

*Welcome to A View on the New Technologies
for Instrumentation and Measurements*

On behalf of the organizing committee, we cordially welcome you to the 2006 IEEE Instrumentation and Measurement Technology Conference (IMTC).

This IMTC edition will be held for the first time South of Italy - Sorrento. The IMTC venue, Hilton hotel, with its modern yet inviting facilities, stands on a hill overlooking the town of Sorrento and offering to its guests a unique and spectacular view, beautifully framed by the jagged outline of the Gulf of Naples on the horizon, the unmistakable silhouette of Mount Vesuvius, while just round the corner unfolds the breathtaking Amalfi Coast. The same encounter of sky, land and sea that has inspired so many poets and writers since the old Roman times.

IMTC/2006 continues a series of successful scientific and technical annual events with this 23rd edition. The conference covers all aspects of the theory and practice of instrumentation, measurement and control technologies, and related applications. This year the conference is focused on *A View on the New Technologies for Instrumentation and Measurements*. The impetuous escalation of the technology requires, as a consequence, a continuous view on its impact on instrumentation and measurement field both from research, industry, and daily life.

The IMTC/2006 organization was a complex task due to the large and increasing interest of our research and application areas. Effort from many people was required to shape the technical program, arrange accommodation, manage the administrative aspects, and set up the social functions. We like to take this opportunity to thank all and each of them. We like also to thank the public and private organizations that supported the meeting in different ways.

For the first time a complete automatic web based abstract selection was introduced, the final electronic version of the manuscripts was formatted by using an adequate software developed for this aim.

The IMTC/2006 Technical Program consists of 86 oral and poster sessions scheduled over three days. With the wide range of technical sessions covering the whole range of the Instrumentation and Measurement field we are happy to welcome you to the variety of technical presentations that await you this year. Thanks to all of the Technical Program Committee members and the reviewers who have contributed to make this outstanding program possible.

The technical program was particularly difficult to be arranged since we received, for the first time 644 abstracts from all over the world. Due to the time limits of the conference only 460 papers have been selected after a painstaking activity of the program committee and additional reviewers. We like to thank all people who contributed to this process with opinions, comments, and suggestions to choose the best papers and even improve their quality.

The technical program encompasses several events and activities. The keynote speech will be held by FERRARI experts in the field of electrical and electronic measurements, we tried to show a one the well recognized world wide Italian technology. Several parallel sessions will accommodate the contributed papers: to avoid overlapping of sessions on related topics, papers are distributed in separate them-

tic tracks. A special one, the 2nd ADC Forum, was devoted to ADCs, DACs and DAQ. Some sessions are designated as special since they have been solicited and organized and will be chaired by well-known experts from the international industrial and academic communities. Panels have also been organized to allow a wider and in-depth discussion of some hot topics related to education and measurement system modernization.

Tutorial sessions have been included to offer attendees hands-on, practical information. Several Awards offered by International Institution and Companies will be assigned, in particular to young researchers.

The Conference is about to begin. You are now in a position to enjoy the fellowship of colleagues and experts and to pass free time in natural and artistic beauties. It is up to you to appreciate the Conference worth! Be critical! We, metrologists, colleagues, and friends, we know that this is the best way to improve quality, and to achieve lasting excellences.

Welcome to IMTC/06 in Sorrento, Italy

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Tom Linnenbrink
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Fabrizio Russo

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Keynote Address

Design and Testing of Human Machine Interfaces in Automotive Industry

The IMTC/06 keynote address will be delivered at the plenary session Tuesday morning, 25 April, by Adriana Di Pede and Pietro Genesin.

In the last years the concept of sport car is changed; actually this market area involves the traditional expert customer and increasing number of amateurs. First kind of users has a predilection for performance of car while the second kind of users chooses a luxury car for its exclusiveness; they consider the comfort of cockpit an essential product characteristic.

To provide this pleasantness improvement, Ferrari Electric/Electronic System Department works to mount an efficient Human Machine Interfaces System. The goal is to obtain an high level instruments to control and monitor all comfort/safety/check devices; it's clear that it's no sufficient the reliableness of components but the final interface must be user friendly in every condition of work.

The most important steps of this complex implement process are: benchmarking with concurrents, selection of best suppliers, innovation design, complete testing and approval measurements. It's necessary to respect the development car timing and to maximaze the objectivity of measurements. The last job needs of advancing technology and these advancements require new measurement capability, comparability and traceability.

Adriana Di Pede is graduated in Management Engineering from Politecnico of Turin, Italy. From 01/11/1997, Magneti Marelli Telematic Business unit, marketing and sales developer. From 01/01/1999, Magneti Marelli Quality dept, ECU quality Team Leader. From 01/09/2000, Magneti Marelli Telematic dept, Project & Product manager. From 15/02/2003, Ferrari Electronic dept, the Responsible.

Pietro Genesin is graduated in Electronic Engineering from Politecnico of Turin, Italy. From 20/04/1998, Ansaldo Signal Electronic dept, software developer. From 01/06/2000, Magneti Marelli Telematic/Motorsport dept, Sw development Responsible. From 10/01/2005 Infotainment Project manager is a member of Ferrari Electronic dept.

