



## SHORT BIO

**Maria I. Christopoulou** (<https://orcid.org/0000-0002-3302-6843>) is a Dipl. Electrical Engineer (NTUA-2003), and she holds a Ph.D. in Biomedical Engineering. During her PhD studies, Maria visited IT'IS Foundation, Zurich as an academic visitor and she contributed in two research projects. Maria's PhD studies combined numerical dosimetry and experimental human studies investigating awake-EEG alternations after exposure to UMTS-like signal. Since 2011, Maria belongs to the scientific team of Non-Ionising Radiation Unit in Greek Atomic Energy Commission (EEAE) and she serves as a senior researcher (Grade B). Her duties focus on a) conducting and analyzing measurements of radiofrequency and low frequency electric and magnetic fields according to the requirements of the EN ISO/IEC 17025 standard, b) compiling legislative texts, d) participating in national and European projects, e) organizing science communication and information campaigns for the society in order to translate complex scientific findings into clear, accessible guidelines and information. Since 2019, Maria also serves as Data Protection Officer (DPO) in EEAE. Her research interests include electromagnetic field measurements, bioelectromagnetics and biomedical engineering. She has authored/co-authored more than 70 articles in refereed international/national journals, conference proceedings and scientific books. She has worked as a senior researcher in more than 6 research projects focused in bioelectromagnetics. She has participated in 4 interlaboratory RF-EMF and ELF measurement campaigns. She has served as a reviewer for 11 international scientific journals and participated in organizing and scientific committees of 8 international conferences. Currently, Maria serves as Guest Editor in Electronics Special issue "Innovations in Electromagnetic Field Measurements and Applications", MDPI. She has served as substitute member of the Management Committee (MC), representing Greece for COST BM1309 EMF-MED Action.

## Journals

[J1] M. Eggeling-Böcker, E. Karabetsos, M. Christopoulou, S. C. Link, F. Abacioglu and C. Boehmert, "RF-EMF risk perception and trust in radiation protection authorities: A comparative study on precautionary information in Germany and Greece", *Bioelectromagnetics* [under review], 2025.

[J2] M. Eggeling-Böcker, E. Karabetsos, M. Christopoulou, S. C. Link, F. Abacioglu and C. Boehmert, "[Does personal relevance moderate communication effects? The example of risk communication about 5G-related electromagnetic fields](#)", *Open Research Europe* 5.13: (13), 2025.

[J3] A. Manassas, M. Christopoulou, N. Papanikolaou, S. Delidimitriou, E. Karabetsos and T. Samaras, "[Assessing EMF Exposure in Greek Urban and Suburban Areas During 5G Deployment: A Focus on 5G EMF Levels and Distance Correlation](#)", *Electronics* 2025, 14, 1554. <https://doi.org/10.3390/electronics14081554>.

[J4] M. I. Christopoulou, T. Kyritsi, A. Yalofas, D. Koutounidis and E. Karabetsos, "[5G NR launching in Greece: Preliminary in situ and monitoring network measurements of electromagnetic fields exposure levels](#)", *Bioelectromagnetics*, 2024 May; 45(4):193-199. doi: 10.1002/bem.

[J5] M. Christopoulou and E. Karabetsos, "[Evaluation of RF and ELF Field Levels at Children Playground Sites in Greece from 2013 to 2018](#)", *Bioelectromagnetics*, vol. 40 (8), pp. 602-605, 2019.

[J6] M. Koutsoupidou, E. Groupas, I. S. Karanasiou, M. Christopoulou, K. S. Nikita and N. Uzunoglu "[The effect of using a dielectric matching medium in focused Microwave Radiometry: an anatomically detailed head model study](#)", *Medical & Biological Engineering & Computing*, <https://doi.org/10.1007/s11517-017-1729-4>, 2017.

[J7] I. Anestopoulos, G.-P. Voulgaridou, N. Moraitis, M. Christopoulou, K. S. Nikita, S. Koulouridis, S. Mpakogianni, M. Panayiotidis, and A. Pappa, "[Comparative study of oxidative stress biomarkers to evaluate](#)

[cellular response of Jurkat T-cells exposed to 1966 MHz electromagnetic fields](#)", *Journal of International Society of Antioxidants in Nutrition & Health*, vol. 1, 2016.

[J8] [M. Christopoulou](#), and S. Koulouridis, "[Inter-subject variability evaluation towards a robust microwave sensor for pneumothorax diagnosis](#)", *Progress in Electromagnetics Research-PIER M*, vol. 42, pp. 61-70, 2015.

