

# **2011 IEEE International Conference on RFID-Technologies and Applications**

**(RFID-TA 2011)**

**Sitges, Spain  
15 – 16 September 2011**



**IEEE Catalog Number: CFP11RFT-PRT  
ISBN: 978-1-4577-0028-6**

# Program

Wednesday, September 14

**WED\_REG: Registration**

Thursday, September 15

**THU\_REG: Registration**

**THU\_OPENING: Opening Address**

**EWTW\_THU\_PLE1: Joint Plenary Session 1: Stepan Lucyszyn, Imperial College London, UK**

"Commercial Applications for RF MEMS"

**EWTW\_THU\_PLE2: Joint Plenary Session 2: Yahya Rahmat-Samii, University of California Los Angeles, Los Angeles, USA**

"Novel Platform Tolerant and Medicine Monitoring RFID Antenna Designs"

**Coffee Break**

**RFIDTA\_STUDENT\_CONTESET: RFID-TA Student Contest [Poster Session]**

**RFIDTA\_THU1P: Smart Environments & Sensing Systems [Poster Session]**

***A Disposable Passive Temperature Sensor with RFID ISO15693 Interface***

Mayukh Bhattacharyya (University of Applied Sciences, Offenburg & Institute For Applied Research (IAF), Germany); Dirk Jansen (Offenburg University of Applied Sciences, Germany); Tobias Volk (University of Applied Sciences, Offenburg, Germany); Daniel Bau (Institute for Applied Research, Germany); Alexander Riske (University of Applied Sciences, Offenburg, Germany)

pp. 1-7

***Tag Testing Methodology for RFID Enabled Temperature Tracking and Shelf Life Estimation***

Ismail Uysal (University of South Florida Polytechnic, USA); Jean-Pierre Emond (University Florida, USA); Gisele Bennett (Georgia Tech, USA)

pp. 8-15

***Lab-Scale Long-Term Operation of Passive Multivariable RFID Temperature Sensors Integrated Into Single-Use Bioprocess Components***

Radislav Potyrailo (General Electric, USA); Cheryl Surman (General Electric, USA); William Morris (General Electric, USA); Tim Wortley (GE Healthcare, USA); Mark Vincent (General Electric, USA); Rafael Diana (General Electric, USA); Vincent Pizzi (General Electric, USA); Jeffrey Carter (General Electric, USA); Gerard Gach (General Electric, USA)

pp. 16-19

***Nonius based time-to-digital converter for low-power RFID sensory systems***

Ainara Jimenez-Irastorza (CEIT and Tecnun, Spain); Juan F Sevillano (CEIT and TECNUN, Spain); Fernando Arizti (CEIT-Universidad de Navarra, Spain); Roc Berenguer (CEIT and TECNUN, Spain); Ivan Rebollo (FARSENS, Spain)

pp. 20-26

***Evaluation of RFID Based Sensor Platform for Packaging Surveillance Applications***

Tomas Unander (SCA R&D Centre, Sweden); Hans-Erik Nilsson (Mid-Sweden University, Sweden)

pp. 27-31

***Supervised learning of RFID Sensor Model using a Mobile Robot***

Grazia Cicirelli (National Research Council, Italy); Annalisa Milella (Italian National Research Council, Italy); Donato Di Paola (National Research Council (C.N.R.), Italy)

pp. 32-36

***A Systematic RFID Application Platform with Integration Capability for Tour and Exhibition***

Na Li (Institute of Automation CAS, P.R. China); Wancheng Ni (Institute of Automation, Chinese Academy of Sciences, P.R. China); Hong Cheng (Institute of Automation, Chinese Academy of Sciences, P.R. China); Jie Tan (Institute of Automation Chinese Academy of Science, P.R. China)

pp. 37-44

***A Framework for the Delivery of Contents in RFID-Driven Smart Environments***

Luca Caviglione (National Research Council (CNR), Italy); Mauro Coccoli (University of Genoa, Italy); Alberto Grosso (University of Genova, Italy)

