



IC1301 -WiPE

Wireless Power Transmission for Sustainable Electronics

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EUROPEAN COOPERATION
IN SCIENCE AND TECHNOLOGY



Journal papers 2015 – Q1 2016 (13)

1. M. Đokić, V. Radonić, Anton Pleteršek, Urška Kavčič, V. Crnojević-Bengin, T. Muck: "Comparison between the characteristics of screen and flexographic printing for RFID applications," *Informacije MIDEM - Journal of microelectronics, electronic components and materials*, Vol. 45, No 1, pp. 3-11, 2015.
2. C. Konstantopoulos, E. Koutroulis, N. Mitianoudis and A. Bletsas, "Converting a Plant to a Battery and Wireless Sensor with Scatter Radio and Ultra-Low Cost", *IEEE Transactions on Instrumentation & Measurement (IM)*, Vol. 65, No. 2, pp. 388-398, Feb. 2016.
3. N. Kargas, F. Mavromatis and A. Bletsas, "Fully-Coherent Reader with Commodity SDR for Gen2 FM0 and Computational RFID", *IEEE Wireless Communications Letters (WCL)*, Vol. 4, No. 6, pp. 617-620, Dec. 2015. Software code available online, for coherent Gen2 RFID reception and a single RF card with USRP2.
4. N. Fasarakis-Hilliard, P. Alevizos and A. Bletsas, "Coherent Detection and Channel Coding for Bistatic Scatter Radio Sensor Networking", *IEEE Transactions on Communications (TCOM)*, Vol. 63, No. 5, pp. 1798-1810, May 2015.
5. B. K. Tehrani, C. Mariotti, B. S. Cook, L. Roselli, and M. M. Tentzeris, "Development, characterization, and processing of thin and thick inkjet-printed dielectric films," *Org. Electron.*, vol. 29, pp. 135–141, 2016.
6. F. Alimenti, C. Mariotti, V. Palazzi, M. Virili, G. Orecchini, P. Mezzanotte, and L. Roselli, "Communication and sensing circuits on cellulose," *J. Low Power Electron. Appl.*, vol. 5, no. 3, pp. 151–164, 2015.
7. M. Virili, A. Georgiadis, A. Collado, K. Niotaki, P. Mezzanotte, L. Roselli, F. Alimenti, and N. B. Carvalho, "Performance improvement of rectifiers for WPT exploiting thermal energy harvesting," *Wirel. Power Transf.*, vol. 2, no. 01, pp. 22–31, 2015.
8. 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," *Wirel. Power Transf.*, no. 11, pp. 1–8, 2015.
9. C. Mariotti, W. Su, B. Cook, L. Roselli, and M. Tentzeris, "Development of Low Cost, Wireless, Inkjet Printed Microfluidic RF Systems and Devices for Sensing or Tunable Electronics," *IEEE Sens. J.*, vol. 15, no. 6, pp. 3156 – 3163, 2015.
10. C. Mariotti, S. Member, B. S. Cook, L. Roselli, S. Member, and M. M. Tentzeris, "State-of-the-Art Inkjet-Printed Metal-Insulator-Metal (MIM) Capacitors on Silicon Substrate," *IEEE Microw. Wirel. COMPONENTS Lett.*, vol. 25, no. 1, pp. 2014–2016, 2015.
11. Hierarchical, Collaborative Wireless Energy Transfer in Sensor Networks with Multiple Mobile Chargers. Adelina Madhja, Sotiris Nikolettseas, Theofanis P. Raptis. *Computer Networks*, Volume 97, Pages 98-112, Elsevier, March 2016.
12. Improving Sensor Network Performance with Wireless Energy Transfer. Constantinos Marios Angelopoulos, Sotiris Nikolettseas, Theofanis P. Raptis, Christoforos Raptopoulos, Filippos Vasilakis. *International Journal of Ad Hoc and Ubiquitous Computing*, Volume 20, Pages 159-171, Inderscience Publishers, 2015.
13. Distributed Wireless Power Transfer in Sensor Networks with Multiple Mobile Chargers. Adelina Madhja, Sotiris Nikolettseas, Theofanis P. Raptis. *Computer Networks*, Volume 80, Pages 89-108, Elsevier, April 2015.

Conference papers 2015 – Q1 2016 (22)

1. P. Kant, J. J. Michalski, "Concept of Wireless Power Distribution System for Wireless Sensor Networks", First International Conference on Innovative Research and Maritime, Applications of Space Technology, IRMAST 2015, Gdansk, Poland
2. K. Tountas, P. Alevizos, A. Tzedaki and A. Bletsas, "Bistatic Architecture Provides Extended Coverage and System Reliability in Scatter Sensor Networks", Proc. 5th Int. Workshop on RFID Technology, Oct. 2015, Rosenheim, Germany.
3. P.N. Alevizos and A. Bletsas, "Noncoherent Composite Hypothesis Testing Receivers for Extended Range Bistatic Scatter Radio WSNs", IEEE International Conference on Communications (ICC), June 2015, London, UK.
4. N. Fasarakis-Hilliard, P.N. Alevizos and A. Bletsas, "Coherent Detection and Channel Coding for Bistatic Scatter Radio Sensor Networking", IEEE International Conference on Communications (ICC), June 2015, London, UK.
5. P.N. Alevizos, Y. Fountzoulas, G.N. Karystinos and A. Bletsas, "Noncoherent Sequence Detection of Orthogonally Modulated Signals in Flat Fading with Log-Linear Complexity", IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 19-24 April 2015, Brisbane, Australia. **Received conference-wide student paper award and best student paper award in Communications and Networks track.**
6. K. Tountas, A.G. Dimitriou, A. Bletsas and J.N. Sahalos, "Mobility Improves Performance of RFID Library Systems", IEEE European Conference on Antennas and Propagation (EUCAP), April 2015, Lisbon, Portugal.
7. [M. Virili, A. Georgiadis, F. Mira, A. Collado, F. Alimenti, P. Mezzanotte, and L. Roselli, "EH Performance of an Hybrid Energy Harvester for Autonomous Nodes," 2016, pp. 71–74.
8. V. Palazzi, F. Alimenti, C. Mariotti, M. Virili, G. Orecchini, L. Roselli, and P. Mezzanotte, "Demonstration of a High Dynamic Range Chipless RFID Sensor in Paper Substrate based on the Harmonic Radar Concept," in IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM DIGEST, 2015, pp. 0–3.
9. S. Barmada, P. Mezzanotte, L. Roselli, and M. Tucci, "Full Simulation of a Wireless Power Transfer System with Power Line Communication Integration," in ACES, 2015, pp. 2–3.
10. M. Virili, L. Roselli, F. Alimenti, P. Mezzanotte, S. Moscato, L. Silvestri, M. Bozzi, and L. Perregriani, "GRETA Approach Towards New Green Material Technologies," in EURASIP RFID 2015, 2015, pp. 9–15.
11. L. Roselli, C. Mariotti, P. Mezzanotte, F. Alimenti, G. Orecchini, M. Virili, and N. B. Carvalho, "Review of the present technologies concurrently contributing to the implementation of the Internet of Things (IoT) paradigm : RFID , Green Electronics , WPT and Energy Harvesting," in IEEE Radio Wireless Week, 2015, pp. 1–3.
12. V. Palazzi, P. Mezzanotte, and L. Roselli, "Design of a Novel Antenna System Intended for Harmonic RFID Tags in Paper Substrate," in Wireless Power Transfer Conference, 2015, pp. 6–9.
13. C. Mariotti, R. Gonçalves, M. Virili, N. B. Carvalho, L. Roselli, and P. Pinho, "Dual- frequency Antennas Embedded into the Floor for Efficient RF ' Energy Evaporation ,'" in IEEE ECTC, 2015, pp. 2066–2070.
14. C. Mariotti, R. Gon, L. Roselli, N. B. Carvalhot, and P. Pino, "' Energy Evaporation ' : the New Concept of Indoor Systems for WPT and EH Embedded into the Floor," in IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM DIGEST, 2015, pp. 0–3.
15. N. Decarli, A. Guerra, F. Guidi, M. Chiani, D. Dardari, A. Costanzo, M. Fantuzzi, D. Masotti, S. Bartoletti, J. S. Dehkordi, A. Conti, A. Romani, M. Tartagni, R. Alesii, P. Di Marco, F. Santucci, L. Roselli, M. Virili, P. Savazzi, and M. Bozzi, "The GRETA Architecture for Energy Efficient Radio Identification and Localization," in EURASIP RFID 2015, 2015, pp. 1–8.
16. C. Mariotti, B. S. Cook, F. Alimenti, L. Roselli, and M. M. Tentzeris, "Additively Manufactured Multilayer High Performance RF Passive Components on Cellulose Substrates for Internet-of-Things Electronic Circuits," in IEEE MTT-S INTERNATIONAL MICROWAVE SYMPOSIUM DIGEST, 2015, pp. 2–5.
17. R. A. A. Rodrigues, F. M. De Assis, V. Palazzi, F. Alimenti, L. Roselli, and P. Mezzanotte, "Design of Planar Resonators on Flexible Substrate for Chipless Tags Intended for Crack Sensing," in 15th Mediterranean Microwave Conference 2015, 2015, pp. 447–450.
18. V. Palazzari, P. Mezzanotte, F. Alimenti, F. Fratini, G. Orecchini, M. Virili, C. Mariotti, and L. Roselli, "Leaf compatible ' eco-friendly ' temperature sensor clip for high density monitoring wireless networks," in 15th Mediterranean Microwave Conference 2015, 2015.
19. M. Virili, A. Georgiadis, A. Collado, P. Mezzanotte, and L. Roselli, "EM Characterization of a Patch Antenna with Thermo-Electric Generator and Solar Cell for Hybrid Energy Harvesting," in Radio Wireless Week 2015, 2015, pp. 44–46.
20. An Experimental Evaluation of Wireless Power Transfer Protocols in Mobile Ad hoc Networks. Sotiris Nikolettseas, Theofanis P. Raptis, Alexandros Souroulagkas, Dimitrios Tsolovos. IEEE Wireless Power Transfer Conference, Boulder, CO USA, (WPTC 2015).
21. Low Radiation Efficient Wireless Energy Transfer in Wireless Distributed Systems. Sotiris Nikolettseas, Theofanis P. Raptis, Christoforos Raptopoulos. 35th IEEE International Conference on Distributed Computing Systems, Columbus, OH USA, (ICDCS 2015). Acceptance Rate: 13%
22. Hierarchical, Collaborative Wireless Charging in Sensor Networks. Adelina Madhja, Sotiris Nikolettseas, Theofanis P. Raptis. IEEE Wireless Communications and Networking Conference, New Orleans, LA USA, (WCNC 2015).