[J9] [M. Christopoulou](#), and E. Karabetsos, "[In situ measurements of radiofrequency exposure levels in Greece in the period of 2008 to 2013: A multi-parametric annual analysis](#)", *Bioelectromagnetics*, vol. 36 (4), pp. 325–329, 2015.

[J10] [M. Christopoulou](#), Ch. Govari, P. Tsaprouni, and E. Karabetsos, "[Evaluation of occupational exposure to ELF magnetic fields at power plants in Greece in the context of European Directives](#)", *Radiation Protection Dosimetry*, Dec;167(4), pp. 502-12, 2015.

[J11] M. Murbach, E. Neufeld, [M. Christopoulou](#), P. Achermann, and N. Kuster, "[Modeling of EEG electrode artifacts and the thermal ripples in human radiofrequency exposure studies](#)", *Bioelectromagnetics*, 35 (4) pp. 273–283, 2014.

[J12] M. Murbach, [M. Christopoulou](#), P. Crespo-Valero, P. Achermann, and N. Kuster, "[Exposure system to study hypotheses of ELF and RF electromagnetic field interactions of mobile phones with the central nervous system](#)", *Bioelectromagnetics*, 33 (6), pp.527-533, 2012.

[J13] P. Crespo-Valero, [M. Christopoulou](#), M. Zefferer, A. Christ, P. Achermann, K.S. Nikita, and N. Kuster, "[Novel methodology to characterize electromagnetic exposure of the brain](#)", *Physics in Medicine and Biology*, 56, pp. 383-396, 2011.

[J14] A. Christ, M.-C. Gosselin, [M. Christopoulou](#), S. Kuhn, and N. Kuster, "[Age dependent tissue-specific exposure of cell phone users](#)", *Physics in Medicine and Biology*, 55, pp. 1767-1783, 2010 [**PMB Highlights of 2010**]- [**Thomaides Foundation Award**]

[J15] [M. Christopoulou](#), S. Koulouridis, K.S. Nikita, "[Parametric Study of Power Absorption Patterns Induced in Adult and Child Head Models by Small Helical Antennas](#)", *Progress in Electromagnetics Research-PIER*, 94, pp. 49-67, 2009.

[J16] S. Koulouridis, [M. Christopoulou](#), K.S. Nikita, "[Comparative assessment of power absorption in heads of adults and children exposed to the radiation of cellular phones at 1800 MHz](#)", *Special Issue of the Environmentalist*, 25, pp. 223-232, 2005. [**Thomaides Foundation Award**]

## Books

[B1] [M. Christopoulou](#), D. Koutounidis, T. Kyritsi and E. Karabetsos, "Long term evaluation (2010-2018) of general public and occupational electromagnetic fields exposure in radiocommunication antenna parks across Greece", *Electromagnetic Ergonomics – From Electrification to a Wireless Society*, CRC Press - Taylor & Francis Group, LLC, eBook published on 7 September 2023 (<https://doi.org/10.1201/9781003020486>).

## Conferences

[C1] [M. Christopoulou](#), E. Karabetsos, E. Carinou and D. Koutounidis, "In-situ measurements of electromagnetics fields on rooftops in Greece: A 2022-2024 analysis of the 5G NR FR1 contribution", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2025*, Rennes, France, 22-27 June, 2025.

[C2] S. Wang, Y. Zhang, J. Liu, E. Conil, O. Jawad, A. Manassas, S. Delidimitriou, D. Babas, T. Samaras, [M. Christopoulou](#), E. Karabetsos, S. Kuehn, B. Valic, P. Gajšek, N. Djuric and J. Wiart, "EMF Exposure Assessments in Urban EU Cities by Drive Test Measurements", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2024*, Chania Crete, 17-21 June, 2024.

