FORUM DELLA RICERCA – CITTA DI MARTINA FRANCA *"PROF. MATTEO PIZZIGALLO"*

Nome EMANUELA_
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https://www.isof.cnr.it/saracino-emanuela

WORK EXPERIENCE

February 2022-NOW **Permanent Staff – EPR Level III Researcher and Technologist**

December 2025-2028 **CO-PI of a AFOSR project- Biophysical Program**- DANDELION.

Istituto per la Sintesi Organica e la Fotoreattività ISOF-CNR, Bologna-VIA GOBETTI 101, 40129.

Main Area: Neuroscience, 3D printing and Advanced Materials
Interest in *Validation of 3D new devices based on nanowires (IMM) and Carbon Fibers (ISSMC) with 3D bioprintig and SNP co-colture.*

July 2025-2030 **PI of a FISA MUR project- Advanced Materials**- REGEN-3D TISSUE.

Istituto per la Sintesi Organica e la Fotoreattività ISOF-CNR, Bologna-VIA GOBETTI 101, 40129.

Main Area: Basic and Applied Research of Neuroscience- 3D printing and Advanced Materials
Interest in *Validation and Characterization of New smart materials based on PEEK for the application in 3D-impantable prosthesis and devices.*

October 2022-2025 **CO-PI of a PRIN MUR Project BASICPROMED**.

Istituto per la Sintesi Organica e la Fotoreattività ISOF-CNR, Bologna-VIA GOBETTI 101, 40129.

Main Area: Cell culture, 3D printing and Pharmacology on cancer cells, spheroids.
Interest in *Validation of 3D new platforms for the 3D printing development of cancer spheroids.*

October 2022-2025 **Responsible of the Spoke WP4 "Validation of optimized, smart devices enabling a one-health approach"-in the ECOSISTER- PNRR**.

Istituto per la Sintesi Organica e la Fotoreattività ISOF-CNR, Bologna-VIA GOBETTI 101, 40129.

Main Area: Basic and Applied Research of Neuroscience, Material Science and Nanoneuroscience.

Interest in *Validation and Characterization of Nanostructured Materials, Interfaces and Devices to probe Glial Cells Function and Dysfunction in the Central Nervous System.*

The contribution in this field has been consolidated by an active participation in several national and international projects and several publications from 2013 - Now.

Emanuela Saracino

October 2013-2022

Since 2013 Research Fellow (PI V. Benfenati)
Istituto per la Sintesi Organica e la Fotoreattività ISOF-CNR, Bologna- VIA GOBETTI 101, 40129.
"**ASTROLIGHT**: *Shining Light for sensing and control of astrocytes microdomains structure, dynamics, and biophysics",* Air Force Office Of Scientific Research, AFOSR; **POR-FESR 2007-2013 MAT2REP** "*Biomateriali multifunzionali per l' autoriparazione di tessuti e organi"*, Fondazione IRET; "**ASTRONIR**- *Shedding light in brain Microdomains*" AFOSR, "**SAMBA** - *Specific Activation of Medisulfone® for Biomolecules Adsorption*"MISTER and MEDICA Spa; **FIRB-** "*Studio del ruolo fisiopatologico della mutazione D184E nel gene dell'Acquaporina 4*".
*Specific supported information of the projects sustaining the fellowships are listed below.

The research activities carried out concerned the following topics:1) Multifunctional biomaterials for advanced devices 2) Methods and technologies for the characterization, validation and manipulation of biomaterials. 3) Preparation and characterization of biological systems and bio-multifunctional interfaces. 4) Setting and Adapting of protocols from literature to advanced cellular system of *in vitro* study.

EDUCATION AND TRAINING

AA 2018-May 2022

PhD **cum Laude** in Nanoscience for the Medicine and the Environment, University of Bologna.
Chemical Department "G. Ciamician" – (Prof. D. Braga): main project - "Nanoglial Interfaces: Nanostructured Materials, Interfaces and Devices to unveil the role of astrocytes in Brain Function and Dysfunction" Tutors and Relators: Dott. V. Benfenati, Prof. M.Caprini, Prof. A. Credi.

AA 2020

ESDP - Master Academy I° Edition by ENRICH in the USA –
Training and Graduation in Entrepreneurial Skills Development Program.

AA 2017-2018

Professional II° degree Master in "Polymers for the Biomedicine" (30/30).
Department of Chemistry "G.Ciamician", University of Bologna and Department of Life Sciences, University of Modena and Reggio Emilia. Thesis in "Multifunctional polymeric materials as interfaces and advanced biomedical devices for the study and modulation of non-neuronal brain cells", Supervisor Prof. L. Calzà-IRET Foundation and Unibo, Ozzano Emilia (BO), Dr. V. Benfenati. The Master's aim is training in the field of biomedical engineering applied to physiology and medicine.

