**IMTC/04 Technical Program**

**Tuesday, May 18, 2004**

**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**

**TB1:  Chemical Measurements 1**

**Chair:** V. Ferrari; Università di 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; Università di Brescia, ITALY  
D. Marioli; Università di Brescia, ITALY  
A. Taroni; Università di 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**

**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. Kovácsné; 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

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

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; Luleå University of Technology, Sweden
P. Lindgren; Luleå University of Technology, Sweden

Monday, 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. Cassiago; 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 Martinez; 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 Instrumentation
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 Merckel; 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; University of Brescia, ITALY
A. Ghisla; University of Brescia, ITALY
D. Marioli; University of Brescia, ITALY
A. Taroni; University 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 INFM, ITALY
G. Giuliani; University of Pavia, and INFM, ITALY
S. Donati; University of Pavia, and INFM, 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 Computations 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

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 Cancelation 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 Instrumentation
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 Sao Paulo Estate, BRAZIL
R. de Oliveira Rodrigues; Sao 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; Universität der Bundeswehr München, GERMANY

Tuesday, May 18, 2004

TE5: Calibration
Chair: A. Ferrero; Politecnico di Milano, ITALY

Network-Assisted Procedure for Impedance Dissemination
A. Carullo; Politecnico di Torino, 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 Torino, 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

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. Carnì; University of Calabria, ITALY
D. Grimaldi; University of Calabria, ITALY

Symbol Timing Measurement for Single Carrier Digital Modulations
D.L. Carnì; 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
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
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
TF3: Image Processing and Vision 2
Chair: G.P. Mauris; Université de Savoie, FRANCE

2:00 PM to 6:30 PM

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; University 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; Politecnico of Milan, ITALY

TF4: Image Processing and Vision 3
Chair: M. Pastorino; University of Genoa, ITALY

2:00 PM to 6:30 PM

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; Universita' 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. Cannata; 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. Cocuiccio;  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 Politeneica de Catalunya, SPAIN
   A. Turo;  Universitat Politeneica de Catalunya, SPAIN
   M. Garcia-Hernandez;  Universitat Politeneica 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 NOx 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 SnO2-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. Ulivieri; University of Siena, ITALY
V. Vignoli; University of Siena, ITALY

Considerations and Improvement of Phosphorescence Lifetime Measurement Systems

M.A. Perez-Garcia; University 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 I
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

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. Mártus; 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 de 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

WA6: Microwave-Based Measurements
Chair: W.J. Bock; University of Quebec at Outaouais, CANADA
8:30 AM to 10:30 AM
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
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. Mazzeri; 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

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. Baschirotto; 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 Directionless 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 Telecomunications, 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; INFM - National Institute for Physics of Matter, ITALY
S. Trevisan; INFM - 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

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

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 Institit, CROATIA

A Monitoring System Based on a Multi-Agent Platform
L. Cristaldi; Politecnico 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 Superieure d'Electricite, 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. Carlomena; 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

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; Politecnical 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 Inclinometer 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; Politecnico 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; Universita 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**

**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**

**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. Shoaei; 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. Kielbas; 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;  University of Brescia, ITALY
A. Taroni;  University of Brescia, ITALY

Wednesday, May 19, 2004  2:00 PM  to  4:00 PM
WD6:  Optical Sensors I
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

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

WE2: Special Session -- Detectors for Nuclear and Particle Physics:
Chair: Ereditato; Istituto Nazionale di Fisica Nucleare, ITALY

The CMS Crystal Calorimeter
W. Lustermann; 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. Vallanza; I.N.F.N. sezione di Trieste, ITALY
J. Marczewski; Institute of Electron Technology, POLAND

Wednesday, May 19, 2004 4:30 PM to 6:30 PM
WE3: Special Session -- Electronic Tools for Education and Training
Chair: T. Laopoulos; Aristotle University of Thessaloniki, GREECE

Virtual Measurement System for Distance Education and Training
P. Tyml; Czech Technical University in Prague, CZECH REPUBLIC
D. Slepicka; Czech Technical University, CZECH REPUBLIC
J. Roztocil; Czech Technical University, CZECH REPUBLIC

Remotely Accessible 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; Politecnico of Turin, ITALY
F. Cambiotti; Politecnico of Turin, ITALY
F. Corinto; Politecnico of Turin, ITALY
G. Romano; Politecnico of Turin, ITALY
Wednesday, May 19, 2004  

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

WE5: Special Session -- Sensor Networks: Technologies, Methodology
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

- 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. Orトogonalization 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
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; Politecnico 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; Politecnico 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

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

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. 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. Bafleur; 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

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

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
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
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-kóczi; Budapest University of Technology and Economics, HUNGARY
M. da Graça Ruano; University of Algarve, PORTUGAL
P. Vár Lak; 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 Intracocular Pressure Monitoring
S. Lizón Martinez; 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 INFM, 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. Pallás-Areny; Technical University of Catalonia, SPAIN
Translation 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 I

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 Conveyor 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 Sezione di Padova, ITALY
M. Lunardon; University of Padova and INFN, ITALY
C. Manea; INFN Sezione di Padova, ITALY
S. Marchini; INFN Sezione 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. Veziant; 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. Pirchard; 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
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; Universita di Pisa, ITALY
R. Miller; Michigan State University, USA
R. Paoletti; Universita di Pisa, ITALY
N. Turini; Universita di Pisa, ITALY
F. Ukegawa; University 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 Astrofisica, MEXICO
G. Trinidad-Garcia; Instituto Nacional de Astrofisica, MEXICO

Immunity of a Virtual Instrument to Conducted Electromagnetic Disturbances
S. Nuccio; University of Palermo, ITALY
C. Spataro; University of Palermo, ITALY
G. Tiné; 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; Politecnical University of Catalonia, SPAIN
J. Del Rio; Politecnical 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; Politecnic 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 Politencica de Catalunya, SPAIN
J. Salazar; Universitat Politencica de Catalunya, SPAIN
A. Turo; Universitat Politencica de Catalunya, SPAIN
M. Garcia-Hernandez; Universitat Politencica 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. Saggin; Politecnico di Milano, ITALY

Sound Source Identification Using Coherence and Intensity Based Methods
G. Moschioni; Politecnico di Milano, ITALY
B. Saggin; 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
HD2: Special Session -- Instrumentation and Measurements for Na

Chair: Milani; University of Milan, ITALY

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

HD3: Power Quality
Chair: F. Ponci; University of South Carolina, USA

2:00 PM to 4:00 PM

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

HD4: Special Session -- System-On-Chip Integrated Circuits for Ins
Chair: S.R. Das; University of Ottawa, CANADA

2:00 PM to 4:00 PM

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. Valyon; 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. Srägner; 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 Extraction 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 Navarre, SPAIN
A.L. Manuel; Technical University of Catalonia (UPC), SPAIN
A. Carlosena; Public University of Navarre, 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. Sisini; University of Brescia, ITALY
A. Flammini; University of Brescia, ITALY
D. Marioli; University of Brescia, ITALY
A. Taroni; Universiy 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
HE5: Temperature Measurement
Chair: X. Roset; Politecnical 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
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  
2:00 PM to 6:30 PM  
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. Winiecki; Warsaw University of Technology, POLAND
Thursday, May 20, 2004
2:00 PM to 6:30 PM
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

Thursday, May 20, 2004
2:00 PM to 6:30 PM
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 GeV4He with 209Bi 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

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

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

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

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

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

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. Watzenig; 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  2:00 PM  to  6:30 PM
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 µm 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 µm 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

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