



**Royal Irish Academy
Committee for Communications and Radio Science**

Colloquium on Emerging Trends in Wireless Communications

Academy House Dawson Street, Dublin 2

Thursday, 24th April 2008

With Welcome Reception on Wednesday 23rd April, 18.30.

V9.1

Wednesday, 23th April 2008:

18.00 Registration Desk open
18.30 - 19.30 **Wine Reception for Registered Delegates**, at Academy House.

Welcome Addresses

Mr. Tony Killeen, Minister of State,
Dept. of Communications, Marine and Natural Resources.

Prof. Fionn Murtagh, Director, SFI
Information, Communications & Emergent Technologies, SFI.

18.30 - 19.30 **Poster Session I** (This session continues: 08.30 to 11.00 on 24 April)

Thursday, 24th April 2008:

08.30 – 08.55 **Registration**

08.55 - 09.00 **Colloquium Opening**
Dr. Máirtín Ó Droma, University of Limerick
Chair, Conference Organising Committee
Welcome
Prof. Tom Brazil, University College Dublin
Chair, RIA Committee on Communications and Radio Science

09.00 – 16.45 **Colloquium Oral and Poster Sessions**

Colloquium Sessions

- Session (1)** **Trends in Wireless Systems and Subsystems**
Chair: *Prof. T. Brazil, UCD; Dr. K. McCarthy, UCC*
- 09.00 - 09.25 Key Challenges and Trends for Future Cellular Base Station Power Amplifiers
Invited Speaker: *Dr. Mark Murphy, Program Manager, BL-Cellular, PL RF Power & Base Stations, NXP Semiconductors*
- 09.25 - 09.45 Peak to Average Power Ratio Reduction of OFDM Signals
Carole Devlin, Anding Zhu, Thomas Brazil, University College Dublin
- 09.45 - 10.05 Development of Laterally Contacted Schottky Diodes for THz Applications
Liam Floyd, Tyndall National Institute, U.C.C.
- 10.05 – 10.25 Impedance Tuning Unit for Reconfigurable RF Applications
Tejprakash Pochiraju, Vincent Fusco, Queens University of Belfast; J. Francey, Taconic-ADD, Ireland; H. Schmassmann, Varioprint AG, Switzerland
- 10.25 – 10.55** **Tea/coffee & Poster Session I (cont'd)**
- Session (2)** **Antennas**
Chair: *Prof. P. Murphy, UCC; Dr. C. Brennan, DCU*
- 10.55 – 11.15 Advancements in Active-Antenna-Array Systems and Technologies for Mobile Communication Applications
Invited Speaker: *Florian Pivit, Alcatel-Lucent - Bell Labs*
- 11.15 – 11.35 The Effectiveness of Non-Radiative Calibration Approaches of a Tower Top Distributed Transceiver System
Justine McCormack, Lukasz Lengier, John Dooley, Ronan Farrell, National University of Ireland, Maynooth
- 11.35 – 11.55 ISM Printed Curl CP Antenna Design
Sean O'Kane, Vincent Fusco, Queens University Belfast
- 11.55 – 12.15 Effects of Tapered Coaxial Feedlines on the Performance of a 3D Monopole UWB Antenna
Giuseppe Ruvio, Dublin Institute of Technology; Max Ammann, CTVR, Dublin Institute of Technology
- 11.00 – 16.20 **Poster Session II**
- 12.15 – 13.45** **Lunch**

Colloquium Sessions

Session (3)

Wireless architectures

Chair: *Dr. M. Ó Droma, UL;*

Lt. Col. T. Roche, Air Corps.

- 13.45 – 14.05 Cross-Layer Design and Dynamic Optimization for Wireless Systems
Invited Speaker: *Giovanni Giambene, University of Siena, Italy*
- 14.05 - 14.25 Lower Bound on the Capacity of SVD MIMO Communications Systems Based on Experimentally Observed Wireless and Transmission Line Channels.
Pat Chambers, Conor Downing, Hussein Baher, Dublin Institute of Technology
- 14.25 – 14.45 RF Communications for a Swallowable Capsule
Colm Mc Caffrey, Olivier Chevalerias, Karen Twomey, Tyndall National Research Institute;
Emmanuel Leyraud, ENSEIRB (University of Bordeaux)
- 14.45 – 15.05 Performance comparison of the position estimators in WCDMA networks
A.K.M. Najmul Islam, Md. Farzan Samad, Tampere University of Technology, Finland

15.05 – 15.25 Tea/coffee & Poster Session II (cont'd)

