Laura Caramazza

CURRENT POSITION

2022 – today

PostDoc at the BioEMLab of the Department of Information Engineering, Electronics and Telecommunications (DIET)

University of Rome "Sapienza", Department of Information Engineering, Electronics and Telecommunications (DIET), Division of Electronic Engineer, Rome, Italy.

Research activity: "Experimental activity of characterization and control of exposure systems generating pulsed electric fields for *in vitro* experimental models", in the framework of the EU Horizon 2020 – FET OPEN funded RISEUP project

EDUCATION AND TRAINING

2018 – 2022

PhD in Information and Communications Technologies (ICT) XXXIV Cycle

University of Rome "Sapienza", Department of Information Engineering, Electronics and Telecommunications (DIET), Division of Electronic Engineer, Rome, Italy.

Supported by Center for Life Nano Science@Sapienza, Istituto Italiano di Tecnologia (IIT), Rome, Italy

Thesis: "Electromagnetic fields and Nanosystems for Biomedical Applications"
(Scholarship end date January 31st, 2021. Dissertation held on May 27th, 2022)

2015 – 2018

Master of Science in Nanotechnology Engineering

Sapienza University of Rome, Rome, Italy

Master Thesis Trainee at the Department of Information Engineering, Electronics and Telecommunications (DIET) and in collaboration with the Department of Drug Chemistry and Technologies, University of Rome, "Sapienza", Rome, Italy (six months)

Title of the thesis: Stimuli-responsive liposomes activated by nanosecond pulsed electric field: an integrated approach

Grade 110 out of 110, cum laude

2015

Full-time English course

EF International Language Centers, Boston MA, United States (one month)

- Intercultural communication skills

2011 – 2015

Bachelor of Science in Chemical Engineering

Sapienza University of Rome, Rome, Italy
Bachelor Thesis Trainee at Department of Chemical Materials, Environmental Engineering (DICMA), University of Rome, "Sapienza", Rome, Italy (three months)

Title of the thesis: "Multistage extraction of lycopene from tomatoes waste"
Grade 99 out of 110

2006 – 2011

High school leaving qualification in scientific studies

"Isacco Newton", Rome, Italy, Subjects including Math's, Science, Chemistry, English
Grade 100 out of 100

ACADEMIC COURSES AND SCHOOL PARTECIPATION

January 2021

Full-time participation to the Tom Brazil Doctoral School of Microwaves by the European Microwave Week EUMW2020, Utrecht, The Netherlands

School title: "The Route to 5G: Design of mmWave Active Array Systems, from RFIC to Signal Processing". The overall theme of the technical topics is 5G mmWave with a focus on the design of integrated active array systems, covering the fields all the way from RFIC to signal processing. (one week)

October 2019

Full-time participation to the High Performance Molecular Dynamics course by CINECA, Rome, Italy

I learned how to perform molecular dynamic simulations reducing computational costs of the simulations. (one week)

February 2019

Full-time participation to the XXIII International School of Pure and Applied Biophysics on "Emerging Tools in Biomechanics: from tissues down to single molecules", Venice, Italy

I studied through theoretical lessons, in silico tutorials and experimental activities the importance of mechanical properties in biological processes, from molecular and sub-cellular approaches to single cell and tissues. (one week)

2019

Master Course of Biomedical Engineering "Compatibilità elettromagnetica per apparecchiature medicali" by Prof. Alessandra Paffi

Theoretical and practical lessons attended in the framework of the PhD training (five months)

2018

Master Course of Biomedical Engineering "Misure elettriche per la biomedica" by Prof Emanuele Piuzzi

Theoretical and practical lessons attended in the framework of the PhD training (four months)

RESEARCH ACTIVITY

September 2022 - today

Regeneration of Injured Spinal Cord by Electro Pulsed Bio-hybrid Approach (RISE UP) Project

In the framework of the European Union's Horizon 2020 FET OPEN Research and innovation under grant agreement N° 964562