AA 2007-2013

Master's Degree in Pharmacy and Industrial Pharmacy (105/110).
Faculty of Pharmacy, Biotechnology and Motor Science, University of Bologna.
Experimental degree thesis: "Study of the functional expression of the potassium ion channels with two domains of the Pore" (Prof. Marco Caprini and Dr. Laura Minieri). Description: October 2011 - July 2013 practical and theoretical knowledge relating primary cell brain cultures, cellular and molecular techniques and electrophysiology.

Emanuela Saracino

AA 2002-2007 Liceo Classico-Linguistico “T. Livio” Martina Franca, Piazza Vittorio Veneto, 74015, Martina Franca (TA), vote (100/100).

WORK ACTIVITIES

Awards

-**March 2026** Honored Eccellenza Donna Award. .
January 2026 Honored Member of Pugliesi nel Mondo Association.
-**December 2025** Expert and member of Research Forum and Award of Martina Franca.
-**September 2025 EuroMed 2025 International Award**, in Locorotondo, “*Mediterranean Bridge 2025–2027*”.
-**June 2022 PhD cum Laude;** -**December 2020** CIVIL AND SOCIAL AWARD for the COVID EMERGENCY conferred by Magnifico Rettore F. Ubertini, University of Bologna, supporting the Microbiological and Engineering activity of S. Orsola Hospital in the task force of Italy.
-**September 2018** 1° WINNER AS BEST POSTER PRESENTATION in the Department
Conference “CNR DSCTM 2018” Assisi, Italy.
-**October 2019** 1° WINNER AS BEST POSTER PRESENTATION in the 7th Structure andFunction of Ion Channels and Transporters workshop, Sestri Levante, Italy.

Editorial activity

Chapters’ Book in “BIOLOGIA E SCIENZA” *La Vita Intorno a Noi*, Cavazzuti Damiani new edition NP52075 for the Zanichelli Casa Editrice-Bologna (Via Irnerio 34, 40126, Bologna).

Emanuela Saracino

Invited presentations

- US-Italy Joint Commission Meeting on Science and Technology Cooperation Advanced Materials and Nanotechnologies Working Group", Embassy of Italy, Washington DC, 2 April 2026; - "Bioengineering meets glia: biomaterials applications to study glia and glial-associated disorders" in Special Trainee Symposium of GLIA 2023 8-11 2023, Berlin; "Probing structural and functional properties of primary astrocytes in vitro by fluorescent gold-nanoclusters (fAuNCs) as potential quantum nano-tools for the modulation of brain's functions." DSCTM, Acicastello 26-28 October 2022;"Organic Interface and carbon- based materials and interfaces to study the role of astrocytes in the brain physiology", ICSM 2022, 17-22 July 2022, Glasgow; "Primary 2D and 3D cell culture models to study astrocytes", 2nd School Astrotech, 19-21 Aprile 2022, CNR, Bologna; " Glial Cells Interface to study physiology and pathophysiology in the brain" lectures for medicine students in the course of Physiology in the University of Bologna" April 2022, Sant' Orsola Hospital; " International Summit who, where and what" in IEEE WIE International Leadership Summit held in Genoa, Italy, 2-3, December, 2021, Oral Presentation; "Overview on the tools, devices and interface to probe and sense astrocytes glial brain cells", 14th "Getting a Deeper Sense for Non-Classical Sensing" workshop, 23-24 September 2019, Johns Hopkins University (JHU) School of Advanced International Studies (SAIS), Washington DC, "Astrocytes and the Central Nervous System from basic research to future innovative perspectives" ENRICH- Academy NCURA June 2020, Online presentation.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English (C1), French (B2), German (B2)

Job-related skills 1) application of different biological techniques (preparation and manipulation of primary and secondary cell cultures, staminal cells, adult and embryonic neurospheres: excellent skills with preparation and dissection of animals for *in vitro* studies), molecular and functional biological techniques (i.e. RT-PCR, Western Blot, Immunofluorescence, luminometric/fluorimetric/spettrofotometric multiplate reading, ELISA), confocal microscopy, STED, SEM; **Solid expertise in electrophysiology** (PATCH CLAMP), MEA, Calcium Imaging. 2) development and validation of biomaterials and innovative optoelectronic devices useful for the stimulation and response of biological cell systems, in particular: neurons and glial cells; 2) development and characterization of biomaterials with a potential in tissue engineering, drug delivery application, therapeutic approach; 3) preparation of samples, films and substrates (i.e. drop casting, dry in oven, spin coating, vertical deposition) made of natural, synthetic polymers and molecules and polymorphic molecules.

