

CV FRANCESCA APOLLONIO

Full Professor at the Department of Information Engineering, Electronics and Telecommunication, Sapienza University of Rome

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POSITIONS

2023: Full Professor – Electromagnetic Fields (ING-INF/02)

2019: Associate Professor – Electromagnetic Fields (ING-INF/02)

2018: ASN (Abilitazione Scientifica Nazionale) for Full Professor, settore 09/F1 – Campi Elettromagnetici (ING-INF/02)

2000: Assistant Professor at the University Sapienza of Rome

1994: Master’s degree in electronic engineering University Sapienza of Rome

WORK EXPERIENCE

2023-now: Full Professor, DIET, Sapienza University of Rome

2019-2023: Associate Professor, DIET, Sapienza University of Rome

2000-2019: Assistant Professor, DIET, Sapienza University of Rome

1998-2000: Technical Support, Telecom Italia

1995-1996: Research Fellowship from AIRP

BIBLIOMETRICS (from Scopus, January 2024)

Total Citations=	2532
Hirsch (H) index=	30
Journals & Books=	104
Conference papers=	113

AWARDS AND ROLES IN INTERNATIONAL SOCIETIES

- 2023-today: elected CHAIR of the International Commission CNR-URSI, Commission K “Electromagnetics in Biology and Medicine”
- 2022-today: MEMBER of the IEEE TC-28 Biological Effects and Medical Applications Committee
- 2020-today: MEMBER of the ICNIRP Scientific Expert Group (SEG), Project Group on LF Guidelines
- 2019-today: CHAIR of the National Commission CNR-URSI, Commission K “Electromagnetics in Biology and Medicine”.
- 2021-2023: elected VICE-CHAIR of the International Commission CNR-URSI, Commission K “Electromagnetics in Biology and Medicine”
- 2019-2021: MEMBER of the LOC URSI GASS2021
- 2016-2021: NATIONAL REPRESENTATIVE, MIUR Action COST CA15211: “Atmospheric Electricity Network: coupling with the Earth System, climate and biological systems” (Electronet)
- 2011-2019: VICE-CHAIR National Commission CNR-URSI, Commission K “Electromagnetics in Biology and Medicine”.
- 2016-2017: MEMBER of the TPC for the BioEM2017 June 2017 Hangzhou, China.
- 2015-2016: CHAIR of the TPC for the BioEM2016, June 2016 Ghent, Belgium.
- 2014-2018: MEMBER of the WG3 “EMF dosimetry: in silico tools & measurements” in the Action COST BM1309, EMF-MED
- 2014-2015: MEMBER of the TPC for the BioEM2015, June 2015 Asilomar, USA.
- 2013-2016: ELECTED MEMBER of the Board of Directors of the Bioelectromagnetics Society
- 2011: MEMBER of the LOC of the 10th EBFA Conference Rome 2011

- 2008-2012: EXPERT MEMBER in the Action COST BM0704
- 2004-2008: EXPERT MEMBER of the Technical Working Groups in EMF-NET, EU 6th Framework Program.
- 2001-2004: EXPERT MEMBER in the Quality Assessment and Assurance Committee (QAAC) of RAMP2001, Key Action 4, Environment and Health, EU 5th Framework Program.

ACADEMIC ACTIVITY

- 2019 - Reviewer for ANVUR – VQR Team
- 2012-today: Supervisor of 7 PhD students and 4 Post-Doc Fellowship at DIET
- 2008-today: Supervisor of more than 90 students for master's degree Theses (Biomedical Engineering and Nanotechnology Engineering) and Bachelor (Clinical Engineering)
- 2013-2013: UIF (Università Italo-Francese), Member of Commission for the Evaluation of the Galileo Projects
- 2010-2014: Member of the Scientific Commission for the Framework Agreement Sapienza-ENEA (Cluster Biotechnology)
- 2008-2009: UIF (Università Italo-Francese), Member of Commission for the Evaluation of the Galileo Projects
- 2008-2008: MIUR, Member of the Commission for the Evaluation of the Integrated Actions Italy-Spain

TEACHING ACTIVITY

- 2022-today: Bioelectromagnetic Methodologies – Medicine and Surgery HT
- 2022-today: Bioelectromagnetic Interaction II – Clinical and Biomedical Engineering
- 2021-today: Bioelectromagnetic Interaction I – Clinical and Biomedical Engineering
- 2019-today: Therapeutic Applications of Low frequency Electromagnetic Fields– Clinical and Biomedical Engineering
- 2003-today: Electromagnetic Fields – Clinical and Biomedical Engineering
- 2009-today: Electromagnetic Fields and Nanosystems for biomedical applications – Nanotechnology Engineering

INVITED SPEAKER

2023: INVITED panelist for the Special Session MTT-S Inter-Society Technology Panel Session – Biomedical Applications at EUMW2023, 17-22 September 2023, Berlin, Germany.

2023: INVITED lecturer at IEEE MTT-S International Microwave Biomedical Conference 2023 (IMBioC2023), 11-13 September 2023, Leuven, Belgium.

