# **Curriculum Vitae**

#### **PERSONAL INFORMATION**

Name Address Telephone E-mail

Nationality

Date of Birth

# WORK EXPERIENCE

• Date (from – to) • Employer's name and locality

Business or sector
 Job description

· Main activities and responsabilities

• Date (from – to) • Employer's name and locality

Business or sector
 Job description

Main activities and responsabilities

• Date (from – to) • Employer's name and locality VALENTINA PALAZZI

Frazione San Brizio, n.52, 06049 Spoleto (PG), Italia 3339133028 palazzi.valentina.89@gmail.com, valentina.palazzi@unipg.it

Italian

19/01/1989

December 2017-present day

Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy; supervisor: Prof. Paolo Mezzanotte

University

# Post-Doc researcher at the High Frequency Electronics laboratory (HFE lab); main research subjects:

- Zero-power sensors with a low environmental impact
- Reconfigurable feed networks for 5G applications
- 3D printed microwave circuits
- Theoretical study, design and prototyping of microwave circuits
- Drafting of scientific papers
- Technical presentations at international conferences
- Participation in international scientific committees (IEEE MTT-S TC-24 and TPRC)
- Tutoring of Bachelor's and Master's candidates

November 2014 – April 2018

Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy; supervisors: Prof. Luca Roselli and Prof. Paolo Mezzanotte University

Doctorate in Industrial and Information Engineering; main research subjects:

- Zero-power wireless sensors on flexible substrates based on the harmonic radar concept
- wireless power transfer and RF energy harvesting
- additive manufacturing (ink-jet and 3D printing)
- telecommunications front-ends
- green electronics
- Theoretical study, design and prototyping of microwave circuits
- Drafting of scientific papers
- Technical presentations at international conferences
- Tutoring of Bachelor's and Master's candidates
- Courses and relative exams (33 CFU)
- Doctorate schools and seminars (27 CFU)
- Study abroad periods (9 months)

February 2016 –July 2016

Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy; professor: Prof. Paola Rubbioni

- Business or sector
  - Job description

Main activities and responsabilities

• Date (from – to) • Employer's name and locality

Business or sector
 Job description

Main activities and responsabilities

# COLLABORATION IN INDUSTRIAL AND RESEARCH PROJECTS

Date (from – to)
 Project title
 Contractor
 Role

# **VOLUNTEER EXPERIENCE**

• Date (from – to) • Description

# **EDUCATION AND TRAINING**

Date

#### University

Teaching assistant for Calculus II – Bachelor's degree in Computer and Electronic Engineering

- Two-hour lectures per week concerning exercises for exam preparation (total time: 12 weeks)
- Individual tutoring
- Support during exam sessions

#### July 2014 - November 2014

Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy; project manager: Prof. Paolo Mezzanotte

#### University

Contract for the design of a microstrip feed network for a TE01 launcher in a circular guide

- CAD design of the microwave circuit commissioned to the Department of Engineering by the company Saipem spa
- Interaction with Saipem spa to define and adjust specifications
- Participation in the on-field test of the prototype, manufactured by Saipem spa on the basis of the final design

28/02/2018 – 28/08/2018 Miniaturised Ka-band FSS transponder for small satellites PicoSaTs s.r.l. Area Science Park, Padriciano, 99, 34149 Trieste, Italy. Member of the research team

2017 – present day Organizer of the Student Design Competition entitled "Backscatter Radio", sponsored by "IEEE Microwave Theory and Techniques Society (MTT-S) – Technical Committee (TC) 24. The first edition was held during the "2018 IEEE MTT-S International Microwave Symposium (IMS), in Philadelphia, 5 June 2018, while the second edition will be held during "2019 IEEE MTT-S IMS" in Boston, 4 June 2019.

2017 – present day Reviewer for international scientific journals, such as "IEEE Transactions on Microwave Theory and Techniques", "IEEE Microwave and Wireless Component Letters", "IEEE Microwave Magazine", "IET Microwaves Antennas and Propagation", "Electronics Letters", "IEEE Access", "Sensors".

