampaolo Nobili
(Department of Chemistry, Materials and Chemical Engineering "G. Natta" , Politecnico di
Milano)

Activity:

The research that was carried out during the PhD concerns the micro-fabrication and characterization of the diamond in order to modify the surface, electrical and mechanical properties. The main techniques used were ion spectroscopy and ion lithography (Deep Ion Beam Lithography) at linear particle accelerators:

- o AN2000 microbeam line at the National Laboratory of Legnaro (LNL-INFN, Padova);
- o External microbeam line at the Laboratory of Nuclear Techniques for Cultural Heritage (LABEC-INFN, Firenze);
- o Ion microbeam line at the laboratory of Ruđer Bošković Institute (LIBI-RBI, Zagabria, Croatia)
- o MP2 beamline, MicroAnalytical Research Centre, University of Melbourne – Melbourne (Australia)

Objective

The aim of the research was the realization of a **prototype of particles detector** in diamond of new conception and implementation of a prototype of **bio-sensor in diamond** that would allow the detection of the activity of a single cell.

Achievements

During the three-year of my PhD I successfully developed an implantation technique that allows to create three-dimensional structures into diamond and to micro-fabricate buried graphitic electrodes with emerging endpoints. I characterized the electrical and mechanical properties of the created structures. I made a prototype of "all-carbon" particles detector with charge collection efficiency of 100% tested by measures of Ion Beam Induced Charge (IBIC) at the ion microbeam line at the laboratories of Ruđer Bošković Institute. I realized a prototype of a cellular biosensor that allows the amperometric measurement of exocytosis of a single cell chromaffin reaching the performance of the commercial electrodes, but offering the possibility of making further structures on the same device through DIBL thus obtaining a "Lab-on-a-chip".

19 – 23 November 2012: **Advanced Course on "Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation"**, at the Department of Electronics and Information of Politecnico di Milano

20 – 21 July 2012: **SPIRT tutorial - live cell micro irradiation**, at the Escola Superior de Tecnologias da Saúde de Lisboa (ESTeSL) organized by UNIBW München, Institut für Messtechnik e Universität Bordeaux, CENBG subsidized and sponsored by SPIRT (Support of Public and Industrial Research using Ion beam Technology) an Integrated Infrastructure Initiative (I3) founded by European Commission

20 – 21 June 2010: **SPIRT tutorial - ion beam surface analysis**, at the Eidgenössische Technische Hochschule (ETH) di Zurigo, subsidized and sponsored by SPIRT (Support of Public and Industrial Research using Ion beam Technology) an Integrated Infrastructure Initiative (I3) founded by European Commission

17 – 21 May 2010: **Introductory school of theory-practice of Scanning Probe Microscopy**, at the National Research Center of Bologna

31 May – 2 June 2010: **1^a Resident school of SAT**, organized by Doctoral School of Science and High Technology, (Pra-Catinat, Italy)

2006 - 2008: **Master of Science**

Study course in Materials Science at the Faculty of Mathematical, Physical and Natural Sciences of the University of Turin.

Characterizing courses:

- Solid State Physics (with associated laboratories)
- Semiconductor Materials (with associated laboratories)
- Polymeric Materials (with associated laboratories)
- Metallic Materials (with associated laboratories)

3 October 2008: Master's degree, 110/110 cum laude and Right of Publication

experimental thesis in solid state physics,

title " Microfabrication of three-dimensional structures into diamond by Deep Ion Beam Lithography "

supervisor: Prof. Ettore Vittone, co-supervisor: Dr. Paolo Olivero, outside expert: Prof. Gabriele Ricchiardi

2003 - 2006: **Bachelor of Science**

Study course in Materials Science at the Faculty of Mathematical, Physical and Natural Sciences of the University of Turin

22 September 2006: degree, 110/110 cum laude

experimental thesis at the Laboratory of Metallurgy,

title " Thermophysical properties of a nickel-based superalloy "

supervisor: Prof. Livio Battezzati

1998 - 2003: Diploma Scientifico

Liceo Scientifico Tecnologico at the Liceo Statale Norberto Rosa di Bussoleno

2 July 2003: diploma

BRIEF TRACK RECORD**COLLABORATIONS**

- International Agency for Atomic Energy (IAEA) (scientific collaboration n. 17028)
- CERN collaboration RD42
- Neurologic institution "Carlo Besta", Milano, Italy, (Prof. E. Parati)
- Laboratory for Ion Beam Interactions of Ruđer Bošković Institute, Zagreb (Prof. M. Jakšić)
- Nano-Optics and Forces group, Institute NEEL CNRS, Grenoble (Prof. O. Arcizet, Dr. E. Dupont-Ferrier)
- Science, Engineering & Health Office, RMIT University, Melbourne (Dr. B. Fairchild)
- School of Physics and Melbourne Materials Institute, University of Melbourne (Prof. S. Praver)
- Electron Microscope Unit, Bio21 Institute, University of Melbourne (Dr. S. Rubanov)
- Department of Industrial Engineering, University of Roma "Tor Vergata" (Dr. G. Verona-Rinati, Dr. C. Verona)
- National Laboratory of Legnaro, LNL-INFN (Dr. V. Rigato, Dr. R. Cherubini)
- Laboratory of Nuclear Techniques for Cultural Heritage, LABEC-INFN, Firenze (Dr. L. Giuntini)
- Department of Physics, University of Padova (Dr. M. Bazzan, Dr. N. Argiolas)
- Department of Physics, Politecnico di Milano (Dr. S. Eaton, Prof. R. Ramponi)
- NanoFacility Piemonte and Quantum Research Laboratory, National Institute of Metrological Research, Torino (Dr. G. Amato, Dr. L. Boarino, Dr. M. Genovese)
- Physics department of University of Torino (Dr. P. Olivero, Prof. E. Vittone)
- Drug Science and Technology of University of Torino (Prof. E. Carbone, Prof. V. Carabelli, Dr. A. Barge, Dr. K. Martina, Prof. S. Tagliapietra)

COORDINATOR OF PROJECTS and EXPERIMENTS:

- Coordinator of **2 funded projects** (2 INFN projects)
- Coordinator of **2 experiments** (1 INFN + 1 European)
- Participant in **8 funded projects** (5 INFN projects + 1 regional + 2 nationals)
- Participant in **6 experiments** (2 INFN + 1 INRiM + 1 IAEA + 2 7th framework)
- Days of access to international implantation facility: **94**

TEACHING ACTIVITIES and CO-SUPERVISOR OF DEGREE STUDENTS:

Adjunct professor of Solid State Physics (2012/13), Material properties (2013/14) and Methods for Materials Characterization (2015/16-2016/17) + teaching assistance (2009/10 – 2015/16)

Co-Supervisor of:

- Bachelor's Degree thesis in Physics and Materials Science: 11
- Master's Degree thesis in Physics: 6

