

Loughborough Antennas & Propagation Conference (LAPC) 2008

Conference Programme

Monday March 17th

- **Registration and Coffee** 8:00am – 9:00am
- **Conference Opening** 9:00am – 9:15am

■ **Invited Session 1: Antennas and Propagation for Body-Centric Wireless Communications** 9:15 – 11:15am

- 09:15 – 09:45am **Keynote Talk: A Critical Look at the Problem of Small Antenna Design and a Review of Physics-Based Performance Limitations of these Antennas**
Prof. Raj Mittra, Pennsylvania State University, USA
- 09:45 – 10:15am **Progress in Radiowave Propagation Studies of On-Body Communications Channels**
Prof. Peter Hall, University of Birmingham, UK
- 10:15 – 10:45am **Understanding On-Body Fading Channels at 2.45 GHz Using Measurements Based on User State and Environment**
Dr. William Scanlon, Queen's University at Belfast, UK
- 10:45 – 11:15am **Dual Band Wearable Antenna**
Prof. Richard Langley, The University of Sheffield, UK

- **Refreshments and Poster Session 1, Exhibition Area A, B & C** 11:15am - 12:45pm

■ **Poster Session 1**

Exhibition Area A

- A 1 Far-field reconstruction from planar spiral data using an effective modelling of the antenna**
Francesco D'Agostino, Claudio Gennarelli, Flaminio Ferrara, Rocco Guerriero, Massimo Migliozi, Carlo Rizzo
- A 2 Sub-Millimetre Wave Linear to Circular Polariser Converter**
Matthias Euler, Vincent Fusco
- A 3 Estimation of an Error on Phase Progression Measurement**
Igor Shirokov, Yuri Gimpilevich, George Jandieri
- A 4 Switching a dual-band planar inverted-F antenna to operate in eight frequency bands**
Mikko Komulainen; Heli Jantunen
- A 5 Eigenmode Decoupling of Miniaturised Diversity Antennas Using Compact Quasi-Lumped Networks**
Jörn Weber; Christian Volmer; Ralf Stephan; Matthias Hein

A 6 Reduced mutual coupling in a compact antenna array using periodic structures
Mario Schuehler

A 7 On-Body Bluetooth Link Budget: Effects of Surrounding Objects and Role of Surface Waves
Masood Ur Rehman; Yue Gao; Xiaodong Chen; Clive Parini; Ying Zhinong; Thomas Bolin

A 8 Design of a Novel On-Chip Antennas with Multi-Band for Wireless Sensor Networks
Dong Park

A 9 Proposal for A Novel Near-Field Antenna Measurement Technique Employing A Conic FRUSTUM Geometry
Stuart Gregson; Clive Parini; John McCormick

Exhibition Area B

B 1 Printed Curl CP Antenna Design
Sean O'Kane; Vincent Fusco

B 2 Experimental Verification of a New Technique for System Level Characterization of the Radiated Emissions of Unknown Sources inside Cavities from Unit Level Measurements.
Francisco Saez de Adana

B 3 A Novel X-band Rectangular Industrial Free Electron Maser
Fareq Malek, James Lucas and Yi Huang

B 4 EBG Antenna Conformation for Beamforming
Dina Serhal; Bernard Jecko

B 5 Time-resolved Bragg effects in an ultra wideband leaky feeder antenna array based on semi-rigid coaxial cable
Terry Quinlan; Sandra Dudley; Stuart Walker

B 6 A pure dielectric PIFA for wlan applications
David Ireland; Simon Kingsley; Steven O'Keefe

B 7 WiMAX Antennas for Intelligent Transport System communications
Ignacio Garcia Zuazola; Jaafar Elmirghani; John Batchelor

B 8 Active coating for wind turbine blades
Barry Chambers; Kenneth Ford; Alan Tennant

B 9 Independent Multiband Antenna Tuning Using An Active EBG
Hyung-Joo Lee; Kenneth Ford; Richard Langley

B 10 A Novel Tapered Leaky Wave Antenna
Onofrio Losito

Exhibition Area C

C 1 Indicative SAR levels due to an active mobile phone in a front trouser pocket in proximity to common metallic objects
William Whittow; Chinthana Panagamuwa; Robert Edwards; Lei Ma