June 2017 – present day Member of the international technical committee "IEEE MTT-S – TC 24 RFID Technologies"

January 2018 – present day Member of the international technical committee "IMS Technical Paper Review Committee (TPRC)", subcommittee "26. 3D printed RF and microwave components and systems"

2014 – II Session – June/October 2014

 Education or training organisation's name and locality
 Subjects covered or skills acquired

 Qualification awarded
 Final degree mark

Date (from - to)
Education or training organisation's name and locality
Subjects covered or skills acquired
Qualification awarded
Average exam grade
Final degree mark
Thesis title

Thesis supervisors

Date (from-to)
 Education or training organisation's
 name and locality
 Subjects covered or skills acquired
 • Qualification awarded
 • Average exam grade
 • Final degree mark
 • Thesis title
 • Thesis supervisorsi

#### **PERSONAL SKILLS**

MOTHER TONGUE

OTHER LANGUAGE

• Reading

• Writing

• Speaking

COMMUNICATIONS SKILLS.

**ORGANIZATIONAL SKILLS** 

JOB-RELATED SKILLS

Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy Professional Engineer Licensure (Information Technology Class) Information Engineer 214/240

February 2012 – February 2014 Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy Master's course in Electronics and Telecommunications Engineering (LM-29) **Master's degree** 29.67/30 110/110 cum laude Design and experimental validation of microwave frequency doublers in cellulose-based substrates for harmonic RFID applications Prof. Federico Alimenti, Prof. Paolo Mezzanotte September 2008 – February 2012

September 2008 – February 2012 Università degli Studi di Perugia, Dipartimento di Ingegneria, via G. Duranti, 93, 06125 Perugia (PG), Italy Bachelor's course in Computer and Electronics Engineering (class n. 9) **Bachelor's degree** 28.67/30 110/110 cum laude Design of a time-to-digital measurement system Prof. Paolo Carbone

#### ITALIANO

#### ENGLISH

PROFICIENT (LEVEL CEFR C1) PROFICIENT (LEVEL CEFR C1) PROFICIENT (LEVEL CEFR C1)

- TUTORING FOR CALCULUS II, PRESENTING SCIENTIFIC PAPERS AT INTERNATIONAL CONFERENCES AND PERIODICAL REPORTS RELATED TO MY SCIENTIFIC ACTIVITY DURING PHD ALLOWED ME TO IMPROVE MY CAPABILITY TO EFFECTIVELY COMMUNICATE SCIENTIFIC CONCEPTS AND MY TECHNICAL LANGUAGE;
- LABORATORY ACTIVITIES, CARRIED OUT FOR MY RESEARCH BOTH IN ITALY AND ABROAD, ALLOWED ME TO DEVELOP RELATIONAL SKILLS WHICH ARE USEFUL FOR TEAMWORK.
- THE DESIGN ACTIVITY FOR SAIPEM SPA AND DRAFTING OF SCIENTIFIC PAPERS ALLWED ME TO IMPROVE MY CAPABILITY TO WORK WITH DEADLINES
- TUTORING BACHELOR'S AND MASTER'S CANDIDATES ALLOWED ME TO IMPROVE MY CAPABILITY TO MANAGE AND COORDINATE PEOPLE.
- APTITUDE FOR RESEARCH AND DEVELOPMENT ON WIRELESS SENSING AND ENERGY HARVESTING, TESTIFIED BY THE NUMEROUS PUBLICATIONS AND PRIZES REGARDING THESE SUBJECTS
- EXPERTISE IN ANTENNA AND MICROWAVE COMPONENTS DESIGN, PROTOTYPING AND TESTING;

