Przemysław Pawełczak — Assistant Professor (Tenured)

TU Delft — Embedded and Networked Systems Group — Sustainable Systems Lab

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RESEARCH VISION

To make Internet of Things free from batteries, less polluting and sustainable.

TOP THREE PUBLICATIONS (LAST THREE YEARS)

1. J. de Winkel, V. Kortbeek, J. Hester, *P. Pawełczak*, Battery-Free Game Boy, Proc. **ACM IMWUT/UbiComp 2020**
2. J. de Winkel, C. Delle Donne, K. S. Yıldırım, *P. Pawełczak*, J. Hester, Reliable Timekeeping for Intermittent Computing, **ACM ASPLOS 2020**
3. A. Dahlberg, M. Skrzypczyk, T. Coopmans, L. Wubben, F. Rozpędek, M. Pompili, A. Stolk, *P. Pawełczak*, R. Knegjens, J. de Oliveira Filho, R. Hanson, S. Wehner, A Link Layer Protocol for Quantum Networks, **ACM SIGCOMM 2019**

ACADEMIC PERFORMANCE INDICATORS (GOOGLE SCHOLAR)

Citations: 2196 ● **H-index:** 22 ● **i10-index:** 40

MEDIA COVERAGE (SELECTED)

Battery-Free Game Boy Project: CNET, The Verge, Hackaday, Mashable, Gizmodo, Engadget, PCMag, The Register, Tech Times, The Independent ● **Battery-Free Reprogramming Project:** SlashDot, FastCompany, The Verge, Quartz

PROFESSIONAL EXPERIENCE (SELECTED)

Assistant Professor (Tenured) *TU Delft, The Netherlands*, Embedded and Networked Systems Group Jan. 2013–Present
Postdoctoral Researcher *UCLA, USA*, Cognitive Radio Embedded Systems Laboratory Jul. 2009–Jun. 2011

GRANT ACQUISITION AT TU DELFT (SELECTED)

Flagship Quantum Internet Alliance (EU) [10 M€]	2019–Now
European Training Network in Low-energy Visible Light IoT Systems (EU) [4 M€]	2019–Now
Towards Energy Autonomous Systems for IoT (NWO, NL) [647 k€]	2016–Now
Veni (NWO, NL) [250 k€]	2013–2016

STUDENTS SUPERVISION AT TU DELFT

PhDs (active): Carlo Delle Donne, Jasper de Winkel, Vito Kortbeek, James Broadhead, Coen van Leeuwen ● **PhDs (graduated):** Amjad Yousef Majid (Postdoc, TU Delft), Qingzhi Liu (Lecturer, Wageningen University) ● **Postdocs (graduated):** Yuxiao Hou, Kasim Sinan Yildirim (Assistant Professor, University of Trento) ● **MSc (graduated):** 26 in total

TEACHING AT TU DELFT

MSc level: Fundamentals of Wireless Communications [ET4358] (2015–Now), Wireless IoT and Local Area Networks [ET4394] (2014–Now) ● **BSc level:** Mentorship Academic Coordinator [CSE1000] (2014–Now)

EDUCATION

Doctor of Philosophy *Delft University of Technology, The Netherlands*	Feb. 2005–Apr. 2009
Master of Science *Wrocław University of Science and Technology, Poland*	Sep. 1999–Oct. 2004

PROFESSIONAL SERVICE (SELECTED)

Associate Editor: IEEE Wireless Communications Letters (2018–Now) ● **TPC:** IEEE INFOCOM (2016–Now), ACM/IEEE IoTDI 2021, ACM SenSys 2020 ● **Steering Committee:** ENSsys

Przemysław Pawełczak

Assistant Professor (Tenured), Delft University of Technology, Embedded and Networked Systems Group
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RELATED PROFESSIONAL WEBSITES

Google Scholar:	scholar.google.com/citations?user=NzykFrsAAAAJ
Scopus:	scopus.com/authid/detail.url?authorId=14632383700
ArXiv:	arxiv.org/find/cs/1/au:+Pawelczak_P/0/1/0/all/0/1
Twitter:	twitter.com/przemyslawp
LinkedIn:	linkedin.com/in/przemyslawpawelczak
Mathematics Genealogy:	genealogy.math.ndsu.nodak.edu/id.php?id=183478

RESEARCH INTERESTS

Energy Harvesting, Battery-less Systems, RFID

EDUCATION

Doctor of Philosophy (Doctor)   Feb. 2005–Apr. 2009
Delft University of Technology, The Netherlands
Department of Electrical Engineering, Mathematics and Computer Science
Advisor: Prof. Ignas G. M. M. Niemegeers
Dissertation: Opportunistic Spectrum Access: Designing Link and Transport Layer

Master of Science (Magister Inżynier)   Sep. 1999–Oct. 2004
Wrocław University of Science and Technology, Poland
Faculty of Electronics
Advisor: Prof. Krzysztof Abramski
Dissertation: Traffic Engineering in All-Optical Networks

RESEARCH AND PROFESSIONAL EXPERIENCE

Assistant Professor   Jan. 2013–Present
Delft University of Technology, The Netherlands
Department of Electrical Engineering, Mathematics and Computer Science
Embedded and Networked Systems Group

Research Fellow   Oct. 2011–Jan. 2013
Fraunhofer Heinrich Hertz Institute, Berlin, Germany
Wireless Communications and Networks Department
Mentor: Dr. Sławomir Stańczak

Postdoctoral Researcher   Jul. 2009–Jun. 2011
University of California, Los Angeles, USA
Department of Electrical Engineering
Cognitive Radio Embedded Systems Laboratory
Mentor: Prof. Danijela Čabrić

Visiting Scholar   Sep. 2007–Jan. 2008
University of California, Berkeley, USA
Department of Electrical Engineering
Connectivity Laboratory
Mentor: Prof. Ahmad Bahai

UMTS Radio Access Engineer   Sep. 2004–Feb. 2005
Nokia Networks (Former Siemens COM)
Research and Development Center, Wrocław, Poland

