

DASKALAKIS SPYRIDON-NEKTARIOS

PhD Candidate
School of Engineering and Physical Sciences
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PERSONAL INFORMATION

- Date of birth: 11 June 1991
- Citizenship: Greek

EDUCATION

- **Doctor of Philosophy**
School of Engineering & Physical Sciences,
Heriot-Watt University, Edinburgh, EH14 4AS, United Kingdom
(Start: Mar. 2017)
Thesis: “Additive manufacturing of millimetre wave wireless sensors based on nanoparticle inks for pervasive Internet of Things (IoT) sensing and 5G communications.”
Advisor: Associate Professor Apostolos Georgiadis
- **Master of Science** (2-year program)
School of Electrical and Computer Engineering, Technical University of Crete, Chania, Greece,
(Oct. 2014 - Jul. 2016)
Thesis: “*Environmental Scatter Radio Sensors with RF Energy Harvesting*”
Advisor: Associate Professor Aggelos Bletsas
GPA: 9.67/10.0
- **Diploma of Engineering** (5-year program)
School of Electrical and Computer Engineering, Technical University of Crete, Chania, Greece,
(Sep. 2009 - Sep. 2014)
Thesis: “*Energy Harvesting and Sensing for Backscatter Tags*”
Advisor: Associate Professor Aggelos Bletsas
GPA: 8.66/10.0 (“Excellent”).
Class Ranking: 1st (out of 27)

AWARDS AND DISTINCTIONS

- **Member of Group team ASTRAPI** wins Seeding Ideas Harvesting the Future, Technical University of Crete, Innovation Contest Jul. 2016.
- **Onassis Foundation MSc. Scholarship**, for the academic year 2015-2016.
- **3rd Student Paper Content Award**, Soil moisture Wireless Sensor Network with Analog Scatter Radio Low, Ultra-Low Cost and Low Complexity, COST WIPE, Thessaloniki, Greece, Sept. 2015.
- **Co-Founder at Kaloudia Project.**
Site: www.kaloudia.com
- **Citation for 5 years Excellent Graduation**, Technical University of Crete 2014.
- **Founder for Aristeos Project.**
Site: www.aristeos.eu
- **Clinton Global Initiative University (CGIU) and Angelopoulos Fellowship 2014**, Phoenix, Arizona, Mar. 19 - 24th, 2014.
Project: "Detection and population monitoring of olive fly with image processing technology."
Site: www.angelopouloscgiu.org
- **Excellence Award**, Award for the top of the class. Technical University of Crete, for the academic year 2012-2013.
- **Undergraduate Fellowship Award**, Office of Sponsored Research, awarded to the top 10 of class (100€). Technical University of Crete, for the academic year 2009-2010.

RESEARCH INTERESTS

- Wireless Sensor Networks for environmental applications
- Low-cost and Low-energy Wireless Systems
- RF Engineering and Software-Defined Radio (RTL-SDR)
- Backscatter Radio Communication
- RF Energy Harvesting

LANGUAGES

- Greek Native Speaker
- English B2 Language Certificate

JOURNAL PUBLICATIONS

1. S.N. Daskalakis, S.D. Assimonis, E. Kampionakis and A. Bletsas, "Soil Moisture Scatter Radio Networking with Low Power", IEEE Transactions on Microwave Theory and Techniques (TMTT), Special Issue on RFID Sensing & Imaging, Vol. 64, No. 7, pp. 2338-2346, Jul. 2016.
2. S.D. Assimonis, S.N. Daskalakis and A. Bletsas, "Sensitive and Efficient RF Harvesting Supply for Battery-less Backscatter Sensor Networks", IEEE Transactions on Microwave Theory and Techniques (TMTT), Vol. 64, No. 4, pp. 1327-1338, Apr. 2016.

CONFERENCE PUBLICATIONS

1. S.N. Daskalakis, A. Georgiadis, A. Collado and M.M. Tentzeris, "An UHF rectifier with 100% bandwidth based on a ladder LC impedance matching network, IEEE European Microwave Week (EuMW) (submitted), Nuremberg, Germany Oct. 2017.
2. S.N. Daskalakis, J. Kimionis, A. Collado, M.M. Tentzeris and A. Georgiadis, "Ambient FM Backscattering for Smart Agricultural Monitoring", IEEE MTT-S International Microwave Symp. (IMS), Honolulu, Hawaii, USA, Jun. 2017.
3. A. Servent, S.N. Daskalakis, A. Collado and A. Georgiadis, "A Proximity Wireless Sensor Based on Backscatter Communication", International Applied Computational Electromagnetics Society (ACES) Symp., Firenze, Italy, Mar. 2017.
4. G. Vougioukas, S. N. Daskalakis and A. Bletsas, "Could Battery-less Scatter Radio Tags Achieve 270-meter Range?", IEEE Wireless Power Transfer Conf. (WPTC), Aveiro, Portugal, Mar. 2016.
5. S. N. Daskalakis, A. Georgiadis, A. Bletsas, C. Kalialakis "Dual Band RF Harvesting with Low-Cost Lossy Substrate for Low-Power Supply System", accepted in IEEE Europ. Conf. on Antennas and Propagation (EuCAP), Davos, Switzerland, Apr. 2016.
6. S. N. Daskalakis, S. D. Assimonis, E. Kampionakis and A. Bletsas, "Soil Moisture Wireless Sensing with Analog Scatter Radio, Low Power, Ultra-Low Cost and Extended Communication Ranges", in Proc. IEEE Sensors Conf., Valencia, Spain, Nov. 2014, pp. 122-125.
7. S. D. Assimonis, S. N. Daskalakis and A. Bletsas, "Efficient RF Harvesting for Low-Power Input with Low-Cost Lossy Substrate Rectenna Grid", in Proc. IEEE Conf. on RFID Technology and Applications (RFID-TA), Tampere, Finland, Sep. 2014, pp. 1-6.