- EXPERTIZE IN CIRCUITAL AND ELECTROMAGNETIC SIMULATIONS TOOLS, SUCH AS ADVANCED DESIGN SYSTEM, MOMENTUM AND CST;
- APTITUDE FOR LABORATORY ACTIVITIES MEASUREMENTS;
- KNOWLEDGE OF ADDITIVE MANUFACTURING TECHNOLOGIES (INK-JET PRINTING AND 3D PRINTING);
- EXPERIENCE IN TELECOMMUNICATION SYSTEM ISSUES (AT HARDWARE LEVEL) GAINED THROUGH MY RESEARCH ACTIVITY AND COURSES AT UNIVERSITY;
- GOOD COMMAND OF MICROSOFT OFFICE<sup>™</sup>, LATEX, CORELDRAW AND MATLAB

#### PUBLICATIONS

books/chapters

conferences

• international journals

F. Alimenti, *et al.*, "Smart Hardware for Smart Objects: Microwave Electronic Circuits to Make Objects Smart," *IEEE Microwave Magazine*, vol. 19, no. 6, pp. 48-68, Sept.-Oct. 2018.

V. Palazzi, J. Hester, J. Bito, F. Alimenti, C. Kalialakis, A. Collado, P. Mezzanotte, A. Georgiadis, L. Roselli, M. M. Tentzeris, "A Novel Ultra-Lightweight Multiband Rectenna on Paper for RF Energy Harvesting in the Next Generation LTE Bands", *IEEE Transactions on Microwave Theory and Techniques*, vol. 66, n.1, pp. 366-379, Jan. 2018.

V. Palazzi, F. Alimenti, C. Kalialakis, P. Mezzanotte, A. Georgiadis and L. Roselli, "Highly Integrable Paper-Based Harmonic Transponder for Low-Power and Long-Range IoT Applications," *IEEE Antennas and Wireless Propagation Letters*, vol. 16, pp. 3196-3199, 2017.

Alimenti, F.; Palazzi, V.; Mariotti, C.; Virili, M.; Orecchini, G.; Bonafoni, S.; Roselli, L.; Mezzanotte, P. A 24-GHz Front-End Integrated on a Multilayer Cellulose-Based Substrate for Doppler Radar Sensors. *Sensors* 2017, *17*, 2090.

Valentina Palazzi, Massimo Del Prete, Marco Fantuzzi, "Scavenging for Energy: A Rectenna Design for Wireless Energy Harvesting in UHF Mobile Telephony Bands", *IEEE Microwave Magazine*, vol.18, n.1, pp.91-99, Jan./Feb. 2017.

V. Palazzi, C. Mariotti, F. Alimenti, M. Virili, G. Orecchini, P. Mezzanotte and L. Roselli, "Demonstration of a Chipless Harmonic Tag working as Crack Sensor for Electronic Sealing Applications", *Wireless Power Transfer – Cambridge University Press, Special Issue: Chipless RFID*, pp.1-8, Nov. 2015.

F. Alimenti, C. Mariotti, V. Palazzi, M. Virili, G. Orecchini, P. Mezzanotte and L. Roselli, "Communication and Sensing Circuits on Cellulose", *Journal of Low Power Electronics and Applications*, Vol.5, No. 3, pp. 151-164, June 2015.

V. Palazzi, F. Alimenti, P. Mezzanotte, M. Virili, C. Mariotti, G. Orecchini and L. Roselli, "A Low-Power Frequency Doubler in Cellulose-Based Materials for Harmonic RFID Applications", *IEEE Microwave and Wireless Components Letters*, Vol.24, No.12, pp.896-898, Dec. 2014.

Luca Roselli, Paolo Mezzanotte, Valentina Palazzi, Stefania Bonafoni, Giulia Orecchini, Federico Alimenti, **"WPT-Enabling Distributed Sensing"**, in *Recent Wireless Power Transfer Technologies via Radio Waves*, River Publisher, pp. 173-208, 2018.