DISTINCTIONS AND AWARDS

Nomination: UCLA Award for Postdoctoral Research (33/1200 postdocs nominated)   2011
KIVI NIRIA Prize for best PhD Student in Telecommunications in The Netherlands   2009
Winner of the IEEE DySPAN 2008 Video Contest   2008
Visiting Scholar Grant from University of California, Berkeley, USA   2007
US National Science Foundation IEEE GLOBECOM 2006 Student Travel Grant   2006
Best Graduate Prize, Wrocław University of Technology, Poland   2004
Best MSc thesis award by Society of Polish Electrical Engineers (Runner-up)   2004

GRANT ACQUISITION

Active Grants

Quantum Internet Alliance (QIA) (EU) [10 M€]   2019–Now
European Training Network in Low-energy Visible Light IoT Systems (ENLIGHT'EM) (EU) [4 M€]   2019–Now
STW Perspectief: Towards Energy Autonomous Systems for IoT (ZERO) (STW) [647 k€]   2016–Now

Completed Grants

Reconeissance Grant (NIRICT) [10 k€]   2015
Veni Grant (NWO) [250 k€]   2013
Spatio-Temporal Spectrum Sensing (NSF)   2011
Cognitive Low-energy Signal Analysis Sensor ICs (DARPA)   2011
Enlighten Your Research (SurfNet)   2008
1000 Flowers (TU Delft)   2008

PUBLICATIONS

Peer Reviewed Conference and Workshop Papers

2020

1. Jasper de Winkel, Carlo Delle Donne, Kasim Sinan Yıldırım, **Przemysław Pawełczak**, Josiah Hester, *Reliable Time-keeping for Intermittent Computing*, Proc. **ACM Conference on Architectural Support for Programming Languages and Operating Systems (ACM ASPLOS)**, 16–20 Mar. 2020, Lausanne, Switzerland [See: artifacts, source code]
2. Vito Kortbeek, Kasim Sinan Yıldırım, Abu Bakar, Jacob Sorber, Josiah Hester, **Przemysław Pawełczak**, *Time-sensitive Intermittent Computing Meets Legacy Software*, Proc. **ACM Conference on Architectural Support for Programming Languages and Operating Systems (ACM ASPLOS)**, 16–20 Mar. 2020, Lausanne, Switzerland [See: artifacts, source code]

2019

1. Eren Çürük, Kasim Sinan Yıldırım, **Przemysław Pawełczak**, Josiah Hester, *On the Accuracy of Network Synchronization Using Persistent Hourglass Clocks*, Proc. **ACM International Workshop on Energy Harvesting and Energy-Neutral Sensing Systems (ACM ENSsys) [ACM SenSys 2019 Workshop]** pp. 35–41, 10 Nov. 2019, New York, NY, USA [See: ACM DL]
2. Axel Dahlberg, Matthew Skrzypczyk, Tim Coopmans, Leon Wubben, Filip Rozpędek, Matteo Pompili, Arian Stolk, **Przemysław Pawełczak**, Robert Knegjens, Julio de Oliveira Filho, Ronald Hanson, Stephanie Wehner *A Link Layer Protocol for Quantum Networks*, Proc. **ACM Special Interest Group on Data Communication Conference (ACM SIGCOMM)**, pp. 159-173, 19-23 Aug. 2019, Beijing, China [See: ACM DL]

3. Kasim Sinan Yıldırım, **Przemysław Pawełczak**, *On Distributed Sensor Fusion in Batteryless Intermittent Networks*, Proc. **IEEE International Conference on Distributed Computing in Sensor Systems (IEEE DCOSS)**, 29–31 May 2019, Santorini Island, Greece [See: IEEE eXplore]

4. Amjad Yousef Majid, Michel Jansen, Guillermo Ortas Delgado, Kasim Sinan Yıldırım, **Przemysław Pawełczak**, *Multi-hop Backscatter Tag-to-Tag Networks*, Proc. **IEEE Conference on Computer Communications (IEEE INFOCOM)**, 29 Apr.–2 May 2019, Paris, FR, EU [See: IEEE eXplore, ArXiv, source code]

2018

1. Kasim Sinan Yıldırım, Amjad Yousef Majid, Dimitris Patoukas, Koen Schaper, **Przemysław Pawełczak**, Josiah Hester, *InK: Reactive Kernel for Tiny Batteryless Sensors*, Proc. **ACM Conference on Embedded Networked Sensor Systems (ACM SenSys)**, pp. 41–53, 4–7 Nov. 2018, Shenzhen, China [See: ACM DL, source code (runtime), source code (battery-less robot)]

2. Dimitris Patoukas, Kasim Sinan Yıldırım, Amjad Yousef Majid, Josiah Hester, **Przemysław Pawełczak**, *Feasibility of Multi-tenancy on Intermittent Power*, Proc. **International Workshop on Energy Harvesting and Energy-Neutral Sensing Systems (ACM ENSsys) [ACM SenSys 2018 Workshop]**, pp. 26–31, 4 Nov. 2018, Shenzhen, China [See: ACM DL]

3. Carlo Delle Donne, Kasim Sinan Yıldırım, Amjad Yousef Majid, Josiah Hester, **Przemysław Pawełczak**, *Backing out of Backscatter for Intermittent Wireless Networks*, Proc. **International Workshop on Energy Harvesting and Energy-Neutral Sensing Systems (ACM ENSsys) [ACM SenSys 2018 Workshop]**, pp. 38–40, 4 Nov. 2018, Shenzhen, China [See: ACM DL]

2017

1. Coen J. van Leeuwen, Kasim Sinan Yıldırım, **Przemysław Pawełczak**, *Self Adaptive Safe Provisioning of Wireless Power using DCOPs*, in Proc. **IEEE International Conference on Self-Adaptive and Self-Organizing Systems (IEEE SASO)**, 18–22 Sep. 2017, Tucson, AZ, USA [See: IEEE eXplore, source code] [Best Paper Award]