- C 2 Analysis of On-Body Antenna Radiation Pattern using a Numerical Technique Based on FDTD and Equivalence Principle**
Andrea Sani
- C 3 Reconfigurable Multi-band Stacked Microstrip Patch Antenna for Wireless Communications**
Christos Christodoulou; Mahmoud Alayesh; Miroslav Joler; Silvio Barbin
- C 4 Early Results of Experiments to Investigate the Feasibility of Employing MIMO Techniques in the HF Band**
Salil Gunashekar; Michael Warrington; Sana Salous; Stuart Feeney; Hao Zhang; Nasir Abbasi; Louis Bertel; Dominique Lemur
- C 5 Comparison of MIMO Communications Systems Based on Experimentally Observed Unbalanced and Balanced Transmission Line Channels**
Pat Chambers; Conor Downing
- C 6 Investigation of EMF Induced Protein Conformational Changes Using an Optical Assay**
Wenchao Liu; Greg Cook; Tony Barker; Les Coulton
- C 7 Improving Wearable Slot Antenna Performance with EBG Structures**
Zhiyuan Duan; David Linton; William Scanlon; Gareth Conway
- C 8 Sidelobe Analysis of Scanning Lens Antenna for Satellite Communications.**
John Thornton
- C 9 Direction finding using a four element time-switched array**
Alan Tennant; Barry Chambers

■ **Lunch Day 1 (Restaurant)**

12:45pm - 2:00pm

■ **Invited Session 2: Medical and Healthcare Applications of RF & Microwave**
2:00 – 4:00pm

2:00 – 2:30pm

Keynote Talk: Wireless Networks – Antennas and Propagation Achievements and Challenges
Dr. Ben Allen, University of Oxford, UK

2:30 – 3:00pm

Development and Application of a UWB Radar System for Breast Imaging
Dr. Ian Craddock, University of Bristol, UK

3:00 – 3:30pm

Small UWB Antennas for Medical Applications
Prof. Xiaodong Chen, Queen Mary, University of London, UK

3:30 – 4:00pm

Direct Detection of the Magnetic Fields of Neuronal Impulses Using MRI
Dr. Greg Cook, The University of Sheffield, UK

■ **Refreshments and Poster Session 2, Exhibition Area A, B & C** 4:00pm - 5:30pm

■ **Poster Session 2**

Exhibition Area A

A 1 Dual-band Printed Inverted-F Antenna for DCS, 2.4GHz WLAN applications

Pak Wai Chan; Hang Wong

A 2 Near-field-far-field transformation with helicoidal scan: an experimental validation

Francesco D'Agostino; Flaminio Ferrara; Claudio Gennarelli; Rocco Guerriero; Massimo Migliozzi; Giovanni Riccio

A 3 Dipoles and loop antennas with left handed loading

Peter Hall; Qing Liu

A 4 Changes in specific absorption rate in the head due to metallic gap loops and a simulated mobile phone source in a study of the effects of jewellery

William Whittow; Chinthana Panagamuwa; Robert Edwards; Shahid Bashir; Yiannis Vardaxoglou

A 5 Cost performance optimization of large scale wideband arrays for radio telescope applications

Ahmed El-makadema

A 6 Field Distributions Within A Rectangular Cavity with Vehicle-like Features

Lester Low; Richard Langley; Hui Zhang; Jonathan Rigelsford

A 7 Complex Propagation in a Novel Ferrite-Filled Rectangular Waveguide Isolator

Christopher Seewald; Joey Bray

A 8 Ultra-wideband measurements and results for sparse off-body communication channels

Angelos Goulianos; Tim Brown; Stavros Stavrou

A 9 Application of the Antenna-Filter-Antenna EBG as An Integrated Compact Superstate

Ivor Morrow – Please note this is just a poster and the paper is not in the proceedings

Exhibition Area B

B 1 Dual-Band Antenna Design Using an EBG Artificial Magnetic Conductor Ground Plane