pp. 45-49

***Flexible and Agile Architecture for Internet of Things Gadgets***

Jonathan Ruiz-de-Garibay (Deusto Institute Technology & DeustoTech, Spain); Tomás Campo (Deusto Institute Technology, Spain); Maite Álvarez (Tecnalia, Spain); Ana Ayerbe (Tecnalia, Spain)

pp. 50-55

***Low Power Passive RFID Transponder Frontend Design for Implantable Biosensor Applications***

Feras Al-Dirini (Princess Sumaya University for Technology, Jordan); Mahmood Mohammed (Princess Sumaya University for Technology, Jordan); Murad Mohammad (Princess Sumaya University for Technology, Jordan); Fadi R. Shahroury (Princess Sumaya University for Technology, Jordan)

pp. 56-63

***A Sensor Network Based On RFID Inventory for Retail Application***

Charles Anssens (IEMN/IRCICA & Auchan/IEMN, France); Nathalie Rolland (University of Lille, France); Paul-Alain Rolland (University of Lille, France)  
pp. 64-67

***RFID and Sensor Network Technologies for Safety Managing in Hazardous Environments***

Claudio Salvador (Advanced Microwave Engineering, Italy); Filippo Zani (Advanced Microwave Engineering, Italy); Guido Biffi Gentili (University of Florence, Italy)  
pp. 68-72

***Advanced Interaction Metaphors for RFID-Tagged Physical Artefacts***

Jens Ziegler (Technische Universität Dresden, Germany); Leon Urbas (Technische Universität Dresden, Germany)  
pp. 73-80

**RFIDTA\_THU2P: Test & Measurements [Poster Session]**

***Evaluation of the electromagnetic absorption in furniture for the integration of UHF-RFID tags***

Andrés Bleda (Centre of Furniture and Wood of the Region of Murcia, Spain); Guadalupe Santa (Centre of Furniture and Wood of the Region of Murcia, Spain); Antonio Jara (University of Murcia, Spain); Rafael Maestre (Centre of Furniture and Wood of the Region of Murcia, Spain); Antonio Fernando Gomez Skarmeta (University of Murcia, Spain)  
pp. 81-88

***Read rate profile monitoring for defect detection in RFID Systems***

Gilles Fritz (Grenoble INP - LCIS, France); Boutheina Maaloul (Grenoble INP - LCIS, France); Vincent Berouille (Lcis-Esisar-Inpg, France); Oum-EI-Kheir Aktouf (Grenoble INP - LCIS, France); David Hély (Grenoble INP - LCIS, France)  
pp. 89-94

***RFID Testing and Evaluation for an RF-Harsh Environment***

Allison Mercer (Georgia Institute of Technology & GTRI, USA); Ryan James (Georgia Institute of Technology, USA); Gisele Bennett (Georgia Tech, USA); Priyank Patel (Georgia Institute of Technology, USA); Chase Johnston (Georgia Institute of Technology, USA); James Cai (Georgia Institute of Technology, USA)  
pp. 95-102

***Design and Reliability Evaluation of Passive HF RFID Systems in Metal Environments***

Kevin D'hoë (KaHo Sint-Lieven Gent, Belgium); Tom Hamelinckx (Catholic University College Ghent, Belgium); Jean-Pierre Goemaere (Catholic University College Ghent, Belgium); Nobby Stevens (Catholic University College Ghent, Belgium); Lieven De Strycker (Catholic University College Ghent, Belgium); Bart Nauwelaers (Katholieke Universiteit Leuven, Belgium)  
pp. 103-108