2. Henko Aantjes, Amjad Yousef Majid, **Przemysław Pawełczak**, Jethro Tan, Aaron Parks, Joshua R. Smith *Fast Downstream to Many (Computational) RFIDs*, in Proc. **IEEE Conference on Computer Communications (IEEE INFOCOM)**, 1–4 May 2017, Atlanta, GA, USA [See: IEEE eXplore, source code]

3. Ivar in 't Veen, Amjad Yousef Majid, **Przemysław Pawełczak**, *OTGS: Reducing Energy Consumption of USB-connected Low-cost Sensors on Smartphones*, in Proc. **IEEE International Symposium on Dynamic Spectrum Access Networks (IEEE DySPAN)**, 6–9 Mar. 2017, Baltimore, MA, USA [See: IEEE eXplore]

4. Coen J. van Leeuwen, **Przemysław Pawełczak**, *CoCoA: A Non-Iterative Approach to a Local Search (A) DCOP Solver*, in Proc. **AAAI Conference on Artificial Intelligence (AAAI)**, 4–10 Feb. 2017, San Francisco, CA, USA [See: AAAI, source code]

2016

1. Ivar in 't Veen, Qinzhi Liu, **Przemysław Pawełczak**, Aaron Parks, Joshua R. Smith, *BLISP: Enhancing Backscatter radio with Active Radio for Computational RFIDs*, in Proc. **IEEE International Conference on RFID (IEEE RFID)**, 3–5 May 2016, Orlando, FL, USA [See: IEEE eXplore, source code]

2. Jethro Tan, **Przemysław Pawełczak**, Aaron Parks, Joshua R. Smith, *Wisent: Robust Downstream Communication and Storage for Computational RFIDs*, in Proc. **IEEE Conference on Computer Communications (IEEE INFOCOM)**, 10–14 Apr. 2016, San Francisco, GA, USA [See: IEEE eXplore, source code]

3. Kasim Sinan Yıldırım, Henko Aantjes, Amjad Yousef Majid, **Przemysław Pawełczak**, *On the Synchronization of Intermittently Powered Wireless Embedded Systems*, in Proc. **Hillariously Low Power Computing (HLPC 2016) [ACM ASPLOS 2016 Workshop]**, 2 Apr. 2016, Atlanta, GA, USA [See: ArXiv+source code]

4. Henko Aantjes, Amjad Yousef Majid, **Przemysław Pawełczak**, *A Testbed for Transiently Powered Computers*, in Proc. **Hillariously Low Power Computing (HLPC 2016) [ACM ASPLOS 2016 Workshop]**, 2 Apr. 2016, Atlanta, GA, USA

2013

1. P. Grønsund, P. E. Engelstad, **Przemysław Pawełczak**, O. Grondalen, P. H. Lehne, *Spectrum Sensing Aided Long-term Spectrum Management in Cognitive Radio Networks*, in Proc. **IEEE Local Computer Networks (IEEE LCN 2013)**, 21–24 Oct. 2013, Sydney, NSW, Australia [See: IEEE eXplore]

2. P. Grønsund, **Przemysław Pawełczak**, J. Park, D. Čabrić, *Sensing of Wireless Microphones in IEEE 802.22: A System Level Performance Evaluation*, in Proc. **IEEE International Conference on Communications (IEEE ICC 2013)**, 9–13 Jun. 2013, Budapest, Hungary [See: IEEE eXplore]
3. W. Gabran, **Przemysław Pawełczak**, C.-H. Liu, D. D. Čabrić, *Blind Estimation of Primary User Traffic Parameters under Sensing Errors*, in Proc. **IEEE International Conference on Communications (IEEE ICC 2013)**, 9–13 Jun. 2013, Budapest, Hungary [See: IEEE eXplore]

2012

1. S. Joshi, **Przemysław Pawełczak**, J. Villasenor, D. Čabrić, *Performance of Channel Bonding for Opportunistic Spectrum Access Networks*, in Proc. **IEEE Global Communications Conference (IEEE GLOBECOM 2012)**, 3–7 Dec. 2012, Anaheim, CA, USA [See: IEEE eXplore]
2. **Przemysław Pawełczak**, M. Zheng, Sławomir Stańczak, H. Yu, *Enriching cellular networks with dynamic spectrum access and energy harvesting: a network planning case*, in Proc. **IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (IEEE DySPAN 2012)**, 16–19 Oct. 2012, Bellevue, WA, USA [See: IEEE eXplore]

2011

1. W. Gabran, **Przemysław Pawełczak**, D. Čabrić, *Multi-Channel Multi-Stage Spectrum Sensing: Link Layer Performance and Energy Consumption*, in Proc. **IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (IEEE DySPAN 2011)**, 3–6 May 2011, Aachen, Germany [See: IEEE eXplore]

2010

1. S. Joshi, **Przemysław Pawełczak**, J. Villasenor, D. Čabrić, S. Addepalli, *Connection Admission Versus Load Balancing*, in Proc. **IEEE Global Communications Conference (IEEE GLOBECOM 2010)**, 6–10 Dec. 2010, Miami, FL, USA [See: IEEE eXplore]
2. J. Park, **Przemysław Pawełczak**, P. Grønsund, D. Čabrić, *Performance of Opportunistic Spectrum OFDMA Network with Users of Different Priorities and Traffic Characteristics*, in Proc. **IEEE Global Communications Conference (IEEE GLOBECOM 2010)**, 6–10 Dec. 2010, Miami, FL, USA [See: IEEE eXplore]
3. J. Park, **Przemysław Pawełczak**, D. Čabrić, *To Buffer or to Switch: Design of Multichannel MAC for OSA Ad Hoc Networks*, in Proc. **IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (IEEE DySPAN 2010)**, 6–9 Apr. 2010, Singapore [See: IEEE eXplore]
4. R. Doost Mohhamady, **Przemysław Pawełczak**, G. J. M. Janssen, H. Segers, *Physical Layer Bootstrapping Protocol for Cognitive Radio Networks*, in Proc. **IEEE Consumer Communications and Networking Conference (IEEE CCNC 2010)**, 10–12 Jan. 2010, Las Vegas, NV, USA [See: IEEE eXplore]