Qi Luo; Henrique Salgado; Artur Moura; Jose Pereira

B 2 Near-field measurements of a planar meta-surface illuminated by dipole antennas

Elena Saenz; Kaan Guven; Iñigo Ederra; Ekmel Ozbay; Peter de Maagt; Ramon Gonzalo

B 3 Wireless Sensor Transmission Range Measurement Within The Ground Level

Chan See; Raed Abd-Alhameed; Yim-Fun Hu; Kirill Horoshenkov

B 4 Millimetre Wave Imaging Experimental System

Lianhong Zhang

B 5 Tunable Microstrip Antenna Using Switchable Patches

Adrian Muscat

B 6 Method to optimize a tuning network for mobile terminal antennas

Matthias Arnold; Dirk Manteuffel

B 7 Analytical Modelling of Electric Field in Biased Photoconductive Antennas with Advanced Structure

Di Li; Yi Huang; Yao-Chun Shen

B 8 Tuning of a 24-GHz array using near-field measurements

Marta Martinez-Vazquez; Oliver Litschke; Andreas Bettray; Martin Boettcher

B 9 Enhanced Detection of Buried Assets

Tong Hao; Harvey Burd; David Edwards; Christopher Stevens

B 10 Design and Optimization of a multipurpose Tri-Band Electronically Steerable Passive Array Radiator (ESPAR) antenna with steerable-beam-pattern for maximum directionality at the frequencies of 1.8, 1.9 and 2.4 GHz with the aid of Genetic Algorithms

Themistoklis Dimousios

Exhibition Area C

C 1 A Simple Switched Parasitic Array with a Fixed Active Element for WiFi and WLAN Applications at 2.4 GHz

Stylianos Panagiotou

C 2 An Empirical Study of Computational Optimisation Techniques for Microstrip Antennas

Robert Woodhouse

C 3 Dual-element antenna for DVB-H terminal

Mikko Kyrö; Maria Mustonen; Clemens IcheIn; Pertti Vainikainen

C 4 Stability Comparison between Multi-Resolution Time-Domain (MRTD) and Finite Difference Time-Domain (FDTD) Techniques

Xiaojing Wang; Yang Hao; Cho-Ho Chu

C 5 Conformal Archimedian Spirals Array Over a Perfectly Conducting Cylinder

Jun Wu; Salam Khamas; Greg Cook

C 6 Characterisation of passive intermodulation in printed lines

Aleksey Shitvov; Torbjörn Olsson; Alex Schuchinsky; Dmitry Zelenchuk

C 7 A Circular Switched Parasitic Array of Log-Periodic Antennas with Enhanced Directivity and Beam Steering Capability for Ultra Wideband Communications Applications

Tsitouri Christina; Stylianos Panagiotou; Themistoklis Dimousios; Christos Capsalis

C 8 A Study On The Effect Of A Metallic Ring Worn On Human Fingers Using A Simple Scannable Block Hand Phantom

Noor Asmawati Samsuri; James Flint

C 9 Design Considerations in Planar Soft Surfaces

Eva Rajo-Iglesias; Oscar Quevedo-Teruel; Luis Inclan-Sanchez

Drinks Reception

6:30pm - 7:00pm

Drinks are sponsored by CST, Microwave Studio®

Conference Banquet (Restaurant)

7:00pm - 10:30pm

Including: Invited Pre-Dinner Talk: 'QM Antenna Group's 40th Anniversary'
by Prof. Peter Clarricoats, Queen Mary, University of London, UK

Tuesday March 18th

■ **Invited Session 3: Radar Measurements and Metamaterials Theory, Modelling and Applications**

9:15 – 11:15am

09:15 – 09:45am

Keynote Talk: An Introduction to Radar Cross Section Measurements

Dr. Doren Hess, MI Technologies, USA

09:45 – 10:15am

Planar Spiral Resonators for Compact Antenna Applications

Dr. Alex Schuchinsky, Queen's University at Belfast, UK

10:15 – 10:45am

Recent Progress on Metamaterials Research at Southeast University

Prof. Tie Jun Cui, Southeast University, Nanjing, China

10:45 – 11:15am

Theoretical and Experimental Studies of Metamaterials for Radar Absorption and for Low-profile Antennas