***Comparison of Multi-Antenna Configurations of an RFID Reader with Active Carrier Compensation***

Robert Langwieser (Vienna University of Technology, Austria); Gregor Lasser (Vienna University of Technology, Austria); Arpad L Scholtz (Vienna University of Technology, Austria); Markus Rupp (Vienna University of Technology, Austria)

pp. 109-114

***Measuring UHF RFID Tag Reading for Document Localization***

Marina Buzzi (IIT-CNR, Italy); Marco Conti (IIT-CNR, Italy); Caterina Senette (IIT-CNR, Italy); Daniele Vannozzi (IIT-CNR, Italy)

pp. 115-122

***Some considerations about RFID System performance applied to the Vehicular Identification***

Ricardo Meneses González (Instituto Politécnico Nacional & Escuela Superior de Ingeniería Mecánica y Eléctrica Unidad Zacatenco, Mexico); Roberto Orosco Vega (SEPI-ESIME National Polytechnique Institute, Mexico); Roberto Linares y Miranda (SEPI-ESIME National Polytechnique Institute, Mexico)

pp. 123-127

***Experimental Analysis for Signal Strength (SS) Based Estimation Method in RFID Systems***

Majid Alotaibi (University of Queensland, Australia); Konstanty S Bialkowski (The University of Queensland & National ICT Australia, Australia); Adam Postula (University of Queensland, Australia)

pp. 128-134

***Pulse shaping in ISO/IEC14443 measurement systems using inverse system parameters for feed-forward compensation***

Ulrich Muehlmann (NXP Semiconductors, Austria)

pp. 135-139

***Measurement Instrument Selection for Very High Bit Rate Contactless Transponder Evaluation***

David Seebacher (TU Graz, Austria); Michael Gebhart (NXP Semiconductors, Austria); Michael Stark (NXP Semiconductors & NXP Semiconductors, Austria)

pp. 140-147

***Customized Experimental Test Set for Characterization and Calibration of RFID Tags in Liquids***

Riccardo Stefanelli (Politecnico di Torino - iXem Labs, Italy); Daniele Trincherò (Politecnico di Torino & iXem Labs, Italy)

pp. 148-151

***Investigation of Impact Factors for Various Performances of Passive UHF RFID System***

Jae Sung Choi (University of Texas at Arlington, USA); Mingon Kang (University of Texas at Arlington, USA); Ramez Elmasri (University of Texas at Arlington, USA); Daniel W Engels (Revere Security, USA)

pp. 152-159

## RFIDTA\_THU1: RFID for Positioning & Localization

### ***Efficient Self-Adjusting, Similarity-based Location Fingerprinting with Passive UHF RFID***

Philipp Vorst (University of Tuebingen, Germany); Artur Koch (University of Tuebingen, Germany); Andreas Zell (University of Tuebingen, Germany)  
pp. 160-167

### ***Localization of UHF RFID Labels with Reference Tags and Unscented Kalman Filter***

Theresa Nick (TU Dortmund University, Germany); Jürgen Götze (TU Dortmund University, Germany); Werner John (System Integration Laboratory, Germany); Gerhard Stoenner (Deutsche Post AG, Germany)  
pp. 168-173

### ***Improved AoA Based Localization of UHF RFID Tags Using Spatial Diversity***

Salah Azzouzi (Cologne University of Applied Sciences, Germany); Markus Cremer (Cologne University of Applied Sciences, Germany); Uwe Dettmar (Cologne University of Applied Sciences, Germany); Thomas Knie (Cologne University of Applied Sciences, Germany); Rainer Kronberger (Cologne University of Applied Sciences, Germany)  
pp. 174-180

### ***Non-intrusive Localization of Passive RFID Tagged Objects in an Indoor Workplace***

Siddika Parlak (Rutgers University, USA); Ivan Marsic (Rutgers University, USA)  
pp. 181-187

### ***Phase Difference of Arrival Distance Estimation for RFID Tags in Frequency Domain***

Ales Povalac (Brno University of Technology, Czech Republic); Jiri Sebesta (Brno University of Technology, Czech Republic)  
pp. 188-193

## Lunch Break

## RFIDTA\_PANNEL: Panel Session

RFID Technologies: status and challenges

## RFIDTA\_THU2: RFID Circuits, Components & Tags

### ***Review of active textile antenna co-design and optimization strategies***

Arnaut Dierck (Ghent University, Belgium); Frederick Declercq (Ghent University & Faculty of engineering, Belgium); Hendrik Rogier (Ghent University, Belgium)  
pp. 194-201