IMTC/06 Tutorials

Monday, 24 April

Tutorial T1: Magnetic Sensors for Navigation and Security Applications

Monday, April 24, 9:30AM-12:30PM, Room: Nettuno #1, Lecturer: Pavel Ripka

Tutorial T3: Space Navigation Systems and the Role of Clocks: The Adopted Solutions in the Existing GPS System and in the Planned Galileo System

Monday, April 24, 9:30AM-12:30PM, Room: Nettuno #3, Lecturers: Sigfrido Leschiutta and Patrizia Tavella

Tutorial T7: Developing Real-Time Embedded Products

Monday, April 24, 9:30AM-5:30PM, Room: Nettuno #6, Lecturer: Kim R. Fowler

Tutorial T8: Automatic Spectral Estimation with Time Series Models

Monday, April 24, 2:00PM-5:00PM, Room: Nettuno #1, Lecturer: Piet M.T. Broersen

Tutorial T11: Fundamentals of Measurement Science and Instrumentation

Monday, April 24, 9:30AM-12:30PM, Room: Nettuno #4, Lecturers: Alessandro Ferrero and John L. Schmalzel

Tutorial T12: Achieving Accurate and Reliable Low Level Electrical Measurements

Monday, April 24, 2:00PM-5:00PM, Room: Nettuno #4, Lecturer: Jason Chonko

TUESDAY, April 25, 2006

8:45 to 10:10	TuA1 Plenary - Keynote Sirene room						
10:10 to 10:30	Coffee Break - Sirene Foyer						
10:30 to 12:10	TuB1 - FERRARI Sirene room - Di Pele, Genesin 6167, 6224, 6257, 6321	TuB2 - Optical I&M Tech. for Biomedical Applications Organizer Nettuno 1 room - L. Rovati 6621, 6275, 6276, 6341, 6269	TuB3 - Magnetic Measurements Nettuno 3 room - L. Walckiers Keynote, 6521, 6545, 6593, 6300	TuB4 - Instrumentation and Measurement Methods for Availability Analysis of Components and Systems Nettuno 4 room - M. Catalani 6064, 6485, 6235, 6494, 6333	TuB5 - System Identification Applied to Solve Measurement Problems Nettuno 6 room - J. Schoukens 6029, 6038, 6126, 6409, 6493		
12:10 to 13:30	Lunch - Citrus Garden						
13:30 to 15:10	TuC1 - ADC Forum 1 Sirene room - T.Linnenbrink Keynote, 6644, 6479, 6610	TuC2 - Imaging Systems and Techniques 1 Nettuno 1 room - G. Giakos 6572, 6099, 6530, 6149, 6466	TuC3 - RF and Microwave Moisture and Quality Sensing Applications 1 Nettuno 3 room - S. Trabelsi 6037, 6040, 6058, 6059, 6089	TuC4 - Monitoring and Performance Meas. in Communications and Computer Networks 1 Nettuno 4 room - C. Narduzzi 6217, 6512, 6538, 6229, 6527	TuC5 - System-on-Chip (SoC) Design and Test Nettuno 6 room - S. R. Das 6416, 6614, 6388, 6436		
15:10 to 15:30	Coffee Break - Sirene Foyer						
15:30 to 17:10	TuD1 - ADC Forum 2 Sirene room - J. Blair 6014, 6238, 6259, 6220, 6304	TuD2 - Imaging Systems and techniques 2 Nettuno 1 room - M. Pastorino 6153, 6544, 6519, 6136, 6335	TuD3 - RF and Microwave Moisture and Quality Sensing Applications 2 Nettuno 3 room - S. Nelson 6226, 6534, 6396, 6312, 6183	TuD4 - Monitoring and Performance Meas. in Communications and Computer Networks 2 Nettuno 4 room - L. Angrisani 6233, 6308, 6351, 6357, 6358	TuD5 - Electrical and Power Measurements 1 Nettuno 6 room - L. Peretto 6518, 6241, 6268, 6389, 6506	TuD6 - Women in Engineering Nettuno 2 room - R.A. Dyer	
13:30 to 18:00	TuF1 - Imaging Systems and techniques Sirene Foyer - H. Yamamoto 6435, 6105, 6053, 6227, 6160, 6201	TuF2 - Imaging Systems and techniques 3 Sirene Foyer - F. Scotti 6469, 6123, 6560, 6124, 6145, 6184, 6457	TuF3 - Frequency, Microwave and Laser I&M Systems Sirene Foyer - C. Svetto 6262, 6459, 6473, 6366, 6018, 6628, 6136	TuF4 - Telecommunications Sirene Foyer - D. Chuz 6056, 6065, 6152, 6190, 6203	TuF5 - Measurement Microsystems Sirene Foyer - S.Sulis 6583, 6449, 6024, 6055, 6061, 6062		
13:30 to 18:00	TuF6 - Instrum. and Prototype Development 1 Sirene Foyer - E.Balazsri 6027, 6540, 6263, 6569, 6558, 6481, 6237, 6636, 6535, 6541, 6573, 6542, 6580, 6566, 6587, 6625, 6635, 6225, 6104	TuF7 - Testing and Diagnosis Systems Sirene Foyer - S.Moisa 6265, 6293, 6352, 6505	TuF8 - Temperature, Moisture and Humidity Measurements Sirene Foyer - C. Lu 6001, 6025, 6533, 6129, 6246, 6311, 6219	TuF9 - Chemical and Biological Measurements Sirene Foyer - J. Jakubowski 6098, 6051, 6102, 6230, 6146, 6277, 6189, 6284, 6194, 6288, 6595, 6332, 6634, 6638	TuF10 - Magnetic Measurements Sirene Foyer - P. Arpaia 6507, 6509, 6537, 6589, 6520		
18:00 to 19:00	Welcome Party						