2009

1. C. Guo, R. V. Prasad, **Przemysław Pawełczak**, R. Hekmat, *Designing Energy Efficient Automatic Repeat Request (ARQ) Protocol in Wireless Sensor Networks*, in Proc. **ACM Workshop on Challenged Networks (ACM CHANTS 2009)**, Workshop, 25 Sep. 2009, Beijing, China [See: ACM Digital Library]
2. J. Wang, R. V. Prasad, **Przemysław Pawełczak**, I. G. M. M. Niemegeers, *A Link Stability Model for Indoor 60 GHz Radio Wireless Networks*, in Proc. **IEEE Vehicular Technology Conference (IEEE VTC-Fall 2009)**, 20–23 Sep. 2009, Anchorage, AK, USA [See: IEEE eXplore]
3. J. Zhou, C. Guo, **Przemysław Pawełczak**, I. G. M. M. Niemegeers, *Adaptable Link Quality Estimation for Multi Data Rate Communication Networks*, in Proc. **IEEE Vehicular Technology Conference (IEEE VTC-Spring 2009)**, 26–29 Apr. 2009, Barcelona, Spain [See: IEEE eXplore]
4. N. Shetty, S. Pollin, **Przemysław Pawełczak**, *Identifying Spectrum Usage by Unknown Systems using Experiments in Machine Learning*, in Proc. **IEEE Wireless Communications and Networking Conference (IEEE WCNC 2009)**, 5–8 Apr. 2009, Budapest, Hungary [See: IEEE eXplore]
5. C. Guo, J. Zhou, **Przemysław Pawełczak**, R. Hekmat, *Improving Packet Delivery Probability Estimation for Indoor Ad Hoc and Wireless Sensor Networks*, in Proc. **IEEE Consumer Communications and Networking Conference (IEEE CCNC 2009)**, 10–13 Jan. 2009, Las Vegas, NV, USA [See: IEEE eXplore]

2008

1. **Przemysław Pawełczak**, S. Pollin, H-S. W. So, A. Bahai, R. V. Prasad, R. Hekmat, *Comparison of Opportunistic Spectrum Multichannel Medium Access Control Protocols*, in Proc. **IEEE Global Telecommunications Conference (IEEE GLOBECOM 2008)**, 30 Nov.–4 Dec. 2008, New Oreleans, LA, USA [See: IEEE eXplore]
2. **Przemysław Pawełczak**, S. Pollin, H-S. W. So, A. Motamedi, A. Bahai, R.V. Prasad, R. Hekmat, *State of the Art in Opportunistic Spectrum Access Medium Access Control Design*, in Proc. **ICST/IEEE International Conference on Cognitive Radio Oriented Wireless Networks and Communications (ICST/IEEE CrownCom 2008)**, 15–17 May 2008, Singapore 2008 (*Invited Paper*) [See: IEEE eXplore]
3. F. E. Visser, G. J. M. Janssen, **Przemysław Pawełczak**, *Multinode Spectrum Sensing Based on Energy Detection for Dynamic Spectrum Access*, in Proc. **IEEE Vehicular Technology Conference (IEEE VTC 2008-Spring)**, 11–14 May 2008, Singapore [See: IEEE eXplore]
4. R. V. Prasad, Vijay S., R. Muralishankar, **Przemysław Pawełczak**, H. N. Shankar, I. G. M. M. Niemegeers, *A Holistic Study of VoIP Session Quality-The Knobs that Control*, in Proc. **IEEE Consumer Communications and Networking Conference (IEEE CCNC 2008)**, 10–12 Jan. 2008, Las Vegas, NV, USA [See: IEEE eXplore]

2007

1. C. Guo, R. Hekmat, **Przemysław Pawełczak**, *Analysis and Optimization of Energy Efficient Cluster Forming for Wireless Sensor Networks*, in Proc. **IEEE Vehicular Technology Conference (IEEE VTC 2007-Fall)**, 30 Sep.–3 Oct. 2007, Baltimore, MA, USA [See: IEEE eXplore]
2. **Przemysław Pawełczak**, R. V. Prasad, R. Hekmat, *Opportunistic Spectrum Multichannel OFDMA*, in Proc. **IEEE International Conference on Communications (IEEE ICC 2007)**, 24–28 June 2007, Glasgow, Scotland [See: IEEE eXplore]
3. A. M. R. Slingerland, **Przemysław Pawełczak**, R. V. Prasad, A. Lo, R. Hekmat, *Performance of Transport Control Protocol over Dynamic Spectrum Access Links*, in Proc. **IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks (IEEE DySPAN 2007)**, 17–20 Apr. 2007, Dublin, Ireland [See: IEEE eXplore]
4. B. Linh Dang, **Przemysław Pawełczak**, R. V. Prasad, I. G. M. M. Niemegeers, *Performance Study of a Novel Architecture for Indoor Networks at 60 GHz Using Extended Cells*, in Proc. **IEEE Consumer Communications and Networking Conference (IEEE CCNC 2007)**, 11–13 Jan. 2007, Las Vegas, NV, USA [See: IEEE eXplore]

2006

1. **Przemysław Pawełczak**, G.J.M. Janssen, R. V. Prasad, *Performance Measures of Dynamic Spectrum Access Networks*, in Proc. **IEEE Global Telecommunications Conference (IEEE GLOBECOM 2006)**, 27 Nov.–1 Dec. 2006, San Francisco, CA, USA [See: IEEE eXplore]
2. R. V. Prasad, R. Muralishankar, Vijay S., H. N. Shankar, **Przemysław Pawełczak**, I. G. M. M. Niemegeers, *Voice Activity Detection for VoIP-An Information Theoretic Approach*, in Proc. **IEEE Global Telecommunications Conference (IEEE GLOBECOM 2006)**, 27 Nov.–1 Dec. 2006, San Francisco, CA, USA [See: IEEE eXplore]
3. R. V. Prasad, H. N. Shankar, R. S. Varchas, H. S. Jamadagni, **Przemysław Pawełczak**, *User-centric Architecture for Virtual Voice-only VoIP Conferencing*, in Proc. **International Workshop "Towards the QoS Internet" (To-QoS)—IFIP Networking 2006 Workshop**, 19 May 2006, Coimbra, Portugal [See: Paper]

