

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di II fascia da ricoprire ai sensi dell'art. 18, commi 1 e 4, della Legge n. 240/2010 per il settore concorsuale 02/D1 - Fisica Applicata, Didattica e Storia della Fisica, (settore scientifico-disciplinare FIS/07 - Fisica Applicata (a Beni Culturali, Ambientali, Biologia e Medicina) presso il Dipartimento di FISICA "ALDO PONTREMOLI", Codice concorso 5284

## **Filippo Pisano**

### **CURRICULUM VITAE**

#### **INFORMAZIONI PERSONALI**

COGNOME	PISANO
NOME	FILIPPO
DATA DI NASCITA	21/09/1987

#### **SINOSI ATTIVITA' SCIENTIFICA**

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La mia attività di ricerca verte sullo sviluppo di metodologie e dispositivi sperimentali che combinano metodologie ottiche con tecniche di micro e nanofabbricazione per impiegare la radiazione elettromagnetica quale sonda minimamente invasiva, con particolare riferimento alle neuroscienze. Sono fortemente interessato ad espandere il campo di applicazione delle mie competenze all'analisi dei Beni Culturali, utilizzando ad esempio innovative tecniche di imaging multispettrale, spettroscopia vibrazionale e caratterizzazione morfologica alla micro e nano-scala.

#### **TITOLI**

##### **TITOLO DI STUDIO**

*(indicare la Laurea conseguita inserendo titolo, Ateneo, data di conseguimento, ecc.)*

##### **Laurea Magistrale in Fisica**

110/110 con lode

12/10/12, Università degli studi di Torino

##### **Laurea triennale in Fisica**

104/110

05/10/2010, Università degli studi di Torino

##### **TITOLO DI DOTTORE DI RICERCA O EQUIVALENTI, OVVERO, PER I SETTORI INTERESSATI, DEL DIPLOMA DI SPECIALIZZAZIONE MEDICA O EQUIVALENTE, CONSEGUITO IN ITALIA O ALL'ESTERO**

*(inserire titolo, ente, data di conseguimento, ecc.)*

##### **PhD in Physics**

Dottorato di ricerca in Fisica

Viva voce defense, 07/01/2017, University of Strathclyde, Glasgow, UK

(Titolo e dichiarazione di equipollenza allegata)

#### **ABILITAZIONE SCIENTIFICA NAZIONALE**

25/05/2022 Abilitazione Scientifica Nazionale alle funzioni di professore universitario di Seconda Fascia nel Settore Concorsuale 02/D1 - FISICA APPLICATA, DIDATTICA E STORIA DELLA FISICA.

## **ATTIVITÀ DIDATTICA**

### **INSEGNAMENTI E MODULI**

*(inserire anno accademico, corso laurea, numero di ore frontali, eventuale CFU)*

- 2013-14      Demonstrator (24 ore in laboratorio e conseguente valutazione relazioni)  
Laboratory of Physics  
Degree in Physics  
Dept. of Physics, University of Strathclyde, Glasgow, UK
- 2011-12      Esercitatore (10 ore frontali)  
Corso di Fisica e Matematica  
Corso di laurea triennale in Biologia  
Facoltà Scienze M.F.N., Università di Torino  
Titolare del corso: Prof. A. Diaferio
- 2010-2011    Assistente di laboratorio (50 ore)  
Laboratorio di Elettromagnetismo e Ottica  
Corso di laurea Triennale in Fisica  
Facoltà Scienze M.F.N., Università di Torino  
Titolari del corso: Prof. L. Busso, Prof. S. Beolé
- 2009-2010    Assistente di laboratorio (50 ore)  
Laboratorio di Elettromagnetismo e Ottica  
Corso di laurea Triennale in Fisica  
Facoltà Scienze M.F.N., Università di Torino  
Titolari del corso: Prof. L. Busso, Prof. S. Beolé

## **ATTIVITÀ DI DIDATTICA INTEGRATIVA E DI SERVIZIO AGLI STUDENTI**

### **ATTIVITÀ DI TUTORATO DEGLI STUDENTI DI CORSI DI LAUREA E DI LAUREA MAGISTRALE E DI TUTORATO DI DOTTORANDI DI RICERCA**