Horizon2020 proposals

1. Proposal H2020 submitted, entitled:

1. ANTARES: Centre of Excellence for Advanced Technologies in Sustainable Agriculture and Food Security H2020- WIDESPREAD- 2014
Teaming 2015-2016, BioSense Institute



STSM impact

- » STSM of S.N. Daskalakis from TU Crete to CTTC, June 2015 resulted to paper S.N. Daskalakis, A. Georgiadis, A. Bletsas and C. Kalialakis, "Dual Band RF Harvesting with Low-Cost Lossy Substrate for Low-Power Supply System", IEEE European Conference on Antennas and Propagation (EUCAP), April 2016, Davos, Switzerland.
- » STSM of V. Palazzi from University of Perugia, Italy, to CTTC, Spain, in January 2016 resulted in the paper: 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', IEEE Wireless Power Transfer Conference (WPTC), May 2016, Aveiro, Portugal.
- » STSM of C. Mariotti from University of Perugia, Italy, to Georgia Tech, USA, in April – May 2015, resulted in the paper: C. Mariotti, M.M. Tentzeris, L. Roselli, 'Demonstration and characterization of fully 3D-printed RF structures', IEEE 15th Mediterranean Microwave Symposium (MMS), 2015
- » STSM of C. Mariotti from University of Perugia, Italy, to IT – University of Aveiro, Portugal, in Sept. 2014, resulted in the papers:
 - > C. Mariotti, R. Gonçalves, L. Roselli, N.B. Carvalho, P. Pinho, 'Dual-frequency antennas embedded into the floor for efficient RF energy evaporation', IEEE 65th ECTC , 2015
 - > C. Mariotti, R. Gonçalves, L. Roselli, N.B. Carvalho, P. Pinho, 'Energy Evaporation: the new concept of indoor systems for WPT and EH embedded into the floor, IEEE MTT-S IMS, 2015

Special sessions and Workshop organization

1. WiSNET 2016 Special Session Organization
“WSN technologies enabling Internet of Things “ organizer Luca Roselli,
contributors from COST: Nuno B. Carvalho,
Maurisio Bozzi, Apostolos Georgiadis,
Alessandra Costanzo,



Others

Grants for summer schools and to attend conferences with impact on the PhD students and researchers activities:

- K. Tountas from TU Crete was sponsored to present paper at EUCAP15: K. Tountas, A.G. Dimitriou, A. Bletsas and J.N. Sahalos, "Mobility Improves Performance of RFID Library Systems", IEEE European Conference on Antennas and Propagation(EUCAP), April 2015, Lisbon, Portugal.
- V. Palazzi from University of Perugia was sponsored to attend the training school entitled: "Wireless Networks: From Energy Harvesting to Information Processing" held in Castelldefels, Barcelona, from 9 to 13 November 2015.
- V. Palazzi from University of Perugia was sponsored to attend the training school entitled: "International Spring School on Electromagnetics and emerging technologies for pervasive applications: Internet of Things, Health and Safety" held in Bologna, Italy, from 18 to 20 April 2016.
- C. Mariotti from University of Perugia was sponsored to present a paper at EuMW 2014: W. Su, C. Mariotti, B.S. Cook, S. Lim, L. Roselli, M.M. Tentzeris 'A metamaterial-inspired temperature stable inkjet printed microfluidic tunable bandstop filter', European Microwave Week, Rome, Italy, 2014
- C. Mariotti from University of Perugia won the first Women in Wireless Power Transfer Grant to attend the 2016 Wireless Power Transfer Conference in Aveiro Portugal.