V. Palazzi, F. Gelati, U. Vaglioni, F. Alimenti, P. Mezzanotte, L. Roselli, "Leaf-Compatible Autonomous RFID-based Wireless Temperature Sensors for Precision Agriculture", accepted for publication in 2019 IEEE Topical Conference on Wireless Sensors and Sensor Networks (WiSNet), 20-23 January 2019.

Valentina Palazzi, Paolo Mezzanotte, Luca Roselli, **"A Novel Agile Phase-Controlled Beamforming Network Intended for 360° Angular Scanning in MIMO Applications"**, *2018 IEEE/MTT-S International Microwave Symposium (IMS)*, 10-15 June 2018, pp. 624-627.

Valentina Palazzi, Federico Alimenti, Paolo Mezzanotte, Giulia Orecchini, Luca Roselli, "Analysis of a multi-node system for crack monitoring based on zero-power wireless harmonic transponders on paper", 2018 IEEE Topical Conference on Wireless Sensors and Sensor Networks (WiSNet), 14-17 January 2018, pp. 92-95.

V. Palazzi, R. Bahr, B. Tehrani, J. Hester, J. Bito, F. Alimenti, P. Mezzanotte, L. Roselli, M. M. Tentzeris, "A Novel Additive-Manufactured Multiple-Infill Ultra-Lightweight Cavity-Backed Slot Antenna for UWB Applications", 2017 European Microwave Conference (EuMC), 10-12 October 2017, pp.1-4.

R. Bahr, Y. Fang, W. Su, B. Tehrani, V. Palazzi, M. M. Tentzeris, "**Novel Uniquely 3D Printed Intricate Voronoi and Fractal 3D Antennas**", 2017 IEEE MTT-S International Microwave Symposium (IMS), 4-9 June 2017, pp.1-4.

V. Palazzi, F. Alimenti, P. Mezzanotte, G. Orecchini, L. Roselli, "Zero-power, long-range, ultra low-cost harmonic wireless sensors for massively distributed monitoring of cracked walls", 2017 IEEE MTT-S International Microwave Symposium (IMS), 4-9 June 2017, pp.1-4.

J. Bito, V. Palazzi, J. Hester, R. Bahr, F. Alimenti, P. Mezzanotte, L. Roselli, M. M. Tentzeris, "Millimeter-wave ink-jet printed RF energy harvester for next generation flexible electronics" 2017 IEEE Wireless Power Transfer Conference (WPTC), 10-12 May 2017, pp.1-4.

V. Palazzi, C. Kalialakis, F. Alimenti, P. Mezzanotte, L. Roselli, A. Collado, A. Georgiadis, "Performance analysis of a ultra-compact low-power rectenna in paper substrate for RF energy harvesting", 2017 IEEE Topical Conference on Wireless Sensors and Sensor Networks (WiSNet), 15-18 Jan. 2017, pp.65-68.

F. Alimenti, C. Mariotti, M. Silvestri, V. Palazzi, M. Virili, P. Mezzanotte, L. Roselli, "Demonstration of 2.4 GHz Vector Modulator for RF Wireless Systems on Cellulosebased Substrates", 2016 IEEE International Conference on Electronics, Circuits and Systems (ICECS), 11-14 Dec. 2016, pp.1-4.

V. Palazzi, F. Alimenti, M. Virili, C. Mariotti, G. Orecchini, P. Mezzanotte, L. Roselli, "A novel compact harmonic RFID sensor in paper substrate based on a variable attenuator and nested antennas", 2016 IEEE MTT-S International Microwave Symposium (IMS), 22-27 May 2016, pp.1-4.

V. Palazzi, C. Kalialakis, F. Alimenti, P. Mezzanotte, L. Roselli, A. Collado, A. Georgiadis, "Design of a ultra-compact low-power rectenna in paper substrate for energy harvesting in the Wi-Fi band", 2016 IEEE Wireless Power Transfer Conference (WPTC), 5-6 May 2016, pp.1-4.