BIBLIOMETRIC INDEXES

- organizer of conference, workshop or seminars 3
- invited talks at conferences and workshop: 3
- contributed talks at conferences: 12
- poster presentations at conferences: 4
- seminars: 2
- co-author in talks at conferences: 26
- co-author in posters at conferences: 24
- awards: 2
- ISI publications: 34
- no-ISI publications: 25
- h-index 9
- citations 195
- ResearcherID: A-2675-2010
- Scopus Author ID: 25825404600
- ORCID 0000-0003-3179-271X

AWARDS AND HONORS:

- **Prize to the communication** "Amperometric detection of quantal catecholamine secretion from individual cells by an ion beam microfabricated biosensor single crystalline diamond" as the **first best oral presentation** at the "Biophysics and Medical Physics" of the "XCVIII National Congress of the Italian Society of Physics", 17 - 21 September, 2012, Napoli, Italy, leading to the €10,000 prize
- **Honourable Mention** for the **poster** "Focused ion beam fabrication and IBIC characterization of a diamond detector with buried electrodes" presented to "ICNMTA2010 - 12th International Conference on Nuclear Microprobe Technology and Applications" (26-30 July 2010, Leipzig, Germany)

TEACHING ACTIVITIES

SCHOOL YEAR 2016 - 2017:

Adjunct professor of the course "**Methods for material characterization with laboratory**" (Ssd FIS/01) of the Bachelor's degree in Science and Technology of Materials at the University of Turin (44 hours)

SCHOOL YEAR 2016 - 2017:

Winner of the competition announcement for the allocation of "**Integrative teaching activity**" (art. 7 of the Statute of the University of Turin)

Project To3nano outreach: *from diamonds to superconductors: a journey to "extreme" materials discovery for advanced micro and nano devices development*

Area: Fisica

Supervisor: Dott. Paolo Olivero (Università di Torino)

SCHOOL YEAR 2015 - 2016:

Adjunct professor of the course "**Methods for material characterization with laboratory**" (Ssd FIS/01) of the Bachelor's degree in Science and Technology of Materials at the University of Turin (44 hours)

SCHOOL YEAR 2015 - 2016:

Winner of the competition announcement for the allocation of "**Educational cooperation for Cycles Tutorials**" (art. 76 of the Statute of the University of Turin)

Course: **Material Structure with Laboratory / Laboratory of Physics of Matter,**

Area: Physics

Supervisor: Prof. Ettore Vittone (University of Turin)

SCHOOL YEAR 2013 - 2014:

Adjunct professor of the course "**Material properties B: origin, typologies, databases**" (Ssd FIS/01) of the Master in Materials, Mathematics e Models for the Production and for the Design at the University of Turin (16 hours)

SCHOOL YEAR 2012 - 2013:

Adjunct professor of the course "**Solid State Physics with Laboratory**" (Ssd FIS/03, course code MFN0671) of the Bachelor's degree in Science and Technology of Materials at the University of Turin (40 hours)

SCHOOL YEAR 2012 - 2013:

Winner of the competition announcement for the allocation of "**Educational cooperation for Cycles Tutorials**" (art. 76 of the Statute of the University of Turin)

Course: **Solid State Physics,** Area: Physics

Supervisor: Prof. Ettore Vittone (University of Turin)

SCHOOL YEAR 2011 - 2012:

Winner of the competition announcement for the allocation of "**Educational cooperation for Cycles Tutorials**" (art. 33 subsection 4 of the Statute of the University of Turin)

Course: **Solid State Physics, Structure of Matter and Laboratory of Material Physics,** Area: Physics

Supervisor: Prof. Ettore Vittone (University of Turin)

SCHOOL YEAR 2010 - 2011:

Winner of the competition announcement for the allocation of "**Educational cooperation for Cycles Tutorials**" (art. 33 subsection 4 of the Statute of the University of Turin)

Course: **Laboratory of Solid State Physics I and II**, Area: Physics

Supervisor: Prof. Ettore Vittone (University of Turin)

SCHOOL YEAR 2009 - 2010:

Winner of the competition announcement for the allocation of "**Educational cooperation for Cycles Tutorials**" (art. 33 subsection 4 of the Statute of the University of Turin)

Course: **Laboratory of Solid State Physics II**, Area: Physics

Supervisor: Prof. Ettore Vittone (University of Turin)

SCHOOL YEAR 2004 - 2005:

Winner of the competition announcement for the allocation of "**Part Time Collaboration**" (art. 13 l.390/91 of the Statute University of Turin)

Course: "**Numerical Analysis, Laboratory of programming and computing, computer applications in materials science**"

Supervisor: Prof. Vittoria Demichelis (University of Turin)

Co-supervisor of Degree students:

- Brenda Berenice Martínez Cantú: Master's Degree thesis in European Master MaMaself at the University of Turin, thesis title: "Processing and characterization of nanodiamond for drug delivery", in course;
- Federico Pastore: Master's Degree thesis in Physics at the University of Turin, thesis title: "Development of detector in artificial diamond for radiobiological application", in course;
- Pietro Aprà: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Processing and Raman characterization of artificial nanodiamonds", graduated in October 2016;
- Marco Riccardi: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Electrical characterization and assembling of cellular biosensors in artificial diamond", graduated in July 2016;
- Fiammetta Sardi: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Fabrication and testing of microfluidic channels in artificial diamond", graduated in July 2016;
- Fabio Scaffidi Muta: Master's Degree thesis in Physics at the University of Turin, thesis title: "Development of ion beam lithography techniques in artificial diamond", graduated in July 2016;

- Giulia Bruno: Master's Degree thesis in Physics at the University of Turin, thesis title: "Characterization of multi-functional cellular biosensors in artificial diamond", graduated in April 2016;
- Filippo Gedda: Master's Degree thesis in Physics at the University of Turin, thesis title: "Development and test of multi electrode biosensors in artificial diamond", graduated in April 2016;
- Federico Pastore: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Development of a FIB assisted masking technique for the fabrication of sub-micrometric structures in diamond", graduated in December 2015;
- Francesco Parino: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Development of advanced lithography techniques for the fabrication of sub-micrometric graphitic structures in diamond", graduated in December 2014;
- Erick Cerrato: Bachelor's Degree thesis in Materials Science at the University of Turin, thesis title: "Development of microfluidic devices in diamond", graduated in October 2014;
- Anna Marsicano: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Development of an automatized displacement system for a laser microfabrication apparatus", graduated in October 2013;
- Marta Bassignana: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Fabrication of opto-mechanical structures in single crystal diamond", graduated in July 2013;
- Giovanni Sofia: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Development and testing of a system in controlled atmosphere for the selective etching of graphite from synthetic diamond samples", graduated in April 2013;
- Giulia Garello: Master's Degree thesis in Physics at the University of Turin, thesis title: "Development and testing of a cellular bio-sensor in single-crystal diamond", graduated in April 2013;
- Alberto Sassi: Bachelor's Degree thesis in Physics at the University of Turin, thesis title: "Development of instrumentation and methodologies for the selective etching of graphite from single-crystal diamond", graduated in June 2012;
- Giuseppe Sansone: Bachelor's Degree thesis in Materials Science at the University of Turin, thesis title: "Development of a cell bio-sensor in single-crystal diamond", graduated in July 2012.

