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# IMTC/04 Technical Program

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**Tuesday, May 18, 2004** 8:30 AM to 10:30 AM

**TA1: Keynote**

**Chair: V. Piuri; University of Milano, ITALY**

How Electronics Changed Impedance Measurements

H.P. Hall; Retired -- General Radio Company, USA

**Tuesday, May 18, 2004** 11:00 AM to 1:00 PM

**TB1: Chemical Measurements 1**

**Chair: V. Ferrari; University of Brescia, ITALY**

Binary Chemical Detector Using Time-Wavelength Spectroscopy

J. Chou; University of California, Los Angeles, USA

Y. Han; University of California, Los Angeles, USA

B. Jalali; University of California, Los Angeles, USA

Estimation of Dissolved Oxygen Dynamics for Sequencing Batch  
Aerobic Reactors

V.V. Lira; Federal University of Campina Grande, BRAZIL

P.R. Barros; Federal University of Campina Grande, BRAZIL

J.S. Rocha Neto; Federal University of Campina Grande, BRAZIL

A.C. van Haandel; Federal University of Campina Grande,  
BRAZIL

In-Liquid Sensing of Chemical Compounds by QCM Sensors  
Coupled with High-Accuracy ACC Oscillator

M. Ferrari; University of Brescia, ITALY

V. Ferrari; University of Brescia, ITALY

D. Marioli; University of Brescia, ITALY

A. Taroni; University of Brescia, ITALY

M. Suman; University of Parma, ITALY

E. Dalcanale; University of Parma, ITALY

Analog and Intelligent Calibration System to Reduce Undesired  
Variables in Sodium Measurement

M. Attari; Houari Boumediene University, ALGERIA

L. Lounis; Institute of Professional Formation, ALGERIA

**Tuesday, May 18, 2004** 11:00 AM to 1:00 PM

**TB2: Signal Processing 1**

**Chair: J. Schoukens; Vrije Universiteit Brussel, BELGIUM**

Time-Stretched Short Time Fourier Transform

A. Nuruzzaman; University of California, Los Angeles, USA

O. Boyraz; University of California, Los Angeles, USA

B. Jalali; University of California, Los Angeles, USA

Inverse Filtering with Signal-Adaptive Constraints

C. Narduzzi; Università di Padova, ITALY

Transient Management of Reconfigurable Digital Filters in Case of Sinusoidal Excitation

T. Kováčsházy; Budapest University of Technology and Economics, HUNGARY

G. Peceli; Budapest University of Technology and Economics, HUNGARY

L. Sujbert; Budapest University of Technology and Economics, HUNGARY

Common Architecture for Discrete Wavelet Transform Analysis and Synthesis with Sequential and Constant Processing Elements

P.H. Cox; UNESP FEIS Ilha Solteira, BRAZIL

A.A. de Carvalho; University of São Paulo Estate, BRAZIL

**Tuesday, May 18, 2004** 11:00 AM to 1:00 PM

**TB3: Special Session: Radio-Frequency Dielectric Properties of Ma**

**Chair: S. Trabelsi; University of Georgia, USA**

Modeling Permittivity Measurement Probes by Using a Genetic Algorithm

P.G. Bartley, Jr.; Innovative Measurement Solutions, Inc., USA

S.O. Nelson; US Department of Agriculture, USA

R. McClendon; University of Georgia, USA

W.D. Potter; University of Georgia, USA

Determination of the Thickness and Dielectric Constant of a Dielectric Slab Backed by Free-Space or a Conductor Through Inversion of the Reflection Coefficient of a Rectangular Waveguide Probe

J. Lai; University of Missouri-Rolla, USA

D. Hughes; University of Missouri--Rolla, USA

E. Gallaher; University of Missouri-Rolla, USA

R. Zoughi; University of Missouri-Rolla, USA

Uncertainty Analysis for the Simultaneous Measurement of Complex Electromagnetic Parameters Using an Open-Ended Coaxial Probe

C.P. Chen; Shanghai University, CHINA

M.Y. Chen; Shanghai University, CHINA

J. Yu; Shanghai University, CHINA

M. Niu; Shanghai University, CHINA

D. Xu; Shanghai University, CHINA

Temperature Dependence of Bound Water Dielectric Behavior in Grain

S. Trabelsi; University of Georgia, USA

S.O. Nelson; US Department of Agriculture, USA

**Tuesday, May 18, 2004** 11:00 AM to 1:00 PM

**TB4: Smart Sensors Systems**

**Chair: K. Lee; National Institute of Standards and Technology, USA**

An Architecture for Intelligent Systems Based on Smart Sensors

J.L. Schmalzel; Rowan University, USA

F. Figueroa; NASA Stennis Space Center, USA

J. Morris; NASA, USA

S. Mandayam; Rowan University, USA

R. Polikar; Rowan University, USA

Energy-Efficient Data Collection for Bluetooth-Based Sensor Networks

M. Handy; University of Rostock, GERMANY

J. Blumenthal; University of Rostock, GERMANY

D. Timmermann; University of Rostock, GERMANY

Dew Point and Relative Humidity Smart Measuring System

O. Postolache; Institute of Telecommunications, PORTUGAL

P.M.B. Silva Girao; Instituto de Telecomunicações, PORTUGAL

J.M. Dias Pereira; Escola Superior de Tecnologia, PORTUGAL

C. Banha; Escola Superior de Tecnologia, PORTUGAL

H. Ramos; Instituto de Telecomunicações, PORTUGAL

Smart Two-Element PTC Wind Sensor

H. Ruser; University of Bundeswehr Munich, GERMANY

M. Horn; University of Bundeswehr Munich, GERMANY

Context Aware Power Optimizations of Wireless Embedded Internet Systems

M. Lundberg; Luleå University of Technology, Sweden

J. Eliasson; Luleå University of Technology, Sweden

L. Svensson; Lulea University of Technology, Sweden

P. Lindgren; Luleå University of Technology, Sweden

**Tuesday, May 18, 2004**

11:00 AM to 1:00 PM

**TB5: Special Session: Traceability Issues in Distributed and Softw**

**Chair: A. Carullo; Politecnico di Torin, ITALY**

Metrological Management of Large-Scale Measuring Systems

A. Carullo; Politecnico di Torin, ITALY

Internet Calibration for Electrical Metrology: First Application at IEN

C. Cassiagio; Istituto Elettrotecnico Nazionale "Galileo Ferraris", ITALY

L. Callegaro; Istituto Elettrotecnico Nazionale Galileo Ferraris, ITALY

G. La Paglia; Istituto Elettrotecnico Nazionale Galileo Ferraris, ITALY

Stochastic and Reactive Methods for the Determination of Optimal Calibration Intervals

E. Nunzi; University of Perugia, ITALY

G. Panfilo; Istituto Elettrotecnico Nazionale "Galileo Ferraris", ITALY

P. Tavella; Istituto Elettrotecnico Nazionale "Galileo Ferraris", ITALY

P. Carbone; University of Perugia, ITALY

D. Petri; University of Trento, ITALY

Optimal Two-Point Static Calibration of Measurement Systems with Quadratic Response

J. Jordana; Technical University of Catalonia, SPAIN

R. Pallàs-Areny; Technical University of Catalonia, SPAIN

High Precision Voltage Ratio Measurements Using Digital Voltmeters and Resistive Voltage Divider

R. Malaric; University of Zagreb, CROATIA

I. Lenicek; University of Zagreb, CROATIA

K. Malaric; University of Zagreb, CROATIA

**Tuesday, May 18, 2004** 11:00 AM to 1:00 PM

**TB6: Materials 1**

**Chair: N.G. Paulter; NIST, USA**

A Virtual Instrument for the Characterisation of Magneto-Optical Materials

L.M. Martinez; Universidad Iberoamericana, MEXICO

F. Cecelja; Brunel University, UK

R. Rakowski; Brunel University, UK

A New Method to Characterize Magnetic Hysteresis in Soft Ferrites up to High Frequencies

B. Tellini; University of Pisa, ITALY

R. Giannetti; "Pontificia Comillas" University, SPAIN

G. Robles Muñoz; University Carlos III, SPAIN

S. Lizón Martínez; University Pontificia Comillas, SPAIN

Eddy Current Measurement of the Electrical Conductivity and Porosity of Metal Foams

X. Ma; Lancaster University, UK

A.J. Peyton; Lancaster University, UK

Measurement of the Silicon Resistivity at Very High Temperature  
with Junction Isolated Van der Pauw Structures

C. Corvasce; Swiss Federal Institute of Technology (ETH),  
SWITZERLAND

M. Ciappa; Swiss Federal Institute of Technology (ETH),  
SWITZERLAND

D. Barlini; Swiss Federal Institute of Technology (ETH),  
SWITZERLAND

F. Illien; Swiss Federal Institute of Technology (ETH),  
SWITZERLAND

W. Fichtner; Swiss Federal Institute of Technology (ETH),  
SWITZERLAND

**Tuesday, May 18, 2004** 2:00 PM to 4:00 PM

**TD1: National Instruments Seminar**

The Evolution of Virtual Instrumentation: Accelerating Global  
Design and Development

M. Ravel; National Instruments, USA

**Tuesday, May 18, 2004** 2:00 PM to 4:00 PM

**TD2: Signal Processing 2**

**Chair: I. Kollár; Budapest University of Technology and  
Economics, HUNGARY**

Fast Measurement of Quantization Distortions in DSP Algorithms

J. Paduart; Vrije Universiteit Brussel, BELGIUM

J. Schoukens; Vrije Universiteit Brussel, BELGIUM

Y. Rolain; Vrije Universiteit Brussel, BELGIUM

A Practical Approach to Evaluate the Measurement Uncertainty of  
Virtual Instruments

D.A. Lampasi; University of Rome "La Sapienza", ITALY

L. Podestà; University of Rome "La Sapienza", ITALY

An Outlook on the Dynamic Error "Blind" Correction for the Time-  
Varying Measurement Channel

J. Nabielec; AGH University of Science and Technology,  
POLAND

Estimation of Signal Parameters in Frequency Domain in Presence of  
Harmonic Interference: A Comparative Analysis

C. Liguori; University of Cassino, ITALY

A. Paolillo; University of Salerno, ITALY

A. Pignotti; University of Salerno, ITALY

Improving Phase Estimation with Leakage Minimization

D. Agrez; University of Ljubljana, SLOVENIA

**Tuesday, May 18, 2004** 2:00 PM to 4:00 PM

**TD3: Special Session: Microwave Measurements and instrumentati**

**Chair: R. Zoughi; University of Missouri-Rolla, USA**

Investigating Near-Field Measurements of the Complex Permittivity of Granular Materials with Microstrip Antennas

S. Trabelsi; University of Georgia, USA

S.O. Nelson; US Department of Agriculture, USA

Near-Field Microwave Imaging Utilizing Tapered Rectangular Waveguides

N. Qaddoumi; American University of Sharjah, UNITED ARAB EMIRATES

M. Abou Khousa; American University of Sharjah, UNITED ARAB EMIRATES

W. Saleh; American University of Sharjah, UNITED ARAB EMIRATES

Parametric Model Approach for Rapid SAR Measurements

O Merkel; SUPELEC, FRANCE

J.-C. Bolomey; SUPELEC, FRANCE

G. Fleury; SUPELEC, FRANCE

A Microwave Imaging Method for NDE/NDT Based on the SMW Technique for the Electromagnetic Field Prediction

S. Caorsi; University of Pavia, ITALY

M. Donelli; University of Trento, ITALY

A. Massa; University of Trento, ITALY

M. Pastorino; University of Genoa, ITALY

A. Randazzo; University of Genoa, ITALY

A. Rosani; University of Trento, ITALY

Nano Resolution Imaging Technique with a Near-Field Scanning Microwave Microscope

H. Yoo; Sogang University, KOREA

S. Kim; Sogang University, KOREA

J. Yang; Sogang University, KOREA

K. Lee; Sogang University, KOREA

B. Friedman; Sam Houston State University, USA

**Tuesday, May 18, 2004**

2:00 PM to 4:00 PM

**TD4: Position Measurements 1**

**Chair: K. Watanabe; Shizuoka University, JAPAN**

Capacitive Angular-Position Sensor with Electrically-Floating Conductive Rotor and Measurement Redundancy

V. Ferrari; Univesity of Brescia, ITALY

A. Ghisla; Univesity of Brescia, ITALY

D. Marioli; Univesity of Brescia, ITALY

A. Taroni; Univesity of Brescia, ITALY

Digital Signal Processing for Biaxial Position Measurement with a Pyroelectric Sensor Array

A. Depari; University of Brescia, ITALY  
P. Ferrari; University of Brescia, ITALY  
V. Ferrari; University of Brescia, ITALY  
A. Flammini; University of Brescia, ITALY  
A. Ghisla; University of Brescia, ITALY  
D. Marioli; University of Brescia, ITALY  
A. Taroni; University of Brescia, ITALY

Design and Characterization of Magnetostrictive Linear Displacement Sensors

A. Affanni; University of Parma, ITALY  
A. Guerra; University of Parma, ITALY  
L. Dallagiovanna; FIAMA s.r.l., ITALY  
G. Chiorboli; University of Parma, ITALY

A Measurement Method Based on Kalman Filtering for Ultrasonic Time-of-Flight Estimation

L. Angrisani; Università di Napoli Federico II, ITALY  
A. Baccigalupi; University of Naples Federico II, ITALY  
R. Schiano Lo Moriello; University of Naples Federico II, ITALY

New Absolute Distance Measurement Technique by Self-Mixing Interferometry in Closed Loop

M. Norgia; University of Pavia, and INFN, ITALY  
G. Giuliani; University of Pavia, and INFN, ITALY  
S. Donati; University of Pavia, and INFN, ITALY

**Tuesday, May 18, 2004** 2:00 PM to 4:00 PM

**TD5: Uncertainty**

**Chair: A. Ferrero; Politecnico di Milano, ITALY**

The Use of Random-Fuzzy Variables for the Implementation of Decision Rules in the Presence of Measurement Uncertainty

A. Ferrero; Politecnico di Milano, ITALY  
S. Salicone; Polytechnic University of Milan, ITALY

A t-Norm Based Fuzzy Approach to the Estimation of Measurement Uncertainty

C. De Capua; University "Mediterranea" di Reggio Calabria, ITALY  
E. Romeo; University "Mediterranea" of Reggio Calabria, ITALY

Expanded Uncertainty and Coverage Factor Computation by Higher Order Moments Analysis

G. D'Antona; Politecnico di Milano, ITALY

On the Uncertainty in Wavelet-Based Signal Analysis

L. Peretto; University of Bologna, ITALY  
R. Sasdelli; University of Bologna, ITALY  
R. Tinarelli; University of Bologna, ITALY

Software Customization to Provide Digital Oscilloscope with  
Enhanced Period Measurement Features

M.G. D'Elia; University of Salerno, ITALY

C. Liguori; University of Cassino, ITALY

A. Pietrosanto; University of Salerno, ITALY

**Tuesday, May 18, 2004** 2:00 PM to 4:00 PM

**TD6: Measurement in Telecommunications 1**

**Chair: R.S. Thomä; Ilmenau University of Technology,  
GERMANY**

A 3D Spectrum Analyzer Prototype for 3G Mobile  
Telecommunication Systems

L. De Vito; University of Sannio, ITALY

S. Rapuano; University of Sannio, ITALY

G. Truglia; University of Sannio, ITALY

Multidimensional High-Resolution Channel Sounding in Mobile  
Radio

R.S. Thomä; Ilmenau University of Technology, GERMANY

M. Landmann; Technical University Ilmenau, GERMANY

G. Sommerkorn; Technical University Ilmenau, GERMANY

A. Richter; Technical University Ilmenau, GERMANY

Measurement of GSM Phone Emission

K. Malaric; University of Zagreb, CROATIA

J. Bartolic; University of Zagreb, CROATIA

R. Malaric; University of Zagreb, CROATIA

Error Vector-Based Measurement Procedures for RF Digital  
Transmitters Troubleshooting

L. Angrisani; Università di Napoli Federico II, ITALY

M. D'Apuzzo; Università di Napoli Federico II, ITALY

M. D'Arco; Università di Napoli Federico II, ITALY

M. Vadursi; Università di Napoli Federico II, ITALY

Evaluation of Telecommunication Station Parameters by Means EM  
Field Measurements

M. Bertocco; University of Padova, ITALY

D. Dainese; University of Padova, ITALY

A. Sona; University of Padova, ITALY

**Tuesday, May 18, 2004** 4:30 PM to 6:30 PM

**TE1: Robotics**

**Chair: E.M. Petriu; University of Ottawa, CANADA**

Intelligent Haptic Sensor System for Robotic Manipulation

C. Pasca; University of Ottawa, CANADA

P. Payeur; University of Ottawa, CANADA

E.M. Petriu; University of Ottawa, CANADA

A.-M. Cretu; University of Ottawa, CANADA

Neural Network-Based Adaptive Sampling of 3D Object Surface  
Elastic Properties

A.-M. Cretu; University of Ottawa, CANADA

E.M. Petriu; University of Ottawa, CANADA

G.P. Patry; University of Ottawa, CANADA

A Coil-Based Multifunctional Three-Dimensional Tactile Sensor

K. Shida; Saga University, JAPAN

Z. Chi; Saga University, JAPAN

Vision Assisted Measurement for Optimisation of Robot Motion and  
Position Control Functions

G. Sen Gupta; Massey University, NEW ZEALAND

C.H. Messom; Massey University, NEW ZEALAND

S. Demidenko; Monash University Malaysia, MALAYSIA

Multiple Targets Tracking by Optimized Particle Filter Based on  
Multi-Scan JPDA

J. Liu; National University of Singapore, SINGAPORE

P. Vadakkepat; National University of Singapore, SINGAPORE

**Tuesday, May 18, 2004**

4:30 PM to 6:30 PM

**TE2: Signal Processing 3**

**Chair: G. D'Antona; Politecnico di Milano, ITALY**

Method for Eliminating Aliasing in the Measurement of the Step  
Response for a Waveform Recorder

J. Blair; Bechtel Nevada, USA

Statistical Acquisition for Embedded Instrumentation

A.A. de Souza, Jr.; Federal University of Rio Grande do Sul,  
BRAZIL

L. Carro; Federal University of Rio Grande do Sul, BRAZIL

Reduction of the Gibbs Phenomenon in the Special Case of Non-  
Harmonic Time Base Distortions

F. De Ridder; Vrije Universiteit Brussel, BELGIUM

R. Pintelon; Vrije Universiteit Brussel, BELGIUM

J. Schoukens; Vrije Universiteit Brussel, BELGIUM

A. Verheyden; Vrije Universiteit Brussel, BELGIUM

Active Distortion Cancellation of Sinusoidal Sources

L. Sujbert; Budapest University of Technology and Economics,  
HUNGARY

B. Vargha; Budapest University of Technology and Economics,  
HUNGARY

**Tuesday, May 18, 2004**

4:30 PM to 6:30 PM

**TE3: Special Session: Microwave Measurements and Instrumentat**

**Chair: N. Qaddoumi; American University of Sharjah, UNITED  
ARAB EMIRATES**

Determination of Dielectric Property Profile in Cement-Based Materials Using Microwave Reflection and Transmission Properties

