

IEEE RFID 2015

Program Brief

April 15 - 17, 2015
San Diego Convention Center
San Diego, CA (USA)



IEEE RFID 2015 Program Brief – Wednesday, April 15

7:30 - 8:30 MORNING COFFEE 31A

8:00 - 8:30 SPEAKER BRIEFING 31B

8:30 - 10:00 MORNING TUTORIAL SESSIONS (Part I)

<p>Tutorial A 31B Backscatter Communication Techniques for the Internet of Things (Part I) See Guidebook program for details Presenters: Vamsi Talla and Bryce Kellog, University of Washington</p>	<p>Tutorial B 31C Near Field Wireless Technology (Part I) See Guidebook program for details Presenter: Hans G. Schantz, CTO, Q-Track Corporation</p>
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10:00 - 10:15 BREAK 31A

10:15 - 12:00 MORNING TUTORIAL SESSIONS (Part II)

<p>Tutorial A 31B Backscatter Communication Techniques for the Internet of Things (Part II)</p>	<p>Tutorial B 31C Near Field Wireless Technology (Part II)</p>
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12:00 - 13:00 LUNCH 31A

13:00 - 14:30 AFTERNOON WORKSHOP SESSIONS (Part I)

<p>Workshop A 31B Bluetooth Low Energy & BLE Beacons for Active RFID Applications (Part I) See Guidebook program for details Presenters: Mark Jakusovszky and Jim Springer, EM Microelectronic</p>	<p>Workshop B 31C Energy Harvesting and Transfer – Present and Future (Part I) See Guidebook program for details Organizer: Daniel Arnitz, University of Washington</p>
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14:30 - 14:45 BREAK 31A

14:45 - 16:30 AFTERNOON WORKSHOP SESSIONS (Part II)

<p>Workshop A 31B Bluetooth Low Energy & BLE Beacons for Active RFID Applications (Part II)</p>	<p>Workshop B 31C Energy Harvesting and Transfer – Present and Future (Part II)</p>
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16:45 – 18:30 RFID Journal Live! Keynote Session General Sessions Room

18:30 - 20:15 RFID Journal Live! Opening Reception Exhibit Hall

20:30 IEEE RFID 2015 Reception 31A

IEEE RFID 2015 Program Brief – Thursday, April 16 (Morning)

7:30 - 8:30	MORNING COFFEE	31A
8:00 - 8:30	SPEAKER BRIEFING	31B
8:30 – 10:00	OPENING PLENARY	33ABC

<p>Welcome and Introduction</p> <p>Technical Program Overview</p> <p>Presentation of Best Paper Award</p> <p>Invited Speaker</p> <p>Poster Session Teaser Talks</p>	<p>Matt Reynolds, General Chair, IEEE RFID 2015</p> <p>Alanson Sample, Technical Program Chair, IEEE RFID 2015</p> <p>Bernd Schoner, ThingMagic, A Division of Trimble (Best Paper Award Patron)</p> <p>Fred Tubb, President and CEO, iControl</p> <p>Stewart Thomas, Poster Session Chair, and Poster authors</p>
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10:00 - 10:30 **BREAK** 31A

10:30 – 12:00 **TECHNICAL SESSIONS**

<p>Session 1A 31B</p> <p>Protocols & Security (Part I)</p> <p>An Improved Dynamic Framed Slotted ALOHA Anti-collision Algorithm based on Estimation Method for RFID Systems Ying Yu, Yifan Chen Hunan University (CN)</p> <p>Coding for Tag Collision Recovery Hessam MahdaviFar, Alexander Vardy University of California, San Diego (US)</p> <p>Forward Error Correction in Passive UHF Gen2 Communications Charlie Albright, Spencer Kaiser, Luke Oglesbee, Daniel W. Engels Southern Methodist University (US)</p> <p>Novel Notch Modulation Algorithm for Enhancing the Chipless RFID Tags Coding Capacity Ahmed Elawamry, Maher Khaliel, Abdelfattah Fawky, Mohamed El-Hadidy, Thomas Kaiser Universität Duisburg-Essen (DE)</p> <p>Session Chair: Peter J. Hawrylak, University of Tulsa (US)</p>	<p>Session 1B 31C</p> <p>Energy Harvesting and Wireless Power</p> <p>Parametric Analysis and Design Guidelines of RF-to-DC Dickson Charge Pumps for RFID Energy Harvesting Blake Marshall, Marcin Morys, Gregory Durgin Georgia Institute of Technology (US)</p> <p>Ultra-low Power 2.4GHz RF Energy Harvesting and Storage System with -25dBm Sensitivity Ken Gudan¹, Jonathan J. Hull¹, Joshua Ensworth², Matthew Reynolds², Shuai Shao¹ ¹ Ricoh Innovations Inc. (US) ² University of Washington (US)</p> <p>Wi-Fi RF Energy Harvesting for Battery-Free Wearable Radio Platforms Vamsi Talla¹, Stefano Pellerano², Hongtao Xu², Ashoke Ravi², Yorgos Palaskas² ¹ University of Washington (US) ² Intel (US)</p> <p>A Novel Hybrid Powered RFID Sensor Tag Yuchen Dong¹, Asanga Wickramasinghe¹, Han Xue¹, Said Al-Sarawi^{1,2}, Damith C. Ranasinghe¹ ¹ The University of Adelaide (AU) ² Centre for Biomedical Engineering (AU)</p> <p>Session Chair: Joshua Smith, University of Washington (US)</p>
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12:00 - 13:30 **LUNCH** Exhibit Hall