Participation as PhD Student and PostDoc

September 2022 - today

Numerical Modelling of RF interaction with Thermal Receptors – Mechanisms and *vivo/vitro* experiments (MOTHERR) Project

In the framework of the ANSES, Programme national de recherche "Environnement Santé Travail"

Participation as PhD Student and PostDoc

May 2022 - today

Research partnership at the ENEA Casaccia Research Center, Rome, Italy

In the framework of the research work on "Numerical and experimental investigations on the use of PEMFs for the treatment of sclerosis amyotrophic lateral (SLA)" (one year)

2020

Progetto di Ricerca di Ateneo: RM120172B6F1B0D6 (One year project)

Participation as PhD Student.

Title: "Optimization of magnetic field remote controlled lipid vesicle nanocarriers".

In collaboration with the Department of Chemistry and Pharmaceutical Technologies, Sapienza University of Rome, Italy."

One-Month activity suspended due to COVID-19

COST Action [CA15211] ElectroNET STSM

Grant winner for the short-term mission

Title: "Complete analysis to reach a full comprehension of the destabilizing effect of pulsed

electric fields like atmospheric lightning signals on lipid vesicles"

Home Institution: Sapienza University of Rome, Italy

Host Institution: CNRS - University of Paris-Saclay - Gustave Roussy UMR 9018, Metabolic and systemic aspects of oncogenesis for new therapeutic approaches (METSY), Paris, France

February 2020 – March 2020 **COST Action [CA15211] ElectroNET STSM**

Grant winner for the short-term mission

Title: "Investigations on driving mechanisms of lipid vesicles destabilization due to intense electric fields with characteristics of the lightning"

Home Institution: Sapienza University of Rome, Italy

Host Institution: CNRS - University of Paris-Saclay - Gustave Roussy UMR 9018, Metabolic and systemic aspects of oncogenesis for new therapeutic approaches (METSY), Paris, France

January 2020 **Collaboration with the Department of Chemical Sciences, University of Padua, Italy**

Short term scientific mission (one week)

Title: "Time-Domain NMR analysis of nano-sized liposome exposed to ultra-short pulsed electric fields"

2019 **Progetto di Ricerca di Ateneo: RM11916B835D12D4 (One year project)**

Participation as PhD Student.

Title: "Liposome vesicles loading magnetic nanoparticles as optimal drug delivery nanosystems controlled by magnetic fields".

In collaboration with the Department of Chemistry and Pharmaceutical Technologies, Sapienza University of Rome, Italy.

April 2019 **COST Action [CA17115] MyWave STSM**

Participation to the short-term mission as involved person (one week).

Title: "Magnetoliposomes for hyperthermia based clinical approach and remotely controlled drug delivery", Home Institution: Sapienza University of Rome, Italy;

Host Institution: Aristotle University of Thessaloniki, Greece

March 2019 – today **Collaboration with the Department of Physics and Astronomy, University of Bologna, Italy**

Research project on "Non-contact electrical stimulation of human derived cells for regenerative medicine studies"

ROLES IN INTERNATIONAL SOCIETIES

SOCIETY MEMBERSHIP

October 2022 to present Founder Member of the Chapter Women in Radio Science (WIRS) in the framework of the Italian URSI Commission

August 2020 to present Member of the URSI

October 2019 to present Member of the European Microwave Association (EuMA)

June 2019 to present Member of the BioEM society

SESSION CHAIR

Workshop " Nanoparticles in medicine: from diagnosis to treatment", supported by the COST Action [CA17115] MyWave, in the framework of the 52nd European Microwave Conference (EuMC), Milan, Italy, 25-30 September 2022

Convened Session " Nanoparticles for EM biomedical applications: from diagnosis to treatment" in the framework of the XXXV General Assembly and Scientific Symposium (GASS) of the International Union of Radio Science, URSI GASS2023, that will be held in Sapporo, Japan, 19-26 August 2023.

SUPPORTING THE LOC OF INTERNATIONAL CONFERENCES

Coordination of the Volunteer Staff Staff in all the OnLine and OnSite work related to the conference activities for the 52nd European Microwave Conference (EuMC), held in Milan, Italy, 25-30 September, 2022

Coordination of the Volunteer Staff Staff in all the OnLine and OnSite work related to the conference activities for the "XXXIV General Assembly and Scientific Symposium (GASS) of the International Union of Radio Science" held in Rome, Italy from August 28th to September 4th, 2021

INVITED SPEAKERS

2022 INVITED lecturer on "On demand drug delivery mediated by EM fields: from dry to wet experiments" in the framework of the Women in Engineering Workshop titled Bioelectromagnetic research: from health protection to biomedical applications for the Master Course of Communication Engineering and Electronic Technologies, Università del Salento, Lecce, Italy, 15 November 2022.

2022 INVITED lecturer at the Workshop "Dosimetry and microdosimetry applied to emerging wireless technologies: from human to cell level" in the framework of the 52nd European Microwave Conference (EuMC), Milan, Italy, 25-30 September 2022

2022 INVITED lecturer at the Workshop "Novel frontiers in nanocarriers preparation and characterization", organized by the Nanomedicine_Lab at the Sapienza University of Rome, Rome, Italy, 7 June 2022

2022 INVITED lecturer on behalf of Prof. Micaela Liberti at the Workshop " "Sensing, imaging and biological tissues characterization using microwaves and mm‐waves"" in the framework of the 51nd European Microwave Conference (EuMC), London, United Kingdom, 2-7 April 2022

EDITORIAL ACTIVITIES

REVIEWER for IEEE TRANSACTION on BIOMEDICAL ENGINEERING (TBME) [I.F. 4.756]

REVIEWER for SCIENTIFIC REPORTS [I.F. 4.996]

REVIEWER of the CONFERENCE PROCEEDINGS for the International Conference BioEM2022, Nagoya, Japan, June 19 - 24, 2022

REVIEWER of the IEEE CONFERENCE PROCEEDINGS for the 52nd European Microwave Conference (EuMW 2022), Milan, Italy, 25-30 September 2022

REVIEWER of the IEEE CONFERENCE PROCEEDINGS for the 53nd European Microwave Conference (EuMW 2023), Berlin, Germany, 17-22 September 2023

AWARDS

2021 **XXXIV General Assembly and Scientific Symposium (GASS) of the International Union of Radio Science (Union Radio Scientifique Internationale-URSI), Rome, Italy: Young Scientist Award.**

2021 **EuMW2021 51th European Microwave Conference, London, United Kingdom: Student Award**

2021 **BioEM2021 Annual Joint Meeting, Ghent, Belgium: Student Travel Award**

2020 **EuMW2020 50th European Microwave Conference, Utrecht, Netherlands: Student Award**

2019 **EuMW2019 49th European Microwave Conference, Paris, France: Student Award**

2019 **BioEM2019 Annual Joint Meeting, Montpellier, France: Student Travel Award**

ACADEMIC ACTIVITIES

December 2022 **Awarded as "Cultore della Materia" in the framework of the Master Course of Biomedical Engineering "Compatibilità elettromagnetica per apparecchiature medicali" by Prof. Alessandra Paffi**

November 2022 **Seminar for the Master Course of Interazione Bioelettromagnetica II under the direction of Prof. Francesca Apollonio e Prof. Micaela Liberti**

Seminar on “Electrical stimulation for regenerative medicine”

February 2020 -June 2020

Tutor for Bachelor Course of Electrical Measurements under the direction of Prof. Emanuele Piuzzi

Bando n. 6-2020, prot. n. 819 – Class. VII/16, 16/12/2020

Practical lessons on the use of basic and advanced equipment, to study the electromagnetic fields propagation.

From November 2020 to present

Practical lessons and Trainer for thesis’ students for Master Course of Therapeutic applications of low frequency electromagnetic, fields under the direction of Prof. Micaela Liberti and Prof. Francesca Apollonio

Practical lessons on the use of basic software to study the electromagnetic fields propagation.