B. Akuthota; University of Missouri-Rolla, USA

R. Zoughi; University of Missouri-Rolla, USA

K.K. Kurtis; Georgia Institute of Technology, USA

Microwave Permittivity Measurement of Polymers by Deposition on a Coplanar Wave Guide

Y. Rolain; Vrije Universiteit Brussel, BELGIUM

A. Barel; Vrije Universiteit Brussel, BELGIUM

F. Gubbels; Dow Corning S.A., BELGIUM

W. Van Moer; Vrije Universiteit Brussel, BELGIUM

Monitoring Moisture Content in Composting Systems Using a Planar Resonant Sensor

E. Fratticcioli; University of Perugia, ITALY

M. Dionigi; University of Perugia, ITALY

F. Valentini; Gesenu spa, ITALY

R. Sorrentino; University of Perugia, ITALY

RF Impedance Method to Estimate Moisture Content in Small Samples of In-Shell Peanuts

C.V.K. Kandala; USDA, ARS, USA

S.O. Nelson; US Department of Agriculture, USA

A Novel Pulsed Load-Pull and S-Parameter Integrated Measurement System

V. Teppati; Politechnic of Turin, ITALY

A. Ferrero; Politechnic of Turin, ITALY

V. Niculae; Politechnic of Turin, ITALY

U. Pisani; Politechnic of Turin, ITALY

**Tuesday, May 18, 2004**

4:30 PM to 6:30 PM

**TE4: Mechanical Quantities**

**Chair: G. Moschioni; Politecnico di Milano, ITALY**

Dynamic Force Calibration Methods for Force Transducers

Y. Fujii; Gunma University, JAPAN

High Sensitivity Low Cost Capacitive Strain Gage

J.G. da Silva; State University of Sao Paulo, BRAZIL

A.A. de Carvalho; University of São Paulo Estate, BRAZIL

R. de Oliveira Rodrigues; São Paulo State University - UNESP, USA

Non-Intrusive Pressure Measurement System: Analysis of Characteristics Using Neural Networks

F. Yu; Napier University, UK

N. Gupta; Napier University, UK

J. Hoy; Napier University, UK

A 3-Axis Acceleration Sensor Data Acquisition Instrument System

J.A. Asumadu; Western Michigan University, USA

V. La Belle; Western Michigan University, USA

R. Od'Neal; Western Michigan University, USA

G.A. Covington; Western Michigan University, USA

Sensorless Position Control of Electromagnetic Linear Actuator

D. Pawelczak; University of Bundeswehr, Munich, GERMANY

H.-R. Trankler; Universitat der Bundeswehr Munchen,  
GERMANY

**Tuesday, May 18, 2004**

4:30 PM to 6:30 PM

**TE5: Calibration**

**Chair: A. Ferrero; Politecnico di Milano, ITALY**

Network-Assisted Procedure for Impedance Dissemination

A. Carullo; Politecnico di Torin, ITALY

M. Parvis; Politecnico di Torino, ITALY

L. Callegaro; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

Four Terminal-Pair Impedance Comparisons at High Frequency

L. Callegaro; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

Hand Held Impedance Measurement System with Seven Decade  
Capability and Potentiostatic Function

E. Angelini; Politecnico di Torino, ITALY

A. Carullo; Politecnico di Torin, ITALY

S. Corbellini; Politecnico di Torino, ITALY

F. Ferraris; Politecnico di Torino, ITALY

V. Gallone; Assing SpA, ITALY

S. Grassini; Politecnico di Torino, ITALY

M. Parvis; Politecnico di Torino, ITALY

A. Vallan; Politecnico di Torino, ITALY

10 nF Capacitance Transfer Standard

L. Callegaro; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

V. D'Elia; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

D. Serazio; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

Generalized Automatic System for AC/DC Transfer, AC Voltage and  
AC Current Measurements

U. Pogliano; IEN "Galileo Ferraris", ITALY

G.C. Bosco; IEN "Galileo Ferraris", ITALY

M. Lanzillotti; IEN "Galileo Ferraris", ITALY

**Tuesday, May 18, 2004**

4:30 PM to 6:30 PM

**TE6: Measurement in Telecommunications 2**

**Chair: A. Cruz Serra; Instituto Superior Técnico, PORTUGAL**

A New Method for the Estimation and Measurement of Traffic  
Packet Loss for Virtual Private Networks Services

C. Lambiri; Diatem Networks, CANADA

D. Ionescu; University of Ottawa, CANADA

V.Z. Groza; University of Ottawa, CANADA

A Passive Measurement Tool for Monitoring Wireless Packet  
Network Performances

L. Benetazzo; Università di Padova, ITALY

C. Narduzzi; Università di Padova, ITALY

P.A. Pegoraro; Università di Padova, ITALY

R. Tittoto; Università di Padova, ITALY

Carrier Frequency and Phase Offset Measurement for Single Carrier  
Digital Modulations

D.L. Carni; University of Calabria, ITALY

D. Grimaldi; University of Calabria, ITALY

Symbol Timing Measurement for Single Carrier Digital Modulations

D.L. Carni; University of Calabria, ITALY

D. Grimaldi; University of Calabria, ITALY

Embedded System to Characterize HPA and Calculate Nonlinear Pre-  
Distortion Neural Network's Weights for HPA

L.H. Tran; Naval Research Lab, USA

T.V. Mai; Naval Research Lab, USA

J.A. Molnar; Naval Research Lab, USA

**Tuesday, May 18, 2004**

2:00 PM to 6:30 PM

**TF1: Special Session: Digital Imaging Techniques 1**

**Chair: G.C. Giakos; University of Akron, USA**

Active Backscattered Optical Polarimetric Imaging of Scattered  
Targets

G.C. Giakos; University of Akron, USA

Laser Imaging Through Scattering Media

G.C. Giakos; University of Akron, USA

A. Molhokar; University of Akron, USA

A. Orozco; University of Akron, USA

A. Kumar; University of Akron, USA

S. Sumrain; University of Akron, USA

D. Mehta; University of Akron, USA

A. Maniyedath; University of Akron, USA

N. Ojha; University of Akron, USA

A. Medithe; University of Akron, USA

A Visual Method for Real-Time Detecting Persons in Complex Scenes

M. Zhang; National University of Defense Technology, China, CHINA

J. Zhang; National University of Defense Technology, China, CHINA

D. Wu; National University of Defense Technology, China, CHINA

W. Wang; National University of Defense Technology, China, CHINA

Edge Detection Based on Early Vision Model Incorporating Improved Directional Median Filtering

R. Lu; Harbin Institute of Technology, CHINA

Y. Shen; Harbin Institute of Technology, CHINA

Q. Wang; Harbin Institute of Technology, CHINA

**Tuesday, May 18, 2004** 2:00 PM to 6:30 PM

**TF2: Image Processing and Vision 1**

**Chair: F. Russo; University of Trieste, ITALY**

Image Processing Vision System Implementing a Smart Sensor

A. Elouardi; University of Paris II, FRANCE

S. Bouaziz; University of Paris II, FRANCE

A. Dupret; University of Paris II, FRANCE

J.O. Klein; University of Paris II, FRANCE

R. Reynaud; University of Paris II, FRANCE

Modelling of High Dynamic Range Logarithmic CMOS Image Sensors

S. Otim; University of Oxford, UK

D. Joseph; University of Oxford, UK

B. Choubey; University of Oxford, UK

S. Collins; University of Oxford, UK

A CMOS Compatible Active Thermopile with High Frequency Measurement

C.-H. Shen; National Changhua University of Education, R.O.C.

W.-F. Chen; National Changhua University of Education, R.O.C.

S.-H. Yu; National Chiao-Tung University, R. O. C

A Moving Object Detection Approach Using Integrated Background Template for Smart Video Sensor

G. Li; National University of Defense Technology, CHINA

J. Zhang; National University of Defense Technology, China, CHINA

H. Lin; National University of Defense Technology, CHINA

D. Tu; National University of Defense Technology, CHINA

M. Zhang; National University of Defense Technology, China, CHINA

**Tuesday, May 18, 2004**

2:00 PM to 6:30 PM

**TF3: Image Processing and Vision 2**

**Chair: G.P. Mauris; Université de Savoie, FRANCE**

The Effects of Fusion Structures on Image Fusion Performances\*

Q. Wang; Harbin Institute of Technology, CHINA

Y. Shen; Harbin Institute of Technology, CHINA

Performances Evaluation of Image Fusion Techniques Based on Nonlinear Correlation Measurement\*

Q. Wang; Harbin Institute of Technology, CHINA

Y. Shen; Harbin Institute of Technology, CHINA

Improved Particle Filter in Sensor Fusion for Tracking Random Moving Object

J. Liu; National University of Singapore, SINGAPORE

P. Vadakkepat; National University of Singapore, SINGAPORE

The Accuracy of the HRBF Networks

S. Ferrari; niversity of Milano, ITALY

I. Frosio; University of Milano, ITALY

V. Piuri; University of Milano, ITALY

N.A. Borghese; University of Milano, ITALY

3D-Coordinate Measurement System and Image Reconstruction of Anatomical Parts from Unorganized Data Clouds

G. Tognola; National Research Council (CNR), ITALY

M. Parazzini; National Research Council (CNR), ITALY

P. Ravazzani; National Research Council (CNR), ITALY

F. Grandori; National Research Council (CNR), ITALY

C. Svelto; Politechnic of Milan, ITALY

**Tuesday, May 18, 2004**

2:00 PM to 6:30 PM

**TF4: Image Processing and Vision 3**

**Chair: M. Pastorino; University of Genoa, ITALY**

Development of a Smart Clear Path Indicator

B. Andò; University of Catania, ITALY

S. Graziani; University of Catania, ITALY

C. Orazio Lombardo; University of Catania, ITALY

N. Pitrone; University of Catania, ITALY

Metric Measurements of 3D Object Features by a Moving Camera

H.Y. Chen; City University of Hong Kong, HONG KONG

Y.F. Li; City University of Hong Kong, HONG KONG

Image-Based Navigation on a Chip

M. Lifshits; Technion, Institute of Technology, ISRAEL

E. Rivlin; Technion, Institute of Technology, ISRAEL

M. Rudzsky; Technion, Institute of Technology, ISRAEL

Accuracy and Performance of Biometric Systems

M. Gamassi; University of Milan, ITALY

M. Lazzaroni; University of Milan, ITALY

M. Misino; University of Milan, ITALY

V. Piuri; University of Milano, ITALY

D. Sana; University of Milan, ITALY

F. Scotti; University of Milan, ITALY

Generalized Inverse Reconstruction Algorithm with Threshold

H. Wang; Tianjin University, CHINA

Y. He; Tianjin University, CHINA

C. Wang; Tianjin University, CHINA

W. Yin; Lancaster University, UK

**Tuesday, May 18, 2004** 2:00 PM to 6:30 PM

**TF5: Analog-to-Digital Converters 1**

**Chair: P. Malcovati; University of Pavia, ITALY**

Modeling ADC Nonlinearity in Monte Carlo Procedures for Uncertainty Estimation

N. Locci; University of Cagliari, ITALY

C. Muscas; University of Cagliari, ITALY

S. Sulis; University of Cagliari, ITALY

Measurement of Static ADC Nonlinearities Using the Servoloop Method

A. Sabatini; University of Perugia, ITALY

P. Carbone; University of Perugia, ITALY

Frequency Spectrum Correction Method for the ADC Testing

V. Haasz; Czech Technical University, CZECH REPUBLIC

D. Slepicka; Czech Technical University, CZECH REPUBLIC

Phase-Plane Characterization of Analog-to-Digital Converters

M.C. Libano Monteiro; Instituto Superior Técnico, PORTUGAL

P. Arpaia; Università del Sannio, ITALY

A. Cruz Serra; Instituto Superior Técnico, PORTUGAL

**Tuesday, May 18, 2004** 2:00 PM to 6:30 PM

**TF6: Analog-to-Digital Converters 2**

**Chair: G. Chiorboli; University of Parma, ITALY**

Design and Realization of High Accuracy SAM (Static Analog Memories) Using Low Cost DA Converters

G. Scandurra; University of Messina, ITALY

C. Ciofi; University of Messina, ITALY

G. Cannatà; University of Messina, ITALY

G. Giusi; University of Messina, ITALY

C-Code Software Implementation of Standardized ADC Test Methods

E. Nunzi; University of Perugia, ITALY

A Sigma Delta A/D Converter Realized by Using ST52X440  
Microcontroller

B. Andò; University of Catania, ITALY  
A. Cocuccio; ST Microelectronics, ITALY  
S. Graziani; University of Catania, ITALY  
M. Lo Presti; ST Microelectronics, ITALY

Double Cascade Digital to Analogue Converter for Metrology Testing

R. Kochan; Ternopil Academy of National Economy, UKRAINE  
A. Sachenko; Ternopil Academy of National Economy,  
UKRAINE  
V. Kochan; Ternopil Academy of National Economy, UKRAINE

**Tuesday, May 18, 2004** 2:00 PM to 6:30 PM

**TF7: Materials 2**

**Chair: N.G. Paulter; NIST, USA**

Characterization of Hysteresis in Ferroelectric Devices

B. Andò; University of Catania, ITALY  
P. Giannone; University of Catania, ITALY  
S. Graziani; University of Catania, ITALY  
N. Pitrone; University of Catania, ITALY

Methodology for Extracting Thermoelectric Module Parameters

D. Mitrani; Polytechnic University of Catalonia, SPAIN  
J.A. Tome; Polytechnic University of Catalonia, SPAIN  
J. Salazar; Universitat Politecnica de Catalunya, SPAIN  
A. Turo; Universitat Politecnica de Catalunya, SPAIN  
M. Garcia-Hernandez; Universitat Politecnica de Catalunya,  
SPAIN  
J.A. Chavez; Polytechnic University of Catalonia, SPAIN

A Facility for the Analysis of Reflection Properties of Surfaces

P. Fiorentin; Università degli Studi di Padova, ITALY  
P. Iacomussi; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY  
G. Rossi; Istituto Elettrotecnico Nazionale Galileo Ferraris,  
ITALY

A Photoelectric Method to Determine Lateral Distribution of the  
Effective Contact Potential Difference in MOS Structures

A. Kudla; Institute of Electron Technology, POLAND  
B. Borowicz; Institute of Electron Technology, POLAND  
H. Przewlocki; Institute of Electron Technology, POLAND

Comparison of Two Coaxial Probes for the Non-Destructive  
Evaluation of a Steel Fiber Reinforced Concrete Layer

S. Van Damme; Ghent University, BELGIUM  
A. Franchois; Ghent University, BELGIUM  
L. Taerwe; Ghent University, BELGIUM

**Tuesday, May 18, 2004** 2:00 PM to 6:30 PM

**TF8: Chemical Measurements 2**

**Chair: V. Ferrari; University of Brescia, ITALY**

Gas Identification Algorithms for Microelectronic Gas Sensor

S. Brahim-Belhouari; Hong Kong University of Science and Technology, CHINA

A. Bermak; Hong Kong University of Science and Technology, CHINA

G. Wei; Hong Kong University of Science and Technology, CHINA

P.C.H. Chan; Hong Kong University of Science and Technology, CHINA

Gas Identification Method by Microcontroller-Based Analysis of Two-dimensional Sensors Behavior

P. Chaitas; Aristotle University of Thessaloniki, GREECE

W. Domanski; Silesian University of Technology, POLAND

T. Laopoulos; Aristotle University of Thessaloniki, GREECE

J. Zakrzewski; Silesian University of Technology, POLAND

Improving Monitoring of NO<sub>x</sub> Emissions in Refineries

S. Graziani; University of Catania, ITALY

N. Pitrone; University of Catania, ITALY

M.G. Xibilia; University of Messina, ITALY

N. Barbalace; University of Messina, ITALY

**Tuesday, May 18, 2004**

2:00 PM to 6:30 PM

**TF9: Chemical Measurements 3**

**Chair: P. Wide; Örebro University, SWEDEN**

Electronic Noses Based on Metal Oxide Gas Sensors: The Problem of Selectivity Enhancement

A. Fort; University of Siena, ITALY

S. Rocchi; University of Siena, ITALY

M.B. Serrano-Santos; University of Siena, ITALY

R. Spinicci; University of Florence, ITALY

N. Ulivieri; University of Siena, ITALY

V. Vignoli; University of Siena, ITALY

Feature Extraction Techniques for QCM Sensors Dynamic Responses

C. Di Nucci; University of Siena, ITALY

A. Fort; University of Siena, ITALY

S. Rocchi; University of Siena, ITALY

N. Ulivieri; University of Siena, ITALY

V. Vignoli; University of Siena, ITALY

M. Catelani; University of Firenze, ITALY

Integration of a Selective Membrane Sampling Technique with an SnO<sub>2</sub>-Based "Electronic Nose"

J.G. Crespo; FCT/New University of Lisbon, PORTUGAL

A. Fort; University of Siena, ITALY

S. Rocchi; University of Siena, ITALY

T. Schäfer; FCT/New University of Lisbon, PORTUGAL

M.B. Serrano-Santos; University of Siena, ITALY

N. Olivieri; University of Siena, ITALY

V. Vignoli; University of Siena, ITALY

Considerations and Improvement of Phosphorescence Lifetime Measurement Systems

M.A. Perez-Garcia; Univeristy of Oviedo, SPAIN

G.J. Grillo Ortega; University of Oviedo, SPAIN

J.C. Campo Rodriguez; University of Oviedo, SPAIN

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA1: Special Session: Digital Imaging Techniques 2**

**Chair: G.C. Giakos; University of Akron, USA**

Automatic Enhancement of Noisy Images Using Objective Evaluation of Image Quality

F. Russo; University of Trieste, ITALY

Off-Device Fault Tolerance for Digital Imaging Devices

B. Jin; Oklahoma State University, USA

T. Feng; Oklahoma State University, USA

N. Park; Oklahoma State University, USA

K.M. George; Oklahoma State University, USA

N. Park; Oklahoma State University, USA

F. Lombardi; Northeastern University, USA

Y.-B. Kim; Northeastern University, USA

Transient Response for Automatic Gain Control with Multiple Intensity Thresholds for Image-Intensified Camera

K.R. Fowler; Johns Hopkins University-APL, USA

3D Shape Measurements Using Stereo Image Scanner with Three Color Light Sources

H. Ukida; University of Tokushima, JAPAN

S. Takamatsu; University of Tokushima, JAPAN

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA2: Special Session: Detectors for Nuclear and Particle Physics**