***Long Range Metal Mountable Tag Antenna for Passive UHF RFID Systems***

Toni Björninen (Tampere University of Technology, Finland); Karina Espejo Delzo (Tampere University of Technology, Finland); Leena Ukkonen (Tampere University of Technology, Finland); Atef Elsherbeni (The University of Mississippi, USA); Lauri Tapio Sydänheimo (Tampere University of Technology, Finland)

pp. 202-206

***A fully EPC compatible Multi frequency Passive RFID Tag with -11.4 dBm Sensitivity***

Hannes Reinisch (Graz University of Technology, Austria); Günter Hofer (Infineon Technologies Austria AG, Austria); Stefan Gruber (Infineon Technologies Austria AG & Graz University of Technology, Austria); Micheal Klamminger (Graz University of Technology, Austria); Wolfgang Pribyl (Graz University of Technology, Austria); Gerald Holweg (, Austria)

pp. 207-213

***Chipless RFID Based on Group Delay Encoding***

Raji Nair (Grenoble-INP/LCIS, France); Etienne Perret (Grenoble-inp, France); Smail Tedjini (Grenoble-inp, France)

pp. 214-218

***Design of Paper-Substrate Dipole Antennas Magnetically Coupled to UHF RFID Silicon Chips***

Federico Alimenti (Università degli Studi di Perugia, Italy); Giulia Orecchini (University of Perugia, Italy); Marco Virili (University of Perugia, Italy); Valeria Palazzari (University of Perugia, Italy); Paolo Mezzanotte (University of Perugia, Italy); Luca Roselli (University of Perugia, Italy)

pp. 219-222

## **Coffee Break**

## **RFIDTA\_THU3: RFID Applications**

***Generating Business Events in an RFID Network***

Nikos Kefalakis (Athens Information Technology, Greece); John Soldatos (AIT, Greece); Efstathios Mertikas (Athens Information Technology, Greece); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark)

pp. 223-229

***RFID tag Readability for Tracking Fiber Optic Connections in Data Centers***

John D Downie (Corning Incorporated, USA); Matthew Whiting (Corning Incorporated, USA); James Trice (Corning Incorporated, USA); Jeevan Vemagiri (Corning Incorporated, USA); Blaignan Vincent (Corning Incorporated, USA); Suber Chris (Corning Incorporated, USA); Aravind Chamarti (Corning Cable Systems, USA); Scott Pollard (Corning Incorporated, USA); Robert McCollum (Corning Incorporated, USA); Richard E. Wagner (Corning Incorporated, USA)

pp. 230-235

***Implementation of an RFID-based Biological Sample Identification and Tracking System***

Atieh Zarabzadeh (Dublin, Ireland); Farzad Hayati (The Department of Electronic, United Kingdom); R. William G. Watson (UCD, Ireland); Geoff Bradley (TCD, Ireland); Jane Grimson (TCD, Ireland)  
pp. 236-243

***Touch- and Audio-based Medication Management Service Concept for Vision Impaired Older People***

Mari Ervasti (VTT Technical Research Centre of Finland, Finland); Minna Isomursu (VTT, Finland); Igone Idigoras Leibar (Health and Life Quality, Tecnalia Research and Innovation, Spain)  
pp. 244-251

***Easily Deployable Solution Based on Wireless Technologies for Traceability of Pharmaceutical Drugs***

Asier Moreno (Deustotech Institute of Technology - University of Deusto, Spain); Ignacio Angulo (University of Deusto, Spain); Hugo Landaluce (Deustotech Institute of Technology - University of Deusto, Spain); Asier Perallos (Fundacion Deusto, Spain)  
pp. 252-258

**Friday, September 16**

**FRI\_REG: Registration**

**RFIDTA\_FRI\_PLE1: Plenary Session 1: Georg Fischer, University of Erlangen-Nuernberg, Erlangen, Germany**

“Non-Linear Measurement Methods for Passive UHF RFID Frontends”

**RFIDTA\_FRI\_PLE2: Plenary Session 2: Manos Tentzeris, Georgia institute of technology, USA**

“Inkjet-printed RFID and Wireless Sensor Nodes: The Final Step to bridge Cognitive Intelligence, Nanotechnology and RF?”