*(inserire anno accademico, corso laurea, ecc.)*

#### **Commissioni di dottorato**

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- 2022    Revisore esterno e membro della commissione, Doctoral School of Politecnico di Torino  
Candidato: Dott. M. Pezzarossa,  
Tesi: "The deep AI-based JTE: development and industrialization of a novel termination design for high-power semiconductor devices"

#### **Tutorato di studenti di Corso di laurea, laurea magistrale e dottorandi di ricerca**

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Le mie posizioni a IIT non mi consentono di avere un ruolo formale nel tutorato di studenti di laurea magistrale o di dottorato. Ho attivamente partecipato al tutoraggio di uno studente magistrale (dott. Paolo Giglio) e di studenti di dottorato co-affiliati fra IIT e l'università del Salento (Dr. A. Rizzo, Dr. A. Balena, Dr. E. Maglie, Dr. M. Bianco, Dott.ssa C. Montinaro) come testimoniato dal contributo a pubblicazioni guidate da un/a dottorando/a (si vedano Rizzo et al, Microelectronic Engineering 2018; Balena et al., Optics Express 2020; Maglie et al, Optics Letters, 2020; Bianco et al., Biomedical Optics Express, 2021; Bianco et al, APL Photonics 2022; Montinaro et al. Biomedical Optics Express 2021).

### **SEMINARI**

*(inserire titolo del seminario, luogo, data, ecc.)*

1. Collecting Raman signal with tapered optical fibers, *NanoBright project webinar*, 09/04/2021

2. Multifunctional neural interfaces combining optics, photonics and nanotechnology Dip.di Fisica, Università di Torino, 01/10/2019
3. Neurophotonics: advanced technologies to illuminate mysteries of the brain, Rhine-Waal University of Applied Science, 22/06/2018
4. Neurophotonic approaches to brain research: a combination between optogenetic stimulation and high-density electrophysiological recordings, Dip. di Fisica, Università degli studi di Torino, 18/12/2013

## **ATTIVITÀ DI RICERCA SCIENTIFICA**

### **PUBBLICAZIONI SCIENTIFICHE**

(per ciascuna pubblicazione indicare: nomi degli autori, titolo completo, casa editrice, data e luogo di pubblicazione, codice ISBN, ISSN, DOI o altro equivalente)

*Pubblicazioni presentate in valutazione. Ogni pubblicazione riporta una breve sinossi e il contributo personale, in lingua inglese. \* indica co-first authorship*

1. Pisano F.\*, Pisanello M.\*, Lee S.J., Lee J., Maglie E., Balena A., Sileo L., Spagnolo B., Bianco M., Hyun M., De Vittorio M., Sabatini B.L., Pisanello F.

*Depth-resolved fiber photometry with a single tapered optical fiber implant*

**Nature Methods**, 16, 1185-1192, 2019

10.1038/s41592-019-0581-x

*Synopsis: We demonstrated the world-first experimental method to monitor neurotransmitter transients in freely moving animals targeting multiple deep-brain regions simultaneously with a single, minimally invasive optical neural implant. This approach has enabled unprecedented experiments to study the neural processes underlying reward-driven movement. Together with its significance for neurobiological research, the study also has a novelty for the optics field as we described, for the first time, the photonic properties of tapered fibers in mode selective collection of incoherent optical radiation.*

*Personal contribution: I was lead-author (co-first) in this study and corresponding author. I built the experimental system, proposed and conducted ex vivo experiments and analyzed the data. I drafted the manuscript and prepared the figures, with contributions from all authors. I proposed the time-division multiplexing experimental approach to collect dopamine-related fluorescence signal from deep brain regions. I also presented the work at several international conferences (SfN, FENS, Fotonica, Optogen).*

2. Pisano, F., Kashif, M. F., Balena, A., Pisanello, M., De Angelis, F., de la Prida, L. M., Valiente M, D'Orazio A, De Vittorio M, Grande M., Pisanello, F.