**Chair: P. Checchia; I.N.F.N. sezione di Padova, ITALY**

The Challenge of LHC Experiments

J.L. Pinfold; University of Alberta, CANADA

Spaceborne Particle Detection

W.J. Burger; INFN-Sezione di Perugia, ITALY

Gamma-Ray Tracking for Large Detector Arrays

D. Bazzacco; National Institute of Nuclear Physics, ITALY

Looking Forward: A Detector for the Future Linear Collider Machine  
M. Winter; Subatomic Research Institute of Strasbourg, FRANCE

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA3: Electrical Measurements 1**

**Chair: L. Callegaro; Istituto Elettrotecnico Nazionale Galileo Ferraris, ITALY**

Measurements-Based Method for Impedance Characterization of Residential Loads

D. Anastasiadou; University of Patras, GREECE

T. Antonakopoulos; University of Patras, GREECE

An Automatic Test System for the Dynamic Characterization of PEM Fuel Cells

G. Bucci; Università di L'Aquila, ITALY

F. Ciancetta; University of L'Aquila, ITALY

E. Fiorucci; Università di L'Aquila, ITALY

A High Voltage Power Supply and Amplifier for Hall Effect Voltage/Current Transducers Characterization

F. Adamo; Polytechnic of Bari, ITALY

G. Andria; Politecnico di Bari, ITALY

G. Cavone; Politecnico di Bari, ITALY

A.M.L. Lanzolla; Politecnico di Bari, ITALY

Novel Computer-Based Processing System for Partial Discharge Detection and Diagnosis

X. Ma; Lancaster University, UK

C. Zhou; Glasgow Caledonian University, UK

I. Kemp; Glasgow Caledonian University, UK

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA4: Analog-to-Digital Converters 3**

**Chair: P. Carbone; University of Perugia, ITALY**

Frequency Domain Analysis for Dynamic Nonlinearity Measurement in A/D Converters

F. Adamo; Polytechnic of Bari, ITALY

F. Attivissimo; Politecnico di Bari, ITALY

N. Giaquinto; Politecnico di Bari, ITALY

I. Kale; University of Westminster, UK

On the Monotonicity and Linearity of Ideal Radix-Based A/D Converters

J. Márkus; Budapest University of Technology and Economics, HUNGARY

I. Kollár; Budapest University of Technology and Economics, HUNGARY

MUSIC Method to Linearize Time Domain Analysis of A/D Converters

D. Dallet; Université of Bordeaux I, FRANCE

D. Haddadi; ST Microelectronics, FRANCE

P. Marchegay; Université de Bordeaux I, FRANCE

Design and Implementation of a Self-Calibrating Floating Point Analog-to-Digital Converter

V.Z. Groza; University of Ottawa, CANADA

M. Debski; University of Ottawa, CANADA

D. Ionescu; University of Ottawa, CANADA

A State of the Art on ADC Error Compensation Methods

E. Balestrieri; University of Sannio, ITALY

P. Daponte; University of Sannio, ITALY

S. Rapuano; University of Sannio, ITALY

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA5: Medical Instrumentation**

**Chair: B.J. Jarosz; Carleton University, CANADA**

Transmittance Photoplethysmography and Pulse Oximetry with Near Infrared Laser Diodes

S. López Silva; University of Las Palmas de Gran Canaria, SPAIN

M.L. Dotor; Microelectronic Institut of Madrid (CNM-CSIC), SPAIN

J.P. Silveira; Microelectronic Institut of Madrid (CNM-CSIC), SPAIN

R. Giannetti; "Pontificia Comillas" University, SPAIN

D. Golmayo; Materials Sciences Institute of Madrid, SPAIN

M.P. Martín Escudero; Universidad Complutense de Madrid, SPAIN

F. Miguel Tobal; Complutense University of Madrid, SPAIN

A. Bilbao; Complutense University of Madrid, SPAIN

J.L. Alvarez-Sala; Complutense University, SPAIN

L. Herrera Noreña; University of Cantabria, SPAIN

In Vivo Volt-Amperometric Characterization of Electrochemical Phenomena Due to Metallic Restorations in the Oral Cavity

G. Bucci; Università di L'Aquila, ITALY

E. Fiorucci; Università di L'Aquila, ITALY

M.E. Giannoni; Università di L'Aquila, ITALY

A. Monaco; Università di L'Aquila, ITALY

Breathing Flow Measurement with Constant Temperature Hot-Wire Anemometer for Forced Oscillations Technique

G.A.L. Araujo; Federal University of Pará, BRAZIL

R.C.S. Freire; Federal University of Campina Grande, BRAZIL

J.F. Da Silva; Federal University of Paraíba, BRAZIL

A. Oliveira; Federal University of Bahia - UFBA, BRAZIL

E.F. Jaguaribe; Federal University of Paraíba, BRAZIL

Evaluation of Patient's Computer Input Ability

Y. Tanimoto; Kibikogen Rehabilitation Center, JAPAN  
Y. Rokumyo; Kibikogen Rehabilitation Center, JAPAN  
K. Furusawa; Kibikogen Rehabilitation Center, JAPAN  
A. Tokuhiro; Kibikogen Rehabilitation Center, JAPAN  
Y. Suzuki; Rousai Rehabilitation Engineering Center, JAPAN  
K. Takami; Rousai Rehabilitation Engineering Center, JAPAN  
H. Yamamoto; Okayama University, JAPAN

Oxygen Saturation Measurements in Athletes Attaining Maximal Exertion Conditions

R. Giannetti; "Pontificia Comillas" University, SPAIN  
J.P. Silveira; Microelectronic Institut of Madrid (CNM-CSIC), SPAIN  
M.L. Dotor; Microelectronic Institut of Madrid (CNM-CSIC), SPAIN  
D. Golmayo; Materials Sciences Institute of Madrid, SPAIN  
M.P. Martin Escudero; Universidad Complutense de Madrid, SPAIN  
F. Miguel Tobal; Complutense University of Madrid, SPAIN  
A. Bilbao; Complutense University of Madrid, SPAIN  
S. López Silva; University of Las Palmas de Gran Canaria, SPAIN

**Wednesday, May 19, 2004** 8:30 AM to 10:30 AM

**WA6: Microwave-Based Measurements**

**Chair: W.J. Bock; University of Quebec at Outaouais, CANADA**

Chaotic Model of a New Reverberating Enclosure for EMC Compliance Testing in the Time Domain

N. Pasquino; University of Naples "Federico II", ITALY

Dielectric Spectroscopy for Agricultural Applications

S.O. Nelson; US Department of Agriculture, USA

**Wednesday, May 19, 2004** 11:00 AM to 1:00 PM

**WB1: Special Session -- Digital Imaging Techniques 3**

**Chair: M. Pastorino; University of Genoa, ITALY**

Novel Multifusion Optical Imaging Sensing Principles

G.C. Giakos; University of Akron, USA

On the Use of Data Fusion in Ultrasonic Imaging

G. Liu; Harbin Institute of Technology, CHINA

Y. Shen; Harbin Institute of Technology, CHINA

Y. Wang; Harbin Institute of Technology, CHINA

Q. Wang; Harbin Institute of Technology, CHINA

Multi-Modal Medical Image Registration Based on Non-Rigid Transformations and Feature Point Extraction by Using Wavelets

R. Rosas-Romero; University of Americas, MEXICO

J. Rodriguez-Asomoza; University of Americas, MEXICO

V. Alarcón-Aquino; University of Americas, MEXICO

D. Báez-López; University of Americas, MEXICO

Vision-Based Extraction of Micro Object Geometry for Micro World Observation

M. Ammi; Laboratoire Vision et Robotique, FRANCE

A. Ferreira; Laboratoire Vision et Robotique, FRANCE

Validation of the Measurement Performance of a Three-Dimensional Vision Sensor by Means of a Coordinate Measuring Machine

G. Sansoni; University of Brescia, ITALY

S. Carmignato; University of Padova, ITALY

E. Savio; University of Padova, ITALY

**Wednesday, May 19, 2004**

11:00 AM to 1:00 PM

**WB2: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: Ereditato; Istituto Nazionale di Fisica Nucleare, ITALY**

Strip Monolithic Telescopes

F. Amorini; University of Catania, ITALY

G. Cardella; INFN, ITALY

A. Di Pietro; INFN, ITALY

P.G. Fallica; ST-microelectronics, ITALY

P. Figuera; INFN, ITALY

A. Morea; ST-microelectronics, ITALY

A. Musumarra; INFN, ITALY

M. Papa; INFN, ITALY

G. Pappalardo; University of Catania, ITALY

A. Pinto; ST-microelectronics, ITALY

F. Rizzo; University of Catania, ITALY

W. Tian; INFN, ITALY

S. Tudisco; INFN, ITALY

G. Valvo; ST-microelectronics, ITALY

The CDFII Silicon Detector

J. Thom; For the CDF Collaboration --Fermi National Accelerator Laboratory, USA

Charge Sharing Measurements of Pixilated CdTe Using Medipix-II Chip

M. Chmeissani; Institute for High Energy Physics, SPAIN

M. Maiorino; Institute for High Energy Physics, SPAIN

G. Blanchot; Institute for High Energy Physics, SPAIN

G. Pellegrini; Institute for High Energy Physics, SPAIN

J. Garcia; National Center for Microelectronics (IMB-CNM, CSIC), SPAIN

M. Lozano; National Center for Microelectronics (IMB-CNM, CSIC), SPAIN

R. Martinez; National Center for Microelectronics (IMB-CNM, CSIC), SPAIN

C. Puigdengoles; Institute for High Energy Physics, SPAIN

M. Ullan; National Center for Microelectronics (IMB-CNM, CSIC), SPAIN

Study of CMOS Image Sensors for Laser Beam Position Detection

A. Lopez Virto; University of Cantabria, SPAIN

A. Calderón; University of Cantabria, SPAIN

The Mechanics and Cooling System of the ALICE Silicon Pixel Detector

F. Antinori; INFN Sezione di Padova, ITALY

M. Cinausero; Laboratorio Nazionale INFN di Legnaro, ITALY

R. Dima; INFN Sezione di Padova, ITALY

D. Fabris; INFN Sezione di Padova, ITALY

E. Fioretto; INFN Sezione di Legnaro, ITALY

L. Garizzo; INFN Sezione di Padova, ITALY

M. Lunardon; University of Padova and INFN, ITALY

D. Maniero; INFN Sezione di Padova, ITALY

S. Martini; INFN Sezione di Padova, ITALY

D. Mazzero; INFN Sezione di Padova, ITALY

S. Moretto; INFN Sezione di Padova, ITALY

A. Panizzi; INFN and Università di Udine, ITALY

A. Pepato; INFN di Padova, Padova, ITALY

G. Prete; Laboratorio Nazionale INFN di Legnaro, ITALY

F. Scarlassara; INFN Sezione di Padova, ITALY

G. Segato; INFN Sezione di Padova, ITALY

F. Soramel; University of Udine, ITALY

M. Turcato; INFN Sezione di Padova, ITALY

R. Turrisi; INFN Sezione di Padova, ITALY

L. Vannucci; Laboratorio Nazionale INFN di Legnaro, ITALY

G. Viesti; INFN Sezione di Padova, ITALY

**Wednesday, May 19, 2004**

11:00 AM to 1:00 PM

**WB3: Magnetic Measurements 1**

**Chair: F. Cecelja; Brunel University, UK**

Design of a Magneto-Optic Residual Current Device Using Aqueous Ferrofluid as the Sensing Material

L.M. Martinez; Universidad Iberoamericana, MEXICO

R. Rakowski; Brunel University, UK

F. Cecelja; Brunel University, UK

Fluxgate Magnetic Sensor in PCB Technology

A. Baschiroto; University of Lecce, ITALY

E. Dallago; University of Pavia, ITALY

P. Malcovati; University of Pavia, ITALY

M. Marchesi; University of Pavia, ITALY

G. Venchi; University of Pavia, ITALY

The Bulk Current Concept: A New Technique for High-Frequency Operation of the Coils in the Standard Magnetic Field Generation

C.F.M. Carobbi; University of Florence, ITALY

L.M. Millanta; University of Florence, ITALY

D. Soldani; University of Florence, ITALY

The Directionalless Instrument for the Periodical Magnetic Field Analysis

T. Skubis; Silesian Technical University, POLAND

D. Gonscz; Silesian Technical University, POLAND

**Wednesday, May 19, 2004** 11:00 AM to 1:00 PM

**WB4: Analog-to-Digital Converters 4**

**Chair: D. Petri; University of Trento, ITALY**

Fast ADC Testing by Spectral and Histogram Analysis

A. Cruz Serra; Instituto Superior Técnico, PORTUGAL

M. Fonseca da Silva; Technical University of Lisbon, PORTUGAL

P.M. Ramos; Technical University of Lisbon, PORTUGAL

L. Michaeli; Technical University of Kosice, SLOVAKIA

J. Saliga; Technical University of Kosice, SLOVAKIA

Improved Determination of the Best Fitting Sine Wave in ADC Testing

I. Kollár; Budapest University of Technology and Economics, HUNGARY

J. Blair; Bechtel Nevada, USA

Analysis of Interference Rejection in Period-to-Code Converters

F. Reverter; Technical University of Catalonia, SPAIN

M. Gasulla; Technical University of Catalonia, SPAIN

R. Pallàs-Areny; Technical University of Catalonia, SPAIN

**Wednesday, May 19, 2004** 11:00 AM to 1:00 PM

**WB5: Biological Measurements**

**Chair: P. Wide; Örebro University, SWEDEN**

A Wavelet-Based Approach for Monitoring Baroreceptors Function Tests in Rats

G. Postolache; University of Lisbon, PORTUGAL

I. Rocha; University of Lisbon, PORTUGAL

L. Silva Carvalho; Lisbon University, PORTUGAL

O. Postolache; Institute of Telecommunications, PORTUGAL

P.M.B. Silva Girao; Instituto de Telecomunicações, PORTUGAL

Pigs Stunning Optimisation

P. Dupuis; K.U.Leuven, BELGIUM

G. Van de Water; K.U.Leuven, BELGIUM

P. Vermeyen; K.U.Leuven, BELGIUM

J. Driesen; Catholic University of Leuven, BELGIUM

J. Coenegrachts; COVAVEE cvba, BELGIUM

R. Belmans; Catholic University of Leuven, BELGIUM

R. Geers; K.U.Leuven, BELGIUM

Analyzing Bacteriological Growth Using Wavelet Transform

L. Robertsson; Örebro University, SWEDEN

P. Wide; Örebro University, SWEDEN

Portable High-End Instrument for In-Vivo Infrared Spectroscopy  
Using Spread Spectrum Modulation

M. Giardini; INFN - National Institute for Physics of Matter,  
ITALY

S. Trevisan; INFN - National Institute for Physics of Matter,  
ITALY

An Instrumentation System Using Combined Sensing Strategies for  
On-Line Mass Flow Rate Measurement and Particle Sizing

R.M. Carter; University of Greenwich, UK

Y. Yan; University of Greenwich, UK

**Wednesday, May 19, 2004** 11:00 AM to 1:00 PM

**WB6: Special Session -- Sensor Array**

**Chair: Chen; Northrop Grumman Space Technology, USA**

COSBA an Experimental System for Direction Finding and Signal  
Parameter Estimation

J.G. Worms; FGAN, GERMANY

Improved Estimation of the Shape of Towed Sonar Arrays

B. Newhall; Johns Hopkins University, USA

J.W. Jenkins; Johns Hopkins University, USA

J.E.G. Dietz; Johns Hopkins University, USA

Super-Directivity Revisited

H. Cox; Lockheed Martin Orincon Defense, USA

Wearable Sensor Systems in Biomechanics: Assessment of  
Unrestrained Walking Features

A.M. Sabatini; Scuola Superiore Sant'Anna, ITALY

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC1: Networks for Monitoring**

**Chair: V.Z. Groza; University of Ottawa, CANADA**

Internet-Based Distributed Data Acquisition System for Fiber-Optic  
Sensors

P.J. Bock; McGill University, CANADA

S. Majumdar; Carleton University, CANADA

W.J. Bock; University of Quebec at Outaouais, CANADA

Community Security Platform for Individually Maintained Home  
Computers: The e-Vigilante Network Project

Y. Fujii; Gunma University, JAPAN

N. Yoshiura; Gunma University, JAPAN

Y. Chigira; Gunma University, JAPAN

K. Hagiwara; Gunma University, JAPAN

A Low Cost Visual Sensor Node for BlueTooth Based Measurement  
Networks

L. Ferrigno; University of Cassino, ITALY

A. Pietrosanto; University of Salerno, ITALY

Portable Wireless Measuring System for Monitoring Motor Shaft Parameters

H. Dzapo; University of Zagreb, CROATIA

Z. Stare; University of Zagreb, CROATIA

N. Bobanac; Brodarski Institut, CROATIA

A Monitoring System Based on a Multi-Agent Platform

L. Cristaldi; Polytechnic of Milan, ITALY

A. Deshmukh; University of South Carolina, USA

M. Lazzaroni; University of Milan, ITALY

A. Monti; University of South Carolina, USA

F. Ponci; University of South Carolina, USA

R. Ottoboni; Politecnico di Milano, ITALY

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC2: Signal Processing 4**

**Chair: J. Schoukens; Vrije Universiteit Brussel, BELGIUM**

A Computationally Efficient Decimation Filter Design for Embedded Systems

M.B. Yeary; University of Oklahoma, USA

W. Zhang; University of Oklahoma, USA

J.Q. Trelewicz; IBM, USA

Limiting Error Based Optimisation of Transformation Algorithms for Measurement Signal Compression

W. Gawedzki; AGH University of Science and Technology, POLAND

Continuous ARMA Spectral Estimation From Irregularly Sampled Observations

E. Lahalle; Ecole Supérieure d'Electricité, FRANCE

G. Fleury; SUPELEC, FRANCE

A. Rivoira; SUPELEC, FRANCE

Full Design Matrix Designation in Orthogonal Least Squares Approximation Problems

X. Wang; University of Portsmouth, UK

D.J. Brown; University of Portsmouth, UK

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC3: Signal Processing 5**

**Chair: S. Ferrari; University of Milano, ITALY**

On the Use of the Warblet Transform for Instantaneous Frequency Estimation

L. Angrisani; Università di Napoli Federico II, ITALY

M. D'Arco; Università di Napoli Federico II, ITALY

R. Schiano Lo Moriello; University of Naples Federico II, ITALY

M. Vadursi; Università di Napoli Federico II, ITALY

Instantaneous Line-Frequency Measurement Under Nonstationary Situations

A. López Ojeda; Universidad de Sevilla, SPAIN  
J.-C. Montaño; Spanish Research Council (CSIC, SPAIN  
M. Castilla; University of Seville, SPAIN  
J. Gutiérrez; University of Seville, SPAIN  
D. Borrás; University of Seville, SPAIN  
J.-C. Bravo; University of Seville, SPAIN

Dynamics of the Frequency Estimation in the Frequency Domain

D. Agrez; University of Ljubljana, SLOVENIA

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC4: Spectrum Analyzers**

**Chair: M. Lazzaroni; University of Milan, ITALY**

Hardware Implementation of a Broad-Band Vector Spectrum Analyzer Based on Randomized Sampling

