

Walter Fuscaldo

Personal Information

First Name Walter
Last Name Fuscaldo

Working Activities

- Jul. 2020 – Today **Researcher**, *Consiglio Nazionale delle Ricerche, Istituto per la Microelettronica e Microsistemi, (CNR-IMM), Rome, Italy.*
- Duration 11 months
- Activities Analysis and design of low-profile reconfigurable antennas for satcom applications; analysis and design of terahertz filters; terahertz characterization of materials; optimization of leaky-wave antennas; design of advanced radiating systems for wireless information and power transfer.
- Jan. 2018 – Jun. 2020
Mar. 2017 – Sep. 2017 **Postdoctoral Researcher**, *Department of Information Engineering, Electronics, and Telecommunications, Sapienza University of Rome, Rome, Italy.*
- Duration 36 months
- Activities Graphene-based reconfigurable antennas, and frequency-domain/time-domain near-field focusing through leaky-wave radiating systems.
- Jun. 2018 – Aug. 2018
Sep. 2017 – Dec. 2017
Sep. 2014 – Dec. 2014 **Visiting Scientist**, *NATO STO - Centre for Maritime Research and Experimentation (CMRE), La Spezia, Italy.*
- Duration 9 months
- Activities Ship Detection/Tracking using multistatic Global Positioning Satellite (GPS) signals; Electromagnetic modeling of scattering problems for ship detection in maritime scenarios through Global Navigation Satellite System Reflectometry (GNSS-R) signals and through high-resolution radars.

Internships

- May 2016 – Sep. 2016 **Intern/Ph.D. Student**, *University of Houston, Houston (TX), USA*
- Duration 4 months
- Supervisors Prof. David R. Jackson *University of Houston*, Prof. Alessandro Galli *Sapienza University of Rome*
- Activities Analytical framework for the evaluation of different figures of merit (beamwidth, directivity, sidelobe level, and etc.) of leaky-wave antennas.

- Jan. 2015 – Jul. 2015 **Intern/Ph.D. Student**, *IETR UMR CNRS 6164*, Rennes, France
 Jan. 2014 – Mar. 2014
- Duration 9 months
- Supervisors Alessandro Galli *Sapienza University of Rome*, and Mauro Ettore *University of Rennes 1*
- Activities Development of a theoretical framework for the analysis of nondiffracting waves generated through Bessel-beam launchers at millimeter waves.
- Jan. 2013 – Jul. 2013 **Intern/Thesis Student**, *IETR UMR CNRS 6164*, Rennes, France
- Duration 6 months
- Supervisors Prof. Alessandro Galli *Sapienza University of Rome*, and Prof. Ronan Sauleau *University of Rennes 1*
- Description Analytical study and pre-design of a 40 GHz Bessel beam launcher for near-field applications.
- Mar. 2012 – May. 2012 **Intern/Master Student**, *ELT Elettronica S.p.A.*, Rome, Italy.
 Sep. 2011 – Jan. 2012
- Duration 6 months
- Supervisors Antonio Manna and Fabrizio Trotta *ELT S.p.A.*
- Description Design of 1-D and 2-D arrays of Vivaldi antennas. Design of conformal arrays of dual-polarized quadruple ridged horn over the 6–18 GHz Band. Full-wave simulation, analysis of results, and documentation.

Education

- Nov. 2013 – Feb. 2017 **Ph. D. in Information and Communication Technology**, *Sapienza University of Rome (Italy) and University of Rennes 1 (France)*.
- Duration 3.5 years. This is currently the standard duration in Italy. Since 2016 PhD students must defend their thesis within the fourth year.
- Title *Advanced Radiating Systems Based on Leaky Waves and Nondiffracting Waves*
- Supervisors Prof. Alessandro Galli *Sapienza University of Rome* and Dr. Mauro Ettore *University of Rennes 1*
- Examination Committee Prof. Giuseppe Schettini, Prof. Alessandro Toscano *Roma Tre University*, Prof. IEEE Fellow Francisco Medina-Mena *University of Seville*
- Grade Ph.D. degree (*cum laude* and with the *Doctor Europaeus label*); international cotutelle agreement between Sapienza University of Rome and University of Rennes 1.
- Description Investigation of near-field focusing systems generating Bessel beams through leaky modes in the millimeter-wave frequency range. Theoretical analysis and design of near-field focusing systems generating limited-dispersive, limited-diffractive X-waves. Analysis and design of reconfigurable leaky-wave antennas based on graphene and nematic liquid crystals whose main beam can electronically be steered at fixed frequency.