- [C3] M. Christopoulou, N. Papanikolaou and E. Karabetzos, "Downlink electromagnetic fields exposure assessment using personal exposimeter: a case study in Athens metro network", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2024*, Chania Crete, 17-21 June, 2024.
- [C4] A. Manassas, M. Christopoulou, N. Papanikolaou, S. Delidimitriou, T. Samaras, E. Karabetzos, 5G NR FR1 contribution to the total EMF exposure levels during ground levels spot measurements in urban and suburban environment in Greece, *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2024*, Chania Crete, 17-21 June, 2024.
- [C5] S. Wang, W.B. Chikha, Y. Zhang, J. Liu, M. Christopoulou, E. Karabetzos, A. Manassas, S. Iakovidis, C. Apostolidis, D. Babas, T. Samaras, J. Wiart, "Comparison of measurement systems on conducting RF-EMF drive test campaign in Greek urban and suburban environments", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2023*, Oxford, UK, 19-23 June 2023.
- [C6] M. Christopoulou, S. Bakogianni and S. Koulouridis, "[On Pneumothorax Detection in Microwave Frequencies Region](#)", *IEEE International Symposium on AP - URSI*, San Diego, California, USA, July, 9-14, 2017.
- [C7] M. Koutsoupidou, E. Groumpas, I. Karanasiou, M. Christopoulou, K. Karathanasis, S. Koulouridis and K.S. Nikita, "Passive temperature monitoring in realistic anatomical head models using microwave radiometry", *BIOENG '15-Bioengineering Conference 2015*, Istanbul, Turkey, November 25-26, 2015.
- [C8] P. Mermigkas, M. Christopoulou, and K. S. Nikita, "Optimization of implanted miniaturized helix antenna for drug delivery control", *IEEE Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC 2015*, Milan, Italy, August 25-29, 2015.
- [C9] I. Anestopoulos, G.-P. Voulgaridou, N. Moraitis, M. Christopoulou, K. S. Nikita, S. Mpakogianni, S. Koulouridis, M. Panayiotidis, and A. Pappa, "Comparative study of oxidative stress biomarkers to evaluate cellular response of Jurkat T-cells exposed to 1966 MHz electromagnetic fields", *15th International Conference on Oxidative Stress reduction, Redox Homeostasis and Antioxidants*, Paris, France, 22-24 June, 2015.
- [C10] N. Moraitis, M. Christopoulou, K. S. Nikita, G.-P. Voulgaridou, I. Anestopoulos, M. I. Panagiotidis and A. Pappa, "In-vitro assessment of Jurkat T-cells response to 1966 MHz electromagnetic fields in a GTEM cell", *IEEE Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC 2015*, Milan, Italy, August 25-29, 2015.
- [C11] M. Christopoulou, M. Capstick, B. Reumer, S. Koulouridis and N. Kuster, "Experimental thorax prototype for multistage pneumothorax diagnosis", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2015*, Asilomar Conference Center, California, USA, June, 14-19, 2015.
- [C12] E. Tsakiraki, N. Tsiaparas, M. Christopoulou, Ch. Papageorgiou, and K.S. Nikita, "Neural Potentials Disorder during Differential Psychoacoustic Experiment evaluated by Discrete Wavelet Analysis", *IEEE Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC 2014*, Chicago, USA, August 26-30, 2014.
- [C13] G. Foustoukos, N. Tsiaparas, M. Christopoulou, Ch. Papageorgiou, and K.S. Nikita, "Continuous Wavelet Application for the Assessment of Neural Potential Interaction during Time Discrimination Task", *IEEE Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC 2014*, Chicago, USA, August 26-30, 2014.
- [C14] M. Christopoulou and S. Koulouridis, "Microwave-based pneumothorax diagnosis: the application of antenna sensors", *COST VISTA, 6th WG Meeting & Technical Workshop*, Bucharest, May 26-28, 2014, Romania.
- [C15] M. Christopoulou and S. Koulouridis, "[Dual patch antenna sensor for pneumothorax diagnosis: sensitivity and performance study](#)", *IEEE Annual International Conference of the IEEE Engineering in Medicine and Biology Society, IEEE EMBC 2014*, Chicago, USA, August 26-30, 2014.
- [C16] N. Moraitis, M. Christopoulou, V. Papavasileiou, and K. S. Nikita, "Electric field uniformity in a GTEM cell for in-vitro exposure studies: simulations and measurements", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2014*, Cape Town, South Africa, June, 8-13, 2014.