2005

1. R. V. Prasad, H. N. Shankar, **Przemysław Pawełczak**, H.S. Jamadagni, *Fixing Number of Floors for Virtual Voice-Only Conference—an Empirical Study*, in Proc. **IEEE International Symposium on Multimedia (IEEE ISM 2005)**, 12–14 Dec. 2005, Irvine CA, USA [See: IEEE eXplore]
2. **Przemysław Pawełczak**, R. V. Prasad, H. Nikookar, I. G. M. M. Niemegeers, *Performance Analysis of Periodical Spectrum Sensing for Dynamic Spectrum Access Networks*, in Proc. **IEEE International Workshop on Adaptive Wireless Networks (IEEE GLOBECOM 2005 Workshop)**, 28 Nov. 2005, St. Louis, MO, USA
3. **Przemysław Pawełczak**, R. V. Prasad, L. Xia, I. G. M. M. Niemegeers, *Cognitive Radio Emergency Networks-Requirements and Design*, in Proc. **IEEE Symposium on New Frontiers on Dynamic Spectrum Access Networks (IEEE DySPAN 2005)**, 8–11 Nov. 2005, Baltimore, MA, USA [See: IEEE eXplore]

2004

1. **Przemysław Pawełczak**, T. Rogowski, *Security of All-Optical Networks*, in Proc. 2nd International Students and Young Scientists Workshop "Photonics and Microsystems", 24–27 June 2004, Wrocław/ Szklarska Poręba, Poland

Journal Papers

Journal Editorial

1. **Przemysław Pawełczak**, Ralf M. Bendlin, Martin B. H. Weiss, *Introduction to the Special Section From the IEEE DySPAN 2017 Conference*, **IEEE Transactions on Cognitive Communications and Networking**, vol. 3, no. 3, pp. 435–436, Sep. 2017 [See: IEEE eXplore]

2020

1. Amjad Yousef Majid, Carlo Delle Donne, K. Maeng, A. Colin, Kasim Sinan Yıldırım, Brandon Lucia, **Przemysław Pawełczak**, *Dynamic Task-based Intermittent Execution for Energy-harvesting Devices*, **ACM Transaction on Sensor Networks**, vol. 16, no. 1, pp. 5:1–5:24, Feb. 2020 [See: ACM DL, source code]

2018

1. Kasim Sinan Yıldırım, Henko Aantjes, **Przemysław Pawełczak**, Amjad Yousef Majid, *On the Synchronization of Computational RFIDs*, **IEEE Transactions on Mobile Computing**, vol. 18, no. 9, pp. 2147–2159, Sept. 2019 [See: IEEE eXplore, ArXiv, source code]

2016

1. Qinzhi Liu, Kasim Sinan Yıldırım, **Przemysław Pawełczak**, Martin Warnier, *Safe and Secure Wireless Power Transfer Networks: Challenges and Opportunities in RF-based Systems*, **IEEE Communications Magazine**, vol. 54, no. 9, pp. 74–79, Sep. 2017 [See: IEEE eXplore]
2. Qinzhi Liu, Michał Goliński, **Przemysław Pawełczak**, Martin Warnier, *Green Wireless Power Transfer Networks*, **IEEE Journal on Selected Areas in Communications**, vol. 34, no. 5, pp. 1740–1756, May 2016 [See: IEEE eXplore, ArXiv, source code]

2014

1. C.-H. Liu, **Przemysław Pawełczak**, D. Čabrić, *Primary User Traffic Classification in Dynamic Spectrum Access Networks*, **IEEE Journal on Selected Areas in Communications**, vol. 32, no. 11, pp. 2237–225, Nov. 2014 [See: IEEE eXplore, ArXiv+source code]
2. P. Grønsund, **Przemysław Pawełczak**, J. Park, D. Čabrić, *System Level Performance of IEEE 802.22-2011 with Sensing-Based Detection of Wireless Microphones*, **IEEE Communications Magazine**, vol. 52, no. 1, pp. 200–209, Jan. 2014 [See: IEEE eXplore]

2013

1. **Przemysław Pawełczak**, S. Joshi, J. Villasenor, D. Čabrić, S. Addepalli, *Impact of Connection Admission Process on Load Balancing in Cellular Networks*, **IEEE Transactions on Mobile Computing**, vol. 12, no. 9, pp. 1681–1696, Sep. 2013 [See: IEEE eXplore, ArXiv]
2. M. Zheng, P. Pawełczak, S. Stańczak, H. Yu, *Planning of Cellular Networks Enhanced by Energy Harvesting*, **IEEE Communications Letters**, vol. 17, no. 6, pp. 1092–1095, Jun. 2013 [See: IEEE eXplore, ArXiv+source code]
3. W. Gabran, C.-H. Liu, **Przemysław Pawełczak**, D. Čabrić, *Primary User Traffic Estimation for Dynamic Spectrum Access*, **IEEE Journal on Selected Areas in Communications**, vol. 31, no. 3, pp. 544–558, Mar. 2013 [See: IEEE eXplore, ArXiv]

2012

1. S. Joshi, **Przemysław Pawełczak**, D. Čabrić, J. Villasenor, *When Channel Bonding is Beneficial for Opportunistic Spectrum Access Networks*, **IEEE Transactions on Wireless Communications**, vol. 11 no. 11, pp. 3942–3956, Nov. 2012 [See: IEEE eXplore, ArXiv]
2. J. Park, **Przemysław Pawełczak**, P. Grønsund, D. Čabrić, *Analysis Framework for Opportunistic Spectrum OFDMA and its Application to IEEE 802.22 Standard*, **IEEE Transactions on Vehicular Technology**, vol. 61, no. 5, pp. 2271–2293, Jun. 2012 [See: IEEE eXplore]