*Plasmonics on a Neural Implant: Engineering Light-Matter Interactions on the Nonplanar Surface of Tapered Optical Fibers.*

**Advanced Optical Materials**, 10(2), 2022

10.1002/adom.202101649

*Synopsis: We demonstrate a first step towards implantable multimodal plasmonic neural interfaces. This was achieved by integrating highly-curved plasmonic nanostructures on a tapered optical fiber in order to engineer the spectral and angular patterns of optical emission and collection, with applications to fluorescence and Raman spectroscopy.*

*Personal contribution: I was lead-author in this study and corresponding author. I designed and performed the nano-fabrications built all the experimental systems, conducted the experiments and the data. I drafted the manuscript and prepared the figures, with contributions from all authors. I also presented the work at several international conferences (META 2021, POM 2020, POM 2021, Optogen 2019).*

3. Collard L. \*, Pisano F.\*, Zheng D., Balena A., Kashif M. F., Pisanello M., D'Orazio A., de la Prida L.M., Ciraci C., Grande M., De Vittorio M., Pisanello F.

*Holographic manipulation of nanostructured fiber optics enables spatially-resolved, reconfigurable optical control of plasmonic local field enhancement and SERS*

Small, 18(23), 2200975 2022  
10.1002/sml.202200975

*Synopsis: The work describes, for the first time, the optical control of plasmonic nanostructures integrated on the distal fiber through a multimode fiber through the fiber itself. To do this, we developed a wavefront engineering approach that optimized the coupling of guided modes with the resonant nanostructures achieving spatially resolved SERS and extraordinary optical transmission.*

*Personal contribution: I am co-first author on this work. I contributed to the conceptualization of the study, to designing and performing the experiments and I developed and performed the nanofabrications. I also co-led the preparation of the manuscript.*

4. Pisanello M.\*, Pisano F.\*, Hyun M., Maglie E., Balena A., De Vittorio M., Sabatini B.L., Pisanello F.

*The three-dimensional signal collection field for fiber photometry in brain tissue*

**Frontiers in Neuroscience**, 13, 2019.

10.3389/fnins.2019.00082

*Synopsis: Optical fibers are widely used to deliver and collect light from brain tissue. However, it is not clear what is the volume and the morphology of the region of tissue that is stimulated or monitored depending on the structural properties of the fiber (e.g. core size or numerical aperture). We proposed a novel experimental method and we applied it to ex vivo brain tissue to provide guidance to the community on the volume of tissue that effectively interacts with a given probe.*

*Personal contribution: I was co-first author on this study. I built the experimental system, performed the experiments and contributed in designing the data analysis. I also contributed to drafting the manuscript and preparing the figures.*

5. Pisanello M.\*, Pisano F.\*, Sileo L., Maglie E., Bellistri E., Spagnolo B., Mandelbaum G., Sabatini B.L., De Vittorio M., Pisanello F.

*Tailoring light delivery for optogenetics by modal demultiplexing in tapered optical fibers*

**Scientific Reports**, 8, 2018

10.1038/s41598-018-22790-z

*Synopsis: Optogenetic control of neural activity requires precise and flexible light delivery with minimally invasive devices. To achieve this, we presented a study on mode-division demultiplexing strategies using tapered optical fiber to tailor the delivery of optical radiation dynamically in large brain volumes or spatially restricted regions.*

*Personal contribution: I was co-first author on this study. I built the optical experimental systems, performed the experiments and analyzed the data. I proposed the experiments to demonstrate independent delivery of optical energy at different tissue depths. I also worked on drafting the manuscript and preparing the figures, with contributions from all authors.*

6. Pisano F.\*, Pisanello M.\*, Sileo L., Quattieri A., Sabatini B.L., De Vittorio M., Pisanello F.

*Focused ion beam nanomachining of tapered optical fibers for patterned light delivery*

**Microelectronic Engineering**, 195, 41-49, 2018

10.1016/j.mee.2018.03.023

*Synopsis: This work proposed micro-structured neural implants, fabricated with Focused-Ion-Beam lithography, to control the interaction volumes between visible optical radiation for optogenetic stimulation and 3D target volumes of neural tissue.*

*Personal contribution: I was co-first author on this study and corresponding author. I performed the nano- and micro-fabrications, ran the experiments and analyzed the data. I also drafted the manuscript and prepared the figures with contributions from all authors.*

7. Pisano F.\*, Zampaglione E.\*, McAlinden N., Roebber J., Dawson M.D., Mathieson K., Sher A.

*Large scale matching of function to the genetic identity of retinal ganglion cells*

**Scientific Reports**, 7, 2017

10.1038/s41598-017-15741-7

**Synopsis:** Understanding the role of neurons in encoding and transmitting information is a major goal in Neuroscience. This requires insight on the data-rich neuronal spiking patterns combined with morphology and genetic identity. We present a novel technique that combines large-scale micro-electrode array recordings with large-area optogenetic stimulation to match functional, genetic and morphological identity of retinal ganglion cells with single cell precision.