IEEE RFID 2015 Program Brief – Thursday, April 16 (Afternoon)

13:30 – 14:45

TECHNICAL SESSIONS

<p>Session 2A</p> <p style="text-align: right;">31B</p> <p>Protocols & Security (Part II)</p> <p>Secret Sharing Based Unidirectional Key Distribution with Dummy Tags in Gen2v2 RFID-enabled Supply Chains Kentaro Toyoda, Iwao Sasase Keio University (JP)</p> <p>Internet of Things (IoT)</p> <p>Oliot EPCIS: New EPC Information Service and Challenges towards the Internet of Things Jaewook Byun, Daeyoung Kim KAIST (KR)</p> <p>Every Smart Phone is a Backscatter Reader: Modulated Backscatter Compatibility with Bluetooth 4.0 Low Energy (BLE) Devices Joshua Ensworth, Matthew Reynolds University of Washington (US)</p> <p>Session Chair: Gisele Bennett, Georgia Tech (US)</p>	<p>Session 2B</p> <p style="text-align: right;">31C</p> <p>Antennas & Propagation</p> <p>UHF RFID Impedance Matching: T-Match-Dipole Design on the Highway Jingtian Xi, Hailong Zhu Hong Kong R&D Centre for Logistics and Supply Chain Management Enabling Technologies (HK)</p> <p>Request Efficient Channel Estimation Method for MIMO Passive RFID Systems Mohamed Fouad Khelladi, Adel Metref, Belkacem Fergani Houari Boumediene University of Science and Technology (DZ)</p> <p>Novel Pseudo-Noise Coded Chipless RFID System for Clutter Removal and Tag Detection Abdelfattah Fawky, Maher Khaliel, Ahmed Elawamry, Mohamed El-Hadidy, Thomas Kaiser Universität Duisburg-Essen (DE)</p> <p>Session Chair: Joshua Griffin, Northwest Nazarene University (US)</p>
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14:45 - 15:00

BREAK

31A

15:00 - 17:00

POSTER AND DEMO SESSION

32AB

See Guidebook program for a list of poster titles, authors and affiliations, and summaries

Session Chair: Stewart Thomas, Duke University, US

17:00 - 18:30

**Student Competition
Rectenna Spinout!**

32AB

19:00 - 21:00

IEEE RFID 2015 Networking Dinner

Gaslamp BBQ
524 Island Avenue, San Diego

IEEE RFID 2015 Program Brief – Friday, April 17 (Morning)

7:30 - 8:30 MORNING COFFEE 31A

8:00 - 8:30 SPEAKER BRIEFING 31B

8:30 – 10:00 PLENARY 33ABC

<p>Welcome CRFID Update Best Poster Award Introduction of Keynote Speaker Keynote Speaker</p>	<p>Matt Reynolds, General Chair, IEEE RFID 2015 Emily Sopensky, Chair, IEEE Technical Committee on RFID (CRFID) Stewart Thomas, Poster Session Chair Gregory Durgin, General Vice Chair, IEEE RFID 2015 Dina Katabi, MIT</p>
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10:00 - 10:30 BREAK 31A

10:30 – 12:00 TECHNICAL SESSIONS

<p>Session 3A 31B</p> <p>Localization</p> <p>Amplitude and Phase Difference Estimation Bounds for Multisensor Based Tracking of RFID Tags Muhammad Bashir Akbar, David Taylor, Gregory Durgin Georgia Institute of Technology (US)</p> <p>Constrained Kalman Filtering for Indoor Localization of Transport Vehicles Using Floor-Installed HF RFID Transponders Christof Röhrig, Daniel Heß, Frank Künemund University of Applied Sciences and Arts, Dortmund (DE)</p> <p>Applications & Software</p> <p>EraRFID: Reliable RFID Systems Using Erasure Coding Nebil Ben Mabrouk¹, Paul Couderc² ¹ Inria Rennes Bretagne-Atlantique (FR) ² INRIA (FR)</p> <p>Wireless Firmware Execution Control in Computational RFID Systems Wenyu Yang¹, Die Wu^{1,2}, Muhammad Jawad Hussain¹, Li Lu¹ ¹ University of Electronic Science and Technology of China (CN) ² School of Computer Science and Technology (CN)</p> <p>Session Chair: Daniel Arnitz, University of Washington (US)</p>	<p>Session 3B 31C</p> <p>Circuits, Devices, & Interrogators</p> <p>A 45 μW Bias Power, 34 dB Gain Reflection Amplifier Exploiting the Tunneling Effect for RFID Applications Francesco Amato, Christopher Peterson, Brian Degnan, Gregory Durgin Georgia Institute of Technology (US)</p> <p>Self-Interference Noise Limitations of RFID readers Gregor Lasser, Christoph F Mecklenbräuker Vienna University of Technology (AT)</p> <p>Quadrature Amplitude Modulated (QAM) Communication Link for Near and Mid-Range RFID Systems Jordan Besnoff¹, David Ricketts² ¹ Duke University (US) ² North Carolina State University (US)</p> <p>Sensors (Part I)</p> <p>Investigating Sensor Data Retrieval Schemes for Multi-Sensor Passive RFID Tags Yang Su, Asanga Wickramasinghe, Damith C. Ranasinghe The University of Adelaide (AU)</p> <p>Session Chair: Matthew Reynolds, University of Washington (US)</p>
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12:00 - 13:30 LUNCH Exhibit Hall