- [C17] M. Christopoulou and S. Koulouridis, "[Miniaturized vivaldi antenna system for pneumothorax diagnosis: proposed air detection scena14rios](#)", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2014*, Cape Town, South Africa, June, 8-13, 2014.
- [C18] M. Christopoulou and S. Koulouridis, "Design requirements of microwave sensor for pneumothorax diagnosis", *IEEE International Symposium on AP - URSI*, Florida, USA, July, 7-13, 2013.
- [C19] V. Papavasileiou, N. Moraitis, M. Christopoulou, and K.S. Nikita, "[Field uniformity measurements in a GTEM cell for in vitro experiments at mobile communication frequencies](#)", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2013*, Thessaloniki, Greece, Jun 10 - 14, 2013.
- [C20] M. Christopoulou, V. Papavasileiou, and K. Nikita, "Brain tissue-specific exposure to small helical antenna radiation", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2013*, Thessaloniki, Greece, Jun 10 - 14, 2013.
- [C21] M. Christopoulou and S. Koulouridis, "Patch antenna configuration for pneumothorax diagnosis", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2013*, Thessaloniki, Greece, Jun 10 - 14, 2013.
- [C22] M. Christopoulou, Ch. Govari, P. Tsaprouni, D. Koutounidis, N. Skamnakis, A. Yalofas, E. Kalampaliki, Ch. Tzoumanika, and E. Karabetsos, "ELF measurements and evaluation of occupational exposure at four power plants in Greece", *Joint Meeting of The Bioelectromagnetics Society (BEMS) and the European BioElectromagnetics Association (EBEA)-BioEM2013*, Thessaloniki, Greece, Jun 10 - 14, 2013.
- [C23] M. Christopoulou, O. Kazasidis and K.S. Nikita, "[Numerical Assessment of EEG Electrode Artifacts during EMF Exposure in Human Provocation Studies](#)", *Wireless Mobile Communication and Healthcare, Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering*, Publ. Springer Berlin Heidelberg, 83, pp. 408-415, 2012.
- [C24] M. Christopoulou and S. Koulouridis, "[microDIAGNOSIS: Microwave-based diagnosis for pneumothorax and detection of air cavities in body](#)", *7th International Workshop on Biological effects of Electromagnetic fields*, Malta, October, 8-12, 2012.
- [C25] M. Christopoulou, V. Terzopoulos, K.S. Nikita, "Numerical assessment of electromagnetic exposure of child brain regions to small helical antenna radiation", *7th International Workshop on Biological effects of Electromagnetic fields*, Malta, October, 8-12, 2012.
- [C26] A. Kiourti, M. Christopoulou, and K.S. Nikita, "[Performance of a Novel Miniature Antenna Implanted in the Human Head for Wireless Biotelemetry](#)", *IEEE AP-S International Symposium on Antennas and Propagation and USNC/URSI National Radio Science Meeting*, Spokane, Washington, USA, 3-8 July 2011.
- [C27] A. Kiourti, M. Christopoulou, S. Koulouridis, K.S. Nikita, "[Design of a Novel Miniaturized Implantable PIFA for Biomedical Telemetry](#)", *International ICST Conference on Wireless Mobile Communication and Healthcare (MobiHealth 2010)*, Ayia Napa, Cyprus, 18-20 October 2010.
- [C28] M. Christopoulou, I. Karanasiou, K.S. Nikita and N.K. Uzunoglu, "[Experimental and numerical assessment of tissue temperature elevation due to mobile phone use](#)", *5th International Conference on Communications, Electromagnetics and Medical Applications (CEMA'10)*, Athens, Greece, 7-9 October, 2010.
- [C29] M. Murbach, M. Christopoulou, A. Christ, P. Crespo-Valero, M. Zefferer, S. Kuehn, P. Achermann, N. Kuster, "[System to Study CNS Responses of ELF Modulation and Cortex Versus Subcortical RF Exposures](#)", *BioEM2009 Annual Meeting*, 14-19 June, Davos, Switzerland 2009.
- [C30] M. Murbach, S. Kuehn, M. Christopoulou, A. Christ, P. Achermann, N. Kuster, "Evaluation of Artifacts by EEG Electrodes During RF Exposures", *BioEM2009 Annual Meeting*, 14-19 June, Davos, Switzerland 2009. **[First BEMS Student Award for Best Platform Presentation]**
- [C31] M.-C. Gosselin, A. Christ, M. Murbach, S. Ryf, S. Kuehn, M. Christopoulou, E. Neufeld, C. Gabriel, A. Peyman and N. Kuster, "[Influences of Age Dependent Tissue Parameters and Anatomical Structures on SAR and Temperature Increase in the Heads of Cellular Phone Users](#)", *XXIX General Assembly of the International Union of Radio Science (URSI)*, Chicago, Illinois, USA, August 07-16, 2008.

[C32] N. Kuster, M. Murbach, M. Christopoulou, S. Kuehn, A. Christ, "Experimental Outcome of Human Provocation Studies Depend on the Design Specifics of the Experimental Setup," *XXIX General Assembly of the International Union of Radio Science (URSI)*, Chicago, Illinois, USA, August 07-16, 2008.

[C33] A. Christ, M.-C. Gosselin, M. Murbach, S. Ryf, M. Christopoulou, E. Neufeld, C. Gabriel, A. Peyman and N. Kuster, "Age Dependent Changes in SAR and Temperature Distribution Induced in the User's Head by Cellular Phones", *The Bioelectromagnetics Society BEMS, 30th Annual Meeting*, San Diego, USA, June 8-12, 2008.