SCIENTIFIC DISSEMINATION

18-20 July 2017

Course for High School students "Vacuum realization, a technology that leave without breath" for **Summer Campus of Mathematics, Physics, Astrophysics and New Technologies** in the framework of: "Scientific Degree Project"

23 May 2016

Seminar during international event for the general public: "The technology helps to feel good: from biosensors to cancer treatment" for *Pint of Science (Turin)* under the program *Tech Me Out*

March 2015:

collaboration in orientation activities sponsored by the University of Turin: "**Scientific Degree Project**"
Supervisor: Dr. Paolo Olivero (University of Turin)

2-7 July 2010

Educational events for the general public: "Meet the diamond: developing tomorrow's Lab-On-Chip clinics" for *EuroScience Open Forum 2010 (Turin)* under the program *Science in the City*
Supervisor: Dr. Paolo Olivero (University of Turin)

March 2010:

collaboration in orientation activities sponsored by the University of Turin: "**Scientific Degree Project**"
Supervisor: Dr. Alessandro Lo Giudice (University of Turin)

February - May 2009:

collaboration in orientation activities sponsored by the University of Turin: "**Scientific Degree Project**"
Supervisor: Dr. Alessandro Lo Giudice (University of Turin)

ORGANIZER OF CONFERENCES, WORKSHOPS and SEMINARS

I was organizer to the following conferences, workshop and seminars:

- **Dr. Markus Mohr** (University of Ulm, Ulm, Germany): "*Influence of grain boundaries on elastic and plastic properties of nanocrystalline diamond films*", Torino, Italy, 15 May 2017
- **Dr. Anna Ferri** (Neurological institute BESTA, Milano, Italy): "*Regenerative medicine: Mesenchymal stem cell differentiation on graphene based scaffolds*", Torino, Italy, 05 May 2016
- **2nd Workshop "Diamond & New Technologies"** -Technological applications of artificial diamond , Torino, Italy, 16 September 2014

COORDINATOR OF FUNDED PROJECTS and NOT FUNDED

I am responsible for or I was coordinator to the following projects:

- **Two years project** (2017 - 2018) **DIACELL** "DIAMond-based detectors for in vitro CELLular radiobiology", funded by the National Institute of Nuclear Physics (INFN), project budget: 78,000 €, *Principal Investigator*
- **Experiment** (2016) "**Micro/Nano-modified diamond lab-on-a-chip for neuronal networks investigation**" as part of the Integrated Infrastructure Initiative "CERIC" funded by the European Commission for the access of Ion Beam Line at Ruđer Bošković Institute (Zagreb, Croatia) and Nanospectroscopy beamline at Elettra Synchrotron (Trieste, Italy), *Coordinator*
- **Two years project** (2014 - 2015) **INFN-Grant for young scientist** "Development of ion beam nanofabrication techniques in diamond for applications in bio-sensing", funded by the National Institute of Nuclear Physics (INFN), project budget: 88,000 €, *Principal Investigator*
- **Experiment** (2013 - present) **Dia.Fab.** on the microfabrication of diamond with ion beams, at the line AN2000 of ion microscopy at the National Laboratories of Legnaro of the National Institute of Nuclear Physics (INFN), *Coordinator*
- **Scientific responsible** (2011 - 2015) of biosensor developing for FIRB project coordinated by Dr. Paolo Olivero, project budget: 1,064,000 €

PARTICIPANT IN PROJECTS FINANCED and NOT FINANCED

I participate or I participated as co-investigator to the following projects:

- **Two years project** (2017 – 2018) **D-Music** "Diamond-based MUlti-task Sensing Chip for neuroscience" funded by the University of Turin, Coordinator: Prof. Valentina Carabelli (University of Turin)
- **Two years project** (2016 - 2017) **Diesis** "Diamond-based electrically-controlled single-photon sources", funded by the Institute of Nuclear Physics (INFN), coordinator: Dr. Jacopo Forneris (INFN – section of Torino)
- **30 months project** (2013 – 2015) **A.Di.N-Tech** "Advanced Diamond-based Nano technologies" funded by the University of Turin in the framework of "University Research Projects - Junior PI Grants", CUP: D15E13000130003, budget: 74,800 €, Coordinator: Dott. Paolo Olivero (University of Torino)
- **Two years project** (2013 - 2014) **INFN-CHneT** "Dating: with accelerator mass spectroscopy and thermoluminescence", coordinator: Prof. Francesco Taccetti (University of Florence)

- **Four years project** (2011 - 2015) **FIRB** "Development of diamond microfabrication techniques for applications in bio-sensors and photonics" funded by the Ministry of Education, University and Research (MIUR) under the scheme "FIRB - Future In Research 2010", coordinator: Dr. Paolo Olivero (University of Turin)
- **Four years agreement** (2011 - 2015) **of scientific collaboration** n. 17028 "Modelling and validation of ion beam induced damage in semiconductors" between the International Agency for Atomic Energy (IAEA) and the Department of Experimental Physics, University of Turin, coordinator: Prof. Ettore Vittone (University of Turin)
- **Experiment** (2010 - present) "**Microfabrication in diamond**" at the "NanoFacility Piemonte" laboratory (INRiM), coordinator: Dr. Paolo Olivero (University of Turin)
- **Two years project** (2011 - 2013) **Diamed** "Development of innovative dosimeters for advanced radiotherapy application" funded by the Institute of Nuclear Physics (INFN), national coordinator: Dr. Gianluca Verona-Rinati (University of Rome "Tor Vergata")
- **Two years project** (2011 - 2012) **MicroDiBi** "Diamond Microchips for "drug screening "and biomedical applications" active at the Regional Innovation Pole "BioPmed", coordinator: Prof. Emilio Carbone (University of Turin)
- **Experiment** (2011 - 2013) **Titania** on the study of the properties of titanium dioxide modified by implantation of nitrogen at the line CN of ion microscopy of the National Laboratories of Legnaro of the Institute of Nuclear Physics (INFN), coordinator: Dr. Paolo Olivero (University of Turin)
- **Experiment** (2009 - 2012) **Dia.Fab.** on the microfabrication of diamond with ion beams, at the line AN2000 of ion microscopy at the National Laboratories of Legnaro of the Institute of Nuclear Physics (INFN), coordinator: Dr. Paolo Olivero (University of Turin)
I held the position of responsible during measurement runs
- **Experiment** (2011) **SPIRIT** "IBIC characterization of position sensing detectors diamond" as part of the Integrated Infrastructure Initiative "SPIRIT" funded by the European Commission under the program "Capacities" (7th framework), coordinator: Dr. Jacopo Forneris (University of Turin)
- **Experiment** (2011) **SPIRIT** "Ion beam microfabrication of artificial diamond" as part of the Integrated Infrastructure Initiative "SPIRIT" funded by the European Commission under the program "Capacities" (7th framework), coordinator: Dr. Paolo Olivero (University of Turin)