Trainer for nine master student under the direction of Prof. Micaela Liberti and Prof. Francesca Apollonio with thesis on:

- Numerical microdosimetric studies on biological cells for bioelectromagnetic interaction applications
- Numerical and experimental investigations on the use of PEMFs for the treatment of sclerosis amyotrophic lateral (SLA)
- Molecular Dynamics studies on the interaction of RF EM fields with biological systems, investigating the transmembrane receprtor TRPM8 as target of interaction
- Microdosimetric investigations on 3D realistic models of cells with intracellular organelles to evaluate the electrical exposure obtained with interdigitated electrodes in the framework of the RISE UP project

From November 2018 to present

Practical lessons and Trainer for thesis’ students for Master Course of Electromagnetic Fields and Nanosystems under the direction of Prof. Micaela Liberti and Prof. Francesca Apollonio

Practical lessons on the use of advanced equipment for electric field application. Practical lessons on the use of basic and advanced software to both study the interaction of electromagnetic fields with biological tissues and perform the post-processing of experimental data.

Trainer for four master student under the direction of Prof. Micaela Liberti and Prof. Francesca Apollonio, with thesis on:

- Experimental and numerical investigations on magnetoliposomes nanosystems activated by magnetic fields
- Numerical studies on biological membrane under the action of electric field at the molecular level
- Study of the electric field distribution in realistic 3D models of microfibril layers in a bio-hybrid device for the treatment of Spinal Cord Injuries

From November 2018 to present

Practical lessons and Trainer for thesis’ students Bachelor Course of Electromagnetic Fields under the direction of Prof. Apollonio Francesca

Practical lessons on the use of basic software to study the electromagnetic fields propagation.

Trainer for eleven master student under the direction of Prof. Micaela Liberti and Prof. Francesca Apollonio, and Dr. Alessandra Paffi with thesis on:

- Microdosimetric investigations on the use of intense pulsed electric fields as trigger for on demand liposomal drug delivery nanosystems: from 2D to 3D realistic models
- Experimental characterization of exposure systems for intense pulse electric fields delivering during *in vitro* and *ex-vivo* experiments
- Numerical characterization of an exposure system for *in vitro* DC electrical stimulation for tissue regeneration
- Experimental characterization of dielectric properties of different culture media used *for in vitro* EMF exposure experiments
- Microdosimetric investigations on spherical and realistic models of cells with intracellular organelles to evaluate the effects of 5G EMFs on biological systems
- Microdosimetric investigations on spherical and realistic models of cells with intracellular organelles to evaluate the dielectric response of biological structures at microscopic level
- Numerical studies to design an implatable electrified device for in vitro and in vivo exposures to electrical stimulus, in the framework of the RISE UP project

- Microdosimetric investigation on the exposure of cells to intense pulsed electric fields delivered by two parallel electrodes, using 3D realistic models of cells and intracellular organelles, in the framework of the RISE UP project
- Literature research on tissue regeneration techniques using electrical stimulation, focus on spinal cord injury treatments

PERSONAL SKILLS

TECHNICAL SKILLS AND COMPETENCES

- Good knowledge of Windows and Linux operating Systems.
- Good command of office suite (word processor, spread sheet, presentation software)
- Programming languages: Awk, Fortran, basic knowledge of C++.
- Software: COMSOL Multiphysics, Ansys HFSS, AutoCAD 2D and 3D, Matlab, GROMACS, LAMMPS, VMD, GNUPLOT, ImageJ, basic knowledge of Labview.
- Laboratory equipment: Electrical Nanopulse Generator, Oscilloscope, Vector Network Analyzer, chromatograph for HPLC, pH meter, Atomic Absorption Spectrometer, Scanning Electron Microscope, Spectrofluorometer, Spectrometer, LCR meter for dielectric properties measurements.