2022: INVITED KEYNOTE at the EUMW2022, Milan, September 2022

2022: INVITED lecturer at the Doctoral School of EUMW2022, Milan, September 2022

2021: INVITED lecturer at the Directed Energy Research Centre, Technology Innovation Institute, Abu Dhabi, UAE

2021: INVITED lecturer at Czech National Radio Science Workshop for the Tutorial Commission K.

2019: INVITED KEYNOTE at the BioEM2019 Montpellier France, June, 2019

2019: INVITED lecturer at the European Microwave Week 2019, Paris France, September 2019

2018: INVITED lecturer at the BioEM2018, June, 2018

2017: INVITED lecturer at the 11th European Conference on Antennas and Propagation (EUCAP), Paris (FR), March, 2017

2017: INVITED lecturer at the COST BM1309 EMF-MED WG2, held in Prague (CZ), April, 2017

2011: INVITED lecturer at the 41st European Microwave Conference (EuMC), Manchester in October 2011.

2010: INVITED lecturer at the 5th COURSE on “Medical Applications of Electromagnetic Fields: Research and Therapy”, at the E. Majorana Foundation and Centre for Scientific Culture

2010: INVITED lecturer at the XXXth URSI General Assembly and Scientific Symposium Istanbul in August 2011

2006: INVITED lecturer at the International school of Bioelectromagnetics “Alessandro Chiabrera” at the Ettore Majorana Foundation and Centre for scientific culture

2005: INVITED lecturer at XXVIII General Assembly International Union of Radio Science, New Delhi, in the session "K01 -Interaction between EMF and Biosystems"

SOCIETY MEMBERSHIPS, AND SCIENTIFIC CONTRIBUTIONS

2023: Session Chair at URSI GASS203 Sapporo 19th – 26th August 2023

2022: Session Chair at EuMW2022, Milan, 26th – 30th September 2022

2022: Session Chair at AT-AP-RASC2022, Gran Canaria, 29th May – 3rd June 2022

2021: Session Chair at URSI GASS2021, Rome, 28th August – 4th September, 2021

2019: Chair of the Focus Session at the European Microwave Week 2019, Paris France, 20 September – 4 October 2019

2019: Session Chair at PIERS2019, Rome, June, 2019

2015: Session Chair at BioEM2015 Asilomar, USA

2014: Session Chair at the BioEM2014 Cape Town, South Africa

2013: Session Chair at the BioEM2013 Thessaloniki, Greece

2012: Session Chair at the EuCAP2012 Prague, Czech Republic

2011: Session Chair at the 10th International Congress of the European Bioelectromagnetics Association (EBEA2011).

2011: Session Chair at EuCAP2011 held in Rome in April 2011

2009: Session Chair at BioEm 2009, Davos, Switzerland

2008: Session Chair at the IEEE International Symposium on Antennas and propagation and USNC/URSI National Radio Science Meeting, San Diego, CA.

Member of the following Societies:

- European Bioelectromagnetics Association (EBEA)
- Bioelectromagnetic Society (BEMS)
- IEEE Microwave Theory and Techninque Society – IEEE Engineering in Medicine and Biology Society
- Società Italiana di Elettromagnetismo (SIEM)
- ICEmB - Centro Interuniversitario di ricerca sulle Interazioni fra Campi Elettromagnetici e Biosistemi.

EDITORIAL SERVICES

2015- today: Review Editor of Journal Frontiers in Public Health - Radiation and Health

2019-today: Editorial Board of Journal of Healthcare Engineering

2020-today: Editorial Board of Chemosensors

2010-today: Conference Editorial Board IEEE EMBC

2005-today Reviewer of several International Journals (PUBLONS: <https://www.webofscience.com/wos/author/record/1679535>)

INTELLECTUAL PROPERTY

2022 INVENTOR Italian PATENT 102021000030557: Detection of viruses via microwave dielectric spectroscopy

2017 INVENTOR in the European Patent: WO2017IB50236 20170117 FLEXIBLE ELECTRODE FOR APPLYING AN ELECTRIC FIELD TO THE HUMAN BODY

FUNDING FROM PROJECTs

- 2023 – Italian Minister University and Research – PNRR- PRIN 2022 – SMILE
- 2023 – Bando RiPREI Pilot Project - SCOVato: Innovative Methods for viral detection by means of multi-bands spectroscopy techniques
- 2022 – European Project: 5G expOsure, causal effects, and rIsk perception through citizen engagement (GOLIAT); call: HORIZON-HLTH-2021-ENVHLTH-02
- 2021 – European Project: Regeneration of Injured Spinal cord by Electro pULsed bio-hybrid implant (RISEUP); call: H2020-FETOPEN-2018-2019-2020-01
- 2021 – Sapienza University Project “Magnetoliposomes and their combination with hydrogels for controlled drug delivery mediated by pulsed electromagnetic fields”