Dr. Colin Brewitt-Taylor, QinetiQ Ltd, UK

■ **Refreshments and Poster Session 3, Exhibition Area A, B & C** 11:15am - 12:45pm

■ **Poster Session 3**

Exhibition Area A

A 1 Body wearable antennas for UHF/VHF

James Matthews; Bruno Pirollo

A 2 Perturbation Input Impedance Matching Technique For Fabry-Perot High Gain Antenna

Dong-Hyun Lee; Yoonjae Lee; Yang Hao; Yiannis Vardaxoglou; WeeSang Park

A 3 Validation of OQ design tool for analysing aberration caused by FSS

Anoma Yamsiri; Robert Donnan

A 4 Recent Progress In Switched Beam Single Element Antennas

Amit Mehta; Dariush Mirshekar; Peter Massey

A 5 New Facility For Minimally Invasive Measurements Of Electrically Small Antennas

Tian Hong Loh; Martin Alexander

A 6 Design Of Wire Bow-Tie Antenna For Near Field Imaging Using Genetic Algorithms

Jonis Chung; Raed Abd-Alhameed; Peter Excell

A 7 The Radon transform for the tomography of vegetated areas

Amedeo Capozzoli; Claudio Curcio; Giuseppe D'Elia; Angelo Liseno; Antonio Mele

A 8 University of Essex Research Poster

Poster sessions 3 & 4

A 9 Durham University Research Poster

Poster sessions 3 & 4

A 10 University of Surrey Research Poster

Poster sessions 3 & 4

Exhibition Area B

B 1 Novel Sequential Rotation Technique for Broadband Circularly Polarized Microstrip Ring Antennas

Kin-Fai Tong

B 2 Bicep mounted low profile wearable antenna based on a non-uniform EBG ground plane – Flexible EBG Inverted-L (FEBGIL) Antenna

Shahid Bashir; Robert Edwards; Mehdi Hossiene; Muhammad Khattak; Lei Ma

B 3 A Novel Low-Profile Antenna with Hemispherical Coverage Suitable for Wireless and Mobile Communications Applications

Pavel Turalchuk; Dmitry Kholodnyak; Orest Vendik

B 4 Measurement Techniques For Polar Electromagnetic Bandgap Structures Using An Air Spaced Microstrip Line

Charity Mulenga; James Flint

B 5 A wearable flexible multi-band antenna based on a square slotted printed monopole

Lei Ma; Robert Edwards; Shahid Bashir; Muhammad Khattak

B 6 Calibration techniques for a silicon fabry-perot (etalon) microcavity sensor for e-field measurement

Arba'iah Inn; Rob Seager

B 7 Effect of tongue jewellery and orthodontist metallic braces on the SAR due to mobile phones in different anatomical human head models including children

William Whittow; Robert Edwards; Chinthana Panagamuwa; Yiannis Vardaxoglou

B 8 Effects of metallic spectacles on SAR when using communications enabled PDAs in front of the face

Chinthana Panagamuwa; William Whittow; Robert Edwards; Robin Ma; Yiannis Vardaxoglou

B 9 Loughborough University CMCR Research Poster

Poster sessions 3 & 4

B 10 University of Sheffield Research Poster

Poster sessions 3 & 4

Exhibition Area C

C 1 Thin 2-D Leaky-Wave Antenna Formed By A Double Layer Periodic Array

James Kelly; Alexandros Feresidis

C 2 MI-NLMS adaptive beamforming algorithm for OFDM system

Mohammad Tariqul Islam; N Misran

C 3 A metal plate solar antenna for UMTS pico-cell base station

Shynu Nair; Max Ammann

C 4 Group delay performance of ultra wideband monopole antennas for communication applications

Patrick McEvoy; Matthias John; Sergio Curto; Max Ammann

C 5 Package-Antenna For Wireless Sensor Network Nodes

Guillaume Bacles-Min; Fabien Ndagijimana

C 6 Effect of linear polarization on backscattering enhancement of targets with beam wave incidence