WEDNESDAY, April 26, 2006

8:30 to 10:10	WeA1 - ADC Forum 3 <i>Sirene room - S.Max</i> 6278, 6432, 6551, 6627, 6355 Coffee Break - Sirene Foyer	WeA2 Imaging Systems and techniques 4 <i>Nettuno room - C. Svelto</i> 6187, 809, 6497, 6502, 6528	WeA3 - Uncertainty 1 <i>Nettuno 3 room - A. Ferrero</i> 6012, 6135, 6412, 6091	WeA4 - Multimedia Tools for Education in Instrumentation and Measurement 1 <i>Nettuno 4 room - D. Grimaldi</i> 6197, 6239, 6315, 6379, 6513	WeA5 - Signal processing, 1 <i>Nettuno 6 room - P. M.T. Broersen</i> 6008, 6013, 6048, 6073, 6191
10:10 to 10:30	WeB1 - ADC Forum 4 <i>Sirene room - N. Björnsall</i> 6606, 6471, 6287, 6482, 6596 Lunch - Citrus Garden	WeB2 Doctoral Students - "Giorgio Savastano" Award <i>Nettuno room - M.Savastano</i> 6458, 450, 6478, 6570, 6616	WeB3 - Calibration <i>Nettuno 3 room - R. Ottoboni</i> 6017, 6204, 6539, 6568, 6107	WeB4 - Multimedia Tools for Education in Instrumentation and Measurement 2 <i>Nettuno 4 room - W. Winiaceki</i> 6586, 6619, 6657, 6517, 6642	WeB5 - Signal Processing, 2 <i>Nettuno 6 room - R. Pintelon</i> 6015, 6028, 6162, 6383, 6398
12:10 to 13:30	WeC1 - ADC Forum 5 <i>Sirene room - V.Haasz</i> 6297, 6310, 6314, 6157, 6440 Coffee Break - Sirene Foyer	WeC2 Soft-computing for Intelligent I&M Systems 1 <i>Nettuno room - A. R. Varkonyi-Koczy</i> 6608, 622, 6516, 6407	WeC3 - Software Metrics <i>Nettuno 3 room - G. Cinfora</i> 6381, 6410, 6154, 6280, 6267	WeC4 - Automated Test 1 <i>Nettuno 4 room - Y. Orozu</i> 6021, 6010, 6110, 6137	WeC5 - Signal Processing, 3 <i>Nettuno 6 room - R. Morawski</i> 6077, 6090, 6164, 6170, 6244
13:30 to 15:10	WeD1 - ADC Forum 6 <i>Nettuno 1 room - P. Carbone</i> 6182, 6214, 6346, 6347 Coffee Break - Sirene Foyer	WeD2 Virtual Instrumentation <i>Nettuno room - E. Petru</i> 6185, 807, 6318, 6600, 6377	WeD3 - Student Award Session <i>Nettuno 3 room - R.Dwyer</i> 6326, 6249, 6120, 6207	WeD4 - Automated Test 2 <i>Nettuno 4 room - Y. Piuri</i> 6166, 6215, 6320, 6196, 6272	WeD5 - Signal Processing, 4 <i>Nettuno 6 room - J. Kollar</i> 6425, 6470, 6356, 6142
15:30 to 17:10	WeE1 - Automated Test and Measurement Systems 3 <i>Sirene Foyer - H.M. Geirinhas</i> 6199, 6367, 6446, 6403, 6344, 6063, 6345, 6298, 6178, 6391, 6330, 6495 WeF6 - Uncertainty 2 <i>Sirene Foyer - S.Silicone</i> 6208, 6618, 6452, 6632, 6510, 6445	WeE2 Instrumentation and Prototype Develop. 2 <i>Sirene foyer - A.Platonov</i> 6397, 828, 6434, 6354, 6392, 6475, 439, 6404 WeF7 Soft-computing for Intelligent I&M Systems 2 <i>Sirene foyer - F. Russo</i> 6523, 088, 6210, 6622	WeF3 - Waveform Measurement, Analysis, and Generation <i>Sirene Foyer - M.Kollar</i> 6054, 6400, 6430, 6447, 6453, 6487, 6525 WeF8 - Multimedia Tools for Education in Instrumentation and Measurement 3 <i>Sirene foyer - F. Zoino</i> 6643, 6245, 6273, 6378	WeE4 - Signal Processing, 5 <i>Sirene Foyer - F.Dong</i> 6034, 6032, 6181, 6188, 6372, 6394, 6074 WeF9 - Networked and Distributed Meas. <i>Sirene Foyer - L.Tomaciello</i> 6035, 6387, 6427, 6426, 6598	WeE5 - Signal Processing, 6 <i>Sirene Foyer - J.Han</i> 6468, 6451, 6070, 6016, 6613, 6253 WeF10 - Electrical and Power Meas. 2 <i>Sirene Foyer - C. De Capua</i> 6009, 6454, 6026, 6180, 6240, 6444, 6282
13:30 to 18:00					
19:00 to 22:00					