COMMUNICATION AND ORGANIZATIONAL SKILLS

- Good intercultural communication skills enhanced through my PhD, specifically during the periods spent abroad, and my one month long experience in EF International House, Boston USA, and during my participation in the Model United Nation, New York USA (March 2011);
- Leadership, good team-working, problem solving and organizational skills gained working in collaboration with other laboratory groups during my PhD and Master thesis.
- Commitment and flexibility gained through my university experience.
- B2 level of English.

Other skills

- Love cinematography, watching movies. Like planning trip around the world, discover different cultures and meeting new people.

LIST OF PUBLICATIONS

Journals

- **L. Caramazza**, M. Nardoni, A. De Angelis, P. Paolicelli, M. Liberti, F. Apollonio, and S. Petralito, “Proof of concept of electrical activation of liposome nanocarriers: from dry to wet experiments”, Frontiers in Bioengineering and Biotechnology, Bioprocess Engineering, v. 8, 2020. doi: 10.3389/fbioe.2020.00819. [IF: 6.064]
- **L. Caramazza**, A. Paffi, M. Liberti and F. Apollonio, “Experimental and numerical characterization of a grounded coplanar waveguide for nanoelectroporation applied to liposomes. International Journal of Microwave and Wireless Technologies, 13(7), 663-672, 2021. doi:10.1017/S1759078721000441. [IF: 1.418]
- P. Marracino, **L. Caramazza**, M. Montagna, R. Ghahri, M. D'Abramo, M. Liberti and F. Apollonio, “Electric-driven membrane poration: A rationale for water role in the kinetics of pore formation”. Bioelectrochemistry. 2022 Feb;143:107987. doi: 10.1016/j.bioelechem.2021.107987. Epub 2021 Oct 26. [IF: 5.76]
- J. Trilli, **L. Caramazza**, P. Paolicelli, M. A. Casadei, M. Liberti, F. Apollonio, S. Petralito, 2021. "The Impact of Bilayer Rigidity on the Release from Magnetoliposomes Vesicles Controlled by PEMFs" Pharmaceutics 13, no. 10: 1712. doi:10.3390/pharmaceutics13101712. [IF: 6.525]
- C. Merla, M. Nardoni, M. Scherman, S. Petralito, **L. Caramazza**, F. Apollonio, M. Liberti, P. Paolicelli, B. Attal-Tretout, L. M. Mir, “ Changes in hydration of liposome membranes exposed to nanosecond electric pulses detected by wide-field Coherent anti-Stokes Raman microspectroscopy,” Bioelectrochemistry, 147(1):108218. doi: 10.1016/j.bioelechem.2022.108218. [IF: 5.76]
- A. De Angelis, **L. Caramazza**, F. M. André, C. Merla, L. M. Mir, F. Apollonio, and M Liberti, “Gaps and Challenges in Microdosimetry: Improvements With Realistic Models of Endoplasmic Reticulum. URSI Radio Science Letters, 2022, 4, doi: 10.46620/22-0003.
- **L. Caramazza**, P. Marracino, M. Liberti and F. Apollonio, “Impact of RF EMFs on Hydrated Membranes: Molecular Dynamics Investigations ”, *under preparation.*
- **L. Caramazza**, A. De Angelis, Z. Haider, M. Zhadobov, F. Andre, L.M. Mir, F. Apollonio, M. Liberti, “A frequency dependent microdosimetric study at the cellular and intracellular level based on 3D realistic cells models,” *under preparation*.