Session (4)

Ultrawideband Wireless Systems

Chair: *Prof. Carson Stewart, QUB;*

R. O'Connor, Dept. of Communications, Marine and Natural Resources

- 15.25 – 15.45 Emerging Trends in Cellular Wireless Technology
Invited Speaker: *David Redmond, Country Manager, Freescale Semiconductor Ireland*
- 15.45 – 16.05 An Ultrawideband LC VCO in 0.18 um CMOS
Robert O'Leary, Kevin McCarthy, Patrick J. Murphy, Electrical Engineering Dept., University College Cork
- 16.05- 16.25 A Hybrid Photonic/Radio system for UWB signal generation and distribution
Liam Barry, Philip Perry, Aleksandra Kaszubowska, Dublin City University
- 16.25 – 16.45 Directive Ultra Wideband Antennas for Radar Applications in Wireless Sensor Networks
Patrick McEvoy, Sergio Curto, Matthias John, Dublin Institute of Technology; Max Ammann, CTVR, Dublin Institute of Technology

16.45

Conclusion of Colloquium

Poster Sessions

Session I (18.30 23rd to 11.00 24th April)

Chair: Dr. M. Ammann, DIT

Ubiquitous Consumer Wireless World – a University of Limerick Wireless NGN Proposal.

*Máirtín Ó Droma, Ivan Ganchev, Zhanlin Ji, Jenó Jakab, Ning Wang,
Telecommunications Research Centre,
University of Limerick.*

Local Estimators for 802.11 MAC Channel Quality

*Domenico, Giustiniano, David Malone, Douglas Leith, Konstantina Papagiannaki,
National University of Ireland, Maynooth.*

Millimetre-Wave Optics for High-Precision Applications

*Creidhe O'Sullivan, J. Anthony Murphy, Marcin Gradziel, Neil Trappe, Tully Peacocke,
National University of Ireland, Maynooth.*

Software Defined Radio Transceiver Implementation

Gerald Corley, Magdalena Sanchez Mora, Ronan Farrell, National University of Ireland, Maynooth.

A Practical Class S Power Amplifier for High Frequency Systems

*John Dooley,
National University of Ireland, Maynooth.*

An effective method for the determination of the locking range of an Injection-Locked Frequency Divider

Marissa Condon, Tao Xu, Dublin City University

Efficient wideband computation of radar cross section for perfectly electrically conducting objects

*Marie Mullen, Patrick Bradley, Conor Brennan,
Marissa Condon, Dublin City University*

Negative resistance generation in degenerated gyrator.

*Grzegorz Szczepkowski, Institute of Microelectronics and Wireless Systems, NUIM;
Ronan Farrell,
National University of Ireland, Maynooth.*

Session II (11.30 to 16.20 24th April)

Chair: Dr. C. Downing, DIT

Reduced Complexity MASH Delta-Sigma Modulator with Dither and Sinusoidal Input

*Zhipeng Ye, Michael Peter Kennedy,
University College Cork.*

Wireless Attenuation by Energy Efficient Windows in the 8-12.5 GHz region

*Paul O'Leary, Waterford Institute of Technology;
Helmut Doelecke, Fachhochschule Hannover,
Nils Knauer, Sennheiser Electronic GmbH & Co. Germany;*

Integrated Modelling of Mechanical and RF Performance of MEMS Capacitive Shunt Switch

*Yamuna Kuberappa, Martin Hill,
Cork Institute of Technology;
Conor O' Mahony, Tyndall National Institute*

The SmartCoast Multi Sensor System: "Development and Deployment of a Wireless Sensor System for Water Quality Monitoring"

Brendan O'Flynn, Tyndall National Institute

Nonuniform Transmission Line Filter for Ultra Wideband Pulse Shaping and Its Applications

*Pawel Rulikowski, John Barrett,
Cork Institute of Technology*

RF Performance Optimization of a 2.45GHz Zigbee Wireless Sensor Node

*John Buckley, Brendan O'Flynn, Cian O'Mathuna
Tyndall National Institute, Cork.
Emanuel Popovici, University College Cork*

An Improved Low Order Bessel-Fourier RF Power Amplifier Behavioural Model

*Yiming Lei, Anthony A. Goacher,
Mairtin Ó Droma,
Telecommunications Research Centre,
University of Limerick*

Embracing the Femtocell Home-basestation Opportunity

Darren Hobbs, Freescale Semiconductor, Cork.

RIA Communications and Radio Science Committee

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Dr K. McCarthy	Dr C. Downing
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