G. Pasini; University of Bologna, ITALY  
P.A. Traverso; University of Bologna, ITALY  
D. Mirri; University of Bologna, ITALY  
G. Iuculano; University of Florence, ITALY  
F. Filicori; University of Bologna, ITALY

On the Power Measurement via a Spectrum Analyzer

M. Bertocco; University of Padova, ITALY  
A. Sona; University of Padova, ITALY

Implementation of a Time-Frequency Domain Reflectometry System with PXI Platform for a Coaxial Cable

T.S. Choe; Yonsei University, KOREA  
C. Hong; Yonsei University, KOREA  
J.B. Park; Yonsei University, KOREA  
T.S. Yoon; Changwon National University, KOREA

Sensitivity Monitoring of Amperometric Gas Sensors Based on Impedance Spectroscopy

M. Horn; University of Bundeswehr Munich, GERMANY  
H. Ruser; University of Bundeswehr Munich, GERMANY

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC5: Special Session -- Electronic tools for Education and Training**

**Chair: A. Carlosena; Public University of Navarra, SPAIN**

Management Architecture for Distributed Measurement Services

F. Cicirelli; University of Calabria, ITALY  
A. Furfaro; University of Calabria, ITALY  
D. Grimaldi; University of Calabria, ITALY  
L. Nigro; University of Calabria, ITALY  
F. Pupo; University of Calabria, ITALY

A Virtual Instrumentation Lab Based on a Reconfigurable Coprocessor

C. Quintáns Graña; Universidad De Vigo, SPAIN  
M.J. Moure Rodríguez; Universidad De Vigo, SPAIN  
R. García-Valladares; Universidad De Vigo, SPAIN  
M.D. Valdés Peña; Universidad De Vigo, SPAIN  
E. Mandado; Universidad De Vigo, SPAIN

Inexpensive Remote Campus Power Sensing, Measurement and Monitoring System via a Student Designed and Manufactured Device

P.M. Jansson; Rowan University, USA  
J. Tisa; Rowan University, USA  
W. Kim; Rowan University, USA

A Remotely Controlled Measurement System for Education and Training of Experiments in Wind Tunnel

F. Cennamo; University of Naples Federico II, ITALY  
F. Fusco; CIRA (Italian Aerospace Research Centre), ITALY  
M. Inverno; CIRA (Italian Aerospace Research Centre), ITALY  
A. Masi; University of Naples Federico II, ITALY  
A. Ruggiero; University of Naples Federico II, ITALY

A Distributed Measurement System for Stepping Motors Study

C. Donciu; "Gh. Asachi" Technical University of Iasi, ROMANIA  
S. Rapuano; University of Sannio, ITALY

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC6: Position Measurements 2**

**Chair: K. Watanabe; Shizuoka University, JAPAN**

Optimization of the Displacement Sensing Precision of a Reflected Beam Sensor in Outdoor Environment

A.J. Makynen; University of Oulu, FINLAND  
J. Kostamovaara; University of Oulu, FINLAND

UWB Localization - Active and Passive Approach

R. Zetik; Technical University Ilmenau, GERMANY  
J. Sachs; Ilmenau University of Technology, GERMANY  
R.S. Thomä; Ilmenau University of Technology, GERMANY

A New Laser-Based Position Sensor With the Ability of Detecting the Incident Angle of a Light

M. Baba; Okayama University, JAPAN  
N. Michiue; Okayama University, JAPAN  
D. Narita; Okayama University, JAPAN  
K. Ohtani; Hiroshima Institute of Technology, JAPAN

Least Mean Square Method for LVDT Signals Processing

A. Flammini; University of Brescia, ITALY  
D. Marioli; University of Brescia, ITALY  
E. Sisinni; University of Brescia, ITALY  
A. Taroni; University of Brescia, ITALY

First Results on the Characterization of New Semitransparent Amorphous Silicon Sensors

A. Calderón; University of Cantabria, SPAIN

A. Lopez Virto; University of Cantabria, SPAIN

J.M. Luque; C.I.E.M.A.T., SPAIN

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC7: Position Measurements 3**

**Chair: X. Roset; Polytechnical University of Catalonia, SPAIN**

Digital Processing of Position Error Signal in Hard Disk Drives

A. Al Mamun; National University of Singapore, SINGAPORE

G.X. Guo; A-Star Data Storage Institute, SINGAPORE

K.C. Tan; National University of Singapore, SINGAPORE

Y. Liu; National University of Singapore, SINGAPORE

A Study of the Deviations in Thickness as Detected by a Laser Measuring Instrument in a Stainless Steel Production Line

C. Spinola; Malaga University, SPAIN

J.M. Bonelo; Acerinox, S.A., SPAIN

C. Martin-Perez; T.C.C, S.A., SPAIN

J. Vizoso; Acerinox, S.A., SPAIN

Thick-Film Inclinator Based on Free Convective Motion of an Heating Air Mass

D. Crescini; University of Brescia, ITALY

D. Marioli; University of Brescia, ITALY

M. Romani; University of Brescia, ITALY

E. Sardini; University of Brescia, ITALY

A. Taroni; University of Brescia, ITALY

A Micro Barometric Altimeter with Applications in Altitude-Holding Flight Control for MAVs

Z. Zhu; Tsinghua University, CHINA

S. Xiong; Tsinghua University, PR CHINA

Z. Zhou; Tsinghua University, CHINA

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC8: Kinematics Measurements 1**

**Chair: E.M. Petriu; University of Ottawa, CANADA**

Uncertainty Propagation Analysis for Defining a Wind Power Density Measurement System Structure

S.Y.C. Catunda; Federal University of Maranhao, BRAZIL

J.E.O. Pessanha; Federal University of Maranhao, BRAZIL

J.V. Fonseca Neto; Federal University of Maranhao, BRAZIL

N.J. Camelo; Federal University of Maranhao, BRAZIL

P.R.M. Silva; CEMAR, BRAZIL

Sensitivity Evaluation of Thermoresistive Sensor Constant  
Temperature Anemometers

S.Y.C. Catunda; Federal University of Maranhao, BRAZIL  
M.V. Gabriel; Vale do Rio Doce Company, BRAZIL  
F.R. Sousa; ENST, FRANCE  
R.C.S. Freire; Federal University of Campina Grande, BRAZIL  
J.V. Fonseca Neto; Federal University of Maranhao, BRAZIL

Improvement in the 3-Color Particle Image Velocimetry System

S. De Ponte; Polytechnic of Milan, ITALY  
C. Svelto; Politechnic of Milan, ITALY  
S. Malavasi; Polytechnic of Milan, ITALY  
S. Franzetti; Polytechnic of Milan, ITALY

Signal Analysis for the Hand Grip Evaluation in Parkinsonian Patients

G. Andria; Politecnico di Bari, ITALY  
F. Attivissimo; Politecnico di Bari, ITALY  
N. Giaquinto; Politecnico di Bari, ITALY  
A.M.L. Lanzolla; Politecnico di Bari, ITALY  
L. Quagliarella; Università degli Studi di Bari, ITALY  
N. Sasanelli; Università degli Studi di Bari, ITALY

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC9: Kinematics Measurements 2**

**Chair: G. Moschioni; Politecnico di Milano, ITALY**

Power Aware Attitude Computation During Rapid Rotational Motion

J.F. Arrigo; University of California San Diego, USA  
P.M. Chau; University of California San Diego, USA

A High-Temperature Low-Cost Rotational Speed Transducer for Oil-Well Telemetry

D. Ambrus; Brodarski Institut, CROATIA  
V. Bilas; University of Zagreb, CROATIA  
D. Vasic; University of Zagreb, CROATIA

Uncertainties in the Vibration Acceleration Measurement

Q. Song; China Academy of Engineering Physics, CHINA  
D. Zhou; China Academy of Engineering Physics, CHINA  
B. Niu; China Academy of Engineering Physics, CHINA  
C. Zhu; China Academy of Engineering Physics, CHINA

**Wednesday, May 19, 2004** 8:30 AM to 1:00 PM

**WC10: Measurement in Telecommunications 3**

**Chair: R.S. Thomä; Ilmenau University of Technology,  
GERMANY**

Advanced Measurement System Design for 4G Mobile Internet  
Systems Structural and Behaviour Testing

C. Tsao; Flarion Technologies, Inc., USA

Experimental Assessment of Modulated S-Parameters Reliability in Modeling and Testing Wideband Radiofrequency Amplifiers

L. Angrisani; Università di Napoli Federico II, ITALY

A. Masi; University of Naples Federico II, ITALY

Evaluation of Performance of Multi-Antenna Terminals Using Two Approaches

P. Suvikunnas; Helsinki University of Technology, FINLAND

K. Sulonen; Helsinki University of Technology, FINLAND

J. Villanen; Helsinki University of Technology, FINLAND

C. Icheln; Helsinki University of Technology, FINLAND

J. Ollikainen; Nokia Research Center, FINLAND

P.V. Vainikainen; Helsinki University of Technology, FINLAND

The Effect of Human Presence on Signal Power Received at a TETRA Handheld Device

A.G. Asimakopoulos; National Technical University of Athens, GREECE

N.E. Rittas; National Technical University of Athens, GREECE

D.G. Xenikos; O.T.E. S.A., GREECE

P.I. Polydoros; National Technical University of Athens, GREECE

P. Constantinou; National Technical University of Athens, GREECE

**Wednesday, May 19, 2004**

2:00 PM to 4:00 PM

**WD1: Special Session -- Digital Imaging Techniques 4**

**Chair: F. Russo; University of Trieste, ITALY**

Imaging of Absorbers in Turbid Media Using Visible Light

E. Scherleitner; Johannes Kepler University of Linz, AUSTRIA

B.G. Zagar; Johannes Kepler University of Linz, AUSTRIA

Detection of Buried Objects by an Electromagnetic Method Based on a Differential Evolution Approach

S. Caorsi; University of Pavia, ITALY

M. Donelli; University of Trento, ITALY

A. Massa; University of Trento, ITALY

M. Pastorino; University of Genoa, ITALY

A. Randazzo; University of Genoa, ITALY

Concurrent Measurement of Combustion Oscillation and Temperature of Multiple Flames in a Simulated Gas Turbine

G. Lu; University of Greenwich, UK

S. Siouris; University of Sheffield, UK

Y. Yan; University of Greenwich, UK

C.W. Wilson; University of Sheffield, UK

S. Cornwell; RWE Innogy, UK

Pixel Shader Based Real-Time Image Processing for Surface Metrology

A. Purde; Technical University of Munich, GERMANY

A. Meixner; Technical University of Munich, GERMANY

H. Schweizer; Technical University of Munich, GERMANY

T. Zeh; Technical University of Munich, GERMANY

A.W. Koch; Technical University of Munich, GERMANY

Human Body Shape Imaging for Japanese Kimono Design

T. Sano; Okayama University, JAPAN

H. Yamamoto; Okayama University, JAPAN

**Wednesday, May 19, 2004**

2:00 PM to 4:00 PM

**WD2: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: P. Checchia; I.N.F.N. sezione di Padova, ITALY**

Progress in TPG Construction

V. Ableev; Istituto Nazionale di Fisica Nucleare, ITALY  
F. Ambrosino; Università degli studi di Napoli "Federico II", ITALY  
M. Apollonio; Istituto Nazionale di Fisica Nucleare sezione di Trieste, ITALY  
P. Bene; University of Geneva, SWITZERLAND  
A. Blondel; University of Geneva, SWITZERLAND  
M.G. Catanesi; Istituto Nazionale di Fisica Nucleare sezione di Trieste, ITALY  
G. Chiefari; Università degli studi di Napoli "Federico II", ITALY  
P. Chimenti; Università e sezione INFN, ITALY  
P. Favaron; Istituto Nazionale di Fisica Nucleare, ITALY  
U. Gastaldi; Istituto Nazionale di Fisica Nucleare, ITALY  
S. Giani; CERN, ITALY  
G. Giannini; University of Trieste, ITALY  
E. Gschwendtner; University of Geneva, SWITZERLAND  
J.C. Legrand; CERN, ITALY  
M. Lollo; Istituto Nazionale di Fisica Nucleare, ITALY  
G. Musso; CERN, ITALY  
M. Napolitano; Università degli studi di Napoli "Federico II", ITALY  
R. de Oliveira; CERN, ITALY  
V. Palladino; Università degli studi di Napoli "Federico II", ITALY  
E. Radicioni; Istituto Nazionale di Fisica Nucleare sezione di Bari, ITALY  
J.P. Richeux; University of Geneva, SWITZERLAND  
M. Rigato; Istituto Nazionale di Fisica Nucleare, ITALY  
L. Ropelewski; CERN, ITALY  
L. Roscilli; Università degli studi di Napoli "Federico II", ITALY  
G. Saracino; Università degli studi di Napoli "Federico II", ITALY  
F. Sauli; CERN, ITALY  
P. Temnikov; Istituto Nazionale di Fisica Nucleare, ITALY

The Straw-Tube Tracker of the ZEUS-Detector at HERA

S. Goers; On Behalf of the ZEUS-STT Collaboration, GERMANY

The AMS-RICH Prototype: Test Beam Results

P. Aguayo; CIEMAT, SPAIN  
L. Arruda; LIP, PORTUGAL  
F. Barao; LIP, PORTUGAL  
A. Barrau; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
B. Baret; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
E. Belmont; Instituto de Fisica -- UNAM, MEXICO  
J. Berdugo; CIEMAT, SPAIN  
G. Boudoul; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
J. Borges; LIP, PORTUGAL  
M. Buénerd; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
D. Casadei; University of Bologna and INFN, ITALY  
J. Casaus; CIEMAT, SPAIN  
C.J. Delgado Mendez; Instituto Astrofisico de Canarias, SPAIN  
C. Diaz; CIEMAT, SPAIN  
L. Derome; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
L. Eraud; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
L. Gallin-Martel; Laboratory for Subatomic Physics and  
Cosmology, FRANCE  
F. Giovacchini; University of Bologna and INFN, ITALY  
P. Goncalves; LIP, PORTUGAL  
E. Lanciotti; CIEMAT, SPAIN  
G. Laurenti; University of Bologna, ITALY  
A. Malinine; University of Maryland, USA  
C. Mana; CIEMAT, SPAIN  
J. Marin; CIEMAT, SPAIN  
G. Martinez; CIEMAT, SPAIN  
A. Menchaca-Rocha; Instituto de Fisica, UNAM, MEXICO  
C. Palomares; CIEMAT, SPAIN  
K. Protasov; Laboratory for Subatomic Physics and Cosmology,  
FRANCE  
E. Sanchez; CIEMAT, SPAIN  
E.S. Seo; University of Maryland, USA  
I. Sevilla; CIEMAT, SPAIN  
A. Torrento; CIEMAT, SPAIN  
M. Vargas-Trevino; Laboratory for Subatomic Physics and  
Cosmology, FRANCE  
O. Veziant; Laboratory for Subatomic Physics and Cosmology,  
FRANCE

**Wednesday, May 19, 2004**

2:00 PM to 4:00 PM

**WD3: Special Session -- Electronic tools for Education and Training**

**Chair: P. Daponte; University of Sannio, ITALY**

Tools for Education and Training in Measurement and Instrumentation - A Review of Requirements

M. Frota; Catholic University Rio de Janeiro, BRAZIL

L. Finkelstein; City University, London, UK

E-Learning in Instrumentation and Measurement Courses

M. Bertocco; University of Padova, ITALY

S. Cappellazzo; University of Padova, ITALY

S. Corbellini; Politecnico di Torino, ITALY

M. Parvis; Politecnico di Torino, ITALY

P.A. Pegoraro; Università di Padova, ITALY

A. Vallan; Politecnico di Torino, ITALY

Internet Aided Education System

J. Nabielec; AGH University of Science and Technology, POLAND

P. Wojtasinski; TeleVox, POLAND

Development in Web-Based Laboratory Sessions

B. Andò; University of Catania, ITALY

P. Giannone; University of Catania, ITALY

E. Pecora; Istituto Nazionale di Geofisica e Vulcanologia, Sez. di Catania, ITALY

N. Pitrone; University of Catania, ITALY

**Wednesday, May 19, 2004**

2:00 PM to 4:00 PM

**WD4: Special Session -- Sigma-Delta Modulators**

**Chair: I. Kale; University of Westminster, UK**

A Stability Criterion for High-Accuracy Delta-Sigma Digital Resonators

D. Macii; University of Perugia, ITALY

F. Pianegiani; University of Trento, ITALY

P. Carbone; University of Perugia, ITALY

D. Petri; University of Trento, ITALY

Precise Behavioural Modelling of High-Resolution Switched-Capacitor Delta-Sigma Modulators

H. Zare-Hoseimi; University of Westminster, UK

O. Shoaiei; University of Tehran, IRAN

I. Kale; University of Westminster, UK

Self-Calibration Method for a Sigma-Delta Micro-Accelerometer

E. Colinet; SUPELEC, FRANCE

J. Juillard; Supélec, FRANCE

R. Kielbasa; SUPELEC, FRANCE

A Constant Temperature Operation Thermo-Resistive Sigma Delta Transducer

A. Oliveira; Federal University of Bahia - UFBA, BRAZIL  
A.S. Costa; Federal University of Bahia - UFBA, BRAZIL  
L.S. Palma; Federal University of Bahia - UFBA, BRAZIL  
A.C.C. Lima; Federal University of Bahia - UFBA, BRAZIL  
R.C.S. Freire; Federal University of Campina Grande, BRAZIL

**Wednesday, May 19, 2004** 2:00 PM to 4:00 PM

**WD5: Special Session -- Sensor Networks: Technologies, Methodolo**

**Chair: K. Lee; National Institute of Standards and Technology, USA**

Object-Oriented Application Framework for IEEE 1451.1 Standard

K. Lee; National Institute of Standards and Technology, USA  
E.Y. Song; NIST, USA

Development of a Dynamically Reprogrammable NCAP

R. Kochan; Ternopil Academy of National Economy, UKRAINE  
K. Lee; National Institute of Standards and Technology, USA  
V. Kochan; Ternopil Academy of National Economy, UKRAINE  
A. Sachenko; Ternopil Academy of National Economy, UKRAINE

A NDIR CO2 Monitor with Smart Interface for Global Networking

Y. Wang; Shizuoka University, JAPAN  
M. Nakayama; Shizuoka University, JAPAN  
M. Yagi; Electrical Construction Materials Co., JAPAN  
M. Nishikawa; Electrical Construction Materials Co, JAPAN  
M. Fukunaga; Electrical Construction Materials Co, JAPAN  
K. Watanabe; Shizuoka University, JAPAN

A Wireless Network of EIS Devices

A. Ostmark; Luleå University of Technology, Sweden  
C. Ohult; Luleå University of Technology, Sweden  
J. Eriksson; Luleå University of Technology, Sweden  
P. Lindgren; Luleå University of Technology, Sweden  
J. Delsing; Luleå University of Technology, Sweden