Conferences

- A. Denzi, C. Merla, **L. Caramazza**, A. De Angelis, F. Apollonio and M. Liberti, “Microdosimetry in Biomedical Applications: Importance of Realistic Models at the Cellular and Subcellular Levels” for 2018 EMF-Med 1st World Conference on Biomedical Applications of Electromagnetic Fields (EMF-Med), 10-13 September 2018, Split, Croatia.
- **L. Caramazza**, M. Nardoni, A. De Angelis, P. Paolicelli, S. Petralito, M. Liberti and F. Apollonio, “Feasibility of drug delivery mediated by ultra-short and intense pulsed electric fields” for 2018 ICEmB 5th National Conference on Interactions between Electromagnetic Fields and Biosystems, 28-30 November 2018, Salerno, Italy.
- **L. Caramazza**, M. Nardoni, A. De Angelis, E. della Valle, A. Denzi, P. Paolicelli, C. Merla, M. Liberti, F. Apollonio, and S. Petralito, "Feasibility of Drug Delivery Mediated by Ultra-Short and Intense Pulsed Electric Fields," 2019 41st Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 2019, pp. 1678-1681, doi: 10.1109/EMBC.2019.8856393..
- **L. Caramazza**, A. De Angelis, E. della Valle, A. Denzi, M. Nardoni, P. Paolicelli, S. Petralito, F. Apollonio, and M. Liberti, "Numerical Investigations of CW Electric Fields on Lipid Vesicles for Controlled Drug Delivery," 2019 49th European Microwave Conference (EuMC), 2019, pp. 220-223, doi: 10.23919/EuMC.2019.8910714.
- **L. Caramazza**, M. Nardoni, A. De Angelis, E. della Valle, A. Denzi, P. Paolicelli, C. Merla, M. Liberti, F. Apollonio, and S. Petralito, “nsPEFs exposure of liposomes to explore controlled drug delivery applications”, for BioEM2019, Montpellier, France, Jun 23 - 28, 2019.
- **L. Caramazza**, A. De Angelis, E. della Valle, A. Denzi, M. Nardoni, P. Paolicelli, S. Petralito, F. Apollonio, and M. Liberti, “Numerical investigations on the action of CW electric fields on lipid vesicles for drug delivery”, for BioEM2019, Montpellier, France, Jun 23 - 28, 2019.
- I. Zironi, G. D'Amen, A. De Angelis, **L. Caramazza**, A. Gabrielli and G. Castellani, “Is an electrostatic field able to induce a galvanotactic phenomenon? Investigation in a scrape wound model”, for BioEM2019, Montpellier, France, Jun 23 - 28, 2019.
- **L. Caramazza**, M. Nardoni, A. De Angelis, P. Paolicelli, S. Petralito, M. Liberti, and F. Apollonio, “Lipid vesicles exposed to nsPEF for drug delivery applications”, for the 3rd WC2019, Toulouse, France, Sep 3-6, 2019.
- S. Petralito, M. Liberti, M. Nardoni, **L. Caramazza**, A. De Angelis, C. Merla, E. della Valle and F. Apollonio, “Drug delivery through liposomes carriers mediated by pulsed electric and magnetic fields: experimental and modelling studies”, for a workshop at the 2019 49th European Microwave Conference (EuMW 2019) Paris, France, 29-4 October 2019.
- **L. Caramazza**, A. De Angelis, D. Remondini, G. Castellani, M. Liberti, F. Apollonio, and I. Zironi “"Galvanotactic Phenomenon Induced by Non-Contact Electrostatic Field: Investigation in a Scratch Assay," 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), 2020, pp. 2520-2523, doi: 10.1109/EMBC44109.2020.9175695.
- P. Marracino, **L. Caramazza**, M. Liberti and F. Apollonio, “"Electroporation Mechanisms: The Role of Lipid Orientation in the Kinetics of Pore Formation," 2020 42nd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC), 2020, pp. 2235-2238, doi: 10.1109/EMBC44109.2020.9175706.
- S. Petralito, M. Nardoni, P. Paolicelli, M.A. Casadei, Laura Di Muzio, **L. Caramazza**, M. Liberti and F. Apollonio, “Non-thermal electromagnetic fields to trigger on-demand drug release from high-Tm Magnetoliposomes,” 21st International Conference and Exhibition on Pharmaceutics & Novel Drug Delivery Systems. Italy, Rome, 11-12 March 2020.
- **L. Caramazza**, A. De Angelis, M. Nardoni, P. Paolicelli, S. Petralito, F. Apollonio, and M. Liberti, "Planning Sine Waves Electroporation on Liposomes for Drug Delivery Application," 2020 IEEE MTT-S International Microwave Biomedical Conference (IMBioC), 2020, pp. 1-4, doi: 10.1109/IMBIoC47321.2020.9384905.
- **L. Caramazza**, A. Paffi, M. Liberti and F. Apollonio, “"A Coplanar Waveguide System for Drug Delivery Mediated by Nanoelectroporation: an Experimental and Numerical Study," 2020 50th European Microwave Conference (EuMC), 2021, pp. 999-1002, doi: 10.23919/EuMC48046.2021.9338023.
- **L. Caramazza**, N. Lauciello, A. De Angelis, D. Remondini, G. Castellani, M. Liberti, F. Apollonio, I. Zironi, “Non-contact DC field effects on glioma cells migration: *in vitro* and *in silico* studies”, 2021 XXXIV URSI GASS2021, Italy, Rome, 28 August – 4 September 2021.
- A. De Angelis, **L. Caramazza**, F. Andre, L.M. Mir, F. Apollonio, M. Liberti, “Modeling Dielectric Response of Biological Structures at Cellular Level” for a workshop at the 2021 XXXIV URSI GASS2021, Italy, Rome, 28 August – 4 September 2021.
- **L. Caramazza**, A. Paffl, M. Liberti, F. Apollonio, “"3D microdosimetric model to plan and control in vitro drug delivery mediated by nsPEFs with GCPW system," 2021 XXXIVth