**Coffee Break**

**RFIDTA\_FRI1P: System Deployment & Middleware [Poster Session]**

***MARC: Minimum Access RFID Readers Commands***

Ismael Abad Cardiel (UNED, Spain); Carlos Cerrada Somolinos (UNED, Spain); Jose Antonio Cerrada Somolinos (UNED, Spain)  
pp. 259-263



***Measuring the Interference at an RFID Tag: Where Does It Have an Impact?***

Rasmus Krigslund (Aalborg University, Denmark); Petar Popovski (Aalborg University, Denmark); Gert Pedersen (Aalborg University, Denmark); Kim Olesen (Aalborg University, Denmark)

pp. 264-271

***Reader Planning in UHF RFID Application***

Yong Yuan (Radio Access Technology and Solution, P.R. China); Dan Yu (Radio Access Technology and Solution, P.R. China)

pp. 272-278

***Scalable Trajectory-based Protocol for RFID Tags Identification***

Rolando Trujillo-Rasua (Rovira i Virgili University, Spain); Agusti Solanas (Rovira i Virgili University, Spain)

pp. 279-285

***RFID Reader with Multi Antenna Physical Layer Collision Recovery Receivers***

Jelena Kaitovic (Vienna University of Technology, Austria); Robert Langwieser (Vienna University of Technology, Austria); Markus Rupp (Vienna University of Technology, Austria)

pp. 286-291

***Web based RFID Asset Management Solution established on Cloud Services***

Arunabh Chattopadhyay (University of California, Los Angeles, USA); Shiv Prabhu (University of California, Los Angeles, USA); Rajit Gadh (University of California - Los Angeles, USA)

pp. 292-299

***RFID network topology design based on Genetic Algorithms***

Oscar Botero (TELECOM & Management SudParis, France); Hakima Chaouchi (Telecom Sud Paris, France)

pp. 300-305

***Enhanced FM0 Decoder for UHF Passive RFID Readers Using Duty Cycle Estimations***

N. Fernando Bautista (University of the Philippines, Philippines); Joel Joseph Jr. S. Marciano (University of the Philippines & Wireless Communications Engineering Laboratory, Philippines)

pp. 306-312

***A Task Allocation Middleware Targeting an RFID-Enhanced Environment***

Alberto Grosso (University of Genova, Italy); Mauro Coccoli (University of Genova, Italy); Antonio Boccalatte (University of Genova, Italy); Luca Caviglione (National Research Council (CNR), Italy)

pp. 313-318

***DHT-based distributed ALE engine in RFID Middleware***

Loïc Schmidt (INRIA-Lille Nord Europe, France); Nathalie Mitton (INRIA Lille-Nord Europe, CNRS UMR 8022, IRCICA, USTL, France); David Simplot-Ryl (Université Lille1 - Sciences et Technologies & INRIA Lille - Nord Europe, France); Roudy Dagher (INRIA Lille-Nord Europe, France); Roberto Quilez (INRIA Lille - Nord Europe, France)

pp. 319-326

***Reader Anti-Collision in Dense RFID Networks With Mobile Tags***

Essia Hamouda (University of California Riverside, USA); Nathalie Mitton (INRIA Lille-Nord Europe, CNRS UMR 8022, IRCICA, USTL, France); David Simplot-Ryl (Université Lille1 - Sciences et Technologies & INRIA Lille - Nord Europe, France)  
pp. 327-334

**RFIDTA\_FRI2P: RFID Applications, Security & Privacy [Poster Session]**

***Weaknesses of the ISO/IEC 14443 Protocol Regarding Relay Attacks***

Wolfgang Issovits (Graz University of Technology, Austria); Michael Hutter (University of Technology Graz, Austria)  
pp. 335-342

***A Pharmaceutical Anti-counterfeiting Method Using Time Controlled Numeric Tokens***

Emil Nilsson (Halmstad University, Sweden); Björn Nilsson (Halmstad University, Sweden); Eric Järpe (Halmstad University, Sweden)  
pp. 343-347