2011

1. W. Gabran, **Przemysław Pawełczak**, D. Čabrić, *Throughput and Collision Analysis of Multi-Channel Multi-Stage Spectrum Sensing Algorithms*, **IEEE Transactions on Vehicular Technology**, vol. 60, no. 7, pp. 3309–3323, Sep. 2011 [See: IEEE eXplore, ArXiv]
2. J. Park, **Przemysław Pawełczak**, D. Čabrić, *Performance of Joint Spectrum Sensing and MAC Algorithms for Multichannel Opportunistic Spectrum Access Ad Hoc Networks*, **IEEE Transactions on Mobile Computing**, vol. 10, no. 7, pp. 1011–1027, Jul. 2011 [See: IEEE eXplore, ArXiv]
3. P. Urriza, E. Rebeiz, **Przemysław Pawełczak**, D. Čabrić, *Computationally Efficient Modulation Level Classification Based on Probability Distribution Distance Functions*, **IEEE Communications Letters**, vol. 15, no. 5, pp. 476–478, May 2011 [See: IEEE eXplore, ArXiv]
4. **Przemysław Pawełczak**, K. Nolan, L. Doyle, S. W. Oh, D. Čabrić, *Cognitive Radio: Ten Years of Experimentation and Development*, **IEEE Communications Magazine**, vol. 49, no. 3, pp. 90–100, Mar. 2011 [See: IEEE eXplore]

2010

1. K. Zheng, **Przemysław Pawełczak**, D. Čabrić, *Reputation-based Cooperative Spectrum Sensing with Trusted Node Assistance*, **IEEE Communications Letters**, vol. 14, no. 3, pp. 226–228, Mar. 2010 [See: IEEE eXplore]
2. F. Granelli, **Przemysław Pawełczak**, R. V. Prasad, K. P. Subbalakshmi, R. Chandramouli, J. A. Hoffmeyer, S. Berger, *Standardization and Research in Cognitive and Dynamic Spectrum Access Networks: IEEE SCC41 Efforts and Other Activities*, **IEEE Communications Magazine**, vol. 48, no. 1, pp. 71–79, Jan. 2010 [Best Readings on Cognitive Radio distinction by IEEE Communications Society] [See: IEEE eXplore]

2009

1. **Przemysław Pawełczak**, S. Pollin, H-S. W. So, A. Bahai, R. V. Prasad, R. Hekmat, *Performance Analysis of Multichannel Medium Access Control Algorithms for Opportunistic Spectrum Access*, **IEEE Transactions on Vehicular Technology**, vol. 58, no. 6, pp. 3014–3031, Jul. 2009 [See: IEEE eXplore]

2008

1. **Przemysław Pawełczak**, S. Pollin, H-S. W. So, A. Motamedi, A. Bahai, R. V. Prasad, R. Hekmat, *Quality of Service of Opportunistic Spectrum Access: A Medium Access Control Approach*, **IEEE Wireless Communications**, vol. 15, no. 5, pp. 20–29, Oct. 2008 [See: IEEE eXplore]
2. R. V. Prasad, **Przemysław Pawełczak**, J. Hoffmeyer and S. Berger, *Cognitive Functionality in Next Generation Wireless Networks: Standardization Efforts*, **IEEE Communications Magazine**, vol. 46, no. 4, pp. 72–78, Apr. 2008 [See: IEEE eXplore]

Book Chapters

1. **Przemysław Pawełczak**, J. Park, P. Grønsund, D. Čabrić, *System Level Analysis of OFDMA-based Networks in TV White Spaces: IEEE 802.22 Case Study*, Book Chapter in "TV White Space for Wireless Broadband: Concepts, Techniques and Applications," edited by R. A. Saeed and S. J. Shellhammer, **CRC Press**, 2011
2. **Przemysław Pawełczak**, R.V. Prasad, *Defining Cognitive Radio*, Invited Book Chapter in "Cognitive Radio Communications and Networks: Principles and Practice," edited by A. Wyglinski, M. Nekovee, and Y. T. Hou, **Academic Press**, Elsevier Inc., 2010

Standards

1. J. Hoffmeyer, D. Stewart, S. Berger, B. Eydt, F. Frantz, F. Granelli, K. Kontson, D. Murotake, K. Nolan, **Przemysław Pawełczak**, R.V. Prasad, R. Roy, M. Scoville, D. Sicker, D. Swain, P. Tenhula, *IEEE Standard Definitions and Concepts for Dynamic Spectrum Access: Terminology Relating to Emerging Wireless Networks, System Functionality, and Spectrum Management*, IEEE 1900.15-2008 Standard, 2 Oct., 2008 (**World's second standard related to Dynamic and Opportunistic Spectrum Access**)

Tutorials

1. M. Mueck, O. Holland, M. Sooriyabandara, **Przemysław Pawełczak**, *Dynamic Spectrum Access Related Standards*, presented at IEEE DySPAN 2011 Tutorial Session, 3–6 May 2011, Aachen, Germany, EU

Demonstrations

1. S. B. Raghunathan, M. van den Oever, R. Doost-Mohammady, **Przemysław Pawełczak**, I. Budiarjo, M. Heskamp, Q. Zhang, A. Kokkeler, H. Nikookar, Z. Qin, R. Hekmat, L. P. Lighart, *Dynamic Spectrum Access AAF Platform*, presented at IEEE DySPAN 2008 Demonstration Session, 11–14 Oct. 2008, Chicago, IL, USA