General Assembly and Scientific Symposium of the International Union of Radio Science (URSI GASS), 2021, pp. 1-4, doi: 10.23919/URSIGASS51995.2021.9560610.

- A. De Angelis, **L. Caramazza**, F. Andre, L.M. Mir, F. Apollonio, Micaela Liberti, "Modeling dielectric response of biological structures at cellular level", BioEM2021, Ghent, Belgium, Sep 26 - 30, 2021.
- **L. Caramazza**, N. Lauciello, A. De Angelis, D. Remondini, G. Castellani, M. Liberti, F. Apollonio, I. Zironi, "*In vitro* and *in silico* investigations on glioma cells motility using a non-contact DC field", BioEM2021, Ghent, Belgium, Sep 26 - 30, 2021.
- **L. Caramazza**, A. De Angelis, Z. Haider, M. Zhadobov, F. Andre, L.M. Mir, F. Apollonio, M. Liberti, "3D microdosimetric study on cells and organelles realistic models: spectral response at cellular and subcellular level", BioEM2021, Ghent, Belgium, Sep 26 - 30, 2021.
- **L. Caramazza**, P. Marracino, C. Schifaudo, M. Liberti and F. Apollonio, "Response of Hydrated Lipid Bilayers to RF EM Fields: Molecular Dynamics Investigations," 2021 IEEE MTT-S International Microwave and RF Conference (IMARC), 2021, pp. 1-4, 17-19 December 2021, Kanpur, India, doi: 10.1109/IMaRC49196.2021.9714568
- **L. Caramazza**, A. Paffi, M. Liberti and F. Apollonio, "Controlled Drug Delivery Mediated by CW Electric fields: Experimental Setup and 3D Microdosimetry Modelling," 2021 51st European Microwave Conference (EuMC), 2022, pp. 785-788, London, United Kingdom, April 2-7 2022, doi: 10.23919/EuMC50147.2022.9784177.
- **L. Caramazza**, A. De Angelis, Z. Haider, M. Zhadobov, F. Andre, L.M. Mir, F. Apollonio, M. Liberti, "A microdosimetric study at the cellular and intracellular level using a 3D realistic cell model," 2021 51st European Microwave Conference (EuMC), 2022, pp. 626-629, London, United Kingdom, April 2-7 2022, doi: 10.23919/EuMC50147.2022.9784171.
- Z. Haider, Y. L. Dréan, R. Sauleau, **L. Caramazza**, M. Liberti and M. Zhadobov, "Microdosimetry in a realistic keratinocyte cell model at mmWave and HF frequencies," 2022 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), 2022, pp. 1-4, 30 May 2022 - 04 June 2022, Gran Canaria, Spain, doi: 10.23919/AT-AP-RASC54737.2022.9814391.
- **L. Caramazza**, P. Marracino, M. Liberti, F. Apollonio, "Hydrated lipid bilayers and RF EM fields: an insight through Molecular Dynamics simulations," 2022 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), 30 May 2022 - 04 June 2022, Gran Canaria, Spain.