Cocktail, Gala Dinner & Music Entertainment

THURSDAY, April 27, 2006

7:00 to 8:30					
8:30 to 10:15	ThA1 - Distinguished Lecturer eval. <i>Nettuno 1 room - K.Fowler</i>	ThA2 - Autonomous Sensors <i>Nettuno 3 room - R. Pallás-Areny</i> 6543, 6561, 6552, 6639, 6554	ThA3 - Medical Measurements and Instrumentation <i>Nettuno 4 room - M.Parvis</i> 6483, 6504, 6489, 6579, 6498	ThA4 - Electromagnetic Compatibility Measurements in the Industrial and Telecommunication World <i>Nettuno 6 room - N. Pasquino</i> 6169, 6290, 6127, 6615	
10:15 to 10:30	Coffee Break - <i>Sirene Foyer</i>				
10:30 to 12:10	ThB1 - Signal processing 7 <i>Nettuno 1 room - D.Petri</i> 6186, 6159, 6242, 6617, 6486	ThB2 - Identification, Control, and Distributed Monitoring <i>Nettuno 3 room - Y. Rolain</i> 6202, 6236, 6411, 6324	ThB3 - Medical Measurement & Instrumentation <i>Nettuno 4 room - S. Rapano</i> 6323, 6467, 6477, 6577, 6590	ThB4 - Dielectric, Magnetics, EMC Measurements 1 <i>Nettuno 6 room - M. Bertocco</i> 6118, 6384, 6386, 6437, 6421	
12:10 to 13:30	Lunch - <i>Citrus Garden</i>				
13:30 to 15:10	ThC1 - Instrumentation and Prototype Develop. ₃ <i>Nettuno 1 room - K.Fowler</i> 6075, 6514, 6492, 6094, 6500	TuC2 - System-on-Chip (SoC) Design and Test <i>Nettuno 3 room - S. Demidenko</i> 6046, 6418, 6582, 6611	ThC3 - Automated Test, Robotics, Industrial Automation, and Mfg. 1 <i>Nettuno 4 room - A.Baccigalupi</i> 6161, 6198, 6303, 6296, 6172	ThC4 - Sensors, Transducers, Smart Sensors 1 <i>Nettuno 6 room - K.Lee</i> 6043, 6100, 6571, 6460, 6641	
15:10 to 15:30	Coffee Break - <i>Sirene Foyer</i>				
15:30 to 17:10	ThD1 - Chapters <i>Nettuno 1 room - R.A. Dyer</i>	ThD2 - Non-invasive Instrumentation and Measurement 1 <i>Nettuno 3 room - R. Zhonghi</i> 6004, 6234, 6329, 6420, 6165	ThD3 - Waveform Measurement, Analysis, & Generation <i>Nettuno 4 room - M.Yeary</i> 6072, 6133, 6289, 6424	ThD4 - Sensors, Transducers, Smart Sensors 2 <i>Nettuno 6 room - J.Schmalzel</i> 6629, 6472, 6082, 6553, 6626	ThD5 - Microwaves and Nonlinear Measurements: A Happy Marriage? <i>Nettuno, 2 room - Y.Rolain, W. Van Moer</i> 6095, 6148, 6093
13:30 to 18:30	ThF1 - Sensors, Transducers, Smart Sensors 3 <i>Sirene Foyer - P. Malcovati</i> 6044, 6175, 6049, 6380, 6050, 6401, 6052, 6508, 6097, 6526, 6171, 6033	ThF2 - Robotics, Industrial Automation, <i>Sirene Foyer - D.Shi</i> 6141, 6193, 6179, 6254, 6264, 6195	ThF3 - Non-invasive Instrumentation and Measurement 2 <i>Sirene Foyer - V.Bilas</i> 6313, 6057, 6442, 6463, 6279, 6599, 6603, 6079	ThF4 - Dielectric, Magnetics, EMC <i>Sirene Foyer - J.Sheen</i> 6068, 6283, 6121, 6291, 6223, 6294, 6281, 6325, 6563, 6361, 6395	
13:30 to 18:30	ThF5 - Instrumentation and Prototype Develop. 4 <i>Sirene Foyer - B.Andó</i> 6086, 6209, 6111, 6228, 6131, 6247, 6143, 6256, 6292	ThF6 - Electrical and Power Measurements 3 <i>Sirene Foyer - J.Barros</i> 6011, 6591, 6125, 6604, 6260, 6286, 6348, 6376, 6549, 6575	ThF7 - Sensors, Transducers, Smart Sensors & Miscellaneous Measurements <i>Sirene Foyer - P.Payeur</i> 6002, 6490, 6047, 6499, 6067, 6529, 6158, 6546, 6266, 6336, 6359, 6480		

IMTC 2006 Technical Program

Tuesday, April 25

TuA1: Plenary Keynote

Tuesday, April 25, 8:45AM-10:10AM, Room: Sirene,

Chair: P.Daponte

Design and Testing of Human Machine Interfaces in Automotive Industry

Adriana Di Pede and Pietro Genesin, FERRARI SpA

Coffee Break

10:10AM-10:30AM, Room: Foyer Sirene

Session TuB1: Special Session Ferrari

Tuesday, April 25, 10:30AM-12:10PM, Room: Sirene,

Chairs: A.Di Pede and P. Genesin, FERRARI SpA

- 10:30AM 3-D Shape Measurement Method by a 6-axis Robot and a New Sensor Having Ability of Detecting Both the 2-D Incident Angle and Position of a Light [#6167]
Daisuke Narita and Mitsuru Baba
Ibaraki University, Japan
- 10:50AM Digital Imaging Based Measurement of Diesel Spray Characteristics [#6224]
Jiaqing Shao and Yong Yan
University of Kent, United Kingdom
- 11:10AM Use of Interface Agents for Automatic Pass-by-Noise Measurements [#6257]
Antonio Vecchio, Herman Van der Auweraer, Jan Leuridan and Alexander Huentemann
Lms, Belgium; Kul, Belgium
- 11:30AM Adjustable Speed Drive Bearing Fault Detection via Wavelet Packet Decomposition [#6321]
Kaptan Teotrakool, Michael J. Devaney and Levent Eren
University of Missouri-Columbia, United States;
University of Bahcesehir, Turkey