Project Participations and Contributions

Senior Participant in the following projects, non-supporting the fellowships:

- "Investigation on Co-cultured Astrocyte and neuron populations by Recording Ultra-low Signals with nanostructured Electrodes" **ICARUS** FA9550-21-1-0424 2021-2024, AIM: to develop an analytical tool able to identify network synchronization and different cellular contribution in the recorded EC electrical

signals (PI A. Convertino); - "Structure-Function Relationships of Brain Astrocyte Glial Cells with Gold-Nanocluster (AuNCs) Bio-Nanophotonic Probe" **ASTROGOLD** W911NF-21-2-0074; 2021-2024, The proposal provides a collaborative program with the Combat Capability Development Command (CCDC), Army Research Laboratory (PI V Benfenati, CO-PI E. Saracino). ASTROGOLD aims to set the scene to push further our understanding of the brain cell function and cross-talk, moving from old neurocentric vision, towards to a more holistic perspective that consider the essential role of astroglial cells in the brain by using nanosize probe of gold 2-4 nm clusters as vehicle for the cell morphological, structural, molecular and functional differentiation. -**ASTRODYN,** "Decoding Astrocytes Rhythm" FA9550-19-10370, AFOSR: The project studies the dynamics of the actin cytoskeleton in astrocytes as a target for possible diagnostic and therapeutic interventions. Furthermore, through the use of nanostructured materials (Hydrotalcites), the impact of nanostructuring on the dynamics of the astroglial cytoskeleton will be verified. – "The Fun-vegetables" **FUN-VEG,** CARIPLO Project, AIM: part of the communication, sensibilization and dissemination of results collected from the sociological impact of a new approach of dieta in primary schools of Milano (University Statale of Milano, PI), 2023-2024; **LO-VEG,** PRIN Project, AIM: part of the communication, sensibilization and dissemination of results collected from the sociological impact of a new approach of dieta in primary schools of Milano (University Statale of Milano, PI), 2022-2025.

Besides the principal interest in Neuroscience, Physiology and Pathophysiology of the brain, interests have been developed in new topics such as:

1) Study and Characterization of 3D cell culture models and spheroids.

2) Biomaterials, 3D printing

3) Tests for the animal and human prosthesis and for the surgical guide by collaborating with MYLAV Srl. Successful results have been achieved in animals' surgery and implanted prosthesis and 3D models to guide veterinary during complex surgery.

Digital skills

2025-now: Informatic Commission of CNR-ISOF for web dissemination and communicarion.

2022-now: Writer and Responsible of the Communication and press communication for

ISOF, CNR Blog, Website and Social Media.

ECDL, Data Analysis, IMAGING Program

(i.e. Origin, Matlab, Imagej, Metaphluor, Clampfit, ecc).

ADDITIONAL INFORMATION

Publications

More than 30 scientific pubblications; total number of citations **802;** H index **18**

Emanuela Saracino

Contributions in Congress and International Events

More than 50 contributions among:

1) 2026 Glial Science Review will be held March 31, 2026, at the Basic Research Innovation Collaboration Center (BRICC). The BRICC is located at 4100 N Fairfax Drive, Suite 450, Arlington, VA 22203. 2) E. Saracino "Probing structural and functional properties of primary astrocytes in vitro by fluorescent gold-nanoclusters (fAuNCs) as potential quantum nano-tools for the modulation of brain's functions." DSCTM, Acicastello 26-28 October 2022, Oral presentation. 2) E. Saracino, R. Fabbri, E. Treossi, V. Palermo, V. Benfenati "Glial interfaces, materials and carbon-based devices to study astrocytes phisiology and phatophisiology", ICSM 2022, 17-22 July 2022, Oral presentation. 3) G. Conte, E. Saracino, L. Maiolo, A. Convertino, V. Benfenati, "Gold coated Silicon Nanowire formation of functional network of Dorsal Root Ganglia neurons and satellite glia", FENS2022, 9-14 July 2022, Paris, Poster. 4) D. Spennato, J. Groppi, M. Baroncini, E. Saracino, F. Formaggio, R. Fabbri, M. Caprini, R. Zamboni, G.P. Nicchia, D.B. Kirdajova, M. Anderova, A. Credi, V. Benfenati "Selective optical control of calcium signaling in astrocytes by Azobenzene photoswitches in vitro and in vivo", FENS2022, 9-14 July 2022, Paris, Poster. 5) E. Saracino "Primary 2D and 3D Cell Culture Models to study Astrocytes" ASTROTECH 2 WORKSHOP Marie Curie Project, 19-21 April 2022, CNR Bologna, oral contribution. 6) E. Saracino, K. J. Perry, D. Spennato, M.G. Mola, G.P. Nicchia, R. Zamboni, V. Benfenati, S. P. Karna "Impact of Gold- Nanocluster (AuNCs) on Structural and Functional Properties of primary Astrocytes", #Federation of European Neuroscience Society Gottingen Meeting 2021, 22-30 March 2021, Gottingen Online, Poster. 7) E. Saracino, K. J. Perry, R. Fabbri, R. Zamboni, V. Benfenati, S. P. Karna "Impact of Gold- Nanocluster (AuNCs) on Structural and Functional Properties of primary Astrocytes", #3324 Federation of European Neuroscience Society FENS 2020, 11-15 July, Glasgow Online, Poster (RICONOSCIMENTO TOP 10% POSTER VISIT). 8) N. Mennona, K. M. O'Neill, E. Saracino, B. Barile, L. Maiolo, M. G. Mola, A. Convertino, V. Guarino, T. Posati, M. Caprini, R. Zamboni, L. Ambrosio, G. P. Nicchia, V. Benfenati, Italy W. Losert, "Quantifying actin dynamics of astrocytes in response to mechanical and chemical cues", Federation of European Neuroscience Society FENS 2020, 11-15 July, Glasgow Online, Poster. 9) R. Fabbri, A. Scidà, E. Saracino, D. Spennato, R. Zamboni, M. Melucci, E. Treossi, Italy V. Palermo, V. Benfenati "Graphene-Based Devices For Selective triggering of Astrocytes Calcium signalling", Federation of European Neuroscience Society FENS 2020, 11-15 July, Glasgow Online, Poster. 10) E. Saracino, F. Prescimone, M. Natali, A. I. Borrachero Conejo, R. Zamboni, M, Muccini, S. Toffanin, V. Benfenati "Electrical Stimulation by an Organic Transistor Structure Induces Calcium Signaling in Non Neuronal Brain Cells", Orbitaly-Organic Biolectronycs 2019, 21-23 October, Napoli, Italia. Oral Presentation. 11) V. Guarino, V. Benfenati, A. Borriello, E. Saracino, V. Cirillo, M. Marrese, S. Zuppolini, R. Zamboni, L. Ambrosio "Electro-conductive nanofibres containing polyaniline nanoneedles for neural applications", Orbitaly-Organic Biolectronycs 2019, 21-23 October, Napoli, Italia. Poster. 12) D. Spennato, E. Saracino, M. Baroncini, A. Cutrignelli, M. Rugolo, A. Credi, R. Zamboni, V. Benfenati "Azobenzene photostimulation elicits Calcium signalling and ion channel conductance in primary differentiated rodent astrocytes", 7th-Structure and Function of Ion Channels and Transporters workshop, 2-5 October 2019, Sestri Levante, Italia.