Book Reviews

1. **Przemysław Pawełczak**, *Book Review: Software Defined Radios: From Smart(er) to Cognitive by Sofie Pollin, Michael Timmers, and Liesbet Van der Perre*, IEEE Communications Magazine, Vol. 49, no. 8, p. 16, Aug. 2011
2. **Przemysław Pawełczak**, *Book Review: Dynamic Spectrum Access and Management in Cognitive Radio Networks, by Ekram Hossain, Dusit Niyato, and Zhu Han*, IEEE Communications Magazine, Vol. 48, no. 2, p. 17, Feb. 2010
3. **Przemysław Pawełczak**, *Book Review: Fundamentals of Resource Allocation in WIreless Networks: Theory and Algorithms, by Sławomir Stańczak, Marcin Wiczanowski and Holger Boche*, IEEE Communications Magazine, Vol. 48, no. 2, pp. 16–17, Feb. 2010
4. **Przemysław Pawełczak**, R. V. Prasad, *Book Review: Cognitive Radio Technology, Bruce A. Fette (editor)*, IEEE Communications Magazine, Vol. 46, no. 5, p. 32, May 2008

Unpublished

2019

1. Q. Liu, W. IJntema, A. Drif, P. Pawełczak, M. Zuniga, *BEH: Indoor Batteryless BLE Beacons using RF Energy Harvesting for Internet of Things* [See: ArXiv]

2017

1. **Przemysław Pawełczak**, Amjad Yousef Majid, N. Brouwers, K. Langendoen, *Better Mobility Support for Radio Spectrum Database-Connected Devices* [See: TU Delft ES-2014-01, source code]

SELECTED TALKS

1. *Wireless Reprogramming of CRFIDs*, Carnegie Mellon University, Pittsburg, PA, USA, 5 May 2017
2. *Wireless Reprogramming of CRFIDs* ETHZ, Zurich, Switzerland, 8 Mar. 2016
3. *Wireless Power Transfer Networks: Greenification and Localization*, University of Washington, Seattle, 9 Nov. 2015
4. *Experiments with White Space Databases: Profiling on Mobile Android Smartphone*, EU Workshop on Spectrum Databases, Brussels, 20 Mar. 2015
5. *Experiments with TVWS: Access Delay and Energy Consumption*, ONR Workshon on "Civilian Use of Military Spectrum Bands- Technologies, Impacts and Opportunities", Maynooth, Ireland, 18 Mar. 2015
6. *Experiments with TVWS: Access Delay and Energy Consumption* CR Platform, 12 Jun. 2014
7. *Autarkic Networks*, Holst Center, Eindhoven, 18 Sep. 2013
8. *Will large-scale white space networks work? Experience from IEEE 802.22 evaluation*, Recent advances on Cognitive Radio Technologies in Flanders workshop, IMEC, Leuven, Belgium, 4 Oct. 2011

9. *Multi-Channel Multi-Stage Spectrum Sensing*, Visitor Seminar, University of Southern California, Los Angeles, CA, USA, 8 Jun. 2011
10. *Opportunistic Spectrum Access: Joint MAC and Spectrum Sensing Analysis*, Visitor Seminar, University of California Irvine, Irvine, CA, USA, 5 Apr. 2011
11. *Opportunistic Spectrum Access: A System Level Perspective*, Visitor Seminar, Bell Labs, Antwerpen, Belgium, 20 Jan. 2011
12. *Protocol Design for Opportunistic Spectrum Access*, Visitor Seminar, TU Berlin, Germany, 12 Mar. 2010
13. *Technical Challenges of Cognitive Radio-Related Systems*, Competition and Regulation in Network Industries Conference, Brussels, 28 Nov. 2008
14. *What is Cognitive Radio*, 11th Economics of Infrastructures Conference (Avoiding Harmful Interference and Cognitive Radio Workshop), TU Delft, the Netherlands, 22 May 2008
15. *Cognitive Radio: From Utopia to Reality*, Freeband Ambient Communication Event, Enschede, the Netherlands, 4 Jul. 2006

PROFESSIONAL SERVICE

Associate Editor

1. IEEE Wireless Communications Letters — 2018–Now

Chairing

1. TPC Co-Chair IEEE DySPAN [Technology Track] — 2017
2. TPC Chair IEEE RFID [Applications and Software Track] — 2017, 2018
3. Demonstration session co-chair and co-organizer IEEE DySPAN — 2010, 2011, 2012
4. IEEE DySPAN Standards Committee [former IEEE SCC41] (Vice-Chair) — 2010−2012

Organizing Committee Member

1. ENSsys (ACM SenSys Workshop) — 2017–Now
2. HLPC (ACM ASPLOS 2016 Workshop) — 2017
3. IDEA League PhD School on Transietly-Powered Devices — 2017
4. GNU Radio Hackathron at TU Delft — 2015
5. IEEE CogNet (IEEE ICC Workshop) — 2007, 2008, 2009
6. ACM CoRoNet (ACM MobiCom Workshop) — 2009, 2010

Technical Program Committee Member (Selected)

IEEE INFOCOM	2016–Now
ICST CROWNCOM	2016
IEEE CCNC (Short Papers Track)	2009, 2010, 2012, 2016
IEEE ICUWB	2015
ICST Mobilight	2009
IEEE CogNet	2007, 2008, 2009
ACM CoRoNet	2009, 2010
IEEE PIMRC	2009
IEEE ICC (Cognitive Radio and Networks Symposium)	2011, 2012, 2015, 2017, 2018
IEEE ICC (Signal Processing for Communications Symposium)	2012
IEEE GLOBECOM (Cognitive Radio and Networks Symposium)	2011
IEEE WCNC (Service and Application Track)	2011, 2015, 2016
IEEE WCNC (Wireless Communications and Networks Track)	2012
IEEE DySPAN (Technology Track)	2011, 2015, 2017
IEEE PIMRC (Cognitive Radio and Spectrum Management Symposium)	2011
IEEE PIMRC (Services, Applications, and Business Track)	2012

Reviewer

Project Proposals

OTP 2019-6 (NWO) Netherlands	2019
National Center for Research and Development (NCBIR) Poland	2015
H2020-2016-ITC-03 (European Commission) Europe	2016
Wireless Innovation between Finland and US (Academy of Finland) Finland	2016

Journals (selected)