L Roselli, C Mariotti, M Virili, F Alimenti, G Orecchini, V Palazzi, P Mezzanotte, NB Carvalho, "<u>WPT related applications enabling Internet of Things evolution</u>", 2016 10th European Conference on Antennas and Propagation (EuCAP), 10-15 April 2016, pp.1-2.

R. A. A. Rodrigues, V. Palazzi, E. C. Gurjão, F. M. de Assis, S. Tedjini, F. Alimenti, L. Roselli, and P. Mezzanotte, "Design of Planar Resonators on Flexible Substrate for Chipless Tags Intended for Crack Sensing", 2015 IEEE Mediterranean Microwave Symposium (MMS), 30 Nov. - 2 Dec. 2015.

F. Alimenti, V. Palazzi, C. Mariotti, M. Virili, G. Orecchini and L. Roselli, and P. Mezzanotte, "24-GHz CW Radar Front-Ends on Cellulose-Based Substrates: a New Technology for Low-Cost Applications", 2015 IEEE MTT-S International Microwave Symposium (IMS), 17-22 May 2015

V. Palazzi, F. Alimenti, C. Mariotti, M. Virili, G. Orecchini and L. Roselli, and P. Mezzanotte, "Demonstration of a High Dynamic Range Chipless RFID Sensor in Paper Substrate based on the Harmonic Radar Concept", 2015 IEEE MTT-S International Microwave Symposium (IMS), 17-22 May 2015

V. Palazzi, P. Mezzanotte, L. Roselli, "Design of a Novel Antenna System Intended for Harmonic RFID Tags in Paper Substrate", 2015 IEEE Wireless Power Transfer Conference (WPTC), 13-15 May 2015

#### PATENTS AND TRADEMARKS

• Type of patent • Issue number Italian Patent 102018000006163

08/06/2018 Issue date Title RETE DI RIPARTIZIONE A RADIOFREQUENZA RICONFIGURABILE PRIZES AND AWARDS 22 June 2018 Date · Place of the award ceremony Naples (Italy) Sannino Prize for the best scientific work in the area of microwave electronics, awarded Description during the 50th annual meeting of the association "Società Italiana di Elettronica" (SIE-2018) Authors: Federico Alimenti, Valentina Palazzi, Domenico Zito, Paolo Mezzanotte, Luca Roselli Title of the paper: "Microwave oscillators on cellulose" Date 20 Aprile 2018 · Place of the award ceremony Rome (Italv) Prize IEEE MTT-S 2017 Italy Chapter - Center and Sourthern Italy, sponsored by "IEEE Description Microwave Theory and Techniques Society (MTT-S)". Motivation: "for the development of a multiband rectenna on innovative materials for LTE applications" Date 12 June 2017 Honolulu (Hawaii, USA) Place of the award ceremony Prize "IEEE MTT-S Graduate Fellowship 2017", sponsored by "IEEE Microwave Theory Description and Techniques Society (MTT-S)". Title of the project: "Novel compact zero-power wireless sensors based on the harmonic radar principle, featuring low environmental impact and high integrability, for the next generation IoT applications". Web-site: ttps://www.mtt.org/graduate-fellowship-recipients Date 22 May 2016 San Francisco (California, USA) Place of the award ceremony First prize in the "Student Design Competition" entitled "Wireless Energy Harvesting", Description sponsored by "IEEE Microwave Theory and Techniques Society (MTT-S) - Technical Committee (TC) 26, and held during the conference "2016 IEEE MTT-S International Microwave Symposium (IMS)" Date 14 November 2015 Castelldefelds (Barcelona, Spain) Place of the award ceremony Member of the winning team of the "Student Design Competition" held during the course Description entitled "Wireless Neworks: From Energy Harvesting to Information Processing", offered by Centre Tecnòlogic de Telecomunications de Catalunya - CTTC and organized in collaboration with "European School of Antennas" and the cost action EU COST IC1301 "Wireless Power Transmission for Sustainable Electronics (WiPE)" Date 29 May 2013 Perugia (Italy) · Place of the award ceremony Best student in the Master's degree "Electronics and Telecommunications Engineering" Description -first year of course, The prize was part of the project: "Riconoscere e valorizzare il merito, I percorsi di eccellenza, incontro con l'impresa e le professioni", Università degli Studi di Perugia, Facoltà di Ingegneria, Perugia, Italy STUDY ABROAD PERIODS AND INTERNATIONAL SCHOOLS · Date (from - to) 28 August – 1 September 2017

