

CURRICULUM VITAE ET STUDIORUM

OF SIMONA DI MEO (Last update: 23/05/2024)

PERSONAL INFORMATION

Year of birth: 1992
Email address: simona.dimeo@unipv.it

PROFESSIONAL EXPERIENCE

- 01/10/2023-current **Lecturer** of the course “Biomedical Instrumentation” for the Bachelor course in Bioengineering of the University of Pavia. (9 CFU)
- 01/08/2023-current **Assistant Professor** (RTD-a) in Bioengineering at the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia.
- 01/10/2022-30/09/2023 **Adjunct Professor** (Professore a contratto) of the course “Advanced Biomedical Instrumentation” (Strumentazione biomedica avanzata) for the Master course “Medicine Enhanced by Engineering Technologies” (MEET) at the Faculty of Medicine and Surgery of the University of Pavia. (3 CFU)
- 01/06/2022-31/07/2023 **Post-doctoral researcher** at the Microwave Laboratory of the University of Pavia, Italy. Project title: “Bridging gaps in microwave imaging for biomedical applications”. Joint activity with the Bioengineering Laboratory of the University of Pavia.
- 01/06/2020-31/05/2022 **Post-doctoral researcher** at the Microwave Laboratory of the University of Pavia, Italy. Research grant completely funded by the UniPv. Project title: “*Development of microwave imaging systems for cancer identification*”
- 1/10/2019-31/05/2020 **Post-doctoral researcher** at the MWLab of the UniPv. Project title: “*Development of microwave and mm-wave imaging systems for biomedical applications*”

EDUCATION

- 29/09/2023 **Abilitazione Scientifica Nazionale (ASN) Settore concorsuale 09/F1 – II fascia.**
- 2020 **Italian Engineering Professional Licence** (National habilitation to practice as an Engineer, score 60/60)
- 2016-2019 **Ph.D. School in Electronics, Computer Science and Electrical Engineering**, at the Microwave Laboratory of the University of Pavia, Pavia, Italy, with a dedicated scholarship entitled “*Microwave imaging systems for biomedical applications*”
Ph.D. Thesis Title: “*On the development of an innovative mm-wave imaging system for breast cancer detection*”
Advisor: Prof. Marco Pasian
End: September 30, 2019 (PhD Thesis Defense: 27/02/2020)
- 2014-2016 **MS in Electronic Engineering** (given in English), University of Pavia, Pavia, Italy
MS thesis: “*Feasibility study of an innovative mm-wave imaging system for early-stage breast cancer detection*”
Advisor: Prof. Marco Pasian
Graduation day: October 27, 2016 Degree
grade: 110/110 *cum Laude*
- 2011-2014 **BS in Electronic and Computer Science Engineering**, University of Pavia, Pavia, Italy
BS thesis: “*Dielectric characterization of biological materials for cancer detection at mm-waves*”
Advisor: Prof. Marco Pasian

Graduation day: October 27, 2014

BS and MS thesis in collaboration with the European Institute of Oncology (Italian acronym, **IEO**) and the Italian Association for Cancer Research (Italian acronym, **AIRC**)

2006-2011 Scientific High School “A. Volta”, Foggia, Italy

OTHER EDUCATION ACTIVITIES

- July 9th, 2020 “*Training on Proposal Writing for Marie Skłodowska-Curie Actions Individual Fellowships (MSCA - IF)*” organized by Xjenza, The Malta Council for Science & Technology.
- June 2nd, 2020 “*Webinar on Marie Skłodowska-Curie Actions (MSCA) with specific focus on Individual Fellowships*” given by Net4MobilityPlus*.
- May 10th, 2019 “*Safety in the use of electromagnetic fields in healthcare*” (“*Sicurezza nell’uso dei campi elettromagnetici in ambito sanitario*”) course organized by the Italian Association of Medical Physics at the Department of Physics, University of Milan, Milan, Italy.
- July 4-7, 2017 *Summer School “TranSkills. Strategic Competences for Young Researchers” (Summer School “TranSkills. Competenze strategiche per i giovani ricercatori”)* organized by the Catholic University of Sacred Heart (Milan) at Villa Vigoni, Loveno di Menaggio, Como, Italy.
- February-May 2017 “*Languages, problems, and methods of scientific research communication*” (“*Linguaggi, problemi e metodi della comunicazione della ricerca scientifica*”) course organized by the *School of Higher Education* at the University of Pavia, Pavia, Italy.
- February 13th, 2017 “*Open access, open data, open science*” course organized by the *School of Higher Education* at the University of Pavia, Pavia, Italy.
- September 7-9, 2016 “*International Summer School on Microwave Systems for the IoT*” sponsored by the *European Microwave Association (EuMA)* at the University of Pavia, Pavia, Italy.
- September 21-25, 2015 “*Diagnostic and Therapeutic Applications of Electromagnetics*” organized by the *European School of Antennas (ESoA)* at the Polytechnic University of Turin, Turin, Italy.

*Net4MobilityPlus is the Horizon 2020 National Contact Points project with the aim of creating different tools for the support of the Marie Skłodowska-Curie Actions (MSCA).

ABROAD PERIODS

- January 14th-May 9th, 2019 Measurement session of dielectric properties of animal and human-cadaver derived tissues in the frequency range [0.5-50] GHz at the *L-Università ta’ Malta*, Msida, Malta.
- July 9-13, 2018 Phantom development and measurement session on mm-wave antennas at the *Institute d’Électronique et de Télécommunications de Rennes*, Rennes, France.