- **Three years project** (2010 - 2012) **INFN-DIARAD** "Monocrystalline CVD diamond dosimeters for radiotherapy applications", coordinator: Prof. Francesco De Notaristefani (University of Rome 3)
- **Two years Research Project of National Interest** (2010 - 2011) **PRIN** "dosimeters based on synthetic monocrystalline diamond for applications in clinical radiotherapy," funded by the Ministry of Education, University and Research (MIUR), coordinator: Prof. Marco Marinelli (University of Rome "Tor Vergata")
- **Four years project** (2009 - 2012) **INFN-FARE** " Outside Rarefied Beams", coordinator: Dr. Lorenzo Giuntini (University of Florence)

SCIENTIFIC COLLABORATION and AFFILIATIONS

- **CERN collaboration** RD42 ("Development of Diamond Tracking Detectors for High Luminosity Experiments at the LHC"): 2013 – present
- National Institute of Nuclear Physics (**INFN**, group V): 2009 – present
- Centre of Excellence "Nanostructured Interfaces and Surfaces" (**NIS**): 2009 - present
- International Agency for Atomic Energy (**IAEA**) ("Modelling and validation of ion beam induced damage in semiconductors"), **scientific collaboration** n. 17028: 2011 - 2015
- National Consortium for the Physical Sciences of Matter (**CNISM**): 2012 – 2017
- Italian Society of Physics (**SIF**): 2012 – 2014

EDITOR OF SCIENTIFIC JOURNALS

I am member of the scientific editorial panel for the EC Neurology (ECNE) journal.

REFEREE FOR ISI JOURNALS

I am referee for the following journals:

- Applied Physics Letter
- Current Analytical Chemistry
- Diamond and Related Materials
- Nuclear Instruments and Methods in Physics Research B
- Scientific Reports
- Surface and Coatings Technology

QUALIFICATION & CERTIFICATES:

- 12/04/2017: **national scientific qualifications** as **Associate Professor** in the sector "02/B1 - Experimental Matter Physics"
- **European Computer Driving Licence (ECDL full)**

ISI PUBLICATIONS

- 34 *"Electrical characterization of a graphite-diamond-graphite junction fabricated by MeV carbon implantation"*, S. Ditalia Tchernij, N. Skukan, **F. Picollo**, A. Battiato, V. Grilj, G. Amato, L. Boarino, E. Enrico, M. Jakšić, P. Olivero, J. Forneris, **Diamond & Related Materials**, *in press*, doi: 10.1016/j.diamond.2017.02.019
- 33 *"Diamond Pixel Detectors and 3D Diamond Devices"*, N. Venturi et al. (RD42 Collaboration), **Journal of Instrumentation**, **11 (2016) C12062**, doi: 10.1088/1748-0221/11/12/C12062
- 32 *"Planar diamond-based multarrays to monitor neurotransmitter release and action potential firing: new perspectives in cellular neuroscience"*, V. Carabelli, A. Marcantoni, **F. Picollo**, A. Battiato, E. Bernardi, A. Pasquarelli, P. Olivero, E. Carbone, **ACS Chemical Neuroscience**, **8 (2017) 252-262**, doi: 10.1021/acschemneuro.6b00328
- 31 *"Fabrication of monolithic microfluidic channels in diamond with ion beam lithography"*, **F. Picollo**, A. Battiato, L. Boarino, S. Ditalia, E. Enrico, J. Forneris, A. Gilardino, M. Jakšić, F. Sardi, N. Skukan, A. Tengattini, P. Olivero, A. Re, E. Vittone, **Nuclear Instruments and Methods in Physics Research B**, *in press*, doi: 10.1016/j.nimb.2017.01.062
- 30 *"Microelectrode arrays of diamond-insulated graphitic channels for real-time detection of exocytotic events from cultured chromaffin cells and slices of adrenal glands"*, **F. Picollo**, A. Battiato, E. Bernardi, A. Marcantoni, A. Pasquarelli, E. Carbone, P. Olivero, V. Carabelli, **Analytical Chemistry**, **88 (2016) 7493 - 7499**, doi: 10.1021/acs.analchem.5b04449
- 29 *"Micro and nano-patterning of single-crystal diamond by swift heavy ion irradiation"*, J.G. García, I. Preda, M. Díaz-Híjar, V. Tormo-Márquez, O. Peña-Rodríguez, J. Olivares, F. Bosia, N.M. Pugno, **F. Picollo**, L. Giuntini, A. Sordini, P. Olivero, L. López-Mir, C. Ocal, **Diamond and Related Materials**, **69 (2016) 1-7**, doi: 10.1016/j.diamond.2016.06.015
- 28 *"Creation and characterization of He-related color centers in diamond"*, J. Forneris, A. Tengattini, S. Ditalia, **F. Picollo**, A. Battiato, P. Traina, I. P. Degiovanni, E. Moreva, G. Brida, V.

- Grilj, N. Skukan, M. Jakšić, M. Genovese, P. Olivero, *Journal of Luminescence*, **179** (2016) 59-63, doi: 10.1016/j.jlumin.2016.06.039
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PERSONAL CONFERENCES and WORKSHOP CONTRIBUTIONS - Invited Talks

- 3 Round Table, IFD2015 - INFN Workshop on Future Detectors, Turin, Italy, 16 - 18 December 2015
- 2 *"Sensori a base di diamante monocristallino e nanodiamanti fluorescenti: strumenti innovativi per le neuroscienze"*, **F. Picollo**, NIS COLLOQUIUM L'interazione fra nano-oggetti e neuroni: dalla biofisica alla nanomedicina, Torino, Italy, 30 November 2015
- 1 *"Structural and Electrical Characterization of Buried Graphitic Micro-Channels Fabricated in Single Crystal Diamond by Deep Ion Beam Lithography"*, **CAARI 2010 - 21st International Conference on the Application of Accelerators in Research and Industry**, Fort Worth, Texas (USA), 8 – 13 August 2010