- C. Merla, M. Nardoni, M. Scherman, S. Petralito, **L. Caramazza**, F. Apollonio, M. Liberti, P Paolicelli, B. Attal-Trétout, and L. M. Mir, "Wide-field Coherent anti-Stokes Raman microspectroscopy to detect changes in membrane hydration of liposome exposed to nanosecond electric pulses," 2022 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), 30 May 2022 - 04 June 2022, Gran Canaria, Spain.
- G. Innamorati, E. Cucchiaro, **L. Caramazza**, S. Fontana, A. D'Anzi, G. Ruotolo, S. Salati, R. Cadossi, B. Benassi, F. Apollonio, M. Liberti, J. Rosati and C. Consales, "Pulsed Electromagnetic Field (PEMF) and Amyotrophic Lateral Sclerosis (ALS): an innovative experimental cell model to evaluate the involvement of adenosine receptor A2A in disease progression," 2022 3rd URSI Atlantic and Asia Pacific Radio Science Meeting (AT-AP-RASC), 30 May 2022 - 04 June 2022, Gran Canaria, Spain.
- G. Innamorati, L.C. Secchiaroli, **L. Caramazza**, S. Fontana, A. D'Anzi, S. Salati, R. Cadossi, B. Benassi, F. Apollonio, M. Liberti, J. Rosati, and C. Consales, "Effects of the electromagnetic fields (EMFs) on cellular redox homeostasis," The future of Redox Biology Conference, Siena, June 17-19, 2022.
- **L. Caramazza**, B. Giustini, N. Dolciotti, V. Moreno-Manzano, N. Torres, M. Pedraza, L. M. Mir, F. M. Andre, L. Vallet, R. Fernandes, C Consales, F. Apollonio, and M. Liberti, "Advanced microdosimetric investigations through a realistic modelling ofcells and intracellular organelles," BioEM2022, Nagoya, Japan, June 19 - 24, 2022
- **L. Caramazza**, P. Marracino, M. Liberti, F. Apollonio, "RF-MW EM fields effects on aqueous environment near lipid membranes: an analysis based on Molecular Dynamics simulations," BioEM2022, Nagoya, Japan, June 19 - 24, 2022.
- S. Fontana, **L. Caramazza**, G. Innamorati, E. Cucchiaro, A. D'Anzi, G. Ruotolo, S. Salati, R. Cadossi, B. Benassi, F. Apollonio, M. Liberti, J. Rosati and C. Consales, "Pulsed Electromagnetic Fields (PEMFs) and Amyotrophic Lateral Sclerosis (ALS): a numerical and experimental study," BioEM2022, Nagoya, Japan, June 19 - 24, 2022.
- C. Merla, M. Nardoni, M. Scherman, S. Petralito, **L. Caramazza**, F. Apollonio, M. Liberti, P Paolicelli, B. Attal-Trétout, and L. M. Mir, "Transient changes in membrane hydration of liposome exposed to nanosecond electric pulses detected by wide-field Coherent anti-Stokes Raman microspectroscopy", Plenary Session at BioEM2022, Nagoya, Japan, June 19 - 24, 2022.
- Z. Haider, Y. Le Dréan, D. Nikolayev, **L. Caramazza**, M. Liberti, R. Sauleau, and Maxim

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