PARTICIPATION IN NATIONAL AND INTERNATIONAL PROJECTS

Simona Di Meo, in the framework of both her Ph.D. and Post-Doc, took part to different national and international projects. In particular:

- **AIRC – Bridging mmWave Biophysics, Safety and Imaging**
- **Blue Sky Research Project – Project title: “Next generation imaging for breast cancer detection: combining ultrasound and millimeter-waves in an advanced multimodal technique” (MULTIWAVE)** - Simona Di Meo was **Co-Principal Investigator** (Co-PI) for this project.
- **COST Action “MyWave” – CA17115 – European network for advancing Electromagnetic hyperthermic medical technologies**
- **PRIN: Progetti di Ricerca di Rilevante Interesse Nazionale – Bando 2017. Research project title: WPT4WID: Wireless Power Transfer for Wearable and Implantable Devices.**

- **PRIN: Progetti di Ricerca di Rilevante Interesse Nazionale – Bando 2022. Research project title: DISCERN: aDvanced hybrid breaSt Cancer imagiNg.**

AWARDS AND SCHOLARSHIPS

December 2022	Recipient of a Virtual Networking Support Grant in the framework of the COST Action CA17115 for the coordination of the key publications within the COST Action MyWave.
October 2022	Winner of the IEEE Antennas and Propagation Society (AP-S) Fellowship. Title of the proposal: “Multi-Modal Imaging System for Early Breast Cancer Detection”.
March 2022	Winner of the Young Scientist Award for the URSI AT-AP RASC 2022. Title of the paper: “Bi-modal tissue-mimicking breast phantoms: comparison between the performance of agar- and gelatin-based phantoms”.
March 2021	Seal of Excellence delivered by the European Commission for the project proposal 101032011 “BeBright – Development of an Innovative Non-Invasive Microwave Teranostic System for inoperable Brain diseases”, submitted under the Horizon 2020’s Marie Skłodowska-Curie actions call H2020-MSCA-IF-2020 of 9 September 2020.
June 2020	Winner of the Young Scientist Award for the URSI GASS 2020. Title of the paper: “Preliminary comparison up to 50 GHz between <i>in-vivo</i> , <i>in-loco</i> , and <i>ex-vivo</i> measurements for the dielectric permittivity of tissues with high water content”.
June 27 th , 2019	Winner of the Italian Society of Electromagnetics Award for the best work presented by a PhD Student at the GTTI-SIEM (acronyms for <i>Italian Association of Telecommunications and Information Technology Group-Italian Society of Electromagnetics</i>) joint meeting, Pavia, June 26-28, 2019. Title of the presented work: “On the development of an imaging system at millimetre-wave frequencies for biological applications”.
April 2019	Recipient of the second Short Term Scientific Mission (STSM) grant from the European COST-Action (Action CA17115), <i>MyWave</i> , supporting the research activity done in Malta in the period April 1 st -May 9 th 2019, entitled “New classifiers of dielectric measurements from 500 MHz to 50 GHz for heterogeneous biological tissues”.
January 2019	Recipient of the first Short Term Scientific Mission (STSM) grant from the European COST-Action (Action CA17115), <i>MyWave</i> , supporting the research activity done in Malta in the period January 14 th -March 31 st 2019, entitled “Advanced experimental characterization of human and animal tissues”.
December 12, 2018	Winner of a residential scholarship at the Graduates section of the <i>Collegio Ghislieri</i> in Pavia for the whole 2019.
April 17, 2018	Winner of the <i>IMS2018 (International Microwave Symposium 2018) PhD Student Sponsorship Initiative</i> , for the <i>IMS2018</i> held in Philadelphia, PA, USA, from June 11 th to June 15 th , 2018.
April, 2018	Winner of the IEEE AP-S Doctoral Research Grant. Title of the proposal: “Testing of an Innovative mm-Wave Imaging Systems for Breast Cancer Detection”.
October 12, 2017	Winner of the Student Challenge during the European Microwave Week (EuMW 2017) , Nuremberg, Germany. Title of the proposed poster: “Compact antenna array-based bra for early breast cancer detection. Advanced Breast Cancer Detection (ABCD)-Bra”.
April, 2017	Winner of the Pavia Donna ADOS Award for her Master’s Thesis.
September 10, 2015	Winner of the European scholarship given by the <i>European Microwave Association (EuMA)</i> for attending the course “ <i>Diagnostic and Therapeutic Applications of Electromagnetics</i> ”, organized by the <i>European School of Antennas (ESoA)</i> .
April, 2015	Winner of the IEEE AP-S Eugene F. Knott Memorial Pre-Doctoral Research Award. Title of the proposal: “Development of a mm-wave imaging prototype for breast cancer”.

INVITED SEMINARS AND WORKSHOPS

- May 2, 2023 Zoom for IEEE EMBS **IEEE EMBS – Montreal Chapter section.** Virtual Seminar Series of the McGill University. Title: “On the potentialities of millimeter waves for breast cancer detection”.
- Dec. 20, 2022 @ Holetown, Barbados **Bellairs Workshop on Biomedical Applications of RF/Microwaves @ Bellairs Research Institute.** Title: “On the design and the perspectives of an innovative mm-wave imaging system for breast cancer detection”.
- July 6, 2022 @ Istanbul, Turkey **MyWave - COST Action CA17115 Closing meeting: Working groups & Management Committee meeting.** Title: “Experimental systematic analysis of the sample water content impact on the variability in dielectric measurement data”.
- July 4, 2022 @ Istanbul, Turkey **MyWave - COST Action CA17115 Closing meeting: Working groups & Management Committee meeting.** Title: “Preliminary investigation of the impact of the setup calibration temperature on dielectric measurement data of biological samples at hyperthermic and ablative temperatures”.
- May 6, 2022 @ Milan, Italy **“COST Meets Researchers” – PRESENTING THE BENEFIT AND IMPACT OF COST ACTIONS FOR RESEARCHERS IN ITALY AND BEYOND** organized by COST at the Faculty of Social and Political Science of the University of Milan. Title: “On the perspectives and opportunities of the international Short Term Scientific Missions for young researchers”.
- May 3, 2022 @ Brussels, Belgium **COST Connect** workshop on "Innovations in Technologies for Continuous Healthcare" organized by COST Association.
- Apr. 3, 2022 @ London, UK **Workshop “Microwave and millimeter waves techniques for sensing, imaging and characterization of biological tissues”** organized in the framework of the **European Microwave Conference 2021.** Title: “Perspectives for mm-wave biomedical applications for in-vivo sensing and imaging”.
- Jan. 13-14, 2020 @ Lisbon, Portugal **MyWAVE – COST Action CA17115 Management committee & Working Groups Meeting.** Title of the seminar: “An experimental analysis of the sample water content as a classifier for the variability of the dielectric measurement data up to 50 GHz”.
- Dec. 3-4, 2018 @ Valletta, Malta **MyWAVE – COST Action CA17115 An international workshop on Electromagnetic hyperthermic technologies, establishing the way forward.** Title of the seminar: “Protocol for measuring dielectric properties up to 50 GHz of *ex-vivo* breast tissues”.