IEEE Transactions on Communications	2017
ACM/IEEE Transactions on Networking	2014
IEEE Journal on Selected Areas in Communications	2014
IEEE Journal on Selected Topics in Signal Processing	2012
IEEE Communications Magazine	2010, 2016, 2017
IEEE Pervasive Computing	2014
IEEE Transactions on Mobile Computing	2013, 2014
IEEE Transactions on Vehicular Technology	2013–2015
IEEE Transactions on Wireless Communications	2010–2012, 2015
IEEE Communications Letters	2009–2014, 2017

EXTERNAL EVALUATION COMMITTEES

PhD

1. **KU Leuven** (Alessandro Chuimento)	2015

STUDENTS MENTORING

TU Delft

Active (PhD)

1. **James Broadhead** (PhD): Energy Disaggregation of Lighting Infrastructure in Buildings	2019–Now
2. **Carlo Delle Donne** (PhD): Software Stack for Quantum Internet	2019–Now
3. **Jasper de Winkel** (PhD): Transiently-Powered Networks	2019–Now
4. **Vito Kortbeek** (PhD): Software Frameworks for Intermittently-Powered Systems	2019–Now
5. **Coen van Leeuwen** (PhD): Distributed Constrained Optimization	2017–Now

Active (MSc)

1. **John Hendriks** (MSc)	2020–Now
2. **Wouter Kayser** (MSc)	2020–Now
3. **Mithun Martin Mendez** (MSc)	2019–Now
4. **Federico Fiorini** (MSc)	2019–Now
5. **Pradhayini Ramamurthy** (MSc)	2019–Now

Graduated (Postdoc)

1. **Yuxiao Hou** (Postdoc) RFID Missing Tag Identification	2019
2. **Kasim Sinan Yildirim** (Postdoc) Transiently-Powered Systems	2017

Graduated (PhD)

1. **Amjad Yousef Majid** (PhD): Software Support for Transiently-Powered Devices	2020
2. **Qingzhi Liu** (PhD): Self-Organizing Energy-Autonomous Systems	2016

Graduated (MSc)

1. **Jasper de Winkel** (MSc): Keeping Track of Time on Energy Harvesting Systems	2019
2. **Thijmen Ketel** (MSc): Novel Interaction Method for UHF RFID Tags	2019
3. **Vito Kortbeek** (MSc): Dependable Dynamic Checkpoints for Batteryless Devices	2019
4. **Dimitris Patoukas** (MSc): Intermittent Kernel: A First Attempt	2018
5. **Carlo Delle Donne** (MSc): Wake-Up Alignment for Batteryless Sensors	2018
6. **Vincent Koeten** (MSc): Low-Power Machine Learning (at MoMo Medical)	2017
7. **Guillermo Ortas Delgado** (MSc): Phase Cancellation and Range Extension in Backscatter Networks	2018
8. **Ehsan Zabihi** (MSc): Digital Control of RF Energy Harvester (at NOWI Energy)	2017
9. **Koen Schaper** (MSc): Transiently-Powered Robot	2017
10. **Michel Jansen** (MSc): Tag-to-Tag Network	2017
11. **Chiel de Roest** [with Tesla] (MSc): Wireless Code Distribution for Cars	2017
12. **Wieger IJntema** (MSc): Wirelessly-Powered Localization	2016
13. **Felix Fikke** [with BWM] (MSc): Optimization of CAN-Bus in Cars	2016
14. **Henko Aantjes** (MSc): Improving Downstream for CRFID	2016
15. **Simon van der Jagt** [with Industrial Design] (MSc): Wireless Power Transfer	2016
16. **Aryan Masoud** [with Holst Center] (MSc): Hybrid Active/Active Radio	2016
17. **Ivar in 't Veen** (MSc): Hybrid Active/Passive Radio	2015
18. **Michał Goliński** (MSc): Green Wireless Power Transfer Networks	2015
19. **Amjad Yousef Majid** (MSc): White Space Databases	2015
20. **Jethro Tan** (MSc): Downstream for CRFID	2015
21. **Stefan van Breukelen** [with Holst Center] (MSc): Wirelessly-Powered Memory	2014
22. **Liang Huo** [with Holst Center] (MSc): Passive Wake-up for Low Power Radios	2014
23. **Frank E. Visser** (MSc): Cooperative Spectrum Sensing for OSA	2008
24. **Rahman Doost** (MSc): Bootstrapping protocols for OSA	2008

UCLA

Graduated

1. **Paulo Urriza** (PhD): Energy efficient modulation classification	2010–2011
2. **Wesam Gabran** (PhD): Multi-stage spectrum sensing protocols	2009–2011
3. **Shaunak Joshi** (PhD): Load balancing for cellular systems	2009–2011
4. **Jihoon Park** (PhD): Medium access control design for OSA	2009–2010

TEACHING

TU Delft

1. **Wireless IoT and Local Area Networks** (ET4394)	2014–Now
2. **Fundamentals of Wireless Communications** (ET4358)	2015–Now
3. **Mentorship** (TI1116)	2014–Now
4. **Internet of Things** (IN4398)	2013–2015

UCLA

1. **Special Topics in Circuits and Embedded Systems** (EE209AS)	Summer 2011

PROFESSIONAL AFFILIATIONS

Member: IEEE Communications Society	2001–Now
Member: IEEE (1529127)	2001–Now
Voting Member: IEEE DySPAN Standards Committee [former IEEE SCC41]	2005–2011
Member: IEEE Standards Association	2007–2011
Member: IEEE Technical Committee on Cognitive Networks	2006–2013

LANGUAGES

Polish: Native speaker
English: Fluent
Dutch: NT2 Level II Exam completed (2015)
German: B2 (Goethe Institute Course Completed) (2015)

MISCELLANEOUS

Date and place of birth: 30 December 1980, Tomaszów Lubelski
Nationality: Polish

Erdös number: ≤ 5 (Paul Erdös $\rightarrow$ Joel H. Spencer $\rightarrow$ Remco van der Hofstad $\rightarrow$ Piet Van Mieghem $\rightarrow$ Ramin Hekmat $\rightarrow$ Przemysław Pawełczak)