**Personal contribution:** I was lead-author (co-first) in this work. I also secured funding through a competitive grant from the Scottish University Physics Alliance. I designed and built the optogenetic stimulation system, I performed large-scale electrophysiological recordings of the mouse retina, including the retinal surgeries, I analyzed the data from the 519 electrode array and prepared most of the figures and the manuscript. I also presented the work to ARVO, the world-leading conference in the retina field.

8. Zheng, D., Pisano, F., Collard, L., Balena, A., Pisanello, M., Spagnolo, B., Mach-Batlle, R., Tantussi, F., Carbone, L., De Angelis, F., Valiente, M., de la Prida, L. M., Ciraci, C., De Vittorio, M., Pisanello, F.

*Toward Plasmonic Neural Probes: SERS Detection of Neurotransmitters through Gold-Nanoislands-Decorated Tapered Optical Fibers with Sub-10 nm Gaps*

**Advanced Materials**, 2200902, 2023.

<https://doi.org/10.1002/adma.202200902>

**Synopsis:** This work introduces an approach for label free detection of molecular neurotransmitters in living brain tissue, with particular attention emphasis on the optical and mechanical properties of a thin layer of gold nanoislands uniformly distributed on the fiber surface.

**Personal Contribution:** I designed and built the optical systems to perform the SERS spectroscopy measurements through the implant. I also helped interpreting the data and writing the manuscript.

9. Collard L., Pisano F., Pisanello M., Balena A., De Vittorio M., Pisanello F.

*Wavefront engineering for controlled structuring of far-field intensity and phase patterns from multimodal optical fibers*

**APL Photonics**, 6 (5), 051301, 2021

10.1063/5.0044666

**Synopsis:** We propose a wavefront shaping method to control the electric field transmitted by a multimode optical fiber in terms of spatial distribution of intensity and phase in the far-field. This method can potentially help the development of micro-endoscopes for clinical applications.

**Personal contribution:** I conducted preliminary proof of experiments, I helped building the experimental system. I worked on the analysis of the holographic images to extract amplitude and phase of the speckle patterns emitted by the fiber. I also helped writing the manuscript.

10. Spagnolo, B.\*, Balena, A.\*, Peixoto, R.T.\*, Pisanello M.\*, Sileo L., Bianco M., Rizzo A., Pisano F., Quattieri A., Lofrumento D. D., De Nuccio F., Assad J.A., Sabatini B.L., De Vittorio M., Pisanello F.

*Tapered fibertrodes for optoelectrical neural interfacing in small brain volumes with reduced artefacts.*

**Nature Materials** 21, 826-835 2022

<https://doi.org/10.1038/s41563-022-01272-8>

**Synopsis:** This work presents a optoelectronics neural probe based on a tapered optical fiber for reconfigurable optogenetic stimulation and multipoint extracellular electrical recordings from the same microscopic tissue volume with abated photoelectric artifacts.

**Personal Contribution:** I performed optical characterization of the devices and supported the development of the multiphoton lithography approach. I also helped analyzing and interpreting the data from optogenetic stimulation and electrophysiological recordings and contributed to writing the manuscript.

11. Pisano F., Balena A., Kashif M.F., Pisanello M., De Marzo G., Algieri L., Quattieri A., Sileo L., Stomeo T., D'Orazio A., De Vittorio M., Pisanello F., Grande M.

High transmission from 2D periodic plasmonic finite arrays with sub-20 nm gaps realized with Ga focused ion beam milling

Nanotechnology, 31. 2020

<https://doi.org/10.1088/1361-6528/aba57a>

**Synopsis:** We report on the optical properties of small-size 2D plasmonic arrays of gold nanoplatelets with sub-20 nm gaps fabricated with a single Focused Ion Beam milling process; we demonstrate that recruiting a small number of resonant element is sufficient to perform refractive index sensing in reflection and transmission domain. Our results can potentially enable exploiting plasmonic-enhanced sensing on unconventional substrates with structure as big as a biological cell.