***Backward Link Authentication For RFID Tags***

Behzad Malek (University of Ottawa, Canada); Ali Miri (Ryerson University & University of Ottawa, Canada); Luis Orozco Barbosa (Universidad de Castilla La Mancha, Spain)  
pp. 348-352

***No Room for Error: RFID-enabled Smart Point-of-Care Medication Process in Hospital Wards***

Zhifeng Qin (The University of Hong Kong, Hong Kong); George Huang (The University of Hong Kong, Hong Kong); Qingyun Dai (Guangdong University of Technology, P.R. China)  
pp. 353-358

***An Incontinence Alarm Solution utilizing RFID based Sensor Technology***

Hans-Erik Nilsson (Mid-Sweden University, Sweden); Johan Sidén (Mid-Sweden University, Sweden); Mikael Gulliksson (Sensible Solutions Sweden AB, Sweden)  
pp. 359-363

***Low-Frequency RFID Based Mobility Network for Blind People***

Lorenzo Faggion (European Commission, Italy); Graziano Azzalin (Joint Research Centre of the European Commission, Italy)  
pp. 364-369

***MedAssist - A Privacy Preserving Application using RFID Tags***

Sandra Dominikus (Graz University of Technology, Austria)  
pp. 370-375

***RFID for anonymous biological samples and pseudonyms***

Frank R. Ihmig (Fraunhofer IBMT, Germany); Haiko Wick (Fraunhofer IBMT, Germany); Karim Hichri (Fraunhofer IBMT, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany)

pp. 376-380

***Studying the Pseudo Random Number Generator of a low-cost RFID tag***

Mohamad Merhi (Faculty of Technology, Portsmouth University, United Kingdom); Julio Cesar Hernandez-Castro (School of Computing, University of Portsmouth, United Kingdom); Pedro Peris-Lopez (Delft University, The Netherlands)

pp. 381-385

***Elliptic Curve Cryptography Based Authentication Protocol for Low-Cost RFID Tags***

Győző Gódor (Budapest University of Technology and Economics, Hungary); Sándor Imre (Technical University of Budapest, Hungary)

pp. 386-393

***Auto-ID Enabled Tracking and Tracing Data Sharing Over Dynamic B2B and B2G Relationships***

Frank J. Xu (The University of Hong Kong, Hong Kong); Frank C.H. Tong (University of Hong Kong, Hong Kong); Chung Jen Tan (The University of Hong Kong, Hong Kong)

pp. 394-401

***Security Implementation within GEN2 Protocol***

Sai Nava Patanjali Seshabhattar (Revere Security & Revere Security, USA); Shesh Kumar Jagannatha (University of Texas Arlington, USA); Daniel W Engels (Revere Security, USA)

pp. 402-407

***Use of RFID technology on a mobile robot for topological navigation tasks***

Ana Corrales (Carlos III University of Madrid, Spain); Miguel A. Salichs (University Carlos III of Madrid, Spain)

pp. 408-414

***RFID Enabled Vehicular Wireless Query for Travel Information in Intelligent Transportation System***

Zongwei Luo (University of Hong Kong, Hong Kong); Tianle Zhang (Beijing University of Posts and Telecommunications, P.R. China); Chunlu Wang (Beijing Post and Telecommunication University, P.R. China)

pp. 415-420

***RFID Technology Applied to Students' Backpacks***

Andreia Abreu (University of Aveiro, Portugal); João Reis (Universidade de Aveiro, Portugal); Sérgio Martins (Universidade de Aveiro, Portugal); Nuno Borges Carvalho (University of Aveiro/IT Aveiro, Portugal); André V. Zúquete (University of Aveiro, Portugal)

pp. 421-425

***An analysis on the use of LF RFID for the tracking of different typologies of pebbles on beaches***

Giuliano Benelli (Dipartimento di Ingegneria dell'Informazione, University of Siena, Italy); Enza Panzardi (University of Siena, Italy); Alessandro Pozzebon (University of Siena, Italy); Duccio Bertoni (University of Pisa, Italy); Giovanni Sarti (University of Pisa, Italy)

pp. 426-431

***Probabilistic Modeling of RFID Business Processes***

Michael Goller (RF-IT Solutions GMBH, Austria); Markus Brandner (Graz University of Technology, Austria)  
pp. 432-436