Poster. 13) E. Saracino, L. Maiolo, V. Guarino, D. Polese, F. Formaggio, M. Caprini, M. Muccini, G. Fortunato, L. Ambrosio, R. Zamboni, A. Convertino. V. Benfenati "Nanostructured interfaces enable in vivo-like molecular and functional differentiation of primary astrocytes in vitro" ,7th- Structure and Function of Ion Channels and Transporters workshop, 2-5 October 2019, Sestri Levante, Italia. Poster. (FIRST WINNER BEST POSTER) 14) E. Saracino, "Overview on the tools, devices and interface to probe and sense astrocytes glial brain cells", 14th "Getting a Deeper Sense for Non-Classical Sensing" workshop, 23-24 September 2019, Johns Hopkins University (JHU) School of Advanced International Studies (SAIS), Washington DC. Invited oral contribution. 15) W. Adams, A. I. Borrachero-Conejo, E. Saracino, A. Mahadaven-Jansen, V. Benfenati, "Astrocyte sensitivity to pulsed infrared light: molecular, physiological, and mechanistic insights", Optogenetics and Optical Manipulation 2020, part of SPIE BiOS, 29 March-2 April 2020, Strasburgo. Poster. 16) R. Zamboni, E. Saracino, V. Benfenati, "Nanomaterials and Living Technologies Interfacing non-classical excitable brain cell astrocytes", IWNBP 2019: 5th International Workshop on Nano and Bio-Photonics, 22-27 September 2019, Saint-Nectare, Francia. Oral contribution. 17) E. Saracino, A. I. Borrachero-Conejo, L. Maiolo,V. Guarino, K. O'Neill, D. Polese, F. Formaggio, M. Caprini, M. Muccini, G. Fortunato, L. Ambrosio, R. Zamboni, W. Losert, A. Convertino, V. Benfenati, "Nanostructured interfaces enable in vivo-like differentiation of primary astrocytes and allow multiscale study of their functionality in vitro", Glia Meeting 2019, 10-13 July 2019, Porto. Poster. 18) W. Adams, A. I. Borrachero-Conejo, E. Saracino, G.P.Nicchia, M.G. Mola, F. Formaggio, M. Caprini, T. Posati, R. Zamboni, A. Mahadaven-Jansen, V. Benfenati, "Infrared laser photostimulationelicits calcium signaling and water transport involving TRPV4 and AQP4 in primary and differentiated rodent astrocytes", Glia Meeting 2019, 10-13 July 2019, Porto. Poster. 19) Cibelli, M. G. Mola, P. Abbrescia, M. De Bellis, E. Saracino, V. Benfenati, A. Frigeri, M. Svelto, G. P. Nicchia, "AQP4 deletion on TRPV4 and Cx43 expression pattern during development", Glia Meeting 2019, 10-13 July 2019, Porto. Poster. 20) E. Saracino, A. I. Borrachero-Conejo, L. Maiolo, D. Polese, F. Formaggio, Grazia Paola Nicchia,M. G. Mola, M. Caprini, M. Muccini, L. Ambrosio, G. Fortunato, R. Zamboni, V. Guarino, A. Convertino, V. Benfenati, "SiliconNanowire and ElectrospunNanofibrePolymerInterfaces and Devices to Alter Non Excitable Brain Cell Morphology and Functionality", MRS-Materials Research Society 2018, 25-30 November 2018, Boston. Oral contribution. 21) E. Saracino, "Astrocytes glia cells: a new challenge for the Neuroscience and Material science. Silicon Nanowire and ElectrospunNanofibre Polymer Interfaces and Devices to alter their Morphology and Functionality", presso 14 November 2018, UMD University of Maryland, Physics and Sciences Complex Depts. Oral contribution. 22) E. Saracino, A. I. Borrachero-Conejo, A. Convertino, V. Guarino, F.Formaggio, G.P. Nicchia,M.G. Mola, L. Maiolo, V. Cirillo, M. Barbalinardo, F.Valle, M. Caprini, M. Muccini, L. Ambrosio,G. Fortunato, R. Zamboni, V. Benfenati "Nanostructured silicon nanowires and electrospun polymer nanofibres as novel glial interfaces to modulate astrocytes biophysics", presso Materials 2018, 22-26 October 2018, Bologna. Oral contribution. 23) Borrachero-Conejo, W. Adams, E. Saracino, G.P. Nicchia, M.G. Mola, F. Formaggio, M. Caprini, T. Posati, R. Zamboni, A. Mahadaven-Jansen, V. Benfenati, "Infrared laser photo stimulation elicits calcium signaling in primary differentiated rodent astrocytes", Materials 2018, 22-26 October 2018, Bologna. Oral contribution. 24) Partecipartion and Oral