**Personal contribution:** I was lead author and corresponding on this work. I optimized the fabrication process, performed the fabrications and the morphological characterization. I designed and built the system for optical characterization, performed all experiments and analyzed the data. I wrote the manuscript and prepared the figures with contributions from all authors.

12. Bianco M., Balena A., Pisanello M., Pisano F., Sileo L., Spagnolo B., Montinaro C., Sabatini B., De Vittorio M., Pisanello F. (2021). Comparative study of auto-fluorescence in flat and tapered optical fibers towards application in depth-resolved fluorescence lifetime photometry in brain tissue, *Biomedical Optics Express* 12, 993-1009.

**Synopsis:** As fiber photometry techniques are increasingly popular across the wide life-science community, we evaluated the contribution of auto-fluorescence in multi-mode optical fibers, with special attention to application for fluorescence lifetime endoscopy. This work will potentially help in devising novel methods to retrieve biochemical information from deep tissue regions.

**Personal contribution:** I worked on setting up the time-correlated single photon detection system and on preliminary experiments to quantify the effect of auto-fluorescence in multimode optical fibers. I also helped writing the manuscript.

## ORGANIZZAZIONE, DIREZIONE E COORDINAMENTO DI CENTRI O GRUPPI DI RICERCA NAZIONALI E INTERNAZIONALI O PARTECIPAZIONE AGLI STESSI

(per ciascuna voce inserire anno, ruolo, gruppo di ricerca, ecc.)

### Partecipazione a gruppi di ricerca nazionali ed internazionali

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- Periodo: 2021-  
Ruolo: Researcher  
Gruppo: Multifunctional neural interfaces with deep brain regions  
Istituzione: IIT-CBN  
  
Co-investigator e membro del gruppo coordinatore del progetto DEEPER, <https://deeperproject.eu>  
Membro del gruppo coordinatore del progetto NanoBRIGHT, <https://projectnanobright.eu>
- Periodo: 2017-2021  
Ruolo: Post-Doc  
Gruppo: Multifunctional neural interfaces with deep brain regions  
Istituzione: IIT-CBN  
Supervisore: Dr. F. Pisanello  
  
Co-investigator e membro del gruppo coordinatore del progetto DEEPER, <https://deeperproject.eu>  
Membro del gruppo coordinatore del progetto NanoBRIGHT, <https://projectnanobright.eu>
- Periodo: 2016-2017

Ruolo: Fellow  
Gruppo: Multifunctional neural interfaces with deep brain regions  
Istituzione: IIT-CBN  
Supervisore: Dr. F. Pisanello

- Periodo: Maggio-Luglio 2015  
Ruolo: Visiting Researcher  
Gruppo: Sher lab  
Istituzione: University of California Santa Cruz  
Supervisore: Prof. A. Sher

Responsabile progetto di ricerca finanziato dalla Scottish University Physics Alliance nel programma short term travel grant

- Periodo: 2013-2016  
Ruolo: PhD Student  
Gruppo: Neurophotonics group  
Istituzione: Institute of Photonics, University of Strathclyde  
Supervisore: Prof. K. Mathieson
- Periodo: Gennaio-Ottobre 2012  
Ruolo: Tesista Magistrale  
Gruppo di Fisica dello Stato Solido, Dip. di Fisica, Università di Torino  
Gruppo di Ottica Quantistica, INRiM, Torino  
Supervisore: Prof. P. Olivero, Dr. I. DeGiovanni
- Periodo: Maggio-Ottobre 2010  
Ruolo: Tesista Triennale  
Gruppo CMS, sezione INFN di Torino, Università di Torino  
Supervisore: Prof. N.C. Amapane

#### **ATTIVITÀ QUALI LA DIREZIONE O LA PARTECIPAZIONE A COMITATI EDITORIALI DI RIVISTE SCIENTIFICHE** (per ciascuna voce inserire anno, ruolo, rivista scientifica, ecc.)

2023 Guest Editor, rivista SPIE Neurophotonics  
Special Section dedicate ai proceedings del workshop OPTOGEN 2023 (10-12/05/2023, Lecce, Italy) di cui sono co-organizzatore.