***Increasing Competitiveness of Third Party Logistics with RFID***

Rebecca Aggarwal (Aston University, United Kingdom); Ming Lim (Aston University, United Kingdom)  
pp. 437-444

**RFIDTA\_FRI3P: Antennas for RFID [Poster Session]**

***Technical Challenges for the Integration of passive HF RFID Technology in FRP Composite Materials***

Iker Mayordomo (Fraunhofer Institute for Integrated Circuits IIS, Germany); Tobias Dräger (Fraunhofer Institute for Integrated Circuits IIS, Germany); Josef Bernhard (Fraunhofer Institute for Integrated Circuits IIS, Germany)  
pp. 445-450

***Frequency Scanning Leaky Wave Antenna for Positioning and Identification of RFID Tags***

Alejandro Javier Martinez-Ros (Universidad Politécnica de Cartagena, Spain); Jose-Luis Gómez-Tornero (Polytechnic University of Cartagena, Spain); George Goussetis (Reader, United Kingdom)  
pp. 451-456

***Feasibility study and on-chip antenna for fully integrated  $\mu$ RFID tag at 60 GHz in 65nm CMOS SOI***

Alessandro Fonte (University of Pisa, Italy); Sergio Saponara (University of Pisa, Italy); Giancarlo Pinto (University of Pisa, Italy); Bruno Neri (University of Pisa, Italy)  
pp. 457-462

***Contribution on UHF RFID antenna design and tag fabrication***

Tran Thuat Nguyen (Ho Chi Minh City National University, Vietnam); Mau Chien Dang (Ho Chi Minh City National University, Vietnam); Nhan Ai Tran (National University Ho Chi Minh City, Vietnam); Anh Hoang (National University Ho Chi Minh City, Vietnam); Dat Son Nguyen (National University Ho Chi Minh City, Vietnam); Eric Fribourg-Blanc (CEA-LETI, France); Hong Phuong Phan (Ho Chi Minh City University of Technology & Laboratory of Nanotechnology, Ho Chi Minh City National University, Vietnam); Ho Cong Tam Vuong (University of Technology Ho Chi Minh City, Vietnam); Van Hieu Nguyen (Ho Chi Minh City University of Technology, Vietnam); Tien Thong Pham (University of Technology Ho Chi Minh City, Vietnam)  
pp. 463-468

***A Low Profile Circularly Polarized Antenna for UHF RFID Readers***

Juvenal Alarcon (IM2NP, France); Matthieu Egels (IM2NP, France); Philippe Pannier (IM2NP, France)  
pp. 469-472

## RFIDTA\_FRI1: Algorithms & Protocols

### ***A true full-duplex communication between HF contactless reader and card***

Florian Pebay-Peyroula (CEA, France); Jacques Reverdy (CEA, France)  
pp. 473-478

### ***Optimal scheduling in dual reader RFID environments***

Javier Vales-Alonso (Universidad Politécnica de Cartagena, Spain); Maria Victoria Bueno-Delgado (Technical University of Cartagena, Spain); Juan Jose Alcaraz (Technical University of Cartagena, Spain)  
pp. 479-485

### ***Cost model for RFID-based Traceability Information Systems***

Miguel L Pardo (IST - Technical University of Lisbon & MIT, Portugal); José Alves Marques (IST - Technical University of Lisbon, Portugal)  
pp. 486-493

### ***Inventory Time Reduction in Gen2 with Single-Antenna Separation of FM0 RFID Signals***

John Kimionis (Technical University of Crete, Greece); Aggelos Bletsas (Technical University of Crete, Greece); Antonis G Dimitriou (Aristotle University of Thessaloniki, Greece); George N. Karystinos (Technical University of Crete, Greece)  
pp. 494-501

### ***A Statistical Approach to the Evaluation of the Coverage Area of UHF RFID Systems***

Franco Fuschini (DEIS - Bologna, Italy); Leo Capriotti (University of Bologna, Italy)  
pp. 502-506

## Lunch Break

## RFIDTA\_FRI2: Sensors & IoT

### ***Passive RFID based sensing***

Santiago Capdevila (Universitat Politècnica de Catalunya, Spain); Luis Jofre (UPC, Spain); Jordi Romeu (Universitat Politècnica de Catalunya, Spain); Jean-Charles Bolomey (Supelec, France)  
pp. 507-512

### ***Review of Technologies for Low-Cost Integrated Sensors***

Amin Rida (Georgia Institute of Technology, USA); Vasileios Lakafosis (Georgia Institute of Technology, USA); Rushi Vyas (Georgia Institute of Technology, USA); Manos M. Tentzeris (Georgia Institute of Technology, USA); Symeon Nikolaou (Frederick Research Center, Cyprus)  
pp. 513-520

***Merging RFID, visual and gesture recognition technologies to generate and manage smart environments***

Alessandra Costanzo (DEIS, University of Bologna, Italy); Sara Bartolini (Università di Bologna, Italy); Luca Benini (University of Bologna, Italy); Elisabetta Farella (DEIS - University of Bologna, Italy); Diego Masotti (University of Bologna, Italy); Bojan Milosevic (University of Bologna, Italy); Luigi Di Stefano (Università di Bologna, Italy); Alessandro Franchi (Arces, Italy); Tullio Salmon Cinotti (University of Bologna, Italy); Sandra Mattarozzi (CCC, Italy); Valerio Nannini (CCC, Italy)  
pp. 521-526

***EPC based Internet of Things Architecture***

Hisakazu Hada (Keio University, Japan); Jin Mitsugi (Keio University, Japan)  
pp. 527-532

***Passive multivariable RFID pH sensors***

Radislav Potyrailo (General Electric, USA); Cheryl Surman (General Electric, USA); Timothy Sivavec (General Electric, USA); Tim Wortley (GE Healthcare, USA)  
pp. 533-536

## Coffee Break

## RFIDTA\_FRI3: Performance Enhancement & Evaluation

***Performance Testing of RFID Systems with RF-Harsh Materials***

Allison Mercer (Georgia Institute of Technology & GTRI, USA); Ryan James (Georgia Institute of Technology, USA); Gisele Bennett (Georgia Tech, USA); Priyank Patel (Georgia Institute of Technology, USA); Chase Johnston (Georgia Institute of Technology, USA); James Cai (Georgia Institute of Technology, USA)  
pp. 537-543

***Experimental Demonstration of Transmit Diversity for Passive Backscatter RFID Systems***

Azhar Hasan (Georgia Institute of Technology, USA); Chenming Zhou (Disney Research, Pittsburgh, USA); Joshua D Griffin (Disney Research Pittsburgh, USA)  
pp. 544-548

***Increasing the Range of Wireless Passive Sensor Nodes using Multisines***

Ricardo Fernandes (Instituto de Telecomunicações & Universidade de Aveiro, Portugal); Alírio S Boaventura (Instituto de Telecomunicações - Universidade de Aveiro, Portugal); Nuno Borges Carvalho (University of Aveiro/IT Aveiro, Portugal); João Matos (Instituto de Telecomunicações - Universidade de Aveiro, Portugal)  
pp. 549-553

***Testing Passive UHF Tag Performance Evolution***

Daniel G Kuester (NIST & University of Colorado at Boulder, USA); David Novotny (National Institute of Standards and Technology, USA); Jeffrey

Guerrieri (National Institute of Standards and Technology, USA); Zoya Popović (University of Colorado at Boulder, USA)  
pp. 554-560

***DTV Band Micropower RF Energy-Harvesting Circuit Architecture and Performance Analysis***

Chomora Mikeka (Yokohama National University, Japan); Hiroyuki Arai (Yokohama National University, Japan); Apostolos Georgiadis (CTTC, Spain); Ana Collado (CTTC, Spain)  
pp. 561-567