USB Sensor Network for Industrial Applications

A. Depari; University of Brescia, ITALY  
A. Flammini; University of Brescia, ITALY  
D. Marioli; Univesity of Brescia, ITALY  
A. Taroni; Univesity of Brescia, ITALY

**Wednesday, May 19, 2004** 2:00 PM to 4:00 PM

**WD6: Optical Sensors 1**

**Chair: C. Svelto; Politechnic of Milan, ITALY**

Optical Sensor with Integrated Four-Quarter Photodiode for Speed-Enhancement

M. Förtsch; Vienna University of Technology, AUSTRIA  
H. Zimmermann; Vienna University of Technology, AUSTRIA  
H. Pless; Melexis GmbH, GERMANY

Designing Modified Cladding Sensors: A Structured Approach

F. Chiadini; University of Salerno, ITALY  
V. Paciello; University of Salerno, ITALY  
A. Paolillo; University of Salerno, ITALY

Fiber-Optic Strain-Gage Tank Level Measurement System for Cryogenic Propellants

F. Figueroa; NASA Stennis Space Center, USA  
M. Mitchell; Lockheed Martin Space Operations, USA  
L. Langford; Lockheed Martin Space Operations, USA

Wide Dynamic Range CMOS Receivers for a Pulsed Time-of-Flight Laser Range Finder

J.J. Nissinen; University of Oulu, FINLAND  
J. Kostamovaara; University of Oulu, FINLAND

Measurements of Sensitivity of Birefringent Holey Fiber to Temperature, Elongation, and Hydrostatic Pressure

W.J. Bock; University of Quebec at Outaouais, CANADA  
W. Urbanczyk; Wroclaw University of Technology, POLAND

**Wednesday, May 19, 2004** 4:30 PM to 6:30 PM

**WE1: Special Session -- Bayesian Methods in Measurement**

**Chair: L.A. Barford; Agilent Laboratories, USA**

Bayesian Fault Diagnosis in Large-Scale Measurement Systems

L.A. Barford; Agilent Laboratories, USA  
V. Kanevsky; Agilent Laboratories, USA  
L. Kamas; Sunnyvale, USA

Evaluation of Measurement Uncertainty by Bayesian-Entropic Approach

G. Iuculano; University of Florence, ITALY  
M. Cox; National Physical Laboratory, UK  
G. Pellegrini; University of Florence, ITALY  
A. Zanobini; University of Florence, ITALY

Robust Joint Audio-Video Localization in Video Conferencing Using Reliability Information II: Bayesian Network Fusion

D. Lo; Carleton University, CANADA  
R. Goubran; Carleton University, CANADA  
R. Dansereau; Carleton University, CANADA

**Wednesday, May 19, 2004** 4:30 PM to 6:30 PM

**WE2: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: Ereditato; Istituto Nazionale di Fisica Nucleare, ITALY**

The CMS Crystal Calorimeter

W. Lusteremann; On Behalf of the CMS ECAL Collaboration,  
SWITZERLAND

The ATLAS Liquid Argon Electromagnetic Calorimeter:  
Construction, Commissioning and Elected Test Beam Results

L. Hervas; CERN, SWITZERLAND

LCcal: a Calorimeter Prototype for Future Linear Colliders

M. Alemi; Università dell'Insubria, ITALY

A. Bulgheroni; Università dell'Insubria, ITALY

M. Caccia; Università dell'Insubria, ITALY

M. Anelli; I.N.F.N. Laboratori Nazionali di Frascati, ITALY

S. Bertolucci; I.N.F.N. Laboratori Nazionali di Frascati, ITALY

M. Cordelli; I.N.F.N. Laboratori Nazionali di Frascati, ITALY

S. Miscetti; INFN, ITALY

E. Borsato; I.N.F.N. sezione di Padova, ITALY

P. Checchia; I.N.F.N. sezione di Padova, ITALY

C. Fanin; I.N.F.N. sezione di Padova, ITALY

M. Margoni; INFN Padova, ITALY

R. Peghin; I.N.F.N. sezione di Padova, ITALY

L. Ramina; I.N.F.N. sezione di Padova, ITALY

F. Simonetto; I.N.F.N. sezione di Padova, ITALY

B. Nadalut; I.N.F.N. sezione di Trieste, ITALY

M. Prest; I.N.F.N. sezione di Trieste, ITALY

E. Vallazza; I.N.F.N. sezione di Trieste, ITALY

J. Marczewski; Institute of Electron Tecnology, POLAND

**Wednesday, May 19, 2004**

4:30 PM to 6:30 PM

**WE3: Special Session -- Electronic Tools for Education and Trainin**

**Chair: T. Laopoulos; Aristotle University of Thessaloniki,  
GREECE**

Virtual Measurement System for Distance Education and Training

P. Tymi; Czech Technical University in Prague, CZECH  
REPUBLIC

D. Slepicka; Czech Technical University, CZECH REPUBLIC

J. Roztocil; Czech Technical University, CZECH REPUBLIC

Remotely Accesible Laboratory for Instrumentation and Sensors

D. Anton; Polytechnic University of Catalonia, SPAIN

R. Bragos-Bardia; Polytechnic University of Catalonia, SPAIN

P.J. Riu; Polytechnic University of Catalonia, SPAIN

A Fully Simulated Laboratory for Instrumentation and Electronic  
Measurements

U. Pisani; Politechnic of Turin, ITALY

F. Cambiotti; Politechnic of Turin, ITALY

F. Corinto; Politechnic of Turin, ITALY

G. Romano; Politechnic of Turin, ITALY

ELVIS. A New Tool for Teaching and Training

J. Del Rio; Politecnico University of Catalonia, SPAIN

E. Trullols; Technical University of Catalonia UPC-EUPVG,  
SPAIN

A.L. Manuel; Technical University of Catalonia (UPC), SPAIN

J. Mendez; National Instruments, SPAIN

G. Prados; National Instruments, SPAIN

R. Palomera-Garcia; University of Puerto Rico, PUERTO RICO

Development of the Networked Virtual Instrument Lab for Vibration  
Measuring Based on Microsoft.Net

S. Qin; Chongqing University, CHINA

L. Bo; Chongqing University, CHINA

X. Liu; Chongqing University, CHINA

**Wednesday, May 19, 2004** 4:30 PM to 6:30 PM

**WE4: Signal Generators and Noise**

**Chair: V.Z. Groza; University of Ottawa, CANADA**

Pulse Parameter Dependence on Transition Position and Epoch  
Duration

D.R. Larson; NIST, USA

N.G. Paulter; NIST, USA

D.I. Bergman; NIST, USA

The Effect of Tilt on Waveform State Levels and Pulse Parameters

N.G. Paulter; NIST, USA

D.R. Larson; NIST, USA

The Digital Tent Map: Performance Analysis and Optimized Design  
as a Source of Pseudo-Random Bits

T. Addabbo; University of Siena, ITALY

M. Alioto; University of Siena, ITALY

S. Bernardi; University of Siena, ITALY

A. Fort; University of Siena, ITALY

S. Rocchi; University of Siena, ITALY

V. Vignoli; University of Siena, ITALY

An Instrument for Real-Time Emulation of DSL Binders

N. Papandreou; Academic Research Computer Technology  
Institute - CTI, GREECE

T. Antonakopoulos; University of Patras, GREECE

**Wednesday, May 19, 2004** 4:30 PM to 6:30 PM

**WE5: Special Session -- Sensor Networks: Technologies, Methodolo**

**Chair: V. Marbukh; NIST, USA**

IEEE802.11 Sensor Networking

P. Ferrari; University of Brescia, ITALY

A. Flammini; University of Brescia, ITALY

D. Marioli; University of Brescia, ITALY

A. Taroni; University of Brescia, ITALY

Ad-Hoc Positioning for Ocean Sensor Networks

J.-E. Garcia Ruiz; University of Hannover, GERMANY

K. Kyamakya; University of Hannover, GERMANY

K. Jobmann; University of Hannover, GERMANY

On Route Exploration Capabilities of Multi-Path Routing in Variable Topology Ad Hoc Networks

S. Kumar; NIST, USA

V. Marbukh; NIST, USA

**Wednesday, May 19, 2004** 4:30 PM to 6:30 PM

**WE6: Special Session -- Optical Instrumentation and Measurement**

**Chair: I. Gurov; Saint Petersburg University, RUSSIA**

Evaluation of Complicated Fringe Patterns by the Nonlinear Data-Dependent Fringe Processing Method

I. Gurov; Saint Petersburg University, RUSSIA

M. Volkov; Saint Petersburg University, RUSSIA

A New Set of Signal Processing Algorithms in Laser Speckle Metrology

S.C. Schneider; Johannes Kepler University of Linz, AUSTRIA

S. Rupitsch; Johannes Kepler University, Linz, AUSTRIA

B.G. Zagar; Johannes Kepler University of Linz, AUSTRIA

Two-Dimensional Characterization of Relief Microstructures in Lithium Niobate Through Digital Holographic Microscopy

S. De Nicola; Istituto di Cibernetica del CNR, ITALY

P. Ferraro; Istituto Nazionale di Ottica Applicata, ITALY

A. Finizio; Istituto di Cibernetica del CNR, ITALY

S. Grilli; Istituto Nazionale di Ottica Applicata, sez. di Napoli, ITALY

L. Sansone; Istituto Nazionale di Ottica Applicata, ITALY

P. De Natale; Istituto Nazionale di Ottica Applicata, ITALY

A New Method of Measuring the 3-D Shape and Surface Reflectance of an Object Using a Laser Rangefinder

M. Baba; Okayama University, JAPAN

D. Narita; Okayama University, JAPAN

K. Ohtani; Hiroshima Institute of Technology, JAPAN

A Special Case of 3-D Optical Measurements and Reverse Engineering for Automotive Applications: The Ferrari 250 Mille Miglia

G. Sansoni; University of Brescia, ITALY

F. Docchio; University of Brescia, ITALY

**Wednesday, May 19, 2004** 2:00 PM to 6:30 PM

**WF1: Electrical Measurements 2**

**Chair: A. Ferrero; Politecnico di Milano, ITALY**

Collaborative Multisensor Network Architecture Based on Smart Web Sensors for Power Quality Applications

D. Castaldo; Second University of Naples, ITALY

D. Gallo; Second University of Naples, ITALY

C. Landi; Second University of Naples, ITALY

Measurement Equipment for Ships' Electrical Power Systems

J. Mindykowski; Gdynia Maritime Academy, POLAND

M. Szweda; Gdynia Maritime Academy, POLAND

T. Tarasiuk; Gdynia Maritime Academy, POLAND

Stepping Motor Driven Constant-Shear-Rate Rotating Viscometer

S.E. Lucena; University of São Paulo, BRAZIL

W. Kaiser; University of São Paulo, BRAZIL

Decomposition of the IEC Flickermeter Weighting Curves

C. Wang; National Chang-Hua University of Education, TAIWAN

M.J. Devaney; University of Missouri-Columbia, USA

S.-W. Yang; National Chang-Hua University of Education, TAIWAN

**Wednesday, May 19, 2004** 2:00 PM to 6:30 PM

**WF2: Special Session -- Electric Power Quality Measurements and**

**Chair: L. Peretto; University of Bologna, ITALY**

An Easy VI Program to Detect Transient Disturbances in the Supply Voltage

A. Ferrero; Politecnico di Milano, ITALY

S. Salicone; Polytechnic University of Milan, ITALY

A Time Domain Approach for IEEE Std 1459-2000 Powers Measurement in Distorted and Unbalanced Power Systems

A. Cataliotti; University of Palermo, ITALY

V. Cosentino; University of Palermo, ITALY

S. Nuccio; University of Palermo, ITALY

A System for the Measurement of the Starting Instant of Impulsive Transients

L. Peretto; University of Bologna, ITALY

P. Rinaldi; University of Bologna, ITALY

R. Sasdelli; University of Bologna, ITALY

R. Tinarelli; University of Bologna, ITALY

Synchronisation Techniques for Power Quality Instruments

M. Aiello; University of Palermo, ITALY

A. Cataliotti; University of Palermo, ITALY

V. Cosentino; University of Palermo, ITALY

S. Nuccio; University of Palermo, ITALY

**Wednesday, May 19, 2004** 2:00 PM to 6:30 PM

**WF3: Magnetic Measurements 2**

**Chair: F. Cecelja; Brunel University, UK**

Validation of a Coil Impedance Model for Simultaneous Measurement of Electromagnetic Properties and Inner Diameter of a Conductive Tube

D. Vasic; University of Zagreb, CROATIA  
V. Bilas; University of Zagreb, CROATIA  
D. Ambrus; Brodarski Institut, CROATIA

A System for the Measurement of Wire-Rope Defect Positions

A. Vallan; Politecnico di Torino, ITALY

Signal Parameterization vs. Ortogonalization on Example of Vehicle's Magnetic Signature Recognition

M. Stencel; AGH University of Science and Technology, POLAND

Effects of Driving Mode on RTD-FluxGate Performances

B. Andò; University of Catania, ITALY  
S. Baglio; University of Catania, ITALY  
A. Bulsara; Space and Naval Warfare Systems Center, USA  
V. Sacco; University of Catania, ITALY

Radial Identification of Tearing Modes in a Tokamak

J. Berrino; Istituto di Fisica del Plasma, ITALY  
S. Cirant; Istituto di Fisica del Plasma, ITALY  
G. D'Antona; Politecnico di Milano, ITALY  
E. Lazzaro; Istituto di Fisica del Plasma, ITALY

**Wednesday, May 19, 2004** 2:00 PM to 6:30 PM

**WF4: Tomography**

**Chair: G. D'Antona; Politecnico di Milano, ITALY**

A Tomography Based Switched-Capacitor Measuring Circuit with Low Offset and Low Temperature Drift

J. Peng; Nanyang Technological University, Singapore, SINGAPORE

P.K. Chan; Nanyang Technological University, Singapore, SINGAPORE

Dynamic Performance Improvement of ERT System

W. Wang; Tianjin University, CHINA  
F. Dong; Tianjin University, CHINA  
Y. Xu; Tianjin University, CHINA  
J. Liu; Tianjin University, CHINA

A Comparative Analysis Between Different Inversion Algorithms for Process Tomographic Measurements

G. D'Antona; Politecnico di Milano, ITALY  
L. Rocca; Politecnico di Milano, ITALY

Electrotechnical Parts Quality Control by Computed Tomography

G. Marinescu; University of Savoie, FRANCE  
L. Valet; University of Savoie, FRANCE  
P. Lambert; University of Savoie, FRANCE  
S. Teyssier; University of Savoie, FRANCE

**Wednesday, May 19, 2004**

2:00 PM to 6:30 PM

**WF5: Special Session -- Defect and Fault tolerance for Dependability**

**Chair: N. Park; Oklahoma State University, USA**

Diagnostic for Measure Transmitters

O Fornaro; Università di Genova, ITALY

M. Caserza Magro; Università di Genova, ITALY

P. Pinceti; Università di Genova, ITALY

A Genetic Algorithm for Fault Identification in Electrical Drives: A Comparison with Neuro-Fuzzy Computation

L. Cristaldi; Polytechnic of Milan, ITALY

M. Lazzaroni; University of Milan, ITALY

A. Monti; University of South Carolina, USA

F. Ponci; University of South Carolina, USA

F. Zocchi; Media Lario S.r.l, ITALY

Diagnostic and Model Validation of a Faulty Induction Motor Drive Via Wavelet Decomposition

L. Cristaldi; Polytechnic of Milan, ITALY

M. Lazzaroni; University of Milan, ITALY

A. Monti; University of South Carolina, USA

F. Ponci; University of South Carolina, USA

Investigating the Causes of Biosensor SNR Decrease by Means of Fault Tree Analysis

F.A. Batzias; University of Piraeus, GREECE

C.G. Siontorou; University of Piraeus, GREECE

**Wednesday, May 19, 2004**

2:00 PM to 6:30 PM

**WF6: Special Session -- System-On-Chip Integrated Circuits for In**

**Chair: S.R. Das; University of Ottawa, CANADA**

Implementation of a Testing Environment for Digital IP Cores

S.R. Das; University of Ottawa, CANADA

C. Jin; University of Ottawa, CANADA

L. Jin; University of Ottawa, CANADA

M.H. Assaf; University of Ottawa, CANADA

E.M. Petriu; University of Ottawa, CANADA

W.-B. Jone; University of Cincinnati, USA

M. Sahinoglu; Troy State University Montgomery, USA

High Confidence Testing for Instrumentation System-on-Chip with Unknown-Good-Yield

N. Park; Oklahoma State University, USA

B. Jin; Oklahoma State University, USA

K.M. George; Oklahoma State University, USA

N. Park; Oklahoma State University, USA

M. Choi; University of Missouri-Rolla, USA

Yield Optimization of Clockless Wave Pipeline with Intra/Inter-Wave Faults

T. Feng; Oklahoma State University, USA

B. Jin; Oklahoma State University, USA

N. Park; Oklahoma State University, USA

F. Lombardi; Northeastern University, USA

Versatile PC/ FPGA Based Verification/Fast Prototyping Platform with Multimedia Applications

Y.-L. Lin; National Cheng Kung University, TAIWAN

C.-P. Young; National Cheng Kung University, TAIWAN

Y.-J. Chang; National Cheng Kung University, TAIWAN

Y.-H. Chung; National Cheng Kung University, TAIWAN

A.W.Y. Su; National Cheng Kung University, TAIWAN

What next? A hardware Operating System?