PERSONAL CONFERENCES and WORKSHOP CONTRIBUTIONS - Contributed Talks

- 12 *"Diamond based-electrochemical sensor for simultaneous detection of quantal exocytic events from neuroendocrine cells"*, **F. Picollo**, A. Battiato, E. Bernardi, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, V. Carabelli, **2nd Italian National Conference on Condensed Matter Physics - FisMat2015**, Palermo, Italy, 28 September – 2 October 2015
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- 10 *"Simultaneous detection of quantal exocytic events from neuroendocrine cells directly grown on a diamond-based multi electrode biosensor"*, **F. Picollo**, A. Battiato, E. Bernardi, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, V. Carabelli, **International Conference on Bio-Sensing Technology**, Lisbon, Portugal, 10 – 13 May 2015
- 9 *"Deep Ion Beam Lithography in diamond: towards the nanoscale"*, **F. Picollo**, A. Battiato, E. Bernardi, P. Olivero, E. Vittone, **ICNMTA 2014 - International Conference on Nuclear Microprobe Technology and Applications**, Padova, 7 – 11 July 2014

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- 7 "Focused on beam micro-fabrication and IBIC characterization of a multi-electrode diamond detector with buried graphitic electrodes", J. Forneris, V. Grijl, M. Jaksic, N. Skukan, C. Verona, G. Verona-Rinati, A. Lo Giudice, P. Olivero, F. Picollo, E. Vittone, **Annual World Conference on Carbon - Carbon 2013**, Rio de Janeiro, Brazil, 14 – 19 July 2012
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- 3 "Focused ion beam fabrication of a diamond detector with buried graphitic electrodes", F. Picollo, P. Olivero, J. Forneris, M. Jakšić, M. Marinelli, Ž. Pastuović, N. Skukan, C. Verona, G. Verona-Rinati, E. Vittone, **Diamond Detector Workshop - Development and Applications**, Plitvice Lakes, Croatia, 7 – 10 March 2012
- 2 "Ion beam microfabrication of microfluidic devices in artificial diamond", F. Picollo, **SPIRIT Annual Meeting 2012**, Leuven, Belgium, 5 – 6 March 2012
- 1 "Studio sui canali conduttivi e la loro applicazione nella biosensoristica", F. Picollo, "Diamond & New Technologies" Workshop, Torino, Italy, 14 November 2011

PERSONAL CONFERENCES CONTRIBUTIONS – Posters

- 4 *"Diamond-based Multi Electrode Array biosensors: towards the systematic detection of exocytosis from chromaffin cells"*, A. Battiato, E. Bernardi, V. Carabelli, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, **F. Picollo**, E. Vittone, **"Dagli atomi al cervello"** convention, Milan, Italy, 27 January 2014
- 3 *"Characterization of single crystal synthetic diamond detectors with lateral IBIC microscopy"*, A. Lo Giudice, P. Olivero, C. Manfredotti, M. Marinelli, E. Milani, **F. Picollo**, G. Prestopino, A. Re, V. Rigato, C. Verona, G. Verona-Rinati, E. Vittone, **Hasselt Diamond Workshop 2011 - SBDD XVI**, Hasselt, Belgium, 21 – 23 February 2011
- 2 *"Buried graphitic channels micro-fabricated in synthetic single crystal diamond by deep ion beam lithography: structural and electrical characterization and application as electrodes for three-dimensional detectors"*, **F. Picollo**, P. Olivero, D. Gatto Monticone, L. Boarino, E. Enrico, B. Fairchild, J. Forneris, M. Jakšić, Ž. Pastuović, S. Prawer, S. Rubanov, N. Skukan, E. Vittone, **Hasselt Diamond Workshop 2011 - SBDD XVI**, Hasselt, Belgium, 21 – 23 February 2011
- 1 *"IV characterization at variable temperature of buried graphitic channels in diamond fabricated with MeV ion implantation"*, **F. Picollo**, G. Amato, F. Bellotti, S. Borini, A. Lo Giudice, M. Jakšić, P. Olivero, Ž. Pastuović, N. Skukan, E. Vittone, **Diamond2009, 20th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides**, Athens, Greece, 6 – 10 September 2009

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- 2 *"Diamond microfabrication by means of ion-beam lithography"*, **invited scientific seminar** organized by INFN Section of Florence at Sesto Fiornetino (FI), Italy, 5 April 2013
- 1 *"Single crystal diamond micro-fabrication by means of ion beam"*, **Advanced Course on "Electrical characterisation of nanoscale samples & biochemical interfaces: methods and electronic instrumentation"**, organized by the Department of Electronics and Information of Politecnico di Milano, Milan, Italy, 23 November 2012

CO-AUTHORSHIP IN CONFERENCE CONTRIBUTIONS - Talks

- 27 *"Bulk diamond optical waveguides fabricated by focused femtosecond laser pulses"*, J. P. Hadden, B. Sotillo, V. Bharadwaj, F. Bosia, **F. Picollo**, M. Sakakura, A. Chiappini, T. T. Fernandez, R. Osellame, K. Miura, M. Ferrari, R. Ramponi, P. Olivero, P. E. Barclay, S. M. Eaton, **SPIE Photonics West**, San Francisco (California), 28 January – 2 February 2017– **Invited Talk**

- 26 *"Diamond multielectrode arrays for real-time detection of oxidizable neurotransmitter release and cell excitability"*, V. Carabelli, A. Marcantoni, **F. Picollo**, A. Battiato, E. Bernardi, A. Pasquarelli, P. Olivero, E. Carbone, **16th International Conference "Monitoring Molecules in Neuroscience"**, Gothenburg, Sweden, 29 May– 2 June 2015 – **Invited Talk**
- 25 *"Towards innovative bioimaging techniques exploiting NV centers in nanodiamonds"*, P. Traina, E. Moreva, J. Forneris, A. Tengattini, I. P. Degiovanni, **F. Picollo**, A. Battiato, E. Bernardi, C. Enrico Bena, L. Boarino, N. De Leo, G. Amato, E. Enrico, V. Carabelli, L. Guarina, E. Carbone, P. Olivero, M. Genovese, **2nd Italian National Conference on Condensed Matter Physics - FisMat2015**, Palermo, Italy, 28 September – 2 October 2015
- 24 *"Electrical excitation and charge state control of deep colour centres in diamond by means of sub-superficial graphitic micro-electrodes"*, J. Forneris, P. Traina, S. Ditalia Tchernij, A. Tengattini, **F. Picollo**, V. Grilj, G. Brida, G. Amato, L. Boarino, E. Enrico, I. P. Degiovanni, E. Moreva, N. Skukan, M. Jakšić, C. Verona, G. Verona Rinati, M. Genovese, P. Olivero, **26th International Conference on Diamond and Carbon Materials**, Bad Homburg, Germany, 6 – 10 September 2015
- 23 *"Single crystal diamond multi electrode array fabricated by ion beam lithography: an all-carbon sensor for the study of neuroendocrine cells activity"*, **F. Picollo**, A. Battiato, E. Bernardi, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, V. Carabelli, **26th International Conference on Diamond and Carbon Materials**, Bad Homburg, Germany, 6 – 10 September 2015
- 22 *"Tuning diamond stiffness through defect control"*, A. Battiato, E. Bernardi, F. Bosia, M. Lorusso, **F. Picollo**, D. Ugues, A. Zelferino, R. Orlando, R. Dovesi, E. P. Ambrosio, P. Olivero, **26th International Conference on Diamond and Carbon Materials**, Bad Homburg, Germany, 6 – 10 September 2015
- 21 *"Electrical excitation and charge state control of deep colour centres in diamond by means of sub-superficial graphitic micro-electrodes"*, J. Forneris, P. Traina, S. Ditalia Tchernij, A. Tengattini, **F. Picollo**, V. Grilj, G. Brida, G. Amato, L. Boarino, E. Enrico, I. P. Degiovanni, E. Moreva, N. Skukan, M. Jakšić, C. Verona, G. Verona Rinati, M. Genovese, P. Olivero, **F. Picollo**, **Annual World Conference on Carbon - Carbon 2015**, Dresden, Germany, 12 – 17 July 2015
- 20 *"Nanoindentation measurements for the investigation of Young's modulus variation in ion-implanted diamond"*, A. Battiato, E. Bernardi, E. P. Ambrosio, F. Bosia, M. Lorusso, P. Olivero, D. Ugues, **F. Picollo**, **NDNC2015 – 9th New Diamond Nano Carbons Conference**, Shizuoka, Japan, 24 – 28 May 2015
- 19 *"Diamond-based multi electrode biosensor for simultaneous detection of quantal exocytic events from neuroendocrine cells"*, E. Bernardi, **F. Picollo**, A. Battiato, E. Carbone, S. Gosso, P. Olivero,