Contribution “Electronic Devices for the communication with neural cells”, E. Saracino in “ISMN WORKSHOP” 11-13 May 2016, Messina. 19) Relator of the Conference “WOAM- WELFARE AZIENDALE” in the Project RS-Rieducatore Sportivo, 9 March 2018, FICO, Via Paolo Canali, 8, 40127 Bologna BO, Bologna. Oral contributions. 25) Participation and Finalist in the national context of ART and SCIENCE 2015 (Immaginario Scientifico di Trieste)-IMMAGINI DELLA RICERCA (confocal phalloidin immuno staining of neurons) 25 September 2015, at Sala Veruda di Palazzo Costanzi, IV° Trieste Next Edition– European Expostion of Scientific Research. Oral contribution. Commisions: Prof. Piero Paolo Battaglini University of Trieste, Maurizio Lorber, art specialist and Serena Mizzan, director of Scientific “Immaginario” Trieste. 26) I. Borrachero-Conejo, W. Adams, E. Saracino, G.P. Nicchia, M.G. Mola, F. Formaggio, M. Caprini, T. Posati, R. Zamboni, M. Muccini, A. Mahadaven-Jansen, V. Benfenati, “Infrared laser photostimulation evokes TRP mediated calcium signaling in primary differentiated rodent astrocytes”, presso Society for Neuroscience Forum, SfN, San Diego, 3th -7th November 2018. - Poster. 27) E. Saracino, A. I. Borrachero-Conejo, A. Convertino, V. Guarino, F. Formaggio, G.P. Nicchia, M.G. Mola, L. Maiolo, V. Cirillo, M. Barbalinardo, F.Valle, M. Caprini, M. Muccini, L. Ambrosio,G. Fortunato, R. Zamboni, V. Benfenati,“Nanostructured silicon nanowire and electrospun nano fibre polymer interfaces modulate astrocytes physiology and biophysical properties in vitro”,presso Conferenza di Dipartimento “CNR DSCTM 2018” 24-26 Settembre 2018, Assisi, Italy, Poster. (FIRST WINNER AS BEST POSTER PRESENTATION OF THE AREA CHEMISTRY AND LIFE SCIENCE). 28) E. Saracino, A. I. Borrachero-Conejo, A. Convertino, V. Guarino, F. Formaggio, G.P. Nicchia, M.G. Mola, L. Maiolo, V. Cirillo, M. Barbalinardo, F.Valle, M. Caprini, M. Muccini, L. Ambrosio, G. Fortunato, R. Zamboni, V. Benfenati, “Nanostructuredsiliconnanowire and electrospun nanofibre polymer interfaces modulate astrocytes physiology and biophysical properties in vitro”, presso Federation of European Neuroscience Society FENS, Berlino 7-11 Luglio 2018. Poster 2018-C 089-Berlino. 29) Borrachero-Conejo, W. Adams, E. Saracino, G.P. Nicchia, M.G. Mola, F. Formaggio, M. Caprini, T. Posati, R. Zamboni, A. Mahadaven-Jansen, V. Benfenati, “Infrared laser photostimulation elicits calcium signalling and modulate ion channel conductance in primary differentiated rodent astrocytes” presso Fedeation of European Neuroscience Society FENS, Berlino 7-11 juky 2018. Poster 2018-C 004-Berlino. 30) Saracino E., Borrachero-Conejo A. I., Cirillo V., GuarinoV., Convertino A., Marrese M., Caprini M., Borriello A., AmbrosioL., Fortunato G., Zamboni R., Benfenati V. “Nanostructured silicon nanowire and electrospun polymer nanofibres promote astrocytes morphological, functional and molecular differentiation in vitro” presso Society for Neuroscience Forum, SfN, Washington DC, 11th -15thNovember 2017. Poster 2017-S-11020-SfN. 31) V. Guarino, V. Benfenati, A. Borriello, E. Saracino, V. Cirillo, A. Borrachero-Conejo, M.A. Alvarez-Perez, M. Marrese, T. Napolitano, R. Zamboni, L. Ambrosio. “Polyaniline based electroactive composite scaffolds for cardiac and neural applications” pressothe 25th annual international conference on composites/nanoengineering (ICCE-25), 16-22 July 2017 in Rome, Italy, Poster. 32) E. Saracino, A.I. Borrachero-Conejo, V. Cirillo, V. Guarino, A. Convertino, L. Maiolo, M. Marrese, M. Caprini, A. Borriello, L. Ambrosio, G. Fortunato, R. Zamboni, V. Benfenati “Nanostructured silicon nanowire and electrospun nanofibre polymer interfaces indice neuralcellmolecular and functionaldifferentiation”, presso Conferenza di