IEEE RFID 2015 Program Brief – Friday, April 17 (Afternoon)

13:30 – 15:00

TECHNICAL SESSIONS

31B

Session 4

Sensors (Part II)

WISPCam: A Battery-Free RFID Camera

Saman Naderiparizi, Aaron N Parks, Zerina Kapetanovic, Benjamin Ransford and Joshua R. Smith
University of Washington (US)

NFC-WISP: A Sensing and Computationally Enhanced Near-Field RFID Platform

Yi Zhao¹, Joshua R. Smith¹, Alanson Sample²

¹ University of Washington (US)

² Disney Research Pittsburgh (US)

RFID Epidermal Sensor including Hydrogel Membranes for Wound Monitoring and Healing

Cecilia Occhiuzzi¹, Alessia Ajovalasit², Maria Antonietta Sabatino², Clelia Dispenza², Gaetano Marrocco³

¹ University of Palermo & RADIO6ENSE srl (IT)

² Università degli Studi di Palermo (IT)

³ University of Rome Tor Vergata (IT)

Towards low-cost, wireless blood anomaly sensing: An RFID-based anemia detection sensor

Rahul Bhattacharyya¹, Christina Swanson², Michelle Wong², Benjamin Tien², Emran Amin¹, Isaac Ehrenberg¹, Sanjay Sarma³

¹ Massachusetts Institute of Technology (US)

² Diagnostics for All (US)

³ MIT Auto-ID Center (US)

Session Chair: Alanson Sample, Disney Research (US)

15:00

CONFERENCE ENDS



9TH ANNUAL IEEE INTERNATIONAL CONFERENCE ON RFID
IEEE RFID 2015
PROGRAM AT A GLANCE

**WED
 APRIL 15**

Registration Hours: 7:00 - 20:00
Exhibit Hours: 18:30 - 20:15

7:30	Morning Coffee
8:00 - 8:30	Speaker Briefing
8:30 - 10:00	Tutorial 1: Backscatter Communications, Techniques for Internet of Things Tutorial 2: Near Field Wireless Technology
	Break
10:15 - noon	Tutorial 1: Backscatter Communications, Techniques for Internet of Things Tutorial 2: Near Field Wireless Technology
	Lunch
13:00 - 14:30	Workshop 1: Bluetooth Low Energy & BLE Beacons for Active RFID Apps Workshop 2: Energy Harvesting & Transfer - Present & Future
	Break
14:45 - 16:30	Tutorial 3: Bluetooth Low Energy & BLE Beacons for Active RFID Apps Tutorial 4: Energy Harvesting & Transfer - Present & Future
16:45 - 18:30	RFID Journal LIVE! Keynote Session
18:30 - 20:15	RFID Journal LIVE! Opening Reception (Exhibit Hall)
20:30	IEEE RFID 2015 Reception

**THURS
 APRIL 16**

Registration Hours: 7:30 - 17:00
Exhibit Hours: 10:45 - 17:30

7:30	Morning Coffee
8:00 - 8:30	Speaker Briefing
8:30 - 10:00	Opening Plenary
	Break
10:30 - 12:00	Technical Papers Technical Papers
	Lunch (Exhibit Hall)
13:30 - 14:45	Technical Papers Technical Papers
	Break
15:00 - 17:00	Poster & Demo Session
17:00 - 18:30	Student Competition
19:00 - 21:00	IEEE RFID 2015 Networking Dinner

**FRI
 APRIL 17**

Registration Hours: 7:30 - 15:00
Exhibit Hours: 10:30 - 15:00

7:30	Morning Coffee
8:00 - 8:30	Speaker Briefing
8:30 - 10:00	Plenary
	Break
10:30 - 12:00	Technical Papers Technical Papers
	Lunch (Exhibit Hall)
13:30 - 15:00	Technical Papers

PROGRAM KEY:

IEEE RFID 2015 Tutorial/Workshop Day
IEEE RFID 2015 Technical Conference
IEEE RFID 2015 Social Events
RFID Journal LIVE! 2015 Activities Open to IEEE Attendees

All-Access Pass holders are welcome to attend programming content for IEEE RFID 2015 (tickets must be purchased separately for Networking Dinner and Tutorial/Workshop Day).

IEEE RFID 2015 THANKS OUR PATRONS!!

Student Competition Patron



Gold Patron



Best Paper Award Patron



Gold Patron



Gold Patron



Our co-location host:



Our financial sponsor:

