



IC1301 -WiPE

Wireless Power Transmission for Sustainable Electronics

**WG1: Far-field Wireless
Power Transmission
Aveiro, May 3-4, 2016**

Chair: Alessandra Costanzo

Vice-Chair: Ana Collado





STSM

4

Journals

7



Papers

Conferences

19

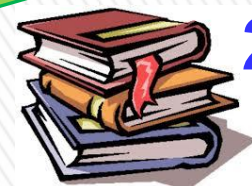


WG1

activities!

Books

2



School

1



Projects

proposals

6



**Workshops/
Conferences**

5



2



IC 1301 - WIPE

International Spring School
on

Electromagnetics and emerging technologies for pervasive applications: Internet of Things, Health and Safety



18th – 20th April, 2016

Bologna, Italy

Organizers:

Prof. Alessandra Costanzo, Prof. Diego Masotti



Some numbers..

3 days & 70 people

>50 grant applications!



50 Attendees

40 Students granted by COST

1 Student: "Women in WPT" prize

2 Students

7 Researchers

~16'000€

~24'000€

COST support

~8'000€

20 Speakers

10 COST IC1301 members

Speakers			
Prof. M. Bozzi (Italy)	Prof. N.B. Carvalho (Portugal)	Prof. J.C. Chiao (U.S.A.)	Prof. G.E. Corazza (Italy)
Prof. A. Costanzo (Italy)	Prof. D. Dardari (Italy)	Prof. B. Fraboni (Italy)	Prof. G. Marrocco (Italy)
Prof. D. Masotti (Italy)	Prof. P.D. Mitcheson (UK)	Prof. M. Mongiardo (Italy)	Prof. G. Monti (Italy)
Prof. P. Nepa (Italy)	Prof. H. Rogier (Belgium)	Prof. L. Roselli (Italy)	Prof. D. Schreurs (Belgium)
Prof. S. Tedjini (France)	Prof. J.L.G. Tornero (Spain)	Prof. F. Viani (Italy)	Prof. H. Visser (The Netherlands)





Women in Wireless Power Transfer (WPT) Award

- Initiative to encourage and sustain women, especially young researchers, to actively participate in emerging technology research fields, as the Wireless Power Transfer -

AWARD consists of **recognizing and providing financial assistance to participate to the IC1301 WiPE COST meetings and schools.**



Winner: **Sara Amendola**
University of Roma Tor Vergata





18th April 2016
- Start of School -

**..and now let's
try to fit all
together in the
pictures!**



20th April 2016
- End of School -

Journals:



1. M. Polivka, M. Svanda, "Stepped Impedance Coupled-Patches Tag Antenna for Platform-Tolerant UHF RFID Applications," IEEE Transactions on Antennas and Propagation, vol. 63, no. 9, pp. 3791-3797, 2015.
2. Schneider, J., Mrnka, M., Gamec, J., Gamcova, M., Raida, Z. Vivaldi antenna for RF energy harvesting, Radioengineering, submitted.
3. J. Gamec, J. Schneider, M. Gamcova, "Vivaldi antenna for UWB sensor networks," in Elektronika ir Elektrotechnika" (IF-0,561 (2014); ISSN: 1392-1215) Accepted for publication
4. Mrnka, M., Vasina, P., Kufa, M., Hebelka, V., Raida, Z. The RF energy harvesting antennas operating in commercially deployed frequency bands: A comparative study, International Journal of Antennas and Propagation, 2016, vol. 2016, no. 1, p. 1-11. ISSN: 1687-5877.
5. H. Visser, S. Keyrouz and B. Smolders, 'Optimized Rectenna Design', Wireless Power Transfer, Vol. 2, No. 1, pp. 44-50.
6. M. Stoopman, Y. Liu, H. Visser, K. Philips and W. Serdijn, 'Codesign of Electrically Short Antenna-Electronics Interfaces in the Receiving Mode', IEEE Transactions on Circuits and Systems – II: Express Briefs, Vol. 62, No. 7, pp. 711-715.
7. S. Yoshida, N. Hasegawa and S. Kawasaki, "Experimental Demonstration of Microwave Power Transmission and Wireless Communication Within a Prototype Reusable Spacecraft," in IEEE Microwave and Wireless Components Letters, vol. 25, no. 8, pp. 556-558, Aug. 2015.



Conferences:



1. M. Polivka, J. Havlicek, M. Svanda, J. Machac, "Improvement of RCS Response of U-Shaped Strip-Based Chipless RFID Tags," Proceedings of 45th European Microwave Conference 2015, Paris, France, pp. 107-110, 2015
2. Correia, R., Carvalho, N. B. De, Fukuda, G., Miyaji, A., & Kawasaki, S. (2015). Backscatter Wireless Sensor Network with WPT Capabilities. In International Microwave Symposium (pp. 1–4).
3. Correia, R., Carvalho, N. B., & Kawasaki, S. (2015). Backscatter radio coverage enhancements using improved WPT signal waveform. In 2015 IEEE Wireless Power Transfer Conference (WPTC) (pp. 1–3).
4. S. N. Daskalakis, A. Georgiadis, A. Bletsas, C. Kalialakis, "Dual Band RF Harvesting with Low-Cost Lossy Substrate for Low-Power Supply System", EuCAP 2016
5. Mrnka, M.; Grosinger, J.; Raida, Z. Wide-band dielectric resonator antennas for RF energy harvesting, In Proceedings of 14th Conference on Microwave Techniques COMITE 2015, Pardubice: University of Pardubice, 2015, p. 40-43. ISBN: 978-1-4799-8121-2.
6. Kotol, M.; Vèlim, J.; Raida, Z. Neural modeling of in-vehicle wireless channels: wave propagation along the vehicle body at 60 GHz, In 2015 IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2015), Turin(Italy):Politecnico di Torino, 2015, p. 279-282. ISBN: 978-1-4799-7808-3.



Conferences:



7. Vèlim, J., Raida, Z., Làcik, J., Lambor, J., Kotol, M. On-roof wireless link operating at 60 GHz, In 2015 IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2015), Turin (Italy): Polytecnico di Torino, 2015, p. 153-156. ISBN: 978-1-4799-7808-3.
8. Mrnka, M., Raida, Z. Rectangular dielectric resonator antenna with switchable radiation pattern, In 2015 IEEE-APS Topical Conference on Antennas and Propagation in Wireless Communications (APWC 2015), Turin (Italy): Polytecnico di Torino, 2015, p. 272-275. ISBN: 978-1-4799-7808-3.
9. Vèlim, J., Lambor, J., Raida, Z. Wireless power transfer along a car body at 60 GHz, In 2015 Loughborough Antennas and Propagation Conference (LAPC 2015), Loughborough (UK), Loughborough University, p. 136-139. ISBN: 978-1-4799-8942-3.
10. Hebelka, V., Vèlim, J., Raida, Z. Dual band Koch antenna for RF energy harvesting, In Proceedings of European Conference on Antennas and Propagation EuCAP 2016. Davos, Switzerland, EurAAP, 2016.
11. Vèlim, J., Cupul, M., Krutlekk, D., Raida, Z. Wireless power transmission in small airplanes, In Proceedings of Wireless Power Transfer Conference (WPTC 2016), Aveiro (Portugal): University of Aveiro, 2016, accepted.
12. H. Visser, H. Pflug and S. Keyrouz 'Rectenna Demonstrators at Holst Centre / imec and Eindhoven University of Technology', European Conference on Antennas and Propagation, EuCAP2015, Lisbon, Portugal, 4 pp.



Conferences:



13. H. Visser and S. Keyrouz, 'Toward the Design of a RF-Harvesting EBG Ground Plane', Wireless Power Transfer Conference, Boulder, CO, USA, 3 pp.
14. H. Pflug, H. Visser and S. Keyrouz, 'Practical Application of Radiative Wireless Power Transfer', Wireless Power Transfer Conference, Boulder, CO, USA, 4 pp.
15. H. Visser, 'Wireless Power Transfer for Space Applications', ESA Antenna Workshop, Noordwijk, The Netherlands, 5 pp.
16. Belo, D.; Georgiadis, A.; Carvalho, N.B., "Increasing Wireless Powered Systems Efficiency by Combining WPT and Electromagnetic Energy Harvesting", Accepted for publication in Wireless Power Transfer Conference (WPTC), May 2016.
17. A. Pacini, F. Mastri, R. Trevisan, A. Costanzo, D. Masotti, "Theoretical and Experimental Characterization of Moving Wireless Power Transfer Systems", presented at 2016 10th European Conference on Antennas and Propagation, April 2016.
18. A. Pacini, R. Trevisan, F. Mastri, A. Costanzo, D. Masotti, "Geometry Optimization of Sliding Inductive Links for Position-independent Wireless Power Transfer" accepted for publication at 2016 IEEE MTT-S International Microwave Symposium, May 2016.
19. J. Schneider, J. Gamec, M. Gamcova, M. Repko, "Alternative antenna measuring methods with use of impulse UWB Radar," in Radioelektronika 2016. 26th International Conference, Košice, 2016, pp. 296-299. ISBN 978-1-5090-1673-0