Dipartimento “CNR DSCTM 2017” 19-20 October 2017, Alghero, Italy, Poster. 33) M. Barbalinardo, D. Gentili, F. Lazzarotto, F. Valle, M. Brucale, M. Melucci, L. Favaretto, M. Zambianchi, A. I. Borrachero-Conejo, E. Saracino, V. Benfenati, D. Natalini, P. Greco, M. Giovanna Di Carlo, G. Foschi and M. Cavallini, “A data matrix method for multiparameter monitoring of cell cultures”, presso Conferenza di Dipartimento “CNR DSCTM 2017” 19-20 October 2017, Alghero, Italy, Poster. 34) Durso M., Borrachero-Conejo A.I., Bettini, Treossi E., Scidà A., Megane, Tuci G., Saracino E., Giambastiani O., Benfenati V., Melucci M., Palermo V. “Biomimetic Graphene for Enhanced Interaction with the External Membrane of Neural Cells” presso Conferenza di Dipartimento “CNR DSCTM 2017” 19-20 October 2017, Alghero, Italy, Poster. 35) Pistone A., Posati T., Saracino E., Nicchia P., Sparaneo A., Caprini M., Formaggio F., Nocchetti M., Sagnella A., Bonetti S., Ruani GP., Muccini M., Valentina B., “Nanostructured interface promoting astrocyte molecular and functional differentiation in vitro”, 12th European Meeting on Glial Cell Function in Health and Disease, GLIA, 15-18 July, 2015, Bilbao, Spagna, Poster.

Relevant Participations

Participation at “ US-Italy Joint Commission Meeting on Science and Technology Cooperation Advanced Materials and Nanotechnologies Working Group”, Embassy of Italy, Washington DC, 2 April 2026; Participation at Biophysic AFOSR program 2024, Washington DC, November 2024; Participation at “14th US-Italy Joint Commission Meeting on Science and Technology Cooperation Advanced Materials and Nanotechnologies Working Group”, Embassy of Italy, Washington DC, 7 December 2021; II° MEETING di Progetto Online MAT2REP, 14 December 2021, online; IEEE WIE International Leadership Summit held in Genoa, Italy, 2-3, December, 2021; Supramolecular Chemical Days for young Researchers 13,14,1 5 October 2021, online; 14°Gottingen Neuroscience Meeting, 22-30 March 2020, online; I° MEETING MAT2REP, 19 November 2020, online; BIOPHYSICS PROGRAM REVIEW MEETING, Air Force Office of Scientific Research (AFOSR), 31 August-4 September, online; Workshop on "Multi-disciplinary approaches to quantify and model calcium signaling in neural systems and beyond" 21-22 July 2020, Online; Federation of European Neuroscience Society FENS, 11-15 July 2020, Online Glasgow; “L’Alimentazione nelle Patologie Neurodegenerative”, 10 March 2020, Scuola di Nutrizione Salernitana SNS; “Orbitaly-Organic Bioelectronics”, 21-23 October, Napoli, Italia; 7th “Structure and Function of Ion Channels and Transporters” workshop, 2-5 October, Sestri Levante, Italia; 14th “Getting a Deeper Sense for Non-Classical Sensing” workshop, 23-24 Settembre, Johns Hopkins University (JHU) School of Advanced International Studies (SAIS), Washington DC; Nano Scientific Forum Europe- “Scanning Probe Microscope” workshop, 11-13 September, Bologna, Italia; 14th European Meeting on Glial Cell Function in Health and Disease, GLIA, 10- 13 July, 2019, Porto, Portogallo; MADIA-Magnetic Diagnostic Assay for Neuroregenerative Diseases, “Nanotechnologies and Smart Systems for Early Diagnostics”, presso CNR- Consiglio Nazionale Delle Ricerche, Bologna, 11-12 June 2019; BIOPHYSICS PROGRAM REVIEW MEETING, Air Force Office of Scientific Research (AFOSR), Basic Research Innovation and Collaboration Center, Arlington VA, 6-10 Maggio 2019;