- A. Pasquarelli, V. Carabelli, **NDNC2015 – 9th New Diamond Nano Carbons Conference**, Shizuoka, Japan, 24 – 28 May 2015
- 18 *"Diamond-based Biosensors for Monitoring Neurosecretion in Chromaffin Cells"*, V. Carabelli, S. Gosso, **F. Picollo**, A. Battiato, E. Bernardi, P. Olivero, A. Pasquarelli, E. Carbone, **65th Annual Meeting of the International Society of Electrochemistry**, Lausanne, Switzerland, 31 August - 5 September 2014 – **Invited Talk**
- 17 *"Strain modeling of annealed ion-implanted diamond"*, F. Bosia, P. Olivero, **F. Picollo**, L. Giuntini, A. Sordini, M. Vannoni, B. Fairchild, A. Greentree, D. Lau, S. Prawer, **25th International Conference on Diamond and Carbon Materials**, Madrid, Spain, 7 – 11 September 2014
- 16 *"A diamond-based biosensor for exocytosis detection from chromaffin cells realized with ion beam lithography"*, **F. Picollo**, V. Carabelli, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, E. Vittone, **REI-17, Radiation Effect in Insulator**, Helsinki, Finland, 30 June – 5 July 2013
- 15 *"Ion beam micro-fabrication and IBIC characterization of a diamond detector with buried graphitic multi-electrodes"*, J. Forneris, V. Grilj, M. Jaksic, N. Skukan, C. Verona, G. Verona-Rinati, A. Lo Giudice, P. Olivero, **F. Picollo**, E. Vittone, **E-MRS 2013 Spring Meeting**, Strasbourg, France, 27 – 31 May 2013
- 14 *"IBIC characterization of homoepitaxial CVD diamond detectors at the University of Turin"*, P. Olivero, J. Forneris, V. Grilj, M. Jaskic, A. Lo Giudice, Z. Pastuovic, **F. Picollo**, A. Re, N. Skukan, C. Verona, G. Verona-Rinati, E. Vittone, **RD42 Collaboration Meeting**, Geneva, Switzerland, 20 May 2013
- 13 *"A Monte Carlo software with graphical user interface for the simulation of IBIC experiments in 1-dimensional geometries"*, J. Forneris, P. Olivero, **F. Picollo**, E. Vittone, **2^o International Atomic Energy Agency Research Coordination Meeting "Utilization of Ion Accelerators for Studying and Modelling of Radiation Induced Defects in Semiconductors and Insulators"**, Vienna, Austria, 13 – 17 May 2013
- 12 *"Ion beam fabrication and IBIC characterization of a diamond particle detector with integrated graphitic micro-electrodes"*, J. Forneris, A. Lo Giudice, P. Olivero, **F. Picollo**, A. Re, E. Vittone, V. Grilj, M. Jaksic, Z. Pastuovic, N. Skukan, M. Marinelli, C. Verona, G. Verona-Rinati **1st Adamas workshop**, Darmstadt, Germany, 16 – 18 December 2012
- 11 *"Detection of quantal catecholamine secretion from single chromaffine cells with a diamond-based biosensor fabricated with MeV ion beam lithography"*, P. Olivero, **F. Picollo**, S. Gosso, A. Battiato, V. Carabelli, A. Pasquarelli, E. Carbone, E. Vittone, **International Conference on Diamond and Carbon Materials**, Granada, Spain, 3 – 9 September 2012