INTERNSHIP AND WORK EXPERIENCE

- COST WiPE Short Term Scientific Mission (STSM).
The School of Electrical and Computer Engineering, Georgia Institute of Technology
Atlanta, GA 30332-0250
(Oct. - Dec. 2016).

- Fab Lab Manager
School of Electrical and Computer Engineering Technical University of Crete, Chania, Greece,
(Sept. 2015 - Jul. 2016).
- International Spring School on Electromagnetics and emerging technologies for pervasive applications:
Internet of Things, Health and Safety
Villa Griffone - Guglielmo Marconi Foundation, Bologna, Italy,
(Apr. 2016).
- European School of Antennas - ESoA2015.
Site: esoa2015.cttc.cat
Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Barcelona, Spain,
(Oct. 2015).
- COST WiPE Short Term Scientific Mission (STSM).
Site: www.cost-ic1301.org
Centre Tecnològic de Telecomunicacions de Catalunya (CTTC), Barcelona Spain,
(Jun. - Jul. 2015).
- Research Assistant in BLASE (Backscatter Networks for Large-Scale Environmental Sensing) Project.
Site: blase.tuc.gr
School of Electrical and Computer Engineering Technical University of Crete, Chania, Greece,
(Dec. 2014 - Dec. 2015).
- Internship in Renewable Energy Company.
Aenaos Energy Systems, Heraklion, Greece,
(Jun. 2011 - Aug. 2011).
- Internship in Maintenance Department of Wind Park.
IWECO MV SA, Megali Vrysi, Heraklion, Greece,
(Jun. 2012 - Aug. 2012).

ACADEMIC EXPERIENCE

- Teaching Assistant, Telecom Lab, Technical University of Crete.
Synthesis and Analysis of Telecommunication Modules,
Academic Year, (2014 - 2015).

TECHNICAL SKILLS

- Programming Languages: C, Java, MySQL, HTML.
- Software Development Tools: Mathworks MATLAB, Microsoft Visual Studio, Eclipse IDE, Agilent Advanced Design System (ADS), Network Simulator ns-2.
- Application Software: TEX (LATEX, BibTEX), Microsoft Office, OpenOffice.
- Embedded Systems: Software and hardware development with MSU and DSP platforms (MSP430FR and C8051F320 MCU, CC2500 Chipcon Radio, ATmega2560, ARM1176JZF-S).

- Hardware Development Tools: VHDL language with Xilinx ISE and Embedded Systems prototyping with Xilinx EDK, Arduino, Raspberry Pi.
- Computer-Aided Design: CadSoft Eagle, Magic VLSI layout tool (Open Circuit Design).
- Operating Systems: Microsoft Windows, Linux (Ubuntu, Kali Linux, Raspbian, Debian).
- SCADA (Supervisory Control and Data Acquisition) for energy management: Remote supervision and control of wind turbines and solar panel trackers.
- PLC (Programmable Logic Controller): Programming and installation.
(Software: SIEMENS SIMATIC STEP 7, PLC model: SIEMENS S7-1200)

SELECTED COURSEWORK

- Special Topics in Design of Analogue CMOS Circuits.
Instructor: M. Bucher, Grade: 10/10.
- Analysis and Synthesis (Design) of Telecommunications Modules.
Textbook: RF Microelectronics, by B. Razavi,
Instructor: A. Bletsas, Grade: 8.0/10.
- Modelling and Performance Evaluation of Communications Networks.
Textbook: Introduction to Stochastic Processes, by E. Cinlar,
Instructor: M. Paterakis, Grade: 8.5/10.
- Design of VLSI and ASIC.
Textbook: Instructor's Notes,
Instructor: E. Koutroulis, Grade: 9.5/10.
- Statistical Modelling and Pattern Recognition.
Textbook: "Pattern Classification", by R. O. Duda, P. E. Hart, D. G. Stork,
Instructor: V. Digalakis, Grade: 9.5/10.
- Electrical Measurements and Sensors.
Textbook: Instructor's Notes,
Instructor: K. Kalaitzakis, Grade: 9/10.

Other

- Data Acquisition and Signal Conditioning Seminar at Technical University of Crete, National Instruments Certification 17th May 2013.

OTHER INTERESTS - EXTRA CURRICULAR ACTIVITIES

- IEEE Student Member.
- Chair of IEEE TUC Student Branch (2014-2015). www.ieeesb.tuc.gr

- Old Member of TUC Radio Team (“Radio Entasi”). www.entasiradio.tuc.gr
- Cycling
- PCB Design & 3D Printing

REFERENCES

- **Apostolos Georgiadis** (Ph.D. Supervisor)
Associate Professor
School of Engineering & Physical Sciences; Sensors, Signals & Systems
Heriot-Watt University
Edinburgh EH14 4AS United Kingdom
e-mail: a.georgiadis@hw.ac.uk

- **Manos M. Tentzeris** (Short Term Scientific Mission Supervisor)
Ken Byers Professor in Flexible Electronics
School of Electrical and Computer Engineering
Georgia Institute of Technology
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- **Matthias Bucher**
Associate Professor, Electronics and Computer Architecture Division
School of Electrical and Computer Engineering
Technical University of Crete
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- **Aggelos Bletsas** (Diploma Thesis & Master Supervisor)
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