Session TuB2: Optical I&M Technology for Biomedical Application

Tuesday, April 25, 10:30AM-12:10PM, Room: Nettuno #1,

Chair: L. Rovati, University of Modena and Reggio Emilia, Italy

- 10:30AM Assessment on Self-Mixing Laser Interferometry for Blood Flow Measurement over Skin Surface [#6621]
SahinKaya Ozdemir, Isao Ohno and Shigenobu Shinohara
Osaka University, Japan; Shizuoka University, Japan
- 10:50AM Combining Near-Infrared Spectroscopy and Electroencephalography to Monitor Brain Function [#6275]
Giorgia Savatori, Luigi Rovati, Luca Bulf and Sergio Fonda

- 11:10AM University of Modena and Reggio Emilia, Italy
Investigation on The Response of the Human Eye to the Light Flicker Produced by Different Lamps [#6276]
Lorenzo Peretto, Luigi Rovati, Giorgia Salvatori, Roberto Tinarelli and Alexander Emanuel
University of Bologna, Italy; University of Modena and Reggio Emilia, Italy; Worcester Polytechnic Institute, United States
- 11:30AM Robust Segmentation and Measurements Techniques of White Cells in Blood Microscope Images [#6341]
Fabio Scotti
Department of Information Technologies, University of Milano, Italy
- 11:50AM Mammographic Images Enhancement and Denoising for Microcalcification Detection Using Dyadic Wavelet Processing [#6269]
Arianna Mencattini, Marcello Salmeri, Roberto Lojaco and Federica Caselli
University of Rome Tor Vergata, Italy

Session TuB3: Special Session on Magnetic Measurements

Tuesday, April 25, 10:30AM-12:10PM, Room: Nettuno #3,

Chair: L. Walckiers, CERN, Geneve, Switzerland

- 10:30AM Keynote address - Challenges in field measurement on accelerator's magnets
L. Walckiers
CERN, Geneve, Switzerland
- 10:50AM Design and Implementation of an Automated Polarity Checker for Superconducting Magnets [#6521]
Marco Buzio, Luca Bottura, Alessandro Masi, Peter Galbraith and Frank Thierry
CERN, Geneve, Switzerland
- 11:10AM A Device to Measure Magnetic and Mechanical Axis of Very Long LHC Superconducting Magnets [#6545]
Juan Garcia Perez, Marco Buzio, Peter Galbraith, Emanuele Laface and Stefano Pautetta
CERN Switzerland
- 11:30AM A Fast Digital Integrator for Magnetic Field Measurements at CERN [#6593]
Pasquale Arpaia, Luca Bottura, Pasquale Cimmino, Juan Garcia Perez and David Giloteaux
University of Sannio, Italy; CERN at/mtm, Switzerland
- 11:50AM Evaluation and Testing of Off-the-shelf Hall Sensors for Compliant Magnetic Field Measurement [#6300]
Andrea Mariscotti
DIE - University of Genova, Italy

Session TuB4: Special Session on Instrumentation and Measurement Methods for Availability Analysis of Components and Systems

Tuesday, April 25, 10:30AM-12:10PM, Room: Nettuno #4,

Chair: M. Catelani, University of Florence, Italy

- 10:30AM Reliability Tests and Experimental Analysis on Radioreceiver Chains [#6064]
 Marcantonio Catelani, Valeria L. Scarano, Iacopo Trotta, Roberto Singuaroli, Stelio Montebugnoli and Germano Bianchi
 University of Florence, Italy; Istituto di Radioastronomia- INAF, Italy
- 10:50AM Research for Ultrasonic Fast-Identification of the Stick-Weld Defect [#6485]
 Xin Zhao, Yansong Zhang and Guanlong Chen
 Shanghai Jiaotong University, China
- 11:10AM Automatic Fault Location System for a Gas Turbine Using a Simulation Before Test Approach [#6235]
 Marcantonio Catelani, Ada Fort, Vito Grande, Marco Mugnaini and Iacopo Trotta
 University of Florence, Italy; University of Siena, Italy
- 11:30AM A Power Measuring Technique for Built-in Test Purposes [#6494]
 Vasilis Konstantakos and Theodore Laopoulos
 Aristotle University of Thessaloniki, Greece
- 11:50AM An Emulation Technique for Diagnosis and Failure Analysis of ATE [#6333]
 Hamidreza Hashempour, Fabrizio Lombardi, Rakesh Mehta, Timothy Alton and Warren Necochea
 Northeastern University, United States; LTX Corp., United States

Session TuB5: Special Session on System Identification Applied to Solve Measurement Problems

Tuesday, April 25, 10:30AM-12:10PM, Room: Nettuno #6,

Chair: J. Schoukens, Vrije Universiteit Brussel, Belgium

- 10:30AM Estimation of Nonparametric Noise Models [#6029]
 Johan Schoukens, Rik Pintelon
 Vrije Universiteit Brussel, Belgium
- 10:50AM ARMAseI for Identification of Univariate Random Measurement Data [#6038]
 Piet M.T. Broersen
 Dept. of Multi Scale Physics, Delft University, Netherlands
- 11:10AM An Approach to Sparse Model Selection and Averaging [#6126]
 Yngve Selen, Erik Gudmundson and Petre Stoica
 Uppsala University, Sweden
- 11:30AM Robustness of the Related Linear Dynamic System Estimates in Cascaded Nonlinear MIMO Systems [#6409]
 Tadeusz Dobrowiecki and Johan Schoukens
 Budapest University of Technology and Economics, Hungary; Vrije Universiteit Brussel, Belgium
- 11:50AM Wireless Sensing for Active Noise Control [#6493]
 Laszlo Sujbert, Karoly Molnar, Gyorgy Orosz and Laszlo Lajko