- Jan. 2011 – Jul. 2013 **M. Sc. in Telecommunications Engineering**, *Sapienza University of Rome*, Rome, Italy.
- Duration 2 years
 - Grade 110/110 “summa cum laude”.
 - Title Design of Advanced Radiating Systems based on Leaky Waves for the Generation of Bessel Beams
 - Supervisors Prof. Alessandro Galli *Sapienza University of Rome*, and Prof. Ronan Sauleau *University of Rennes 1*
 - Description Design of Bessel beam launcher using higher-order leaky-wave modes.
- Sep. 2007 – Dec. 2010 **B. Sc. in Communications Engineering**, *Sapienza University of Rome*, Rome, Italy.
- Duration 3 years
 - Title Analytical Methods for Electromagnetic Radiation Problems
 - Grade 110/110.
 - Supervisor Prof. Alessandro Galli *Sapienza University of Rome*
 - Description Multipole Expansion and Spherical Harmonics Expansion in electromagnetic problems.
- Sep. 2006 – Sep. 2007 **B. Sc. in Mathematics**, *Sapienza University of Rome*, Rome, Italy.
- Duration 1 year
 - Description I started my bachelor study at the faculty of Mathematics, where I regularly succeeded the first year. Afterwards, I preferred to enroll in the Engineering curricula where I restarted my student career from the beginning. I got the Bachelor’s degree in Telecommunications Engineering within the regular three-years time frame, although I started one year later with respect to my peers.

Scientific Activities

- Oct. 2018 – Today **Organizer Activity**
- Description I have organized the Special Session *Localized Waves: Science and Applications* at the 41st Photonics & Electromagnetics Research Symposium (PIERS19), Rome, Italy, 17–20 June 2019, the Convened Session *Near-Field Focusing and Pulse Generation Through Localized Waves* at the 14th European Conference on Antennas and Propagation (EuCAP20), Copenhagen, Denmark, 15–20 March 2020.

Apr. 2018 – Today **Chairman Activity**

Description I served as a Chairman for the Regular Session *Antennas for Future Applications* at EuCAP18 (London, UK), for the Special Session *Localized Waves: Science and Applications* at PIERS19 (Rome, Italy), for the Convened Session *Near-Field Focusing and Pulse Generation Through Localized Waves* at EuCAP20 (Copenhagen, Denmark), and for Regular Session *Fundamental research and emerging technologies – Antennas, at EuCAP21 (Virtual Event)* Antennas

Apr. 2019 – Today **Editor Activity**

Description I serve as Associate Editor for the following journals:

- IET Microwaves, Antennas, and Propagation, since 2019.
- IET Electronic Letters, since 2020.
- MDPI Crystals (Topic Editor), since 2020.
- Frontiers in Signal Processing – Radar Section (Review Editor), since 2020.

Dec. 2014 – Today **Author Activity** (the whole publications' list can be provided upon request.)

Overview

- Bibliometric data (Google Scholar)
 - h-index: 13
 - i10-index: 17
 - citations: 570
- 115 peer-reviewed documents (4 invited book chapters, 36 published journal papers, 6 journal papers under review or under preparation, 53 international conference papers, 7 international conference paper under review, 9 national conference papers)
- First/second author of 30/36 journal papers
- First author of 29/53 conference papers
- Authored 25/36 on IEEE (11/36 in IEEE Trans. Antennas Propag.), or American Institute of Physics (AIP), or American Physical Society (APS) journals.

Jun. 2014 – Today **Reviewer Activity**

Overview Around 250 reviews for peer-reviewed international journals and conferences (an average of 50 per year in the last 5 years)

Description I frequently serve as a Reviewer (see publons.com/a/1277806) for:

- *IEEE Transactions Antennas and Propagation*
- *IEEE Transactions on Nanotechnology*
- *IEEE Antennas and Wireless Propagation Letters*
- *IEEE Journal of Lightwave Technology*
- *IEEE Access*
- *NATURE Scientific Reports*
- *OSA Journal of the Optical Society of America A*
- *OSA Journal of the Optical Society of America B*
- *IOP Journal of Physics D: Applied Physics*
- *IOP Journal of Optics*
- *IOP Material Research Express*
- *SPRINGER Nanoscale Research Letters*
- *AIP Journal of Applied Physics*
- *AIP Applied Physics Letters*
- *AIP Physics of Plasmas*
- *AIP Advances*
- *IET Microwaves, Antennas and Propagation*
- *IET Electronics Letters*
- *TAYLOR & FRANCIS Waves in Random and Complex Media*
- *MDPI Electronics*
- *WILEY International Journal of Numerical Modeling: Electronic Networks, Devices and Fields*
- *CAMBRIDGE International Journal of Microwave and Wireless Technology*