V.Z. Groza; University of Ottawa, CANADA

R. Abielmona; University of Ottawa, CANADA

**Wednesday, May 19, 2004**

2:00 PM to 6:30 PM

**WF7: Circuit Design**

**Chair: R.X. Gao; University of Massachusetts at Amherst, USA**

Hardware and Software Co-Design in Space Compaction of Cores-Based Digital Circuits

M.H. Assaf; University of Ottawa, CANADA

S.R. Das; University of Ottawa, CANADA

E.M. Petriu; University of Ottawa, CANADA

L. Jin; University of Ottawa, CANADA

C. Jin; University of Ottawa, CANADA

D. Biswas; University of Ottawa, CANADA

V.Z. Groza; University of Ottawa, CANADA

M. Sahinoglu; Troy State University Montgomery, USA

Automating the Tracking of Electrical Performance for Memory Test Systems

K.C. Tan; National University of Singapore, SINGAPORE

A. Al Mamun; National University of Singapore, SINGAPORE

The Research of Parameter Optimization Design Method for Analogy Circuit

S. Wang; Harbin Institute of Technology, CHINA

H. Gao; Harbin Institute of Technology, CHINA

Z. Wang; Harbin Institute of Technology, CHINA

Timing Requirement for Reliable Latch-Based Circuit Design

Y.J. Lee; Northeastern University, USA

Y.-B. Kim; Northeastern University, USA

F. Lombardi; Northeastern University, USA

N. Park; Oklahoma State University, USA

Yield Evaluation Methods of SRAM Arrays: A Comparative Study

M. Ottavi; University of Rome "Tor Vergata", ITALY

L. Schiano; Northeastern University, USA

X. Wang; University of Rome "Tor Vergata", ITALY

Y.-B. Kim; Northeastern University, USA

F.J. Meyer; Wichita State University, USA

F. Lombardi; Northeastern University, USA

**Wednesday, May 19, 2004**

2:00 PM to 6:30 PM

**WF8: Circuits**

**Chair: M. Lazzaroni; University of Milan, ITALY**

Stable Source of AC Voltage and Current

Z. Mitrovic; University of Novi Sad, SERBIA &  
MONTENEGRO

I. Zupunski; University of Novi Sad, SERBIA &  
MONTENEGRO

A Low Quiescent-Current, Low Supply-Voltage Linear Regulator

A. Asteriadis; Aristotle University of Thessaloniki, GREECE

T. Laopoulos; Aristotle University of Thessaloniki, GREECE

S. Siskos; Aristotle University of Thessaloniki, GREECE

M. Baffleur; Laboratory of Automation and Analysis of Systems  
(LAAS) / CNRS, FRANCE

A High Sensitivity Conditioning Circuit for Capacitive Sensors

Including Stray Effects Compensation and Dummy Sensors Approach

S. Baglio; University of Catania, ITALY

S. Castorina; University of Catania, ITALY

G. Ganci; University of Catania, ITALY

N. Savalli; University of Catania, ITALY

Test Methodology for Low Power VLSI Neural Oscillator Circuit

Y.J. Lee; Northeastern University, USA

J. Lee; Northeastern University, USA

J. Heo; Northeastern University, USA

F. Zhang; Northeastern University, USA

Y.-B. Kim; Northeastern University, USA

F. Lombardi; Northeastern University, USA

A Systematic Approach for Sensor Bridge Linearisation and Readout

G. de Graaf; Delft University of Technology, THE  
NETHERLANDS

R.F. Wolffenbuttel; Delft University of Technology, THE  
NETHERLANDS

**Thursday, May 20, 2004**

8:30 AM to 10:30 AM

**HA1: Special Session -- Medical Measurements and Instrumentation**

**Chair: M. Parvis; Politecnico di Torino, ITALY**

Thermal Imaging to Measure Local Temperature Rises Caused by  
Hand-Held Mobile Phones

C. Kargel; Carinthia Tech Institute, AUSTRIA

Control of Heating Pattern from Interstitial Instrumentation

B.J. Jarosz; Carleton University, CANADA

Ultrasonic Flow Measurement in Small Periodically Excited  
Capillary-Phantoms

F. Maier; Johannes Kepler University of Linz, AUSTRIA

B.G. Zagar; Johannes Kepler University of Linz, AUSTRIA

CMOS Interface of a Flow Sensor for Urodynamic Monitoring

N. Viarani; ITC-IRST, Centre for Scientific and Technological  
Research, ITALY

N. Massari; ITC-IRST, Centre for Scientific and Technological  
Research, ITALY

M. Gottardi; ITC-IRST, Centre for Scientific and Technological  
Research, ITALY

A. Simoni; ITC-IRST, Centre for Scientific and Technological  
Research, ITALY

Identification of Pneumatic Parameters of the Human Respiratory  
System by Negative Pressure Impulses

P. Piwowar; University of Science and Technology, POLAND

**Thursday, May 20, 2004**

8:30 AM to 10:30 AM

**HA2: Identification 1**

**Chair: P. Carbone; University of Perugia, ITALY**

On the Frequency Scaling in Continuous-Time Modeling

R. Pintelon; Vrije Universiteit Brussel, BELGIUM

I. Kollár; Budapest University of Technology and Economics,  
HUNGARY

Exponential Parameters Measurement Using a Modified Prony  
Method

P. Dupuis; K.U.Leuven, BELGIUM

T. Sels; Catholic University of Leuven, BELGIUM

J. Driesen; Catholic University of Leuven, BELGIUM

R. Belmans; Catholic University of Leuven, BELGIUM

Variance Analysis of Frequency Response Function Measurements  
Using Periodic Excitations

T. D'haene; Vrije Universiteit Brussel, BELGIUM

R. Pintelon; Vrije Universiteit Brussel, BELGIUM

J. Schoukens; Vrije Universiteit Brussel, BELGIUM

E. Van Gheem; Vrije Universiteit Brussel, BELGIUM

System Modelling in the Presence of Nonlinear Distortions

M. Solomou; University of Glamorgan, UK

D. Rees; University of Glamorgan, UK

Linear Approximation of Weakly Nonlinear MIMO Systems

T.P. Dobrowiecki; Budapest University of Technology and  
Economics, HUNGARY

J. Schoukens; Vrije Universiteit Brussel, BELGIUM

**Thursday, May 20, 2004**

8:30 AM to 10:30 AM

**HA3: Special Session -- Electric Power Quality Measurements and**

**Chair: L. Peretto; University of Bologna, ITALY**

Clarke's Alpha, Beta and Zero Components: A Possible Approach for the Conceptual Design of Instrumentation Compatible with IEEE Std. 1459-2000

A.E. Emanuel; Worcester Polytechnic Institute, USA

D.L. Milanez; FEIS UNESP, BRAZIL

A Comparative Analysis of the Statistical and Random-Fuzzy Approaches in the Expression of Uncertainty in Measurement

A. Ferrero; Politecnico di Milano, ITALY

S. Salicone; Polytechnic University of Milan, ITALY

Implementation of Multi-Point Measurement Techniques for PQ Monitoring

C. Muscas; University of Cagliari, ITALY

L. Peretto; University of Bologna, ITALY

S. Sulis; University of Cagliari, ITALY

R. Tinarelli; University of Bologna, ITALY

Data Processing Development in the Field of Power Quality Monitoring

P. Gnacinski; Gdynia Maritime Academy, POLAND

J. Mindykowski; Gdynia Maritime Academy, POLAND

P. Rupnik; Gdynia Maritime Academy, POLAND

T. Tarasiuk; Gdynia Maritime Academy, POLAND

The Impact of Electric Disturbances on the Performance of Induction Motors Fed by Multistage Converters: Theoretical Analysis and Experimental Verification

D. Gallo; Second University of Naples, ITALY

C. Landi; Second University of Naples, ITALY

R. Langella; Second University of Naples, ITALY

A. Testa; Second University of Naples, ITALY

**Thursday, May 20, 2004**

8:30 AM to 10:30 AM

**HA4: Special Session -- Defect and Fault Tolerance for Dependability**

**Chair: N. Park; Oklahoma State University, USA**

On Test Data Compaction Using Linear Cycle Registers

S. Demidenko; Monash University Malaysia, MALAYSIA

E. Levine; Rainbow Technologies Inc., BELARUS

V. Piuri; University of Milano, ITALY

G. Sen Gupta; Massey University, NEW ZEALAND

A Fault-Tolerant Solid State Mass Memory for Highly Reliable Instrumentation

G.C. Cardarilli; University of Rome "Tor Vergata", ITALY

M. Ottavi; University of Rome "Tor Vergata", ITALY

S. Pontarelli; University of Rome "Tor Vergata", ITALY

M. Re; University of Rome "Tor Vergata", ITALY

A. Salsano; University of Rome "Tor Vergata", ITALY

Neural Network Based Motor Bearing Fault Detection

L. Eren; Bahcesehir University, TURKEY

A. Karahoca; Bahcesehir University, TURKEY

M.J. Devaney; University of Missouri-Columbia, USA

Machine Fault Detection Using Bicoherence Spectra

B. Jang; University of Texas at Austin, USA

C. Shin; University of Texas at Austin, USA

E.J. Powers; University of Texas at Austin, USA

W.M. Grady; University of Texas at Austin, USA

Real-Time Implementation of IFDIA Schemes in Automotive System

D. Capriglione; University of Cassino, ITALY

C. Liguori; University of Cassino, ITALY

A. Pietrosanto; University of Salerno, ITALY

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HA5: Transportation**

**Chair: C. Alippi; Politecnico di Milano, ITALY**

Soft Computing Based Car Body Deformation and EES

Determination for Car Crash Analysis Systems

A. Rövid; Budapest University of Technology and Economics,  
HUNGARY

A.R. Várkonyi-kóczy; Budapest University of Technology and  
Economics, HUNGARY

M. da Graça Ruano; University of Algarve, PORTUGAL

P. Várlaki; Széchenyi István University, HUNGARY

P. Michelberger; Budapest University of Technology and  
Economics, HUNGARY

A Technique to Characterize the Wheel-Rail Interaction by Means of  
a Diagnostic Railway Vehicle

F. Attivissimo; Politecnico di Bari, ITALY

A. Danese; Politecnico di Bari, ITALY

N. Giaquinto; Politecnico di Bari, ITALY

P. Sforza; MER MEC S.p.A, ITALY

**Thursday, May 20, 2004** 11:00 AM to 1:00 PM

**HB1: Special Session -- Medical Measurements and Instrumentation**

**Chair: M. Parvis; Politecnico di Torino, ITALY**

Estimation of Concentrations of Ternary Solution with NaCl and  
Sucrose Based on Multifunctional Sensing Technique

K. Shida; Saga University, JAPAN

G. Wei; Saga University, JAPAN

Design of a System for Continuous Intraocular Pressure Monitoring

S. Lizón Martínez; University Pontificia Comillas, SPAIN

R. Giannetti; "Pontificia Comillas" University, SPAIN

J.L. Rodríguez Marrero; Universidad Pontificia Comillas de  
Madrid, SPAIN

Measurement of Electrode Current Pulses from Cochlear Implants

M. Norgia; University of Pavia, and INFN, ITALY  
G. Tognola; National Research Council (CNR), ITALY  
C. Svelto; Politechnic of Milan, ITALY

Multiparametric Measurement System for Detection of Cardiac Graft Rejection

J. Ramos-Castro; Polytechnic University of Catalonia, SPAIN  
R. Bragos-Bardia; Polytechnic University of Catalonia, SPAIN  
M.A. Garcia-Gonzalez; Polytechnic University of Catalonia, SPAIN  
Y. Salazar; Polytechnic University of Catalonia, SPAIN  
A. Fontova; Polytechnic University of Catalonia, SPAIN  
A. Bayes-Genis; Santa Creu i Sant Pau Hospital, SPAIN  
J. Cinca-Cuscullola; Santa Creu i Sant Pau Hospital, SPAIN  
J. Rosell-Ferrer; Universidad Politecnica de Catalunya, SPAIN

Adjustable 60Hz Noise Reduction by a Notch Filter for ECG Signals

Y.-W. Bai; Fu Jen Catholic University, TAIWAN  
W.-Y. Chu; Fu Jen Catholic University, TAIWAN  
C. Chen; Fu Jen Catholic University, TAIWAN  
Y.-T. Lee; Fu Jen Catholic University, TAIWAN  
Y.-C. Tsai; Fu Jen Catholic University, TAIWAN  
C.-H. Tsai; Fu Jen Catholic University, TAIWAN

**Thursday, May 20, 2004** 11:00 AM to 1:00 PM

**HB2: Identification 2**

**Chair: D. Petri; University of Trento, ITALY**

Modified AIC and MDL Model Selection Criteria for Short Data Records

F. De Ridder; Vrije Universiteit Brussel, BELGIUM  
R. Pintelon; Vrije Universiteit Brussel, BELGIUM  
J. Schoukens; Vrije Universiteit Brussel, BELGIUM  
D.P. Gillikin; Vrije Universiteit Brussel, BELGIUM

Estimation of Time Series Spectra with Randomly Missing Data

P.M.T. Broersen; Delft University of Technology, THE NETHERLANDS  
R. Bos; Delft University of Technology, THE NETHERLANDS

Cramér-Rao Lower Bound for Parametric Estimation of Quantized Sinewaves

A. Moschitta; University of Perugia, ITALY  
P. Carbone; University of Perugia, ITALY

Least-Squares Fitting Algorithms Applied to Periodic Signals

M. Fonseca da Silva; Technical University of Lisbon, PORTUGAL  
P.M. Ramos; Technical University of Lisbon, PORTUGAL  
R.C. Martins; Technical University of Lisbon, PORTUGAL  
A. Cruz Serra; Instituto Superior Técnico, PORTUGAL

Accurate Estimation of the Autocovariance Function of Random Observations

P.M.T. Broersen; Delft University of Technology, THE NETHERLANDS

**Thursday, May 20, 2004** 11:00 AM to 1:00 PM

**HB3: Special Session -- Electric Power Quality Measurements and**

**Chair: C. Muscas; University of Cagliari, ITALY**

Poynting Vector and the Physical Meaning of Nonactive Powers

A.E. Emanuel; Worcester Polytechnic Institute, USA

Evaluation of the Uncertainties in the Measurement of Distorted Power by Means of the IEN Sampling System

U. Pogliano; IEN "Galileo Ferraris", ITALY

A Low Cost and Easy Re-Configurable Instrument for Power Quality Survey

M. Aiello; University of Palermo, ITALY

A. Cataliotti; University of Palermo, ITALY

V. Cosentino; University of Palermo, ITALY

S. Nuccio; University of Palermo, ITALY

Virtual Power Quality Analysis for Ship Power System Design

Y. Shin; University of Texas at Austin, USA

A. Monti; University of South Carolina, USA

F. Ponci; University of South Carolina, USA

A. Arapostathis; University of Texas at Austin, USA

W.M. Grady; University of Texas at Austin, USA

E.J. Powers; University of Texas at Austin, USA

R. Dougal; University of South Carolina, USA

**Thursday, May 20, 2004** 11:00 AM to 1:00 PM

**HB4: Special Session -- Defect and Fault tolerance for Dependability**

**Chair: S. Demidenko; Monash University Malaysia, MALAYSIA**

Wideband, Low-Voltage CMOS Sample-and-Hold Amplifier Design

D. Standarovski; E.N.S.E.E.I.H.T. - I.N.P.T. University, FRANCE

M. Cousineau; E.N.S.E.E.I.H.T. - I.N.P.T. University, FRANCE

M. Lescure; E.N.S.E.E.I.H.T. - I.N.P.T. University, FRANCE

A Low-Cost Microcontroller Interface for Low-Value Capacitive Sensors

F. Reverter; Technical University of Catalonia, SPAIN

M. Gasulla; Technical University of Catalonia, SPAIN

R. Pallàs-Areny; Technical University of Catalonia, SPAIN

Transalation of an Efficient Web-Based 3-D Matrix Switching Algorithms for Remote Switching and Control of Electrical and Electronics Instruments

H. Ogunleye; Western Michigan University, USA

Hard Disk Interface Used in Computer Forensic Science

C. Wick; United States Naval Academy, USA

S. Avramov-Zamurovic; United States Naval Academy, USA

J. Lyle; National Institute of Standards and Technology, USA

**Thursday, May 20, 2004** 11:00 AM to 1:00 PM

**HB5: Measurements for Industrial Applications 1**

**Chair: C. Alippi; Politecnico di Milano, ITALY**

New Method for Detection of Harmful Impacts on Shell Liners in Large Grinding Mills

J. Pontt; Federico Santa Maria, University of Technology, CHILE

W. Valderrama; Federico Santa Maria, University of Technology, CHILE

L. Magne; University of Santiago de Chile, CHILE

G. Sepúlveda; ETT Ltda., CHILE

P. Espinoza; Federico Santa Maria, University of Technology, CHILE

Adaptive Dynamic Detection of Separated Bulk Matter in Conveyer System

J. Chu; Shanghai Maritime University, CHINA

W. Gu; Shanghai Maritime University, P.R. CHINA

Artificial Intelligence Techniques for On-Line Monitoring of Fossil Power Plants

F.P. Fantoni; OECD Halden Reactor Project, NORWAY

L. Gregori; CESI S.p.A, ITALY

G.A. Zanetta; CESI S.p.A, ITALY

Monitoring of Oscillatory Characteristics of Pulverised Coal Flames through Image Processing and Spectral Analysis

G. Lu; University of Greenwich, UK

Y. Yan; University of Greenwich, UK

M. Colechin; Powergen UK plc, UK

R. Hill; Powergen UK plc, UK

On-line Fuel Tracking by Combining Principal Component Analysis and Neural Network Techniques

L. Xu; University of Greenwich, UK

Y. Yan; University of Greenwich, UK

S. Cornwell; RWE Innogy, UK

G. Riley; RWE Innogy plc, UK

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HC1: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: M. Winter; Subatomic Research Institute of Strasbourg, FRANCE**

Position Monolithic Silicon Detector Telescope: Simulation Results

G. Bottiglieri; ST-microelectronics, ITALY  
F. Amorini; University of Catania, ITALY  
G. Cardella; INFN, ITALY  
A. Di Pietro; INFN, ITALY  
P.G. Fallica; ST-microelectronics, ITALY  
P. Figuera; INFN, ITALY  
S.F. Liotta; ST-microelectronics, ITALY  
A. Morea; ST-microelectronics, ITALY  
A. Musumarra; INFN, ITALY  
M. Papa; INFN, ITALY  
F. Rizzo; University of Catania, ITALY  
S. Tudisco; INFN, ITALY  
G. Valvo; ST-microelectronics, ITALY

The Barrel Sector Assembly System of the ALICE Silicon Pixel  
Detector

M. Caldogno; INFN Sezione di Padova, ITALY  
M. Cinausero; Laboratorio Nazionale INFN di Legnaro, ITALY  
R. Dima; INFN Sezione di Padova, ITALY  
D. Fabris; INFN Sezione di Padova, ITALY  
E. Fioretto; INFN Sezione di Legnaro, ITALY  
M. Lunardon; University of Padova and INFN, ITALY  
S. Moretto; INFN Sezione di Padova, ITALY  
A. Pepato; INFN di Padova, Padova, ITALY  
G. Prete; Laboratorio Nazionale INFN di Legnaro, ITALY  
F. Scarlassara; INFN Sezione di Padova, ITALY  
G. Segato; INFN Sezione di Padova, ITALY  
F. Soramel; University of Udine, ITALY  
R. Turrisi; INFN Sezione di Padova, ITALY  
L. Vannucci; Laboratorio Nazionale INFN di Legnaro, ITALY  
G. Viesti; INFN Sezione di Padova, ITALY