#### **TITOLARITÀ DI BREVETTI**

(per ciascun brevetto, inserire autori, titolo, tipologia, numero brevetto, ecc.)

1. A microfabrication technique for structuring non-planar electromagnetic waveguides  
Inventori: Pisanello F, De Vittorio M., Pisanello M., Balena A., Spagnolo B., Pisano F., Bianco M., Sileo L., Numero: PCT/IB2022/055986, WO2023275737A1

2. Titolo sotto embargo di confidenzialità  
Inventori: Pisanello F, Collard L, Pisano F., Balena A, Pisanello M, Zhend D, De Vittorio M., De la Prida L. M., Numero: PT210620

#### **PREMI E RICONOSCIMENTI NAZIONALI E INTERNAZIONALI PER ATTIVITÀ DI RICERCA**

(inserire premio, data, ente organizzatore, ecc.)

2022 Travel award come young promising researcher alla conferenza Humboldt Meets Leibniz Hannover (declinato causa positività al Covid)

La pubblicazione *Plasmonics on a neural implant Engineering Light-Matter Interactions on the Nonplanar Surface of Tapered Optical Fibers* è stata selezionata come immagine di copertina della issue 2, 2022 della rivista Advanced Optical Materials

- 2021 Promozione alla posizione di Researcher a IIT-CBN con valutazione scientifica di una commissione interna (F. De Angelis, L. Berdondini, G. Lanzani) e lettere di supporto da esperti internazionali: Prof. B.L. Sabatini (Harvard), Prof. K. Mathieson (University of Strathclyde), M. Grande (Politecnico di Bari)
- 2015 Award: Scottish University Physics Alliance Short Term Visit grant
- 2013 EPSRC Doctoral Training Grant

#### **PARTECIPAZIONE IN QUALITÀ DI RELATORE A CONGRESSI E CONVEGNI DI INTERESSE INTERNAZIONALE**

*(inserire titolo congresso/convegno, data, ecc.)*

##### *Contributi su invito a congressi e convegni internazionali*

1. Exploring augmented neural implants: integrating optical nano modulators and volumetric Raman spectroscopy with tapered fibers, *Complex Media NeuroPhotonics Workshop*, Brno 24-26/10/2022
2. Capturing optical, electrical and biochemical signals from deep brain regions with tapered optical fibers, *Federation of European Neuroscience Societies (FENS) Forum 2022* Parigi, 9-13/07/2022
3. Harnessing light-matter interactions in deep brain regions for the next generation of photonic neural interfaces, *Humboldt meets Leibniz conference*, Hannover 12-14/06/2022 [Declinato causa positive Covid-19]
4. Towards label-free, implantable neuro-plasmonic probes *META 2021, 11<sup>th</sup> International Conference on Metamaterials Photonics Crystals and Plasmonics*, 23/07/2021, Online (Varsavia)
5. Towards multipoint Raman spectroscopy in deep brain tissue with a minimally invasive multimode tapered fiber, *Photonics Online Meetup*, 13/01/2021
6. Towards label-free, depth-resolved nano-photonic probes for deep-brain regions, *Photonics Online Meetup*, 25/06/2020
7. Plasmonic Neural Interfaces, *ICQNM 2019*, 30/10/2019, Nice

##### *Contributi orali a congressi e convegni nazionali e internazionali*

1. Nonplanar nano-structuring of tapered optical fibers for plasmonic neural interfaces, *Micro and Nanoengineering (MNE) 2019*, Rhodes, 20/09/2019
2. Micro and Nanostructuring of tapered optical fibers with focused ion beam and two-photon lithography, *Photonics and Electromagnetics Research Symposium PIERS 2019*, Rome, 17/06/2019
3. Tapered Optical Fibers for Neurophotonic applications, *Fotonica 2018*, Lecce, 23-25/05/2018
4. V drift calibration effects on muon reconstruction, *CMS Muon Barrel Workshop*, CERN, 28/09/2010