- 10 *"Sharing of anomalous polarity pulses in a ion-beam-micromachined multi-electrode diamond detector"*, J. Forneris, V. Grilj, M. Jaksic, N. Skukan, C. Verona, G. Verona-Rinati, A. Lo Giudice, P. Olivero, **F. Picollo**, E. Vittone, **Diamond Detector Workshop - Development and Applications**, Plitvice Lakes, Croatia, 7 – 10 May 2012
- 9 *"Modelling and Validation of Ion Beam Induced Damage in Semiconductors"*, J. Forneris, P. Olivero, **F. Picollo**, E. Vittone, **1° International Atomic Energy Agency Research Coordination Meeting "Utilization of Ion Accelerators for Studying and Modelling of Radiation Induced Defects in Semiconductors and Insulators"**, Vienna, Austria, 19 – 23 May 2012
- 8 *"A fully ion beam micromachined diamond biosensor designed for the detection of quantal catecholamine secretion from chromaffin cells"*, E. Vittone, P. Olivero, **F. Picollo**, V. Carabelli, E. Carbone, S. Gosso, **MRS 2011 Fall Meeting**, Boston, MA (USA), 28 November – 2 December 2011
- 7 *"Focused ion beam fabrication and IBIC characterization of a diamond detector with buried interdigitated electrodes"*, J. Forneris, M. Jaksic, P. Olivero, Ž. Pastuović, **F. Picollo**, N. Skukan, E. Vittone, **Italian Society of Physics XCVII – National Congress**, L'Aquila, Italy, 26 – 30 September 2011
- 6 *"Ion micro-beam fabrication of single-crystal diamond"*, P. Olivero, F. Bosia, D. Gatto Monticone, **F. Picollo**, H. Wang, E. Vittone, S. Calusi, M. Massi, L. Giuntini, E. Enrico, L. Boarino, G. Amato, Ž. Pastuović, N. Skukan, M. Jakšić, A. Sordini, M. Vannoni, A. Sytchkova, S. Lagomarsino, S. Sciortino, B. Fairchild, S. Rubanov, S. Prawer, **MRS 2011 Spring Meeting**, San Francisco, California (USA), 25 – 29 April 2011
- 5 *"Charge collection efficiency mapping of a CVD diamond Schottky diode"*, J. Forneris, A. Lo Giudice, C. Manfredotti, M. Marinelli, E. Milani, P. Olivero, **F. Picollo**, G. Prestopino, A. Re, G. Verona-Rinati, C. Verona, E. Vittone, **RESMDD10 - 8th International Conference on Radiation Effects on Semiconductor Materials Detectors and Devices**, Florence, Italy, 12 – 15 October 2010
- 4 *"Diamond microfabrication by means of ion lithography"*, F. Bosia, A. Lo Giudice, P. Olivero, **F. Picollo**, H. Wang, E. Vittone, S. Calusi, M. Massi, L. Giuntini, G. Amato, L. Boarino, S. Borini, E. Enrico, Z. Pastuovic, N. Skukan, M. Jaksic, A. Sordini, M. Vannoni, A. Sytchkova, S. Lagomarsino, S. Sciortino, B. Fairchild, S. Prawer, S. Rubanov, **Italian Society of Physics XCVI – National Congress**, Bologna, Italy, 20 – 24 September 2010
- 3 *"Carbon microbeam IBIC studies of diamond detectors with planar and buried interdigitated electrodes"*, M. Jaksic, P. Olivero, Z. Pastuovic, **F. Picollo**, N. Skukan, E. Vittone, **CAARI 2010 - 21st**

International Conference on the Application of Accelerators in Research and Industry, Fort Worth, Texas (USA), 8 – 13 August 2010

- 2 *"Ion Micro-fabrication of Diamond"*, P. Olivero, G. Amato, S. Borini, F. Bosia, S. Calusi, B. Fairchild, L. Giuntini, M. Jakšić, S. Lagomarsino, A. Lo Giudice, M. Massi, Ž. Pastuović, **F. Picollo**, S. Praver, S. Rubanov, S. Sciortino, N. Skukan, A. Sordinio, A. Sytchkova, H. Wang, M. Vannoni, E. Vittone, **ICNMTA 2010, International Conference on Nuclear Microprobe Technology and Applications**, Leipzig, Germany, 26 – 30 July 2010
- 1 *"Direct fabrication of three-dimensional buried conductive channels in single crystal diamond with ion microbeam induced graphitization"*, P. Olivero, G. Amato, F. Bellotti, O. Budnyk, E. Colombo, M. Jakšić, C. Manfredotti, Ž. Pastuović, **F. Picollo**, N. Skukan, M. Vannoni, E. Vittone, **Diamond2008, 19th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides**, Sitges, Spain, 7 – 11 September 2008

CO-AUTHORSHIP IN CONFERENCE CONTRIBUTIONS - Posters

- 25 *"Diamond microfluidic channels obtained with ion beam lithography"* **F. Picollo**, A. Battiato, L. Boarino, S. Ditalia Tchernij, E. Enrico, J. Forneris, M. Jakšić, N. Skukan, A. Tengattini, P. Olivero, E. Vittone, **ICNMTA 2016 - 15th International Conference on Nuclear Microprobe Technology and Applications**, Lanzhou, China, 31 July – 5 August 2016
- 24 *"Ion microbeam fabrication techniques for addressing luminescent defects in diamond"*, J. Forneris, A. Tengattini, S. Ditalia Tchernij, **F. Picollo**, A. Battiato, P. Traina, E. Moreva, I. P. Degiovanni, E. Enrico, L. Boarino, G. Amato, N. Skukan, V. Grilj, M. Jakšić, M. Genovese, P. Olivero, E. Vittone, **ICNMTA 2016 - 15th International Conference on Nuclear Microprobe Technology and Applications**, Lanzhou, China, 31 July – 5 August 2016
- 23 *"Simultaneous fluorescent and amperometric detection of catecholamine release from neuroendocrine cells with transparent diamond MEAs"*, A. Pasquarelli, A. Marcantoni, D. Gavello, A. Battiato, **F. Picollo**, P. Olivero, E. Carbone, V. Carabelli **MEA Meeting 2016 - 10th International Meeting on Substrate-Integrated Microelectrode Arrays**, Reutlingen, Germany, 28 June - 1 July 2016
- 22 *"Electrical control of NV centers with sub-superficial graphitic micro-electrodes"*, S. Ditalia Tchernij, J. Forneris, A. Tengattini, A. Battiato, **F. Picollo**, P. Olivero, V. Grilj, N. Skukan, M. Jakšić, E. Enrico, G. Amato, L. Boarino **DIADEMS Summer School**, Cargese, France, 26 April – 4 May 2016

- 21 *"Fluorescent nanodiamonds alter synaptic events and somatic excitability of cultured hippocampal neurons"*, L. Guarina, G. Gavello, A. Battiato, **F. Picollo**, A. Tengattini, J. Forneris, E. Carbone, V. Carabelli, **School on Neurotechniques 2016**, Padova, Italy, 15 - 19 February 2016
- 20 *"Deep Ion Beam Nano-Lithography in diamond"*, **F. Picollo**, A. Battiato, E. Bernardi, P. Olivero, **Hasselt Diamond Workshop 2015 - SBDD XX**, Hasselt, Belgium, 25 - 27 February 2015
- 19 *"Nanoindentation measurements for the investigation of the elastic properties of ion-implanted diamond"*, E. Bernardi, A. Battiato, E. P. Ambrosio, F. Bosia, M. Lorusso, P. Olivero, D. Ugues, **F. Picollo**, **Hasselt Diamond Workshop 2015 - SBDD XX**, Hasselt, Belgium, 25 - 27 February 2015
- 18 *"Electric force microscopy characterization of ion beam microfabricated graphitic channels in single crystal diamond"*, E. Bernardi, A. Battiato, P. Olivero, **F. Picollo**, E. Vittone, **ICNMTA 2014 - 14th International Conference on Nuclear Microprobe Technology and Applications**, Padova, Italy, 6 - 11 July 2014
- 17 *"New developments on the fabrication of high density and low density diamond-based MEA"*, **F. Picollo**, A. Battiato, E. Bernardi, V. Carabelli, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, **MEA Meeting 2014 - 9th International Meeting on Substrate-Integrated Microelectrode Arrays**, Reutlingen, Germany, 1 - 4 July 2014
- 16 *"Diamond-based Multi Electrode Array biosensor: simultaneous detection of exocytosis from chromaffin cells"*, A. Battiato, **F. Picollo**, E. Bernardi, V. Carabelli, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, E. Vittone, **Hasselt Diamond Workshop 2014 - SBDD XIX**, Hasselt, Belgium, 18 - 21 February 2014
- 15 *"A 3-dimensional interdigitated electrode geometry for the enhancement of charge collection in diamond detectors"*, M. Marinelli, F. Pompili, G. Prestopino, C. Verona and G. Verona-Rinati, J. Forneris, A. Lo Giudice, P. Olivero, **F. Picollo**, A. Re, M. Benetti, D. Cannatà, F. Di Pietrantonio, **Hasselt Diamond Workshop 2014 - SBDD XIX**, Hasselt, Belgium, 18 - 21 February 2014
- 14 *"Kelvin probe characterization of buried graphitic microchannels in single-crystal diamond"*, E. Bernardi, A. Battiato, P. Olivero, **F. Picollo**, E. Vittone, **Hasselt Diamond Workshop 2014 - SBDD XIX**, Hasselt, Belgium, 18 - 21 February 2014
- 13 *"Diamond-based biosensor for detecting quantal exocytic events from chromaffin cells"*, **F. Picollo**, V. Carabelli, E. Carbone, S. Gosso, P. Olivero, A. Pasquarelli, E. Vittone, **Hasselt Diamond Workshop 2013 - SBDD XVI**, Hasselt, Belgium, 27 February – 1 March 2013