Hosam El-Ocla

C 7 A CPW-Fed Bow-Tie Slot Antenna with Tuning Stub

Leonidas Marantis; Paul Brennan

C 8 Loughborough University WiCR Research Poster

Poster sessions 3 & 4

C 9 University of Liverpool Research Poster

Poster sessions 3 & 4

C 10 Queen Mary, University of London Research poster

Poster sessions 3 & 4

Lunch Day 2 (Restaurant)

12:45pm - 2:00pm

Invited Session 4: Mobile Antennas from an Industry Perspective

2:00 – 3:30pm

2:00 – 2:30pm

Keynote Talk: Base Station Antenna Systems in China

Prof. Wei Hong, Southeast University, China

2:30 – 3:00pm

In Search of the Perfect Handset Antenna

Prof. Simon Kingsley, Antenova, UK

(Presented by Prof. Richard Langley)

3:00 – 3:30pm

Antennas for Small Satellites

Dr. Steven Gao, University of Surrey, UK

Refreshments and Poster Session 4, Exhibition Area A, B & C 3:30pm - 5:00pm

Poster Session 4

Exhibition Area A

A 1 Interaction between radar systems and wind farms

James Matthews; Carlos Sarno

A 2 A notched hand wearable ultra wideband w printed monopole antenna for sporting activities

Lei Ma; Robert Edwards; William Whittow

A 3 Small Size Multiband Meander Line Antenna for Wireless application

Mustafa Taher

A 4 High Gain Fractal-Based Yagi Antenna

Hani Ghali

A 5 Research of the New UHF Loop Emitter on a Basis of Gas Discharge Cold Plasma

Viktor Ovsyanikov

A 6 A Study On The Effect Of Loop-Like Jewellery Items Worn On Human Hand On Specific Absorption Rate (SAR) at 1900 MHz

Noor Asmawati Samsuri; James Flint

Exhibition Area B

B 1 Application of Higher Order Hierarchical Vector Finite Element Method in Multicomponent Electromagnetic Induction Problem

Sun Xiangyang

B 2 Directivity Enhancement of Line Source Radiation by Hollow Cylinder of Left-handed Materials

Jiang Zhu, Jie Xu, Ai-min Jiang, Da-yong Zou and Rui-xin Wu

B 3 Enhanced Outdoor-to-Indoor Coverage Estimation in Microcells

Faisal Kakar

B 4 Application of the Invasive Weed Optimization Technique for Antenna Configurations

Behrouz Dadalipour; Alireza Mallahzadeh

B 5 Dispersive Finite-Difference Time-Domain Simulation of Electromagnetic Cloaking Devices

Yan Zhao

B 6 Compact Slot-Loaded Patch Antenna for 868 MHz Wireless Body Area Networks

Anupam Chandran; Gareth Conway; William Scanlon

B 7 Peak-to-average power ratio mitigation in quasi-orthogonal space time block coded MIMO-OFDM systems using selective mapping

Faisal Alharbi, Jonathon Chambers

B 8 Patch Antenna Directivity Analysis Using An Equi-Area Method

Sadiq Ullah; James Flint; Rob Seager

Exhibition Area C

C 1 A Novel Method for Modelling Polarisation Conversion

Shihua Wang

C 2 The Effect of Conductor Line to Meander Line Antenna Design

P. J Soh

C 3 The inverted Π dielectric waveguide for microwave applications

José García

C 4 Slotted Ultra Wideband Antenna for Bandwidth Enhancement

Yusnita Rahayu

C 5 Circularly polarized radiation by a dipole antenna over an innovative artificial ground plane

Mehdi Hosseini; Shahid Bashir

C 6 Mutual Coupling Reduction in a Linear Two Element Patch Array and its Effect on Theoretical MIMO Capacity

Evangelos Michailidis; Charalampos Tsimenidis; Graeme Chester

C 7 Versatile Analysis Method for Leaky-Wave Antennas in Hybrid Waveguide-Printed Circuit Technology

Marta Padilla; Yiannis Vardaxoglou

■ **Close of Conference and Prize Giving**

5:00pm - 5:15pm

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