Summer School entitled "Test Development Engineering - Challenging the limits"

Program

<ul> <li>Place</li> </ul>	Infineon Technologies, Villach, Austria
Description	Lectures and laboratory activity concerning test development for automotive components. A final assessment test was also carried out.
• Date (from - to)	December 2016 – April 2017
<ul> <li>Program</li> </ul>	Internship
• Place	Georgia Institute of Technology, Electrical and Computer Engineering, ATHENA laboratory, Atlanta (Georgia, USA)
Description	Research activity related to additive manufacturing (ink-jet and 3D printing), millimeter-wave RF energy harvesting, and design and manufacturing of retro-directive transponders, under the supervision of Prof. Manos Tentzeris.
Date (from - to)	18 – 20 April 2016
• Program	School entitled ""International Spring School on Elecromagnetics and Emerging Technologies for Pervasive Applications: Internet of Things, Health and Safety"
Place	Villa Griffone - Guglielmo Marconi Foundation, Bologna, Italy
Description	Lectures regarding technologies for the Internet of Things. The school was organized by Prof. Costanzo and Masotti, and sponsored by EU COST Action IC1301 "Wireless Power Transmission for Sustainable Electronics" (WiPE)
• Date (from - to)	20 January– 10 February 2016
• Program	Short-term scientific mission sponsored by EU COST Action IC1301 "Wireless Power Transmission for Sustainable Electronics" (WiPE)
• Place	Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Castelldefelds (Barcelona, Spain)
Description	Development and test of zero-power wireless sensors based on the concept of the harmonic radar
• Date (from - to)	9 – 13 November 2015
• Program	School entitled "Wireless Networks: From Energy Harvesting to Information Processing"
• Place	Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Castelldefelds (Barcelona, Spain)
Description	Lectures and Student Design Competition related to the design of a rectenna in WiFi band. A final assessment test was also carried out. The school was offered by CTTC and organized in collaboration with "European School of Antennas" and EU COST action IC1301 "Wireless Power Transmission for Sustainable Electronics (WiPE)"
• Date (from - to)	27 July – 21 August 2015
• Program	Intensive English language course including "Cambridge Advanced English (CAE) – CEFR C1" preparation course and exam
Place	Language Centre, University College Cork, Cork, Ireland
Description	20 hourse tuition per week for four weeks and CAE exam
• Date (from - to)	3 June 2015 – 6 September 2015
<ul> <li>Program</li> </ul>	Internship
Place	Tyndall National Institute, University College Cork, Theory, Modeling and Design centre, Circuits and Systems group
Description	Research activity regarding the design of microwave oscillators on cellulose substrates, under the supervision of Prf. Domenico Zito
• Date (from - to)	29 July – 23 August 2013
Program	Intensive English language course including "First Certificate in English (FCE) – CEFR B2" preparation course and exam
Place	Language Centre, University College Cork, Cork, Ireland
Description	20 hourse tuition per week for four weeks and FCE exam

• Date (from - to)

Program

Place

Description

31 July – 7 August 2010

Summer school entitled "International Summer School and Conference on Sustainable Strategies and Operations"

Columbia University, New York, USA

Lectures from experts coming from universities and companies of international relevance, such as MTI Sloan School of Management, Bradford University School of Management, NYU Poly, Columbia University, Unilever, Eni, regarding the implementation of strategies for the economic and environmental sustainability of industrial activities.

The school was organized by Università degli Studi di Perugia and Politecnico of Bari.