- 12 *"Micro-lonoluminescence and micro-PIXE in natural diopside: activators and iondamaging effects"*, A. Lo Giudice, D. Angelici, A.F. Biondi, **F. Picollo**, A. Re, G. Pratesi, **ICNMTA 2012 - International Conference on Nuclear Microprobe Technology and Applications**, Lisbon, Portugal, 22 - 27 July 2012
- 11 *"IBIC characterization of an ion beam micromachined multi-electrode diamond detector"*, J. Forneris, V. Grilj, M. Jaksic, N. Skukan, C. Verona, G. Verona-Rinati, A. Lo Giudice, P. Olivero, **F. Picollo**, E. Vittone, **ICNMTA 2012 - International Conference on Nuclear Microprobe Technology and Applications**, Lisbon, Portugal, 22 - 27 July 2012
- 10 *"Fabrication with ion beam lithography and IBIC characterization of a particle detector in single-crystal diamond with integrated graphitic micro-electrodes"*, J. Forneris, L. La Torre, A. Lo Giudice, C. Manfredotti, M. Marinelli, P. Olivero, **F. Picollo**, A. Re, C. Verona, G. Verona-Rinati, E. Vittone, **Diamond2010 – 21th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides**, Garmisch-Partenkirchen, Germany, 4 – 8 September 2011
- 9 *"Lateral IBIC characterization of single crystal synthetic diamond detectors"*, D. Ambu, A. Lo Giudice, C. Manfredotti, M. Marinelli, P. Olivero, **F. Picollo**, A. Re, G. Verona-Rinati, E. Vittone, **Diamond2010 – 21th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides**, Budapest, Hungary, 5 – 9 September 2010
- 8 *"Modification of structural and mechanical properties of diamond with MeV ion implantation"*, F. Bosia, N. Argiolas, M. Bazzan, P. Olivero, **F. Picollo**, A. Sordini, M. Vannoni, H. Wang, E. Vittone, **Diamond2010 – 21th European Conference on Diamond, Diamond-Like Materials, Carbon Nanotubes and Nitrides**, Budapest, Hungary, 5 – 9 September 2010
- 7 *"Focused ion beam fabrication and IBIC characterization of a diamond detector with buried interdigitated electrodes"*, P. Olivero, J. Forneris, M. Jaksic, Z. Pastuovic, **F. Picollo**, N. Skukan, E. Vittone, **ICNMTA 2010, International Conference on Nuclear Microprobe Technology and Applications**, Leipzig, Germany, 26 – 30 July 2010
Best poster award
- 6 *"Modification of the electrical and optical properties of diamond surface layers damaged by MeV ions"*, H. Wang, **F. Picollo**, P. Olivero, O. Budnyk, E. Vittone, F. Bosia, G. Amato, M. Bruna, S. Borini, Ž. Pastuović, N. Skukan, M. Jakšić, **E-MRS 2010 Spring Meeting**, Strasburgo, France, 7 – 11 June 2010
- 5 *"Deep ion beam lithography of diamond"*, P. Olivero, F. Bosia, O. Budnyk, A. Lo Giudice, **F. Picollo**, H. Wang, E. Vittone, S. Calusi, M. Massi, L. Giuntini, Ž. Pastuović, N. Skukan, M. Jakšić, A. Sordini, M. Vannoni, A. Sytchkova, S. Lagomarsino, S. Sciortino, B. Fairchild, S. Rubanov, S. Praver, **Hasselt Diamond Workshop 2010 - SBDD XV**, Hasselt, Belgium, 22 – 24 February 2010

- 4 *"Modification of the electrical and optical properties of single crystal diamond with focused MeV ion beams"*, E. Vittone, O. Budnyk, A. Lo Giudice, P. Olivero, **F. Picollo**, Hao Wang, F. Bosia, S. Calusi, L. Giuntini, M. Massi, S. Lagomarsino, S. Sciortino, G. Amato, F. Bellotti, S. Borini, M. Jaksic, Ž. Pastuović, N. Skukan, M. Vannoni, **MRS 2009 Fall Meeting**, Boston, MA (USA), 30 November – 4 December 2009
- 3 *"Finite element analysis of ion-implanted diamond surface swelling"*, F. Bosia, S. Calusi, L. Giuntini, S. Lagomarsino, A. Lo Giudice, M. Massi, P. Olivero, F. Picollo, S. Sciortino, A. Sordini, M. Vannoni, E. Vittone, **REI-15, Radiation Effect in Insulator**, Padua, Italy, 30 August – 4 September 2009
- 2 *"I-V characterization of heavily damaged buried channels in diamond fabricated with MeV ion implantation"*, G. Amato, F. Bellotti, S. Borini, A. Lo Giudice, P. Olivero, **F. Picollo**, E. Vittone, **E-MRS 2009 Spring Meeting**, Strasburgo, France, 8 – 12 June 2009
- 1 *"Three-dimensional buried conductive channels fabricated in single crystal diamond with ion microbeam induced graphitization"*, P. Olivero, G. Amato, F. Bellotti, S. Borini, O. Budnyk, E. Colombo, M. Jakšić, A. Lo Giudice, C. Manfredotti, Ž. Pastuović, **F. Picollo**, N. Skukan, M. Vannoni, E. Vittone, **IBMM2008, 16th International Conference on Ion Beam Modification of Materials**, Dresda, Germany, 31 August – 5 September 2008