Budapest University of Technology and Economics,
Hungary

Lunch

12:10PM-1:30PM, Room: Citrus Garden

Session TuC1: ADC Forum 1

Tuesday, April 25, 1:30PM-3:10PM, Room: Sirene,

Chair: T Linnenbrink, Hittite Microwave Corporation, USA

- 1:30PM ADC Forum keynote address - Why Does a Microwave Company care about ADCs?
Steve Daly
President and CEO, Hittite Microwave Corp.
- 1:50PM IEEE TC-10: Update 2006 [#6644]
Thomas E. Linnenbrink, William B. Boyer, Nicholas G. Paulter, Jr. and Steven J. Tilden
Hittite Microwave Corporation, United States; Sandia National Laboratory (retired), United States; National Institute of Standards and Technology, United States; Texas Instruments, Inc., United States
- 2:10PM Figures of Merit for Analog-to-Digital Converters: Analytic Comparison of International Standards [#6479]
Sergio Rapuano
University of Sannio, Italy
- 2:30PM Digital Non-Subtractive Dither: Necessary and Sufficient Condition for Unbiasedness, with Implementation Issues [#6610]
Istvan Kollar
Budapest University of Technology and Economics, Hungary

Session TuC2: Special Session on Imaging Systems and Techniques 1

Tuesday, April 25, 1:30PM-3:10PM, Room: Nettuno #1,

Chair: G. Giakos, University of Akron, USA

- 1:30PM Tomographic Reconstruction of the Luminosity Distribution of a Combustion Flame [#6572]
Guillermo Gilabert, Lu Gang, Shao Jiaqin and Yan Yong
University of Kent, United Kingdom
- 1:50PM Human Motion Capture System Using Color Markers and Silhouette [#6099]
Hiroyuki Ukida, Seiji Kaji, Yoshio Tanimoto and Hideki Yamamoto
The University of Tokushima, Japan; Kibikogen Rehabilitation Center, Japan; Okayama University, Japan
- 2:10PM Reflection-based Surface Segmentation Using Active Illumination [#6530]
Christoph Lindner and Fernando Puente Leon
Technical University of Munich, Germany
- 2:30PM SubPixel Detection of Polarimetric Signatures of Man-Made Targets [#6149]

- George Giakos and Shadi Sumrain
University of Akron, USA
- 2:50PM Characterizing the Objects Embedded in the Sea-Bottom
by Processing 3-D Acoustic Images [#6466]
Maria Palmese and Andrea Trucco
DIBE, University of Genoa, Italy

**Session TuC3: Special Session on RF and Microwave
Moisture and Quality Sensing Applications 1**

*Tuesday, April 25, 1:30PM-3:10PM, Room: Nettuno #3,
Chair: S. Trabelsi, U. S. Department of Agriculture, USA*

- 1:30PM Influence of Temperature in Radio Frequency
Measurements of Moisture Content in Bio Fuel [#6037]
Ana Paz, Nystrom Jenny and Thorin Eva
Malardalen University, Sweden; Maardalen University,
Sweden
- 1:50PM Dielectric Spectroscopy of Honeydew Melons for
Quality Sensing [#6040]
Stuart Nelson, Samir Trabelsi and Stanley Kays
U.S. Department of Agriculture, United States; The
University of Georgia, United States
- 2:10PM On-Line Microwave Moisture Measurement of Iron Ore
and Mineral Concentrates in Conveyor Applications
[#6058]
David Miljak, Daniel Bennett, Tarek Kazzaz and Nick
Cutmore
CSIRO Division of Minerals, Australia
- 2:30PM Debye Modelisation for the Soil Moisture Measurement
in TDR [#6059]
Philippe Neveux and Andre Chambarel
University of Avignon, France
- 2:50PM A Four Port Structure for Comparative Measurement of
Complex Permittivity and Moisture [#6089]
Alessandro Ocera, Marco Dionigi, Elisa Fratticcioli and
Roberto Sorrentino
University of Perugia, DIEI, Italy

**Session TuC4: Special Session on Monitoring and Performance
Measurements in Communications and Computer Networks 1**

*Tuesday, April 25, 1:30PM-3:10PM, Room: Nettuno #4,
Chair: C. Narduzzi, Università di Padova, Italy*

- 1:30PM Cross-Layer Measurement for the Analysis of a DVB-T
System Performances at the End User Level [#6217]
Matteo Bertocco, Mario Farias, Daniele Fortin and
Alessandro Sona
University of Padova, Italy; Diglab, Italy
- 1:50PM Performance Assessment of Wireless Communication
Networks through Cross-Layer Measurements [#6512]
Leopoldo Angrisani and Michele Vadursi
Università degli Studi di Napoli Federico II, Italy

- 2:10PM Received Signal Strength Characterization for Wireless Sensor Networking [#6538]
Alessandra Flammini, Daniele Marioli, Giuseppe Mazzoleni, Emiliano Sisinni and Andrea Taroni
University of Brescia - DEA, Italy
- 2:30PM On the Analysis of Communication and Computer Networks by Traffic Flow Measurements [#6229]
Luigino Benetazzo, Giada Giorgi and Claudio Narduzzi
Università di Padova - Dept. Information Eng., Italy
- 2:50PM One-Way Delay Measurement: State of Art [#6527]
Laura Tomaciello, Luca De Vito and Sergio Rapuano
University of Sannio, Italy