Probing and Irradiation Tests of ALICE Pixel Chip Wafers and Sensors

M. Cinausero; Laboratorio Nazionale INFN di Legnaro, ITALY  
E. Fioretto; INFN Sezione di Legnaro, ITALY  
F. Antinori; INFN Sezione di Padova, ITALY  
P. Chochula; CERN, SWITZERLAND  
R. Dinapoli; CERN, SWITZERLAND  
R. Dima; INFN Sezione di Padova, ITALY  
D. Fabris; INFN Sezione di Padova, ITALY  
G. Galet; INFN Sez. di Padova, ITALY  
M. Lunardon; University of Padova and INFN, ITALY  
C. Manea; INFN Sez. di Padova, ITALY  
S. Marchini; INFN Sez. di Padova, ITALY  
S. Martini; INFN Sezione di Padova, ITALY  
S. Moretto; INFN Sezione di Padova, ITALY  
A. Pepato; INFN di Padova, Padova, ITALY  
G. Prete; Laboratorio Nazionale INFN di Legnaro, ITALY  
P. Riedler; CERN, SWITZERLAND  
F. Scarlassara; INFN Sezione di Padova, ITALY  
G. Segato; INFN Sezione di Padova, ITALY  
F. Soramel; University of Udine, ITALY  
G. Stefanini; CERN, SWITZERLAND  
R. Turrisi; INFN Sezione di Padova, ITALY  
L. Vannucci; Laboratorio Nazionale INFN di Legnaro, ITALY  
G. Viesti; INFN Sezione di Padova, ITALY

A Simple Method for the Characterization of HPGe Detectors

P. Medina; IRes / IN2P3, FRANCE  
C. Santos; IRes / IN2P3, FRANCE  
D. Villaume; IRes / IN2P3, FRANCE

A Test Bench for the AMS RICH Photodetector Modules

M. Vargas-Trevino; Laboratory for Subatomic Physics and Cosmology, FRANCE

J. Ballon; Laboratory for Subatomic Physics and Cosmology, FRANCE

A. Barrau; Laboratory for Subatomic Physics and Cosmology, FRANCE

G. Boudoul; Laboratory for Subatomic Physics and Cosmology, FRANCE

M. Buénerd; Laboratory for Subatomic Physics and Cosmology, FRANCE

L. Derome; Laboratory for Subatomic Physics and Cosmology, FRANCE

L. Eraud; Laboratory for Subatomic Physics and Cosmology, FRANCE

L. Gallin-Martel; Laboratory for Subatomic Physics and Cosmology, FRANCE

J.-P. Scordilis; Laboratory for Subatomic Physics and Cosmology, FRANCE

O. Veiziant; Laboratory for Subatomic Physics and Cosmology, FRANCE

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HC2: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: D. Bazzacco; National Institute of Nuclear Physics, ITALY**

Test Beam Results from the CMS Electromagnetic Calorimeter

R. Bruneliere; Universite Claude Bernard Lyon-1, FRANCE

The Front-End Electronics System for the CMS Electromagnetic Calorimeter

N. Pastrone; I.N.F.N., ITALY

The CMS Electromagnetic Calorimeter: Results on Crystal Measurements, Quality Control and Data Management in the Rome Regional Center

S. Costantini; University of Rome 1 and INFN, ITALY

Development of a Beam Condition Monitor for Use in Experiments at the CERN Large Hadron Collider Using Synthetic Diamond

L. Fernandez-Hernando; CERN, SWITZERLAND

V. Cindro; CERN, SWITZERLAND

C. Ilgner; CERN, SWITZERLAND

A. MacPherson; CERN, SWITZERLAND

A. Oh; CERN, SWITZERLAND

H. Pernegger; CERN, SWITZERLAND

T. Pirtchard; CERN, SWITZERLAND

R. Stone; Rutgers University, USA

S. Worm; Rutgers University, USA

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HC3: Special Session -- Detectors for Nuclear and Particle Physics:**

**Chair: W.J. Burger; INFN-Sezione di Perugia, ITALY**

Design and Performance of the Cooling System for the  
Electromagnetic Calorimeter of CMS

P. Baillon; CERN, SWITZERLAND  
J. Cogan; CERN, SWITZERLAND  
F. Ferri; University of Milano Bicocca and INFN, ITALY  
G. Franzoni; University of Milano Bicocca and INFN, ITALY  
A. Ghezzi; University of Milano Bicocca and INFN, ITALY  
P. Govoni; University of Milano Bicocca and INFN, ITALY  
P. Negri; University of Milano Bicocca and INFN, ITALY  
M. Paganoni; University of Milano Bicocca and INFN, ITALY  
N. Pastrone; I.N.F.N., ITALY  
A. Pullia; University of Milano Bicocca and INFN, ITALY  
S. Ragazzi; University of Milano Bicocca and INFN, ITALY  
N. Redaelli; University of Milano Bicocca and INFN, ITALY  
C. Rovelli; University of Milano Bicocca and INFN, ITALY  
R. Salerno; University of Milano Bicocca and INFN, ITALY  
T. Tabarelli de Fatis; University of Milano Bicocca and INFN,  
ITALY  
O. Teller; University of Milano Bicocca and INFN, ITALY

Vacuum Phototriodes for the CMS Electromagnetic Calorimeter  
Endcap

K.W. Bell; CCLRC Rutherford Appleton Laboratory, UK  
R.M. Brown; CCLRC Rutherford Appleton Laboratory, UK  
D.J.A. Cockerill; CCLRC Rutherford Appleton Laboratory, UK  
P.S. Flower; CCLRC Rutherford Appleton Laboratory, UK  
P.R. Hobson; Brunel University, UK  
B.W. Kennedy; CCLRC Rutherford Appleton Laboratory, UK  
A.L. Lintern; CCLRC Rutherford Appleton Laboratory, UK  
C. Selby; Brunel University, UK  
O. Sharif; Brunel University, UK  
M. Sproston; CCLRC Rutherford Appleton Laboratory, UK  
J.H. Williams; CCLRC Rutherford Appleton Laboratory, UK

Selection and Testing of 2000 Photomultiplier Tubes for the CMS-  
HF Forward Calorimeter

E. Gülmez; Bogazici University, TURKEY  
U. Akgun; The University of Iowa, USA  
E.W. Anderson; Iowa State University, Ames, USA  
A.S. Ayan; The University of Iowa, USA  
P. Bruecken; The University of Iowa, USA  
F. Duru; The University of Iowa, USA  
A. Mestvirishvili; The University of Iowa, USA  
M. Miller; The University of Iowa, USA  
J. Olson; The University of Iowa, USA  
Y. Onel; The University of Iowa, USA  
I. Schmidt; The University of Iowa, USA  
D. Winn; Fairfield University, USA

Development of a CdTe/CZT Epitaxial Technology for Fabrication of Large Area RT 1-100 keV X-ray Photon Detectors

N. Lovergine; University of Lecce, ITALY  
F. Marzo; University of Lecce, ITALY  
A.M. Mancini; University of Lecce, ITALY  
P. Prete; IMM-CNR, ITALY

The CDF Calorimeter Upgrade for RunIIb

J. Huston; Michigan State University, USA  
M. Iori; University of Rome and INFN, ITALY  
S. Kuhlmann; Argonne National Laboratory, USA  
S. Lami; Università di Pisa, ITALY  
R. Miller; Michigan State University, USA  
R. Paoletti; Università di Pisa, ITALY  
N. Turini; Università di Pisa, ITALY  
F. Ukegawa; Iniversity of Tsukuba, JAPAN

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HC4: Environmental Monitoring 1**

**Chair: M. Siegel; Carnegie Mellon University, USA**

Wide-Band Electric Fields Sensing Using Coherence Modulation of Light

C. Gutierrez-Martinez; Instituto Nacional de Astrofisica, MEXICO  
J. Santos-Aguilar; Instituto Nacional de Astofisica, MEXICO  
G. Trinidad-Garcia; Instituto Nacional de Astofisica, MEXICO

Immunity of a Virtual Instrument to Conducted Electromagnetic Disturbances

S. Nuccio; University of Palermo, ITALY  
C. Spataro; University of Palermo, ITALY  
G. Tinè; C.N.R., ITALY

Multiresolution Analysis of Environmental Noise Signals: An Application to Railways Noise

L.M. Caligiuri; University of Calabria, ITALY  
A. Sabato; University of Calabria, ITALY

Contributions to Model Characterization of Geophone Sensor

X. Roset; Politechnical University of Catalonia, SPAIN  
J. Del Rio; Politecnico University of Catalonia, SPAIN  
A.L. Manuel; Technical University of Catalonia (UPC), SPAIN  
R. Palomera-Garcia; University of Puerto Rico, PUERTO RICO

**Thursday, May 20, 2004** 8:30 AM to 10:30 AM

**HC5: Environmental Monitoring 2**

**Chair: M. Bertocco; University of Padova, ITALY**

A Wireless Internet-Based Measurement Architecture for Air Quality Monitoring

A.S. Hou; Southern Taiwan University of Technology, TAIWAN  
C.E. Lin; National Changhua University of Education, TAIWAN  
Y.Z. Gou; Southern Taiwan University of Technology, TAIWAN

Distributed Measurement System and Sensors for "Ice Slurry" Characterization

S. Baglio; University of Catania, ITALY  
V. Caruso; University of Catania, ITALY  
F. Danieli; University of Catania, ITALY  
N. Pitrone; University of Catania, ITALY  
N. Savalli; University of Catania, ITALY

Low-Cost Conductivity Cells for Water Measurement Purposes

J.M. Torrents; Technical University of Catalonia (UPC), SPAIN

A Meteorological Data Distribution Service

J. Sorribas; CMIMA, SPAIN  
J. Del Rio; Politecnico University of Catalonia, SPAIN  
E. Trullols; Technical University of Catalonia UPC-EUPVG, SPAIN  
A.L. Manuel; Technical University of Catalonia (UPC), SPAIN  
S. Shariat; Technical University of Catalonia (UPC), SPAIN

**Thursday, May 20, 2004** 8:30 AM to 1:00 PM

**HC6: Acoustic Measurements 1**

**Chair: A. Pietrosanto; University of Salerno, ITALY**

A Comparison Between Acoustical Measurements in Two Different Variable Room Resonators

M. Cesare; University of Bologna, ITALY  
A. Zanobini; University of Florence, ITALY

Noise Reduction for Doppler Ultrasound Signal Based on Cycle-Spinning and Thresholding Methods

X. Wang; Harbin Institute of Technology, CHINA  
Y. Shen; Harbin Institute of Technology, CHINA  
Z. Liu; Harbin Institute of Technology, P R CHINA  
Q. Wang; Harbin Institute of Technology, CHINA

Wide Dynamic Range Electronics for Air-Coupled Lamb-Waves Ultrasonic NDT Using Piezoelectric Transducer Arrays

Y. Yanez; Polytechnic University of Catalonia, SPAIN  
J.A. Chavez; Universitat Politecnica de Catalunya, SPAIN  
J. Salazar; Universitat Politecnica de Catalunya, SPAIN  
A. Turo; Universitat Politecnica de Catalunya, SPAIN  
M. Garcia-Hernandez; Universitat Politecnica de Catalunya, SPAIN

Vibroacoustic Monitoring of Complex Phenomena with  
Multisensorial Measurement Network. An Application to an  
Electrical Power Plant

G. Moschioni; Politecnico di Milano, ITALY

A. Vania; Politecnico di Milano, ITALY

Fully Automated Noise-Limited Tuner Sensitivity Measurement  
Setup for Compact Audio Sets Based on LabVIEW

G. Sauerlaender; Philips Research Laboratories, GERMANY

**Thursday, May 20, 2004** 8:30 AM to 1:00 PM

**HC7: Acoustic Measurements 2**

**Chair: C. Liguori; University of Cassino, ITALY**

A New Ultrasonic-Based Device for Accurate Measurement of Oil,  
Emulsion, and Water Levels in Oil Tanks

M. Meribout; SQU University, OMAN

M. Habli; SQU University, OMAN

A. Al-Naamany; SQU University, OMAN

K. Al-Busaidi; PDO Corporation, OMAN

3D Shape Recognition System by Ultrasonic Sensor Array and  
Genetic Algorithms

M. Baba; Okayama University, JAPAN

K. Ohtani; Hiroshima Institute of Technology, JAPAN

S. Komatsu; Okayama University, JAPAN

A New Method for Measurement of Acoustic Efficiency of Classic  
Guitars

G. Moschioni; Politecnico di Milano, ITALY

B. Saggini; Politecnico di Milano, ITALY

Sound Source Identification Using Coherence and Intensity Based  
Methods

G. Moschioni; Politecnico di Milano, ITALY

B. Saggini; Politecnico di Milano, ITALY

M. Tarabini; Politecnico di Milano, ITALY

**Thursday, May 20, 2004** 2:00 PM to 4:00 PM

**HD1: Special Session -- Optical instrumentation and Measurement**

**Chair: L. Rovati; University of Modena and Reggio Emilia,  
ITALY**

On-Line Measurement of Urea in Blood Using Optical Spectroscopy  
in the Visible Range; Validation of the Cell Shrinkage Hypothesis

G.A. Martinez; SEDENA, SPAIN

R. Bragos-Bardia; Polytechnic University of Catalonia, SPAIN

Noninvasive Measurement of Blood Glucose Based on Optical Sensing

K. Tamura; Shinshu University, JAPAN  
K. Fujita; Shinshu University, JAPAN  
W. Kaneko; Shinshu University, JAPAN  
N.T. Linh; Shinshu University, JAPAN  
T. Nishimatsu; Shinshu University, JAPAN  
H. Ishizawa; Shinshu University, JAPAN  
E. Toba; Shinshu University, JAPAN

Design and Performance of an Ophthalmic Instrument for Dynamic Light Scattering and Fluorescence Measurements in Ocular Tissues

L. Rovati; University of Modena and Reggio Emilia, ITALY  
L. Pollonini; University of Brescia, ITALY  
R.R. Ansari; NASA Glenn Research Center, USA

Multi-Channel Time-Resolved Tissue Oximeter for Functional Imaging of the Brain

A. Torricelli; Politecnico di Milano, ITALY  
A. Pifferi; Politecnico di Milano, ITALY  
L. Spinelli; Politecnico di Milano, ITALY  
P. Taroni; Politecnico di Milano, ITALY  
V. Quaresima; University of L'Aquila, ITALY  
M. Ferrari; University of L'Aquila, ITALY  
R. Cubeddu; Politecnico di Milano, ITALY

**Thursday, May 20, 2004** 2:00 PM to 4:00 PM

**HD2: Special Session -- Instrumentation and Measurements for Na**

**Chair: Milani; University of Milan, ITALY**

Novel Three-Dimensional Beam Tracking System for Stationary-Sample Type Atomic Force Microscopy

S.-K. Hung; National Taiwan University, TAIWAN  
I.-S. Hwang; Institute of Physics, TAIWAN  
L.-C. Fu; National Taiwan University, TAIWAN

Improved Trade-Off Between Noise and Bandwidth in Op-Amp Based Transimpedance Amplifier

C. Ciofi; University of Messina, ITALY  
F. Crupi; University of Calabria, ITALY  
C. Pace; University of Calabria, ITALY  
G. Scandurra; University of Messina, ITALY

Measurement of Complex Impedance at High AC Voltages Using Waveforms

J. Obrzut; NIST, USA  
K. Kano; NIST, USA

Characterization and Modeling of Sub-nH Integrated Inductances

T. Biondi; University of Catania, ITALY  
A. Scudeir; University of Catania, ITALY  
E. Ragonese; University of Catania, ITALY  
G. Palmisano; University of Catania, ITALY

**Thursday, May 20, 2004**

2:00 PM to 4:00 PM

**HD3: Power Quality**

**Chair: F. Ponci; University of South Carolina, USA**

Performance Analysis and Optimization of a Robust Algorithm for Voltage Transients Detection

L. Peretto; University of Bologna, ITALY

M. Artioli; University of Bologna, ITALY

G. Pasini; University of Bologna, ITALY

R. Sasdelli; University of Bologna, ITALY

Detection of Voltage Transients to Select and Trigger Control Rules of SMES for Power Quality Applications

M. Caserza Magro; Università di Genova, ITALY

A. Mariscotti; Università di Genova, ITALY

E. Picco; Ansaldo Ricerche, ITALY

P. Pinceti; Università di Genova, ITALY

Development of a Flickermeter for Grid Connected Wind Turbines Using a DSP Based Prototyping System

C. Gherasim; Catholic University of Leuven, BELGIUM

T. Croes; Catholic University of Leuven, BELGIUM

J. Van Den Keybus; Catholic University of Leuven, BELGIUM

J. Driesen; Catholic University of Leuven, BELGIUM

R. Belmans; Catholic University of Leuven, BELGIUM

**Thursday, May 20, 2004**

2:00 PM to 4:00 PM

**HD4: Special Session -- System-On-Chip Integrated Circuits for Ins**

**Chair: S.R. Das; University of Ottawa, CANADA**

Cost-Driven Optimization of Fault Coverage in Combined Built-In Self-Test/Automated Test Equipment Testing

S. Zhang; University of Missouri-Rolla, USA

M. Choi; University of Missouri-Rolla, USA

N. Park; Oklahoma State University, USA

F. Lombardi; Northeastern University, USA

A Built-In Self-Testing Method for Embedded Multiport Memory Arrays

V. Narayanan; University of Cincinnati, USA

S. Ghosh; University of Cincinnati, USA

W.-B. Jone; University of Cincinnati, USA

S.R. Das; University of Ottawa, CANADA

Design for Reliability

S. Mourad; Santa Clara University, USA

H. Fujiwara; Nara Institute of Science and Technology, JAPAN

Inverse Modeling with SVMs-Based Dynamically Reconfigurable Systems

A. Boni; DIBE University of Genoa, ITALY

F. Pianegiani; University of Trento, ITALY

D. Petri; University of Trento, ITALY

CDMA System Sensitivity to A/D Conversion

F. Stefani; University of Perugia, ITALY

A. Moschitta; University of Perugia, ITALY

P. Carbone; University of Perugia, ITALY

**Thursday, May 20, 2004** 2:00 PM to 4:00 PM

**HD5: Machine Testing**

**Chair: R. Ottoboni; Politecnico di Milano, ITALY**

Recurrent Neural Networks for Long-Term Prediction in Machine Condition Monitoring

A. Malhi; University of Massachusetts at Amherst, USA

R.X. Gao; University of Massachusetts at Amherst, USA

Machine Health Diagnosis Based on Approximate Entropy

R. Yan; University of Massachusetts at Amherst, USA

R.X. Gao; University of Massachusetts at Amherst, USA

Diagnosis for Intelligent Field Devices Using the Rough Set Theory

M. Caserza Magro; Università di Genova, ITALY

P. Pinceti; Università di Genova, ITALY

**Thursday, May 20, 2004** 4:30 PM to 6:30 PM

**HE1: Signal and Image Processing for Medical Applications**

**Chair: G.P. Mauris; Université de Savoie, FRANCE**

A Hybrid System for Detecting Masses in Mammographic Images

N. Székely; Budapest University of Technology and Economics, HUNGARY

N. Tóth; Budapest University of Technology and Economics, HUNGARY

B. Pataki; Budapest University of Technology and Economics, HUNGARY

Intelligent Advisory System for Screening Mammography

G. Horváth; Budapest University of Technology and Economics, HUNGARY

J. Vallyon; Budapest University of Technology and Economics, HUNGARY

G. Strausz; Budapest University of Technology and Economics, HUNGARY

B. Pataki; Budapest University of Technology and Economics, HUNGARY

L. Sragner; Budapest University of Technology and Economics, HUNGARY

L. Lasztovicza; Budapest University of Technology and Economics, HUNGARY

N. Székely; Budapest University of Technology and Economics, HUNGARY

A New Adaptive Morphological Algorithm for Contour Extration on  
Ultrasound Image