SEMINAR ORGANIZATION IN PAVIA BY SIMONA DI MEO

- January 11th, 2021 “Millimeter-Wave Antennas for Next Generation Telecommunications Networks”, Dr. Mauro Ettorre, Ph.D., University of Rennes, Rennes, France (*online seminar*)
- October 29th, 2020 “How to write a technical paper (and get it published)”, Prof. Luca Perregrini, University of Pavia, Pavia, Italy (*online seminar*)
- May 23rd, 2019 “Microwave tomography and its application to biomedical imaging”, Martina Teresa Bevacqua, Ph.D., University “Mediterranea” of Reggio Calabria, Reggio Calabria, Italy (*seminar*)
- November 9th, 2018 “Electromagnetic Medical Technologies and the Dielectric Properties of Tissues”, Emily Porter, Ph.D., National University of Ireland Galway, Galway, Ireland (*seminar*)
- November 7th, 2018 “Modelling of the interaction between EM fields and biological system and their impact on biomedical applications”, Prof. Guglielmo d’Inzeo, University of Rome “La Sapienza”, Rome, Italy (*seminar*)

WORKS UNDER AN INDEPENDENT CONTRACTOR AGREEMENT

- Dec. 4th, 2017 - Feb. 3th, 2018 “Studio teorico e sperimentale delle caratteristiche RF di materiali innovative per la stampa 3D” (Theoretical and experimental study of RF characteristics of innovative 3D printing materials) carried out at the Microwave Laboratory of the University of Pavia, announced by the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia.
- Nov. 2nd - Dec. 1th, 2017 “Scrittura proposta di progetto per bando di finanziamento H2020 FET-OPEN” (Writing project proposal for H2020 FET-OPEN funding call) carried out at the Microwave Laboratory of the University of Pavia, announced by the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia.

ACADEMIC POSITIONS AND RESPONSIBILITIES

- **Co-Principal Investigator (Co-PI)** for the University of Pavia funding, *BlueSky Research Project*. Project title: “Next generation imaging for breast cancer detection: combining ultrasound and millimeter-waves in an advanced multimodal technique” (MULTIWAVE).
- **PhD Students’ Delegate in the Academic Senate of the University of Pavia**, from June 2018 to June 2019.
- **Local Organizer of the Management Committee meeting** in the framework of the COST Action MyWave held in the Aula Magna of the Collegio Cairoli in Pavia on Feb. 27-28, 2023.
- **Member of the organizing committee for the European Microwave Week (EuMW) 2022 - Students Activities Chair** (this included the organization of the Ph.D. Student Initiative, the Student competition, and the managing of student volunteers), Milan, Italy, Sept. 25-30, 2022.
- **Organizer and Chair of the Doctoral School “Microwaves for emerging medical technologies” in the framework of the European Microwave Week (EuMW) 2022**, Milan, Italy, Sept. 26-27, 2022.
- **Member of the Technical Program Committee for the IEEE MTT-S International Microwave Biomedical Conference (IMBioC) 2024**, Montreal, Canada, June 11-13, 2024. – Young Professional Chair
- **Member of the Technical Program Committee for the Mediterranean Microwave Symposium (MMS) 2022**, Pizzo Calabro, Italy, May 9-13, 2022.
- **Chair of the Education and Research Cooperation Committee for the Mediterranean Microwave Symposium (MMS) 2022**, Pizzo Calabro, Italy, May 9-13, 2022.
- **Organizer of the Doctoral School “Introduction to biomedical applications of electromagnetics” in the framework of the Mediterranean Microwave Symposium (MMS) 2022**, Pizzo Calabro, Italy, May 9-13, 2022.
- **Students Activities Chair for the Mediterranean Microwave Symposium (MMS) 2022**, Pizzo Calabro, Italy, May 9-13, 2022.
- **Organizer of the student competitions in the framework of the Mediterranean Microwave Symposium (MMS) 2022**, Pizzo Calabro, Italy, May 9-13, 2022.
- **Member of the Local Organizing Committee at Riunione congiunta GTTI-SIEm 2019**, Pavia, Italy, June 26-28, 2019.
- **Member of the Local Organizing Committee at IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes**, Pavia, Italy, Sept. 20-22, 2017.
- **Workshop Chair** - “Microwave and mmWave Techniques for Sensing, Imaging and Characterization of Biological Tissues” in the framework of the *EuMW 2022*, London, UK, April 3, 2022.