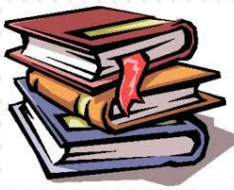
STSM:



1. Applicant: Jan Schneider, TU Kosice (SK). Host: Zbynek Raida, TU Brno (CZ). Period: 4. 5. 2015 to 28. 6. 2015. Topic: UWB antennas for energy harvesting
2. Applicant: Michal Mrnka, TU Brno (CZ). Host: Dusan Kocur, TU Kosice (SK). Period: 9. 11. 2015 to 22. 11. 2015. Topic: LTCC based directive DRA antenna
3. Applicant: Daniel Belo, IT (Portugal). Period: 8.11.2015 to 8.12.2015. Topic: A triple band RF-DC converter was designed and tested.
4. Applicant: Marco Fantuzzi, Univ. Bologna (Italy), Host: Dominique Schreurs, KU Louvain, Period: 09.2015 – 10.2015, Topic: Integrated information decoding and energy harvesting receiver for enhanced energy efficient management.



Book Chapters:



1. H. Visser and R. Vullers, Far-Field RF Energy Transfer and Harvesting, in D. Briand et al (ed.) Micro Energy Harvesting, John Wiley & Sons
2. H. Visser, Far-Field Radiative Wireless Power Transfer for Low-Power Applications, in Webster (Ed.) Encyclopedia of Electrical and Electronics Engineering, John Wiley & Sons



Workshops/Conferences:



1. Workshop at EuCAP 2016 – Davos, Switzerland, 10-15 April 2016 - “Powering RFIDs and Wireless Sensors Using Wireless Power Transfer”, John N. Sahalos
2. Workshop at IMS 2016: WFJ “Power amplifier and variable loads”, organizer Z. Popovic; talk on “Power amplifier load variation in high-efficiency near-field variable-distance inductive resonant wireless power transfer links” by A. Costanzo, C. Florian, F. Mastri, R. Paganelli, D. Masotti
3. Workshop at IMS 2016: WFI “Theory and applications of Wireless Power transmission”, organizers C. Sarris, A. Costanzo, J. Machac.
4. Workshop at EUMW 2016 – London, September 2016, “WPT in space”, organizer: N.B. Carvalho
5. RADIOELEKTRONIKA 2016- 26th International Conference RADIOELEKTRONIKA 2016, organized by the Technical University of Kosice, Slovakia Conference Session: Wireless Power Transmission, <http://kemt.fei.tuke.sk/radioelektronika2016/>



Project proposals:



1. Intelligent cover materials for airplane electronics (INCOME).
Call: H2020-MG-2016-2017. Topic: MG-1.1-2016. Action: RIA. Participants: TU Brno (CZ), TU Graz (AT), Holon Institute of Technology (IL), Univ. Aveiro (PT)
2. Intelligent textile materials for home healthcare. Call: Czech-Israeli Cooperative Scientific Research. Participants TU Brno (CZ), Holon Institute of Technology (IL)
3. FIT-WASP (Future Internet of Things, Wireless Autonomous Sensor Platform), H2020 ICT3, including Imperial College London and Thales TRT
4. H2020-COMPET-3-2015 project proposal ERASTUS “ELECTROMAGNETIC ENERGY BEAM AS A SOURCE OF ENERGY FOR SPACE PROBES”, participants EVOLEO, Instituto de Telecomunicações, University of Perugia, University of Bologna, CTTC, SELEX, LAAS, graded 13.5/15 (not funded)
5. H2020-COMPET-3-2015 project proposal SWIPT “Smart waveguide for Wireless Interconnects and Power Transmission”, participants AER, Heriot-Watt University, University of Bologna, SpaceForest, graded 11.5/15 (not funded)
6. ESA project “Lost in Space”, participants University of Bologna, Université Catholique de Louvain (just funded)





Thank you!

Diego Masotti

WG1 :
Far-field WPT systems