Session TuC5: Special Session on System-on-Chip (SoC) Design and Test 1

Tuesday, April 25, 1:30PM-3:10PM, Room: Nettuno #6,

Chair: S. R. Das, University of Ottawa, Canada

- 1:30PM Clock Grid Simulation Using Transient S-parameter Modeling [#6416]
Kyung Ki Kim, Yong-Bin Kim, Park Nohpill and Fabrizio Lombardi
Northeastern University, USA; Oklahoma State Univ., USA
- 1:50PM Energy Consumption Estimation in Embedded Systems [#6614]
Vasilios Konstantakos, Alexander Chatzigeorgiou, Spiridon Nikolaidis and Theodore Laopoulos
Physics Dept., Aristotle Univ. of Thessaloniki, Greece;
Dept. of Applied Informatics, Univ. of Macedonia, Greece
- 2:10PM A Reconfigurable Processing Unit for Digital Circuit Testing using Built-In Self-Test Techniques [#6388]
Mohammed Elbadri, Voicu Groza, Abielmona Rami and Assaf Mansour
University of Ottawa, Canada
- 2:30PM Statistical Characterization of Partially-Depleted SOI Gates [#6436]
Kyung Ki Kim, Yong-Bin Kim, Nophil Park and Fabrizio Lombardi
Northeastern University, United States; Oklahoma State University, United States

Coffee Break

3:10PM-3:30PM, Room: Foyer Sirene

Session TuD1: ADC Forum 2 - ADC and DAC Design and Analysis

Tuesday, April 25, 3:30PM-5:10PM, Room: Sirene,

Chair: J.Blair, Bechtel Nevada, United States

- 3:30PM Time-to-Digital Converter based on an On-chip Voltage Reference Locked Ring Oscillator [#6014]

- Ilkka Nissinen and Juha Kostamovaara
University of Oulu, Finland
- 3:50PM Noise Analysis in High-Pass Delta Sigma Modulator [#6238]
Van Tam Nguyen, Patrick Loumeau, Naviner Jean Francois and Desgreys Patricia
Telecom Paris, France
- 4:10PM High-level Accurate Model of High-Resolution Pipelined ADC's [#6259]
Cristiano Azzolini, Davide Vecchi, Andrea Boni and Giovanni Chiorboli
University of Parma, Italy
- 4:30PM System for Testing Middle-Resolution Digitizers Using Test Signal up to 20 MHz [#6220]
Vladimir Haasz, Milan Komarek, Jaroslav Roztocil, David Slepicka and Petr Suchanek
Czech Technical University in Prague, Czech Republic
- 4:50PM Measuring Time Base Distortion in Analog-Memory Sampling Digitizers [#6304]
Filippo Attivissimo, Attilio Di Nisio, Nicola Giaquinto and Mario Savino
Polytechnic of Bari, Italy

Session TuD2: Imaging Systems and Techniques 2

Tuesday, April 25, 3:30PM-5:10PM, Room: Nettuno #1,

Chair: M. Pastorino, University of Genoa, Italy

- 3:30PM Study of Positioning Techniques for Skull Radiography [#6153]
Toshinori Maruyama and Hideki Yamamoto
Okayama University, Japan
- 3:50PM A CMOS Camera with Programmable Real-Time Processing [#6544]
Massimo Gottardi, Nicola Massari and Andrea Simoni
ITC-IRST, Italy
- 4:10PM Pre-processing Correction for Micro Nucleuses Image Detection Affected by Contemporaneous Alterations [#6519]
Domenico Luca Carni, Domenico Grimaldi and Francesco Lamonaca
University of Calabria-DEIS, Italy
- 4:30PM A Frequency-Domain Approach to Registration Estimation in 3-D Space [#6136]
Phillip Curtis and Pierre Payeur
University of Ottawa, Canada
- 4:50PM Imaging Internal Structure with Electromagnetic Induction Tomography [#6335]
Xiangdong Ma, Tony Peyton, Manuchehr Soleimani and Bill Lionheart
The University of Manchester, United Kingdom

Session TuD3: Special Session on RF and Microwave Moisture and Quality Sensing Applications 2

Tuesday, April 25, 3:30PM-5:10PM, Room: Nettuno #3,

Chair: S. Nelson, U. S. Department of Agriculture, United States

- 3:30PM Nondestructive Moisture Sensing in Peanut Kernels from Microwave Permittivity Measurements on Unshelled Pods [#6226]
Samir Trabelsi and Stuart Nelson
U. S. Department of Agriculture, United States
- 3:50PM In-situ Monitoring of Moisture Content in Powder Processing Using Dielectric Probe Measurements with Multivariate Calibration [#6534]
Lubomir Gradinarsky, Henric Brage, Bengt Lagerholm, Ingela Niklasson Bjorn and Staffan Folestad
AstraZeneca RD Molndal, Sweden; AstraZeneca RD Molndal, Sweden
- 4:10PM Quality Factor Determination of Resonant Structures [#6396]
Philip Bartley and Shelley Begley
Innovative Measurement Solutions, Inc., United States; Agilent Technologies, Inc., United States
- 4:30PM Adapting the Unified Grain Moisture Algorithm to Commercial Instruments [#6312]
Zoltan Gillay and David Funk
Corvinus University of Budapest, Hungary; US Dept of Ag-Grain Inspection, P and S Admin, United States
- 4:50PM New Measurement Probe for High Impedance Spectroscopy [#6183]
Jerzy Hoja and Grzegorz Lentka
Gdansk University of Technology, Poland

Session TuD4: Special Session on Monitoring and Performance Measurements in Communications and Computer Networks 2

Tuesday, April 25, 3:30PM-5:10PM, Room: Nettuno #4,

Chair: L. Angrisani, University of Naples, Italy

- 3:30PM Detection of Anomalous Behaviors in Networks from Traffic Measurements [#6233]
Giada Giorgi and Narduzzi Claudio
Università di Padova, Dept. Information Eng., Italy
- 3:50PM Packet Loss Probability Estimation with a Kalman Filter Approach [#6308]
Dongli Zhang and Dan Ionescu
University of Ottawa, Canada
- 4:10PM Design of a Test Bed for Performance Evaluation in a Wireless Sensor Network [#6351]
Robert Gao and Tristin Boscardin
University of Massachusetts Amherst, United States
- 4:30PM FPGA-Based Testbed for Packet Switch Performance