- **Organizer and Session Chair** – “Focused Session - Dielectric property measurement and tissue phantoms” in the framework of the *IEEE MTT-S International Microwave Biomedical Conference (IMBioC) 2024*.
- **Session Chair** – in the framework of the 21th International Symposium on Biomedical Imaging, Athens, Greece, May 27-30, 2024.
- **Session Chair** – “EMF Biomedical Applications” in the framework of the *VI National Congress on Interaction between Electromagnetic Fields and Biosystems (ICEmB)*, Cagliari, Italy, June 8-10, 2022.
- **Session Chair** - “Developments on experimental and numerical phantoms for electromagnetic biomedical applications” in the framework of the *3rd URSI Atlantic / Asia-Pacific Radio Science Meeting - 2022 (URSI AT-AP-RASC 2022)*, Gran Canaria, Spain, May 29-June 3, 2022.
- **Session Chair** - “Characterization of electrical properties of biological tissues for biomedical applications” in the framework of the *MMS 2022*, Pizzo Calabro, Italy, May 8-13, 2022.
- **Session Chair** – “Propagation for medical applications” in the framework of the *European Conference on Antennas and Propagation (EuCAP) 2022*, Madrid, Spain, March 27 – April 1, 2022.
- **Session Chair** - “Permittivity characterization and dielectric spectroscopy in cells and tissues” at the *URSI GASS 2021*, Rome, Italy, Aug. 28-Sept. 4, 2021.
- **Session Chair** - “Electromagnetic properties of the materials” in the framework of the *International Conference on Electromagnetics in Advanced Applications (ICEAA) 2019*, Granada, Spain, Sept. 9-13, 2019.
- **Member of the Editorial Board for *IET Healthcare Technology Letters* – Associate Editor.**
- **Editorial Board Member for the *IEEE Open Journal of Engineering in Medicine and Biology*.**
- **Guest Editor** of the Special Issue “Biomedical Applications of Micro/Millimeter Waves” in the MDPI journal *Electronics*.
- **Member of the Editorial Board** of *Journal of Oncology Research*.
- **Chair** of the IEEE University of Pavia *Antennas and Propagation Society* Student Branch Chapter in the Italy Section (Approval date: March 9, 2018. Geo-code: SBC10871A).
- **Responsible** for the Pavia Engineering Student Branch (PESB) from 2017 to 2020. Responsible for and organizer of the *Distinguished Talks Insignia Colloquia* initiative in the framework of the Pavia Engineering Student Branch.
- **Founder** member of the Women in Radio Science Chapter in the URSI Italy Section.

Arms length referee for the Banting Postdoctoral Fellowships Program (Banting PDF) at McGill University in Montreal, Canada (Y. 2024).

Scientific reviewer for the Dutch Cancer Society (KWF Kankerbestrijding) in the Netherlands of a project on the reduction of overdiagnosis of mammographically detected lesions in breast cancer screening (Y. 2023).

- **Scientific paper reviewer** – Simona Di Meo has served as a reviewer for several journals, among which:
 - *IEEE Transactions on Microwave Theory and Techniques*
 - *IEEE Transactions on Biomedical Engineering*
 - *IEEE Journal of Electromagnetics, RF, and Microwaves in Medicine and Biology*
 - *International Journal of Microwave and Wireless Technologies*
 - *Scientific Reports*
 - *Spectroscopy Letters – Taylor & Francis*
 - *Advances in Science, Technology and Engineering Systems Journal (ASTESJ)* in the field of Electronic Engineering and Biomedical Engineering

In addition, she served as reviewer for the following international conferences:

- European Microwave Conference 2023, Berlin, Germany
- BioEM 2023, Oxford, UK
- European Microwave Conference 2022, Milan, Italy
- URSI AT-AP RASC 2022, Gran Canaria, Spain
- MMS 2022, Pizzo Calabro, Italy

- Simona Di Meo **attended** many national and international conferences, **presented** almost all her papers, and helped with the slide/poster preparations for all the works in which she was involved.

Simona Di Meo provided **supplementary lectures** on biomedical applications of electromagnetics for the following courses (from 2020 to current):

- “Bioimmagini multimodali” course for Master students in Bioengineering, Prof. Giovanni Magenes, University of Pavia.
- “Microwave Measurements” course for Master students in Electronic Engineering, Prof. Lorenzo Silvestri, University of Pavia.
- “Bioelettromagnetismo applicato” course for Master students in Bioengineering, Prof. Marco Pasian, University of Pavia.

She made support for the courses of “Electromagnetic fields”, “Advanced electromagnetic fields”, “Electronics” and “Microwave measurements” for BS and MS students at the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia from 2016 to 2024.

In addition, Simona Di Meo was one of the **speakers for the Doctoral School** entitled “**Introduction to biomedical applications of electromagnetics**”, held in Pizzo Calabro on May 11, in the framework of the Mediterranean Microwave Symposium (MMS) 2022. Title of the presentation: “Introduction to microwave radar imaging – case of study: breast cancer detection”.

She has been the **co-supervisor for more than 30 BS and more than 15 MS students** on biomedical applications of electromagnetics at the Department of Electrical, Computer and Biomedical Engineering of the University of Pavia.

Simona Di Meo is also the **Co-Supervisor of one MS student at the Department of Physics of the University of Malta**. Title of the project: “A computational study on the minimum dielectric contrast for breast cancer detection using microwave imaging”.

Simona Di Meo was the contact person for an Erasmus Mobility Agreement - Staff Mobility For Training (Feb. 2023) concerning the multi-modal characterization of tissue-mimicking phantoms.

MEMBERSHIPS

Simona Di Meo is member of the **IEEE Technical Committee TC-28 “Biological effects and medical applications committee”**.

Scientific Societies – She is Member of:

- **IEEE Engineering in Medicine & Biology Society (EMBS)**
- **IEEE Antennas and Propagation Society (AP-S)**
- **IEEE Microwave Theory and Techniques Society (MTT-S)**
- IEEE Women in Engineering (WiE)
- IEEE Pavia Engineering Student Branch (IEEE-PESB)
- Italian Society of Electromagnetics (Società Italiana di Elettromagnetismo, SIEm)
- National Group of Bioengineering (Gruppo Nazionale di Bioingegneria, GNB)
- Italian Association of Medical Physics (Italian Acronym, AIFM)

In addition, she is Member of:

- Italian Association of PhD Students and PhDs (Associazione Dottorandi e Dottori di Ricerca in Italia, ADI)

And she was Member of:

- Academic Senate of the University of Pavia, from June 2018 to June 2019
- “Commissione Permanente Studenti” of the University of Pavia, from June 2018 to June 2019

- “Commissione Ricerca Scientifica e Trasferimento Tecnologico” of the University of Pavia, from June 2018 to June 2019

OTHER INFORMATION

Languages: Italian (mother tongue) and English (good written and spoken knowledge)

- Laser safety technician.
- Basic Life Support and Defibrillation (BLS) operator.
- Student volunteer at the *International Microwave Symposium (IMS2018)*, Philadelphia, PA, June 11-15, 2018.