"Biophisics Seminar – Precisely Regulate ERK Signaling pathway with local electrical fields", Prof Quan Ching, Seminar at UMD University of Maryland College Park, 8 April 2019; "Firing Rate Homeostatis in Neocortical Networks", Prof Gina Turrigiano Brandeis University, Seminar at UMD University of Maryland College Park, 10 April 2019; "Cell biology and cell dynamics: cell functions and biomedical applications", Prof Takanari Indue, Jhon Hopkins Univerisity, Seminar at UMD University of Maryland College Park, 19 April 2019; "Biochemistry and Molecular Biology Seminar- Crowdind, Clutering and Phase Transitions in crowded cellular environments", Dr Michael Feig, Michigan State University, Seminar at UMD University of Maryland College Park, 26 April 2019; "High speed and high resolution imaging of brain activity", Dr Na Ji, Seminar at UMD University of Maryland College Park, 29 April 2019; AFM Workshop: History, Fundamental and Results- CNR ISMN, Oxford Instruments and Schaefer Italy, 7 February 2019, at CNR, Bologna; "13th US-Italy Joint Commission Meeting on Science and Technology Cooperation Advanced Materials and Nanotechnologies Working Group", Embassy of Italy, Washington DC, 3-5 December 2018; "Combined Network, Computational and Mathematics for Biological Networks" UMD University of Maryland College Park, 16 November 2018; "BioScienceDay" UMD University of Maryland College Park, 13 November 2018; "Annual Meeting of the APS Mid-Atlantic Section"- UMD University of Maryland College Park, 9-10 November 2018; "Stressing Cells and Gels: exploiting gradients in two different systems" Prof Sujita Datta-Princeston University, New Jersey, Seminar at UMD University of Maryland College Park, 5 November 2018; Sattelite Conference Neuroscience Course on "Glial Cells", Federation of European Neuroscience Society FENS, 5 July 2018, Berlino; Sattelite Federation of European Neuroscience Society FENS, 7-11 July 2018, Berlino; Smart Sensing: "Utilizing quantum behavior in biological function" sponsored by Air Force Office of Scientific Research (AFOSR), Prof. Larry Nagahara, John Hopkins University, 12-13 April 2018, Washington DC; BIOPHYSICS PROGRAM REVIEW MEETING, Air Force Office of Scientific Research (AFOSR), 16-20 April 2018, Arlington, VA; 11 th SFN Society for Neuroscience SfN, Washington DC, 11-15 November 2017; "Nutraceutici ed Alimenti Funzionali: ricerca, produzione, sicurezza"; NanotechItaly Congress, 25-27 November 2015, Bologna; ISMN "Chemistry, Materials & Light" 21-23 September 2015, Bologna; CNR-ISOF Bologna, 2013-today, in the fields of chemistry, biology, physiology, physics, advanced materials and optoelectronic devices; 12th European Meeting on Glial Cell Function in Health and Disease, GLIA, 5- 18 Luglio, 2015, Bilbao, Spagna.

Others relevant Information

-**December 2022** Organizer of the scientific event of the ISOF Christmas Lecture with Prof. L. Nicolais "From Business to Research".

-**April 2022** Organizer of the scientific committee for 2° EU-Marie Curie Astrotech Project Workshop in CNR of Bologna.

-**February 2020-August 2020** Volunteer researcher as support

of Bologna hospitals in the context of the Coronavirus emergency. The following project was agreed by the Sant' Orsola Foundation with the University and the Local Health Authority of Bologna (Prof. F. Violante and C. Boi). The emergency lab supported the national and international healthcare companies in the certification of the surgical masks according to the 34 Article, paragraph 3, of the Decree Law 9/2020; (bio-engineering and microbiological tests aimed at the validation of texture and masks as medical devices)

AA 2018/2019 Winner of tutoring Course (50H) in General Physiology at Biomedical Engineering CDS of University of Bologna, Cesena (Prof. V. Benfenati).