[C34] M. Christopoulou, M. Murbach, A. Christ, P. Crespo-Valero, M. Zefferer, S. Kuehn, P. Achermann, N. Kuster, "Exposure Systems for Testing Hypotheses of Site and Mechanism of Interaction in the Human Brain", *The Bioelectromagnetics Society BEMS, 30th Annual Meeting*, San Diego, USA, June 8-12, 2008.

[C35] M. Christopoulou and K.S. Nikita, "Effect of Tissues Dielectric Properties on Specific Absorption Rate (SAR) Induced in Human Heads Exposed to Mobile Handsets", *13th IEEE Conference on Electromagnetic Field Computation*, Athens, Greece, 11-15 May, 2008.

[C36] M. Christopoulou, V. Triantos, V. Tsakanikas, K.S. Nikita, "Power absorption characteristics in realistic adult and numerically derived child head models induced by helically equipped mobile phone: A parametric and comparative study," *International Conference and 10th Workshop EC-COST 281 on Emerging EMF-Technologies, Potential Sensitive Groups and Health*, Graz, Austria, 20-21 April 2006.

[C37] M. Christopoulou, S. Koulouridis, K.S. Nikita, "Parametric evaluation of power absorption in human head models exposed to cellular phone radiation at 1800MHz", *Mediterranean Microwave Symposium 2005*, Athens, Greece, September 6-8, 2005.

[C38] S. Koulouridis, M. Christopoulou, K.S. Nikita, "Assessment of Power Absorption in Human Head Models of Adults and Children Irradiated by Cellular Phone Helical Antennas," in *Proc. 3rd International Workshop on Biological Effects of Electromagnetic Fields*, pp. 693-702, Kos Island, Greece, October 2004. **[Thomaides Foundation Award]**

#### **Talks (indicative list)**

[T1] "EMF measurements in Greece: in-situ and 24/7 monitoring", *International Technical Workshop on EMF Exposure for Administrations*, ANFR, Paris, 22 May 2024.

[T2] "RF EMF monitoring in Greece", *SEAWave Workshop in the frame of BioEM 2024*, Chania Crete, 16-21 June, 2024.

[T3] "Exposures from 5G vs. 1G-4G Cellular Networks: Monitoring of downlink exposure in Athens", *WP1 SEAWave project Webinar*, 15-01-2024.

[T4] Ministry of Environment and Tourism - Environmental Education Program of the "University of the Aegean: School Environmental Education Programs" within the framework of EPEAEK II on the topic: "Impacts of mobile telephony (antennas, devices) on school-age children", Collaboration with the 6th High School of Chania, 02/2006 - 08/2006.

[T5] Municipalities of Lesvos, Chania, etc., conferences co-organized by mobile telephony companies: At least five (5) invited talks at public information events on issues of protection from non-ionizing electromagnetic radiation, 2006-2011.

#### **Research projects and other activities (indicative list)**

[P1] **SEAWave** - Scientific-Based Exposure and Risk Assessment of Radiofrequency and mm-Wave Systems from children to elderly (5G and Beyond), (Horizon Europe, HORIZON-HLTH-2021-ENVHLTH-02-01, Grand Agreement Number: 101057622), June 2022-November 2025.

[P2] **microDIAGNOSIS**: Microwave-based diagnosis for pneumothorax and detection of air cavities in body, (Partnership Agreement), 15/06/2012 - 30/06/2015 (personal post-doc project)

[P3] **Thales** "mBioRF: Multilevel assessment on Biological effects of RadioFrequency electromagnetic waves", (Partnership Agreement), 01/11/2009-31/01/2010.

[P4] **Program: EETT**: "Development of website content with the aim of informing the public about the possible health effects of radiation from mobile communications systems", 01/02/2012 – 13/06/2012, 01/07/2015 – 30/09/2015.

**[P5] “EMF & BRAIN/SLEEP”,** (Swiss National Science Foundation NRP 57 - Non-Ionising Radiation - Health and Environment), 01/04/2007 – 31/05/2008.

**[P6] “EX-Age”,** (IT’ IS Foundation - The Foundation for Research on Information Technologies in Society, Swiss Federal Institute of Technology Zurich (ETHZ), 01/04/2007 – 31/05/2008.

**[P7]** Participation in international interlaboratory measurement campaigns of the radiofrequency background electromagnetic field (mobile telecommunication, radio/television): 2010 (EEAE), 2024 (EEAE), University of Zagreb, Dubrovnik (2008).

**[P7]** Participation in international interlaboratory measurement campaigns of ELF electric and magnetic fields: 2024 (EEAE-NTUA high voltage laboratory).