- 2020 – ANSES, Programme national de recherche «Environnement Santé Travail»: Numerical Modelling of RF interaction with Thermal Receptors – Mechanisms and vivo/vitro experiments.
- 2020 – Sapienza University Project “Optimization of magnetic field remote controlled lipid vesicle nanocarriers”
- 2019 – Sapienza University Project “Liposome vesicles loading magnetic nanoparticles as optimal drug delivery nanosystems controlled by magnetic fields”
- 2018 – Sapienza University Project “Non-invasive stimuli-responsive nanocarriers activated by nanosecond pulsed electric field”
- 2016 – Sapienza University Project “Control of drug release from liposome vesicles using electromagnetic fields”
- 2015 – Sapienza University Project “The electromagnetic field as actuator of biocompatible nanosystems for drug delivery applications”
- 2014 – Contratto di Ricerca EMS (Electro Medical Systems) “Sviluppo di un software per la stima del campo elettrico indotto da bobine di TMS in modelli sferici cerebrali”
- 2011 – Joint Project “Life Nanoscience” Istituto Italiano Tecnologie (IIT) – Sapienza Università di Roma: A2-WP2-Task3: “Molecular Imaging of brain tumors”
- 2009 – Progetto di Ricerca e Innovazione (FARI) Sapienza
- 2009 – Progetto di Ricerca di Ateneo Federato di Scienza e della Tecnologia (AST)
- 2001 – MURST “Progetto Giovani Ricercatori”, Interazione tra campi elettromagnetici e tessuto nervoso: dalla modellistica alla verifica sperimentale

RELEVANT SELECTED PUBLICATIONS (last five years)

	Authors	Title		Best SJR	IF JCR
1	Colella, M., Meo, S.D., Liberti, M., Pasian, M., Apollonio, F.	Advantages and Disadvantages of Computational Dosimetry Strategies in the Low mmW Range: Comparison Between Multilayer Slab and Anthropomorphic Models	(2023) IEEE Transactions on Microwave Theory and Techniques	Q1	4.381
2	Colella, M.,...Apollonio F., Pascual-Leon A., Liberti, M., Bonmassar, G.	A study of flex miniaturized coils for focal nerve magnetic stimulation	(2023) Medical Physics, 50(3), pp. 1779–1792	Q1	4.506
3	Marracino, P., Caramazza, L., Montagna, M., (...), Liberti, M., Apollonio F.	Electric-driven membrane poration: A rationale for water role in the kinetics of pore formation	(2022) Bioelectrochemistry 143,107987	Q2	5.76
4	D'Agostino S., Colella M., Liberti M., Falsaperla R., Apollonio F.	Systematic numerical assessment of occupational exposure to electromagnetic fields of transcranial magnetic stimulation	(2022) Medical Physics, 49(5), pp. 3416–3431	Q1	4.071
5	Capone F., Salati S., Vincenzi F., Liberti M., Aicardi G., Apollonio F., Varani K., Cadossi R., Di Lazzaro V.	Pulsed Electromagnetic Fields: A Novel Attractive Therapeutic Opportunity for Neuroprotection After Acute Cerebral Ischemia	(2022) Neuromodulation, art. No 13489	Q1	4.722
6	Colella M., Paffi A., de Santis V., Apollonio F., Liberti M.	Effect of skin conductivity on the electric field induced by transcranial stimulation techniques in different head models	(2021) Physics In Medicine And Biology, 66 (3), art. no. 35010.	Q1	3.609
7	De Angelis A., Leonetti M., Apollonio F., Liberti M., Aglioti S. M., Ruocco G.	Computational optimization of transcranial focused ultrasound stimulation: Toward noninvasive, selective stimulation of deep brain	(2021) Applied Physics Letters, 118 (23) art. no. 233702.	Q1	3.791

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| 8 | Colella M., Camera F., Capone F., Setti S., Cadossi R., Di Lazzaro V., Apollonio F., Liberti, M. | Patient Semi-specific Computational Modeling of EM Stimulation Applied to Neuroprotective Treatments in Acute Ischemic Stroke. | (2020) Scientific Reports, 10 (1), art. no. 2945. | Q1 | 4.38 |
| 9 | Caramazza L., Nardoni M., De Angelis A., Paolicelli P., Liberti M., Apollonio F., Petralito S. | Proof-of-concept of electrical activation of liposome nanocarriers: from dry to wet experiments | (2020) Frontiers In Bioengineering And Biotechnology, 8, art. no 819. | Q1 | 5.89 |
| 10 | Casciola M., Xiao S., Apollonio F., Paffi A., Liberti M., Muratori C., Pakhomov A.G. | Cancellation of nerve excitation by the reversal of nanosecond stimulus polarity and its relevance to the gating time of sodium channels | (2019) Cellular and Molecular Life Sciences, 76(22), pp. 4539-4550. | Q1 | 6.496 |
| 11 | Merla C., Liberti M., Marracino P., Muscat A., Azan A., Apollonio F., Mir L.M. | A wide-band bio-chip for real-time optical detection of bioelectromagnetic interactions with cells | (2018) Scientific Reports, 8 (1), art. no. 5044. | Q1 | 4.011 |
| 12 | Orcioni S., Paffi A., Camera F., Apollonio F., Liberti M. | Automatic decoding of input sinusoidal signal in a neuron model: High pass homomorphic filtering | (2018) NeuroComputing, 292, pp 165-173. | Q1 | 4.072 |