PUBLICATIONS

Journals (J)

- J.1) **S. Di Meo**, P. F. Espin-Lopez, A. Martellosio, M. Pasian, G. Matrone, M. Bozzi, G. Magenes, A. Mazzanti, L. Perregrini, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, “On the Feasibility of Breast Cancer Imaging Systems at Millimeter-Waves Frequencies,” *IEEE Transactions on Microwave Theory and Techniques (IEEE T-MTT)*, vol. 65, no. 5, pp. 1795–1806, May 2017. (invited paper)
- J.2) **S. Di Meo**, L. Pasotti, I. Iliopoulos, M. Pasian, M. Ettore, M. Zhadobov, and G. Matrone, “Tissue-mimicking materials for breast phantoms up to 50 GHz,” *IOP Physics in Medicine and Biology*, Vol. 64, 055006, February 2019.
- J.3) P.E. Summers, A. Vingiani, S. Di Pietro, A. Martellosio, P.F. Espin-Lopez, **S. Di Meo**, M. Pasian, M. Ghitti, M. Mangiacotti, R. Sacchi, P. Veronesi, M. Bozzi, A. Mazzanti, L. Perregrini, F. Svelto, L. Preda, M. Bellomi, and G. Renne, “Towards mm-wave spectroscopy for dielectric characterization of breast surgical margins”, *ELSEVIER The Breast*, Vol. 45, pp. 64-69, June 2019.
- J.4) I.Iliopoulos, **S. Di Meo**, M. Pasian, M. Zhadobov, P. Pouliguen, P. Potier, L. Perregrini, R. Sauleau, M. Ettore, “Enhancement of Penetration of Millimeter Waves by Field Focusing Applied to Breast Cancer Detection,” *IEEE Transactions on Biomedical Engineering*, 10.1109/TBME.2020.3014277, Aug. 2020.
- J.5) **S. Di Meo**, G. Matrone, M. Pasian, “Experimental validation of millimeter-wave imaging for breast cancer detection,” *Applied Sciences*, 2021, 11(1), 432.
- J.6) M. T. Bevacqua, **S. Di Meo**, L. Crocco, T. Isernia, M. Pasian, Millimeter-Waves Breast Cancer Imaging via Inverse Scattering Techniques, *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology (IEEE JERM)*, vol. 5, no. 3, pp. 246-253, Sept. 2021
- J.7) **S. Di Meo**, J. Bonello, I. Farhat, L. Farrugia, M. Pasian, M. T. Camilleri Podesta, S. Suleiman, J. Calleja-Agius, C. V. Sammut, “The variability of dielectric permittivity of biological tissues with water content,” *Journal of Electromagnetic Waves and Applications*, Vol. 36 (1), pp. 48-68, 2022.
- J.8) **S. Di Meo**, A. Cannatà, S. Morganti, G. Matrone and M. Pasian, “On the dielectric and mechanical characterization of tissue-mimicking breast phantoms,” *IOP Physics in Medicine and Biology* 2022 June 23, in print. doi: 10.1088/1361-6560/ac7bcc.
- J.9) M. Colella, **S. Di Meo**, M. Liberti, M. Pasian and F. Apollonio, "Advantages and Disadvantages of Computational Dosimetry Strategies in the Low mmW Range: Comparison Between Multilayer Slab and Anthropomorphic Models," in *IEEE Transactions on Microwave Theory and Techniques*, vol. 71, no. 10, pp. 4533-4545, Oct. 2023.
- J.10) L. Farrugia, E. Porter, R. C. Conceicao, **S. Di Meo**, D. M. Godinho, J. Bonello, M. Ragulskis, I. Ocket, L. Farina, M. Cavagnaro, A. Peyman, "The Complex Permittivity of Biological Tissues: A Practical Measurement Guideline," in *IEEE Access*, vol. 12, pp. 10296-10314, 2024, doi: 10.1109/ACCESS.2024.3352728.
- J.11) **S. Di Meo**, G. Matrone, G. Magenes and M. Pasian, "On the Low-Cost Production of Tissue-Mimicking Skin Phantoms Up to 40 GHz," in *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, vol. 8, no. 1, pp. 51-58, March 2024.

- J.12) **S. Di Meo**, et al., "Multi-Layer Tissue-Mimicking Breast Phantoms for Microwave-Based Imaging Systems," in *IEEE Journal of Electromagnetics, RF and Microwaves in Medicine and Biology*, doi: 10.1109/JERM.2024.3379750.
- J.13) A. Cannatà, A. Elahi, M. O'Halloran, M. Pasian, **S. Di Meo**, G. Matrone, B. Amin, "Microwave Bone Imaging: Reconstruction of Anthropomorphic Numerical Calcaneus Phantoms for Bone Diseases Diagnosis," submitted to *IEEE Access*.
- J.14) A. Cannatà, A. Elahi, M. O'Halloran, M. Pasian, **S. Di Meo**, G. Matrone, B. Amin, "Advancements in Microwave Bone Imaging: Tomographic Reconstruction of an Anthropomorphic Calcaneus Phantom using a Dedicated Bone Imaging Prototype for Bone Health Applications," to be submitted to *IEEE Access*.