D. Li; Harbin Institute of Technology, P R CHINA  
Y. Shen; Harbin Institute of Technology, CHINA  
Z. Liu; Harbin Institute of Technology, P R CHINA  
P. He; Harbin Institute of Technology, CHINA

An Adaptive Clutter Rejection Filter in Ultrasound Color Flow  
Imaging Systems

Z. Pei; Harbin Institute of Technology, CHINA  
N. Feng; Harbin Institute of Technology, PR CHINA  
Y. Shen; Harbin Institute of Technology, CHINA  
Q. Wang; Harbin Institute of Technology, CHINA

**Thursday, May 20, 2004** 4:30 PM to 6:30 PM

**HE2: Environmental Monitoring 3**

**Chair: M. Siegel; Carnegie Mellon University, USA**

Signal Processing in Ocean Bottom Seismographs for Refraction  
Seismology

I. Rodriguez; Public University of Navarra, SPAIN  
A.L. Manuel; Technical University of Catalonia (UPC), SPAIN  
A. Carlosena; Public University of Navarra, SPAIN  
A. Bermudez; CSIC, SPAIN  
J. Del Rio; Politecnic University of Catalonia, SPAIN  
S. Shariat; Technical University of Catalonia (UPC), SPAIN

A Mobile Distributed Architecture for Measurement and Analysis of  
the Electromagnetic Field

C. De Capua; University "Mediterranea" di Reggio Calabria,  
ITALY  
R. Morello; University "Mediterranea" of Reggio Calabria,  
ITALY  
N. Pasquino; University of Naples "Federico II", ITALY

Biophotonic Estimator for Environmental and Farming Quality

A. Boscolo; , ITALY  
A. Cont; University of Trieste, ITALY  
M. Ulian; , ITALY

Combining Neural Networks, Fuzzy Logic, and Kalman Filtering in  
an Oil Leak Detector for Underground Electric Power Cables

D. Fischer; Kinetrics, CANADA  
B. Szabados; McMaster University, CANADA  
S. Poehlman; McMaster University, CANADA

Environmental Tele-Monitoring: A Flexible GSM-DECT Based  
Solution

E. Sisinni; Univesity of Brescia, ITALY  
A. Flammini; University of Brescia, ITALY  
D. Marioli; Univesity of Brescia, ITALY  
A. Taroni; Univesity of Brescia, ITALY

**Thursday, May 20, 2004**

4:30 PM to 6:30 PM

**HE3: Power Measurements**

**Chair: Albu; Politehnica University of Bucharest, ROMANIA**

Harmonic Analysis via Wavelet Packet Decomposition Using Special Elliptic Half-Band Filters

L. Eren; Bahcesehir University, TURKEY

M. Unal; ,

M.J. Devaney; University of Missouri-Columbia, USA

Time-Frequency Analysis of Complex Space-Phasor in Power Electronics

T. Lobos; Wroclaw University of Technology, POLAND

T. Sikorski; Wroclaw University of Technology, POLAND

Z. Leonowicz; Wroclaw University of Technology, POLAND

Reproducibility and Uncertainty of Conducted Emission Measurements for Adjustable Speed Electrical Power Drive Characterization

G. Betta; University of Cassino, ITALY

D. Capriglione; University of Cassino, ITALY

M. Laracca; University of Cassino, ITALY

G. Tomasso; University of Cassino, ITALY

Programmable Electronic Instrument for Condition Monitoring of in Service Power Transformers

F. Poza González; University of Vigo, SPAIN

P. Marino; University of Vigo, SPAIN

M. Ubeira; University of Vigo, SPAIN

F. Machado; University of Vigo, SPAIN

Earth Surface Potentials Measuring Device for Large Grounding Systems Testing

R. Giannini; University of Zagreb, CROATIA

H. Dzapo; University of Zagreb, CROATIA

**Thursday, May 20, 2004**

4:30 PM to 6:30 PM

**HE4: Automatic Test Equipment**

**Chair: R.X. Gao; University of Massachusetts at Amherst, USA**

A Novel Analysis Technique of Power Supply Noise (PSN) for CMOS Circuits Using External Current Sensor with Automatic Test Equipment

E. Liau; Infineon Technologies AG, GERMANY

D. Schmitt-Landsiedel; Technical University Munich, GERMANY

A Novel Semiconductor Test Equipment Concept: Automatic Test Equipment with

Computational Intelligence Technique (ATE-CIT)

E. Liau; Infineon Technologies AG, GERMANY

D. Schmitt-Landsiedel; Technical University Munich, GERMANY

Frequency Domain Measurement of Timing Jitter in ATE

L. Schiano; Northeastern University, USA  
M. Momenzadeh; Northeastern University, USA  
F. Zhang; Northeastern University, USA  
Y.J. Lee; Northeastern University, USA  
Y.-B. Kim; Northeastern University, USA  
F. Lombardi; Northeastern University, USA  
F.J. Meyer; Wichita State University, USA  
T. Kane; LTX Corporation, USA  
S. Max; LTX Corporation, USA  
P. Perkins; LTX Corporation, USA

An Embedded Automatic SBT Diagnosis System for Analog Circuits

C. Alippi; Politecnico di Milano, ITALY  
M. Catelani; University of Firenze, ITALY  
A. Fort; University of Siena, ITALY  
R. Singuaroli; University of Florence, ITALY  
I. Trotta; University of Florence, ITALY

**Thursday, May 20, 2004** 4:30 PM to 6:30 PM

**HE5: Temperature Measurement**

**Chair: X. Roset; Politechnical University of Catalonia, SPAIN**

A Small-Size, Fast-Settling, Low-Cost Thermal Regulator for Chip Surface Measurements

D. Baderna; University of Pavia, ITALY  
A. Cabrini; University of Pavia, ITALY  
G. Torelli; University of Pavia, ITALY

Three Dimensional Temperature Measurement of Combustion Flames Using a Single Monochromatic CCD Camera

P.M. Brisley; University of Greenwich, UK  
G. Lu; University of Greenwich, UK  
Y. Yan; University of Greenwich, UK  
S. Cornwell; RWE Innogy, UK

A Measurement System Exploiting Non-Linearity of Thermocouples for Cold Junction Compensation

D.A. Lampasi; University of Rome "La Sapienza", ITALY  
L. Podestà; University of Rome "La Sapienza", ITALY

**Thursday, May 20, 2004** 2:00 PM to 6:30 PM

**HF1: Identification 3**

**Chair: P. Carbone; University of Perugia, ITALY**

Identification of Non-Linear Dynamics Using Higher Order Frequency Response Functions

P. Nuij; Eindhoven University of Technology, THE NETHERLANDS  
M. Steinbuch; Eindhoven University of Technology, THE NETHERLANDS

Improved Approximate Identification of Nonlinear Systems

J. Schoukens; Vrije Universiteit Brussel, BELGIUM

Y. Rolain; Vrije Universiteit Brussel, BELGIUM

R. Pintelon; Vrije Universiteit Brussel, BELGIUM

Optimisation of a Static Nonlinear Compensator for Bilinear Systems

M.F.L. Foo; Multimedia University, MALAYSIA

A. Tan; Multimedia University, MALAYSIA

T.T.V. Yap; Multimedia University, MALAYSIA

Discriminating Physical Poles from Mathematical Poles in High Order Systems: Use and Automation of the Stabilization Diagram

H. Van der Auweraer; LMS International, BELGIUM

B. Peeters; LMS International, BELGIUM

**Thursday, May 20, 2004**

2:00 PM to 6:30 PM

**HF2: Identification 4**

**Chair: D. Petri; University of Trento, ITALY**

Dynamic Parameter Identification of Induction Machines Using

Spectral Analysis and Output Error Optimization

B. Szabados; McMaster University, CANADA

M. Ye; McMaster University, CANADA

Modeling of Tyre Mechanical Properties

G. Poznanski; AGH - University of Science and Technology,  
POLAND

Microwave Characterization and Modeling of Packaged HEMT's by  
a Direct Extraction Procedure at Cryogenic Temperatures

N. Donato; University of Messina, ITALY

A. Caddemi; University of Messina, ITALY

G. Crupi; University of Messina, ITALY

E. Calandra; University of Palermo, ITALY

**Thursday, May 20, 2004**

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**HF3: Measurements for Industrial Applications 2**

**Chair: M. Lazzaroni; University of Milan, ITALY**

System Design that Minimizes Both Missed Detections and False  
Alarms: A Case Study in Arc Fault Detection

K.R. Fowler; Johns Hopkins University-APL, USA

H.B. Land, III; Johns Hopkins University, USA

Fuzzy Multicriteria Choice of Instrumental Methods for Measuring  
Physical Quantities - Application in the Case of Dielectric  
Aluminium Anodic Oxide Films

A.F. Batzias; University of Piraeus, GREECE

F.A. Batzias; University of Piraeus, GREECE

Time Optimisation of Soft Real-Time Virtual Instrument Design

P. Bilski; Warsaw University of Technology, POLAND

W. Winiński; Warsaw University of Technology, POLAND

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**HF4: Measurements for Industrial Applications 3**

**Chair: F. Scotti; University of Milan, ITALY**

Study on Real-Time Measurement of Nugget Diameter for Resistance Spot Welding Using a Neuro-Fuzzy Algorithm

Z. Lin; Shanghai Jiaotong University, CHINA

Y. Zhang; Shanghai Jiaotong University, CHINA

G. Chen; Shanghai Jiaotong University, CHINA

Y. Li; Shanghai Jiaotong University, CHINA

Data Fusion Methods Based on Fuzzy Measures in Vehicle Classification Process

R. Sroka; AGH - University of Science and Technology, POLAND

Comparison of Near-Field Millimeter Wave Probes for Detecting Corrosion Pit Under Paint

M. Ghasr; University of Missouri-Rolla, USA

S.N. Kharkovsky; University of Missouri-Rolla, USA

R. Zoughi; University of Missouri-Rolla, USA

R. Austin; Texas Research Institute at Austin, USA

Mutual Information in Measurement by Gamma-Ray Transmission

W. Liu; Huazhong University of Science and Technology, CHINA

L. Kong; Huazhong University of Science and Technology, CHINA

P. Zhang; Huazhong University of Science and Technology, CHINA

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**HF5: Measurements for Industrial Applications 4**

**Chair: C. Alippi; Politecnico di Milano, ITALY**

Optical Measurement of Dirt in Textiles Based on Laser Induced Fluorescence

T. Miki; Shinshu University, JAPAN

H. Ishizawa; Shinshu University, JAPAN

T. Nishimatsu; Shinshu University, JAPAN

Y. Matsumoto; Shinshu University, JAPAN

E. Toba; Shinshu University, JAPAN

Measurement of Purity Index in Textile Based on IR Spectroscopy

S. Koyama; Shinshu University, JAPAN

H. Ishizawa; Shinshu University, JAPAN

T. Nishimatsu; Shinshu University, JAPAN

E. Toba; Shinshu University, JAPAN

Near Infrared Spectral Imaging for Water Absorbency of Woven Fabrics

T. Yotsuda; Shinshu University, JAPAN  
T. Yamamoto; Technology Research Institute of Osaka, JAPAN  
H. Ishizawa; Shinshu University, JAPAN  
T. Nishimatsu; Shinshu University, JAPAN  
E. Toba; Shinshu University, JAPAN

Measurement of Cross Sections of Heavy Fragments Formed in the Interaction of 0.65-12.7 GeV<sup>4</sup>He with <sup>209</sup>Bi Using the Makrofol Track Detector

Z. Todorovic; Institute of Physics, SERBIA & MONTENEGRO  
A. Djordjevich; City University of Hong Kong, HONG KONG  
S. Savovic; Institute of Physics, SERBIA & MONTENEGRO

In-Situ Characterization of Polymer Crystallization Using a Low-Cost Light Emitting Diode Array as Optical Receiver with Photogain

F. De Santis; University of Salerno, ITALY  
H.-C. Neitzert; University of Salerno, ITALY

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**HF6: Measurements for Industrial Applications 5**

**Chair: F. Ponci; University of South Carolina, USA**

Application of Support Vector Machine Learning to Leak Detection and Location in Pipelines

H. Chen; Tsinghua University, CHINA  
H. Ye; Tsinghua University, CHINA  
C. Lv; Tsinghua University, CHINA  
H. Su; Tsinghua Tongfang Co. Ltd., CHINA

An Improved Algorithm for the Measurement of Flame Flicker Frequency

L. Xu; University of Greenwich, UK  
Y. Yan; University of Greenwich, UK

Fuzzy Sausage Drying Control Based on Human Sensory Evaluations

I. Ioannou; CEMAGREF, FRANCE  
G.P. Mauris; Université de Savoie, FRANCE  
N. Perrot; CEMAGREF, FRANCE  
G. Trystram; ENSIA, FRANCE

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**HF7: Flow Measurements 1**

**Chair: V. Piuri; University of Milano, ITALY**

Measuring the Salt Content of the Water, the Composition, and Flow, of a Wet Gas Stream Using Microwaves, Differential Pressure, and PVT Calculations

E. Nyfors; Roxar Flow Measurement AS, NORWAY  
Ø. Lund Bø; Roxar Flow Measurement AS, NORWAY

Two Methods for Measurement of Gas-Liquid Flows in Vertical Upward Pipe Using Dual-Plane ERT System

Y. Xu; Tianjin University, CHINA

F. Dong; Tianjin University, CHINA

H. Wang; Tianjin University, CHINA

X. Qiao; Tianjin University, CHINA

Monitoring System of Gas-Liquid Two-Phase Flow

H. Ji; Zhejiang University, CHINA

Z. Huang; Zhejiang University, PR CHINA

B. Wang; Zhejiang University, PR CHINA

H. Li; Zhejiang University, PR CHINA

Characterization of Oil/Water Two Phase Flow Patterns Based on Symbolic Time Series Analysis

N. Jin; Tianjin University, CHINA

W. Li; Tianjin University, CHINA

X. Zhao; Tianjin University, CHINA

X. Liu; Tianjin University, CHINA

Research on Electrical Resistance Tomography and Cross-Correlation Technique to Measure the Two-Phase Flows

L. Hua; Tianjin University, CHINA

F. Dong; Tianjin University, CHINA

X. Qiao; Tianjin University, CHINA

X. Cui; Tianjin University, CHINA

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**HF8: Flow Measurements 2**

**Chair: B. Szabados; McMaster University, CANADA**

Impacts on the Accuracy of a Capacitive Inclination Sensor

T. Bretterklieber; Graz University of Technology, AUSTRIA

H. Zangl; Graz University of Technology, AUSTRIA

G. Brasseur; Graz University of Technology, AUSTRIA

An On-Line Flow Pattern Identification System for Gas-Oil Two-Phase Flow Using Electrical Capacitance Tomography

D. Xie; Zhejiang University, PR CHINA

H. Ji; Zhejiang University, CHINA

Z. Huang; Zhejiang University, PR CHINA

H. Li; Zhejiang University, PR CHINA

Flow Profile Estimator for Closed Pipes Based on Electrical Capacitance Tomography Techniques

A. Fuchs; Graz University of Technology, AUSTRIA

B. Brandstätter; Graz University of Technology, AUSTRIA

D. Watzgen; Graz University of Technology, AUSTRIA

G. Holler; Graz University of Technology, AUSTRIA

B. Kortschak; Graz University of Technology, AUSTRIA

A New Method for Nondestructively Measuring Pressure Based on the Rayleigh Wave

S. Lin; Zhejiang University, CHINA

H. Zhang; Zhejiang University, CHINA

**Thursday, May 20, 2004**

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**HF9: Laser**

**Chair: C. Svelto; Politechnic of Milan, ITALY**

Measurements of Near Infrared Frequency Mixing by Metal-Semiconductor Point-Contact Diodes

E. Bava; Polytechnic of Milan, ITALY

N. Beverini; University of Pisa, ITALY

G. Carelli; University of Pisa, ITALY

A. De Michele; University of Pisa, ITALY

G. Galzerano; National Research Council (CNR), ITALY

E. Maccioni; University of Pisa, ITALY

A. Moretti; National Research Council (CNR), ITALY

M. Prevedelli; University of Bologna, ITALY

F. Sorrentino; University of Pisa, ITALY

C. Svelto; Politechnic of Milan, ITALY

A Temperature Stabilized CMOS Ring Oscillator for a Time-to-Digital Converter of a Laser Radar

I.K. Nissinen; University of Oulu, FINLAND

J. Kostamovaara; University of Oulu, FINLAND

Intensity-Noise and Frequency-Noise Measurements in 2  $\mu\text{m}$  Tm-Ho:KYF Laser

G. Galzerano; National Research Council (CNR), ITALY

E. Sani; Pisa University, ITALY

A. Toncelli; Pisa University, ITALY

M. Tonelli; Pisa University, ITALY

C. Svelto; Politechnic of Milan, ITALY

E. Bava; Polytechnic of Milan, ITALY

S. Taccheo; Polytechnic of Milano, ITALY

P. Laporta; Polytechnic of Milano, ITALY

Laser Spectroscopy of Deuterated Methane at 1.54  $\mu\text{m}$  as a Reference Standard for Optical Communications

C. Svelto; Politechnic of Milan, ITALY

E. Bava; Polytechnic of Milan, ITALY

G. Galzerano; National Research Council (CNR), ITALY

Research on Application of Synchronous Sampling in High Precision Laser Measurement of Wheelset

P. He; Harbin Institute of Technology, CHINA

Z. You; Harbin Institute of Technology, CHINA

X. Yang; Harbin Institute of Technology, CHINA

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**HF10: Optical Sensor 2**

**Chair: E. Bava; Polytechnic of Milan, ITALY**

Digital Optical Position-Sensitive Detector (PSD)

A.J. Makynen; University of Oulu, FINLAND

T. Rahkonen; University of Oulu, FINLAND

J. Kostamovaara; University of Oulu, FINLAND

Diode Zener Feedback Preamplifier for Zero-Crossover Optical Encoders

L. Rovati; University of Modena and Reggio Emilia, ITALY

G. Salvatori; University of Modena and Reggio Emilia, ITALY

Electro-Optical Instrument for Photodetector Characterization

A.J. Makynen; University of Oulu, FINLAND

J. Kostamovaara; University of Oulu, FINLAND

Design and Evaluation of a Pre-Prototype Hybrid Fiber-Optic Voltage Sensor for a Remotely Interrogated Condition Monitoring System

P. Niewczas; University of Strathclyde, UK

L. Dziuda; University of Strathclyde, UK

G. Fusiek; University of Strathclyde, UK

J. McDonald; University of Strathclyde, UK

Fiber-Optic Semiconductor Absorption Temperature Sensor for Electrical Power System Applications

T. Wang; Shanghai University, CHINA

C. Luo; Tsinghua University, CHINA