Teaching and Tutoring Activity

-2021-NOW Tutor in 20h of PCTO for the scientific activity of 1 student from IT Majorana of Biothecnology of S. Lazzaro (Bo), and of 1 class of the Liceo Righi of Bologna, dedicated to Neuroscience.

2022-2023 Invitation Lectures on Neuroscience and Neurophysiology in the Physiology course of School of Medicine of the University of Bologna, Prof. M. Gamberini.

-2019-2024 Co-tutor in the scientific activity of 2 scholarships of the Engineering and Interfaces Lab in ISOF, CNR Bologna.

AA 2015-NOW Co-relator and relator of **17** master's degree Thesis at ISOF, CNR.

2015-2017 Responsible for Biological Activity in the Project CNR, ISOF "SPERIM-ESTATE".

2016-NOW Scientific dissemination in the national project MIUR CNR-ISOF "IL LINGUAGGIO DELLA RICERCA - From research to school and back"; Supporter and Tutor for the MIUR ALTERNANCE SCHOOL-WORK project; Main topic: "the physiology of the digestive system, the chemistry of nutrients and food education" and "Setting up a biological lab: main base of cell culture and cell tests"; "Neuroscience";

-**2017-2019** Responsible of the scientific dissemination and analysis of statistical data in the project "RS Sport Re-Educator-Center for Prevention and Health Services" (Via PCS Nasica, 41/2, 40055 Castenaso, BO) in collaboration with the USL of Bologna, aiming to physiological well-being and psycho-physical efficiency (nutrition, health, physical activity)".

Commission and evaluation commission

Member in the commission of more than 15 BANDI, among:

- BANDO DI SELEZIONE – BORSA DI RICERCA- n. ISOF_01_2026_BO
- BANDO DI SELEZIONE – TD RICERCATORE PNRR- n. ISOF_400.1_2023_BO
- BANDO DI SELEZIONE – TD TECNOLOGO PNRR- n. ISOF_400.2_2023_BO

- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_266_2023_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_265_2023_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_264_2022_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_261_2022_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_259_2022_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI PER LA SALUTE E SCIENZE DELLA VITA
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_250_2022_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI
- BANDO DI SELEZIONE – ASSEGNO PROFESSIONALIZZANTE n. ISOF_230_2021_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI PER LA SALUTE E SCIENZE DELLA VITA
- BANDO DI SELEZIONE – BORSA DI STUDIO n. ISOF_13_2021_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI PER LA SALUTE E SCIENZE DELLA VITA
- BANDO DI SELEZIONE – BORSA DI STUDIO n. ISOF_11_2019_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI PER LA SALUTE E SCIENZE DELLA VITA
- BANDO DI SELEZIONE – BORSA DI STUDIO n. ISOF_10_2019_BO
  AREA SCIENTIFICA "SCIENZE CHIMICHE-MATERIALI PER LA SALUTE E SCIENZE DELLA VITA

Collaborations and abroad Experiences

2024-2026 JOINT LAB CO-PI "Advanced Materials, Nanomaterials, and Biophysics" between CNR-ISOF, IMM e JHU.

2022-NOW 1) Department of Pharmacy, University of Bologna, via San Donato 15, 40126 Bologna. 2) Department of Biotechnologies, Biosciences and Biopharmaceuticals, CAMPUS Via Amendola 165 / A 70126, University of Bari, (Prof. Grazia Paola Nicchia and M.G. Mola experts in the study of astroglial cell physiology, regulation of water permeability and the study of aquaporins). 3) Istituto Italiano di Tecnologia, IIT-CNST, via G.Pascoli 70/3 20133, Milano, (Dr. Maria Rosa Antognazza). 4) University of Maryland, UMD, College Park, MD 2074 USA, Physical Sciences Complex, (Prof. Wolfgang Losert) 5) ARL Army Research Laboratory, Aberdeen, USA (Prof. Shashi Karna), 6) University of Michigan, Dept. of Chemistry (Prof. T. Goodson III),

7) Jhon Hopkins University, Prof. I. Barman, Baltimore.

2023-NOW Collaboration withMYLAV SRL for the development of new materials, biopolymers and substrates to generate 3D printing post traumatic animal prosthesis.

2015- NOW Collaboration with MISTER Smart Innovation Technopole in the Health Tech field.

2020- 2022 Collaboration with IRET Foundation of Ozzano (MAT2REP Project).

2015- 2017 Collaboration with Cell Dynamics S.R.L in the validation and application of biological protocols to the *in vitr*o standard systems and innovative biological instruments useful in biomedical labs and therapeutic approaches.

2017- 2018 Collaboration with MEDICA SPA Via degli Artigiani 7, Medolla, 40136 (MO)- Dr. Letizia Bocchi (SAMBA Project).

Consiglio Nazionale delle Ricerche

Iscriviti al canale WhatsApp del CNR

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