International Conferences (IC)

- IC.1) **S. Di Meo**, A. Martellosio, M. Pasian, M. Bozzi, L. Perregrini, A. Mazzanti, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, "Study on the Compromise between Resolution and Attenuation for Breast Imaging Systems," *11th European Conference on Antennas and Propagation (EuCAP 2017)*, Paris, France, March 19-24, 2017.*
- IC.2) **S. Di Meo**, G. Matrone, M. Pasian, M. Bozzi, L. Perregrini, G. Magenes, A. Mazzanti, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, "High-Resolution mm-Wave Imaging Techniques and Systems For breast Cancer Detection," *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes*, Pavia, Italy, September 20-22, 2017.*
- IC.3) **S. Di Meo**, P. F. Espin-Lopez, A. Martellosio, M. Pasian, M. Bozzi, L. Perregrini, A. Mazzanti, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, "Experimental Validation of the Dielectric Permittivity of Breast Cancer Tissues up to 50 GHz," *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes*, Pavia, Italy, September 20-22, 2017.*
- IC.4) **S. Di Meo**, E. Massoni, L. Silvestri, J. Obbad, M. Pasian, D. Dondi, M. Bozzi, L. Perregrini, G. Alaimo, S. Marconi, and F. Auricchio, "Dielectric Characterization of Materials for 3D-printed Breast Phantoms up to 50 GHz: Preliminary Experimental Results," *IEEE MTT-S International Microwave Workshop Series on Advanced Materials and Processes*, Pavia, Italy, September 20-22, 2017.*
- IC.5) **S. Di Meo**, P. F. Espin-Lopez, A. Martellosio, M. Pasian, M. Bozzi, L. Perregrini, A. Mazzanti, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, "Dielectric properties of breast tissues: experimental results up to 50 GHz," *12th European Conference on Antennas and Propagation (EuCAP 2018)*, London, UK, April 9-13, 2018.*
- IC.6) **S. Di Meo**, G. Matrone, P. F. Espin-Lopez, A. Martellosio, M. Pasian, M. Bozzi, L. Perregrini, A. Mazzanti, F. Svelto, P. E. Summers, G. Renne, L. Preda, and M. Bellomi, "Correlation Between Dielectric Properties and Women Age for Breast Cancer Detection at 30 GHz," *2018 IEEE International Microwave Biomedical Conference (IMBioC)*, Philadelphia, PA, USA, June 14-15, 2018.*
- IC.7) **S. Di Meo**, L. Pasotti, M. Pasian, G. Matrone, "Realization of breast tissue-mimicking phantom materials: dielectric characterization in the 0.5-50 GHz frequency range," *2018 IEEE International Microwave Biomedical Conference (IMBioC)*, Philadelphia, PA, USA, June 14-15, 2018.*
- IC.8) **S. Di Meo**, L. Pasotti, M. Pasian, G. Matrone, "On the Conservation of Materials for Breast Phantoms in the Frequency Range 0.5-50 GHz," *48th European Microwave Conference 2018*, Madrid, Spain, September 23-28, 2018.*
- IC.9) **S. Di Meo**, S. Morganti, L. Pasotti, M. Conti, M. Pasian, and G. Matrone, "Preliminary Experimental Characterization of Gelatin-Based Tissue-Mimicking Materials for Realistic Breast Phantoms aimed at Microwave Applications," *1st EMF-Med World Conference on Biomedical Applications of Electromagnetic Fields*, Split, Croatia, September 10-13, 2018.*
- IC.10) **S. Di Meo**, I. Iliopoulos, M. Pasian, M. Ettore, L. Pasotti, M. Zhadobov and G. Matrone, "Tissue mimicking materials for breast phantoms using waste oil hardeners," *13th European Conference on Antennas and Propagation (EuCAP 2019)*, Krakow, Poland, 31 March-5 April, 2019.*