##### *Contributi poster a congressi e convegni nazionali e internazionali come primo o ultimo autore*

1. Jurado-Parras T., [...], Pisano F.\*, De\* Vittorio M.\*, Pisanello F.\*, De La Prida L.\*, Toward integration of neural probes to correlate Raman and electrophysiological signals, *FENS 2022 Parigi* \*co-last author
2. Pisano F. et al., Collecting Raman signals from deep brain regions, *SfN Annual Meeting of the Society for Neuroscience 2021*, Online
3. Pisano F. et al., Nanopatterning photonic neural implants towards wavevector-encoded optical monitoring of deep brain regions, *MNE 2021*, Torino
4. Pisano F. et al., Depth-resolved fiber photometry enables simultaneous detection of dopamine transients in dorsal and ventral striatum in freely moving animals, *FENS 2020*, Glasgow (UK)
5. Pisano F. et al., Towards implantable plasmonic neural interfaces via curved nanophotonic structures on tapered fibers, *6<sup>th</sup> International Workshop on Technologies for Optogenetics and Neurophotonics Optogen 2019*, Venezia (Italy)
6. Pisano F. et al., Depth-resolved reconfigurable fiber photometry with a single tapered optical fiber, *5<sup>th</sup> International Workshop on Technologies for Optogenetics and*



- Neurophotonics Optogen 2018, Glasgow, UK
7. Pisano F. et al., Fiber photometry at depth with tapered optical fibers, SfN, Annual Meeting of the Society for Neuroscience 2018, San Diego (CA, US)
  8. Pisano F. et al., Tapered optical fibers for deep tissue fiber photometry, FENS 2018, Berlin (Germany)
  9. Pisano F. et al., Nanofabrication of extra-cellular recording electrodes on tapered optical fibers for neuroscience, Trends in Nanotechnology TNT, 2018, Lecce
  10. Pisano F. et al., Tapered optical fibers as multifunctional interfaces with the brain, 2<sup>nd</sup> International Symposium on Photopharmacology, 2018 Vic (Spain)
  11. Pisano F. et al., Tapered optical fibers for optogenetics, SfN, Annual Meeting of the Society for Neuroscience 2017, Washington (DC, US)
  12. Pisano F. et al., Tailoring light emission from tapered optical fibers for optogenetics, 4<sup>th</sup> International Workshop on Technologies for Optogenetics and Neurophotonics Optogen 2017, Lecce
  13. Pisano F. et al., Large scale matching of anatomy and function of retinal ganglion cells, 57<sup>th</sup> Association for Research in Vision and Ophthalmology ARVO Annual Meeting 2016, Seattle (WA, US)

### **ATTIVITÀ GESTIONALI, ORGANIZZATIVE E DI SERVIZIO**

**INCARICHI DI GESTIONE E AD IMPEGNI ASSUNTI IN ORGANI COLLEGIALI E COMMISSIONI, PRESSO RILEVANTI ENTI PUBBLICI E PRIVATI E ORGANIZZAZIONI SCIENTIFICHE E CULTURALI, OVVERO PRESSO L'ATENEO O ALTRI ATENEI**

*(inserire incarico/impegno, ente, data, ecc.)*

#### **Servizio agli studenti**

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2014 Graduate students representative, Dept. of Physics, University of Strathclyde  
 2009-2011 Rappresentante degli studenti  
 Consiglio del Corso di Studi (C.C.S.) in Fisica Università di Torino  
 membro della commissione di autovalutazione

#### **Organizzazione scientifica di conferenze, simposi e scuole internazionali**

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- Co-Chair OPTOGEN 2023, 8<sup>th</sup> International workshop on technologies for optogenetics and neurophotonics, 10-12/05/2023, Lecce, Italy <https://optogen.eu/>
- Co-Chair Micro and Nano Engineering 2021 International School, 20/09/2021, Politecnico di Torino, Italy
- Session Chair, Micro and Nano Engineering 2021

#### **Revisore per riviste scientifiche**

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Scientific Reports, IEEE Transaction on Biomedical Circuits and Systems, SPIE Neurophotonics, IOP Journal of Micromechanics and Microengineering, OPTICA Biomedical Optics Express, MDPI Sensors, Wiley Advanced Photonics Research, IEEE Micro and Nano Engineering

#### **Comitati tecnici di conferenze**

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Micro and Nano Engineering 2023  
 Micro and Nano Engineering 2022  
 Micro and Nano Engineering 2021

Data

04/05/2023

Luogo

Cavallino (LE)