- IC.11) **S. Di Meo**, D. Conforti, M. Pasian and G. Matrone, "Preliminary experimental results for imaging at millimetre-wave frequencies in breast phantoms," *European Microwave Conference in Central Europe (EuMCE 2019)*, Prague, Czech Republic, May 13-15, 2019.*
- IC.12) **S. Di Meo**, J. Bonello, I. Farhat, L. Farrugia, M. Pasian, C. V Sammut, and G. Matrone, "Preliminary study on the inter- and intra-species variability for the dielectric permittivity of animal kidney," *International Conference on Electromagnetics in Advanced Applications (ICEAA 2019)*, Granada, Spain, September 9-13, 2019.*
- IC.13) **S. Di Meo**, I. Farhat, J. Bonello, L. Farrugia, M. Pasian and C. V Sammut, "Hydration as classifier of dielectric measurement data from 500MHz to 50GHz," *Photonics & Electromagnetics Research Symposium (PIERS 2019)*, Rome, Italy, June 17-20, 2019.*
- IC.14) I. Farhat, J. Bonello, L. Farrugia, **S. Di Meo**, D. A. Pollacco, and C. V Sammut, "Dielectric Spectroscopy of Liver Mixture Model for Millimetre-Wave Imaging," *European Microwave Conference in Central Europe (EuMCE 2019)*, Prague, Czech Republic, May 13-15, 2019.
- IC.15) **S. Di Meo**, J. Bonello, M. B. Lodi, I. Farhat, L. Farrugia, A. Fanti, M. Pasian, F. Desogus, C. V. Sammut, "On the dielectric/thermal characterization and calibration of solutions and materials for biomedical applications," *14th European Conference on Antennas and Propagation (EuCAP 2020)*, Copenhagen, Denmark, March 15-20, 2020.
- IC.16) M. T. Bevacqua, **S. Di Meo**, L. Crocco, T. Isernia, G. Matrone, M. Pasian, "Potentialities of Inverse Scattering Techniques for Breast Cancer Imaging at Millimeter-Waves Frequencies," *14th European Conference on Antennas and Propagation (EuCAP 2020)*, Copenhagen, Denmark, March 15-20, 2020.
- IC.17) **S. Di Meo**, L. Pasotti, G. Magenes, M. Pasian, G. Matrone, "Combining Millimeter-Wave Imaging, Ultrasound and Elastography in a New Multimodal Approach for Breast Cancer Detection: Initial Experimental Results," *42nd Annual International Conferences of the IEEE Engineering in Medicine and Biology Society (EMBC)*, July 20-22, 2020, Montréal, Québec, Canada.
- IC.18) **S. Di Meo** and M. Pasian, "Preliminary comparison up to 50 GHz between *in-vivo*, *in-loco*, and *ex-vivo* measurements for the dielectric permittivity of tissues with high water content," *URSI GASS 2020*, Rome, Italy, 29 August – 5 September 2020.*
- IC.19) M. T. Bevacqua, **S. Di Meo**, L. Crocco, T. Isernia, G. Matrone, M. Pasian, "A Quantitative Approach for Millimeter-Wave Breast Cancer Imaging," *15th European Conference on Antennas and Propagation (EuCAP 2021)*, Düsseldorf, Germany, March 22-26, 2021. Virtual conference due to the health emergency by Covid-19.*
- IC.20) A. Cannatà, **S. Di Meo**, S. Morganti, G. Matrone, and M. Pasian, "Gelatin-Based Tissue-Mimicking Materials for Breast Phantoms: Dielectric and Mechanical Characterization," *URSI GASS 2021*, Rome, Italy, 28 August – 4 September 2021.*
- IC.21) **S. Di Meo**, P. Marracino, M. Liberti, F. Apollonio, M. Pasian, "Comparison between planar multilayer vs realistic anatomical models for dosimetric analysis of plane wave propagation in biological tissues," *URSI GASS 2021*, Rome, Italy, 28 August – 4 September 2021.*
- IC.22) A. Costanzo, F. Apollonio, P. Baccarelli, M. Barbiroli, F. Benassi, M. Bozzi, P. Burghignoli, T. Campi, S. Cruciani, **S. Di Meo**, et al., "Wireless Power Transfer for Wearable and Implantable Devices: a Review Focusing on the WPT4WID Research Project of National Relevance," *URSI GASS 2021*, Rome, Italy, 28 August – 4 September 2021.
- IC.23) M. Colella, **S. Di Meo**, P. Marracino, M. Liberti, M. Pasian, and F. Apollonio, "Dosimetric Analysis of Plane Wave Propagation in Biological Tissues: Comparison Between Planar Multilayer vs Realistic Anatomical Models," *European Microwave Conference 2021 (EuMC2021)*, London, UK, Apr. 2-7, 2022.*
- IC.24) **S. Di Meo**, A. Fava, and M. Pasian, "Numerical Quantitative Evaluation of the Skin Impact in Breast Cancer Imaging at mm-Waves," *16th European Conference on Antennas and Propagation (EuCAP 2022)*, Madrid, Spain, March 27-April 01, 2022.*
- IC.25) F. Cilia, **S. Di Meo**, L. Farrugia, J. Bonello, I. Farhat, Evan J. Dimech, M. Pasian and C. V. Sammut, "Techniques for temperature-dependent dielectric measurements: a review," *Mediterranean Microwave Symposium (MMS) 2022*, Pizzo Calabro, Italy, May 8-13, 2022.

- IC.26) **S. Di Meo**, A. Cannatà, C. Macchello, S. Morganti, M. Pasian, and G. Matrone, “Bi-modal tissue-mimicking breast phantoms: comparison between the performance of agar- and gelatin-based phantoms,” *3rd URSI Atlantic Radio Science Meeting (URSI AT-AP-RASC) 2022*, Gran Canaria, Spain, May 29 – June 3, 2022.*
- IC.27) **S. Di Meo**, M. T. Bevacqua, G. Matrone, L. Crocco, T. Isernia, and M. Pasian, “Millimeter breast cancer imaging by means of a dual-step approach combining radar and tomographic techniques: preliminary results,” *IEEE Engineering in Medicine and Biology Society (IEEE EMBC) 2022*, Glasgow, Scotland, UK, July 11-15, 2022.*
- IC.28) J. Bonello, **S. Di Meo**, I. Farhat, F. Cilia, L. Farrugia, M. Pasian and C. V. Sammut, “The effect of a temperature-dependent calibration on the dielectric measurements of standard liquids,” *34th Annual Meeting European Society for Hyperthermic Oncology (ESHO2022)*, Gothenburg, Sweden, Sept. 14-17, 2022.
- IC.29) M. Colella, **S. Di Meo**, M. Liberti, M. Pasian, F. Apollonio, “Numerical comparison of plane wave propagation inside realistic models and multilayer slabs,” *European Microwave Conference 2022 (EuMC2022)*, Milan, Italy, Sept. 25-30, 2022.
- IC.30) A. Cannatà, **S. Di Meo**, S. Morganti, M. Pasian, G. Matrone, “Dielectric, Mechanical and Acoustic Characterization of Multi-Modal Tissue-Mimicking Breast Phantoms,” *IEEE International Ultrasonics Symposium (IEEE IUS) 2022*, Venice, Italy, Oct. 10-13, 2022.
- IC.31) A. Cannatà, **S. Di Meo**, G. Matrone, S. Morganti, M. Pasian, “Multimodal tissue-mimicking breast phantoms for mm-wave and ultrasound imaging,” *17th European Conference on Antennas and Propagation (EuCAP 2023)*, Florence, Italy, March 26-31, 2023.
- IC.32) A. Cannatà, A. Shahzad, M. O’Halloran, A. Elahi, M. Pasian, **S. Di Meo**, G. Matrone, B. Amin, “Numerical assessment of microwave bone imaging: reconstruction of realistic phantoms for diagnosing different bone diseases,” *2023 24th International Conference on Applied Electromagnetics and Communications (ICECOM)*, Dubrovnik, Croatia, 2023, pp. 1-5.
- IC.33) **S. Di Meo**, G. Matrone, M. Pasian, “Millimeter-Waves for Breast Cancer Detection: State-of-the-Art and Perspectives,” accepted for the *International Conference on Antennas and Electromagnetic Systems (AES) 2023*, Torremolinos, Spain, June 5-8, 2023.*
- IC.34) **S. Di Meo**, M. T. Bevacqua, L. Crocco, G. Matrone, T. Isernia, M. Pasian, “Recent developments in mm-wave tomographic and radar imaging for breast cancer detection,” *IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting 2023*, Portland, Oregon, USA, July 23-28, 2023.
- IC.35) A. Cannatà, A. Elahi, M. O’Halloran, M. Pasian, **S. Di Meo**, G. Matrone, B. Amin, “Microwave Tomography Bone Imaging: Analysing the Impact of Skin Thickness on the Reconstruction of Numerical Bone Phantoms,” *2024 18th European Conference on Antennas and Propagation (EuCAP)*, Glasgow, United Kingdom, 2024, pp. 1-5.
- IC.36) **S. Di Meo**, G. Matrone, G. Magenes, M. Pasian, “Millimeter-Waves for Breast Cancer Detection: State-of-the-Art and Perspectives,” to be presented to *International Symposium on Biomedical Imaging*, Athens, Greece, May 27-30, 2024. *
- IC.37) **S. Di Meo**, E. Torti, E. Marenzi, R. Gandolfi, M. Pasian, F. Leporati, “Preliminary Hyperspectral Characterization of Tissue Mimicking Breast Phantoms,” accepted for *IEEE MTT-S International Microwave Biomedical Conference (IMBioC) 2024*, Montreal, Canada, June 11-13, 2024. *
- IC.38) M. Maier, S. Scheerer, **S. Di Meo**, M. Pasian, V. Issakov, “Demonstration of a Compact and Wideband FMCW Radar System for Breast Cancer Detection,” accepted for *IEEE MTT-S International Microwave Biomedical Conference (IMBioC) 2024*, Montreal, Canada, June 11-13, 2024.
- IC.39) M. Colella, **S. Di Meo**, M. Liberti, M. Pasian, F. Apollonio, “Numerical Exposure to Realistic and Planar Body Models: Effect of the Polarization,” accepted for *IEEE Medical Measurements & Applications (MeMeA) 2024*, Eindhoven, The Netherlands, June 26-28, 2024. *
- IC.40) A. Cannatà, A. Elahi, M. O’Halloran, M. Pasian, **S. Di Meo**, G. Matrone, B. Amin, “Exploring microwave bone imaging: preliminary reconstructions of realistic calcaneus phantoms in experimental setting for bone health monitoring,” accepted for *IEEE Engineering in Medicine and Biology Society (IEEE EMBC) 2024*, Orlando, Florida, USA, July 15-19, 2024.

National Conferences (NC)

- NC.1) **S. Di Meo**, L. Pasotti, G. Matrone, “Experimental Study up to 50 GHz on Tissue-Mimicking Materials for Breast Phantoms,” *XXII Riunione Nazionale di Elettromagnetismo (RINEM)*, Cagliari, Italy, September 3-8, 2018.*
- NC.2) **S. Di Meo**, G. Matrone, “Numerical Results on a Millimeter-Wave Conformal Array for Breast Cancer Detection,” *XXII Riunione Nazionale di Elettromagnetismo (RINEM)*, Cagliari, Italy, September 3-8, 2018.*
- NC.3) **S. Di Meo**, P.F. Espin-Lopez, A. Martellosio, “On the Repeatability of the Experimental Characterization up to 50 GHz of *ex-vivo* Breast Tissues,” *XXII Riunione Nazionale di Elettromagnetismo (RINEM)*, Cagliari, Italy, September 3-8, 2018.*
- NC.4) **S. Di Meo**, “On the development of an imaging system at millimetre-wave frequencies for biological applications,” *Riunione congiunta GTTI-SIEm*, Pavia, Italia, 26-28 June 2019.*
- NC.5) **S. Di Meo**, G. Matrone and M. Pasian, “On the Development of a mm-Wave Imaging System for Breast Cancer Detection,” *VI Convegno Nazionale “Interazione tra Campi Elettromagnetici e Biosistemi” (ICEmB)*, Cagliari, Italy, June 8 – 10, 2022.*
- NC.6) **S. Di Meo**, “On the design and perspectives of an innovative mm-wave imaging system for breast cancer detection,” *XXIV Riunione Nazionale di Elettromagnetismo (RINEM)*, Catania, Italy, September 18-21, 2022.*
- NC.7) A. Cannatà, **S. Di Meo**, S. Morganti, M. Pasian and G. Matrone, “Dielectric and mechanical characterization of gelatin- and agar-based breast phantoms: comparison between performances,” *XXIV Riunione Nazionale di Elettromagnetismo (RINEM)*, Catania, Italy, September 18-21, 2022.
- NC.8) **S. Di Meo**, G. Bertuzzi, G. Matrone, G. Magenes, M. Pasian, “Millimeter-Waves Imaging for Breast Cancer Detection: Development of Analytical Models for Scattering Matrices Computation,” *VIII Congress GNB 2023*, Padova, Italy, June 21-23, 2023.*
- NC.9) **S. Di Meo**, “Tissue-Mimicking Skin Phantom up to 40 GHz,” *XXIV Riunione Nazionale di Elettromagnetismo (RINEM)*, Catania, Italy, Sept. 30-Oct. 2, 2024. *

*Presenter: Simona Di Meo

Reports and Contributions

- 1) **S. Di Meo**, M. Pasian, G. Matrone, L. Pasotti, L. Farrugia, and C. V Sammut, “On the development of an imaging system at millimetre-wave frequencies for biological applications: dielectric characterization of tissues and first preliminary results on phantoms,” *BioEM 2019 annual meeting*, Montpellier, France, June 23-28, 2019.
- 2) Report “Bridging mmWave Biophysics, Safety and Imaging” prepared for the European Institute of Oncology by the Microwave Laboratory of the University of Pavia, Oct. 29th, 2014. In particular, Simona Di Meo contributed to the whole document with the work done during her Bachelor Thesis work.

Tutto quanto in esso dichiarato corrisponde a verità ai sensi degli art. 46 e 47 del D.P.R. 28 dicembre 2000, n. 445 e successive modificazioni e integrazioni.

Everything declared therein corresponds to the truth pursuant to Articles 46 and 47 of Presidential Decree No. 445 of 28 December 2000, as amended and supplemented.