- Measurement [#6357]
 Ahmad Abdo and Trevor Hall
 University of Ottawa, Canada
- 4:50PM A Per-Flow Measurement and Estimation Method for
 DiffServ Implementations [#6358]
 Stejarel Veres and Dan Ionescu
 University of Ottawa, Canada

Session TuD5: Electrical and Power Measurements 1

Tuesday, April 25, 3:30PM-5:10PM, Room: Nettuno #6,

Chair: L. Peretto, University of Bologna, Italy

- 3:30PM Design and Application of a Field Mill as a High-Voltage
 DC Meter [#6518]
 Peter Tant, Bruno Bolsens, Tom Sels, Daniel Van
 Dommelen and Johan Driesen
 K. U. Leuven, ESAT-ELECTA, Belgium; Tuc Rail nv,
 Belgium
- 3:50PM Reliable and Repeatable Power Measurements in DVB-T
 Systems [#6241]
 Leopoldo Angrisani, Domenico Capriglione, Luigi
 Ferrigno and Gianfranco Miele
 DIS, University of Naples Federico II, Italy; DAEIMI
 University of Cassino, Italy
- 4:10PM Optimal Placement of Measurement Devices in Electric
 Distribution Systems [#6268]
 Carlo Muscas, Fabrizio Pilo, Giuditta Pisano and Sara
 Sulis
 University of Cagliari, Italy
- 4:30PM Measurement Technique for the Static Output
 Characterisation of High Current Power MOSFETs
 [#6389]
 Toni Lopez and Reinhold Elferich
 Philips Research, Germany
- 4:50PM Definition of Power Quality Indices for DC Low Voltage
 Distribution Networks [#6506]
 Micaela Caserza, Andrea Mariscotti and Paolo Pinceti
 DIE - University of Genova, Italy

Session TuD6: Women in Engineering

Tuesday, April 25, 3:30PM-5:10PM, Room: Nettuno #2,

Chair: R.Dyer, Kansas State University, USA

Session TuF1: Imaging Systems and Techniques 2

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: H. Yamamoto, Okayama University, Japan

- Image Enhancement Based on Noise Estimation [#6435]
 Fabrizio Russo
 D.E.E.I. - University of Trieste, Italy
- Segmentation for MRA Image: An Improved Level Set Approach
 [#6053]

- Hao Jiasheng, Shen Yi and Wang Yan
 Dept. of Control Science and Engineering, Harbin, China
 A Novel Optical Method of Dimension Measurement of Objects with
 Circular Cross-section [#6227]
 Tomas Radil, Jan Fischer and Jan Kucera
 CTU in Prague, FEE, Dept. of Measurement, Czech Republic
 A Microwave Axial Tomograph: Experimental Set Up and
 Reconstruction Procedure [#6160]
 Matteo Pastorino, Andrea Salvade, Ricardo Monleone and Andrea
 Randazzo
 University of Genoa, Italy; University of Applied Sciences of
 Southern Switz, Switzerland
 Short-Range Image-Based Method for the Inspection of Strong
 Scatterers Using Microwaves [#6201]
 Giovanni Bozza, Claudio Estatico, Andrea Massa, Matteo
 Pastorino and Andrea Randazzo
 University of Genoa, Italy; University of Trento, Italy
 High Accuracy Measurement System of Absorbed Dose Using
 Combination of Radiochromic Film and Micro Densitometer for
 Radiation Therapy [#6105]
 Hideki Aoyama, Yoshiharu Azuma, Sachiko Goto, Hirofumi Hato
 and Tetsuhiro Sumimoto
 Okayama University, Japan; Okayama University Medical
 School, Japan

Session TuF2: Imaging Systems and Techniques 3

*Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,
 Chair: F. Scotti, University of Milan, Crema, Italy*

- Design and Assessment of a Low-Cost 3-D Sonar Imaging System
 Based on a Sparse Array [#6469]
 Stefania Repetto, Maria Palmese and Andrea Trucco
 DIBE-University of Genoa, Italy
 A CMOS Sensor based on Single Photon Avalanche Diode for
 Fluorescence Lifetime Measurements [#6560]
 Mosconi Daniel, Stoppa David, Malfatti Mattia, Perenzoni Matteo
 and Scandiuzzo Mauro
 ITC-IRST, Italy
 An Adaptive Pixel-weighted Image Fusion Algorithm Based on Local
 Priority for CT and MRI Images [#6145]
 Yi Shen, Jiachen Ma and Liyong Ma
 Harbin Institute of Technology, China; Harbin Institute
 of technology, China
 Measurement System of Transfer Motion for Patient with Spinal Cord
 Injuries [#6184]
 Yoshio Tanimoto, Kuniharu Nanba, Akihiro Tokuhiko,
 Hiroyuki Ukida and Hideki Yamamoto
 Kibikogen Rehabilitation Center, Japan; The University of
 Tokushima, Japan; Okayama University, Japan
 An Intelligent Camera Based Smart Seeding Rate Sensor [#6457]
 Martin Sommer, Stefan Rupitsch, Michael Kastner and
 Bernhard Zagar

University Linz, Inst. Measurement Technology, Austria
Measurement of Breast Density on Digital Mammograms
[#6123]

Sachiko Goto, Yoshiharu Azuma, Naoko Tsujita, Shigefumi
Kadohisa and Yoshihiro Takeda

Okayama University Medical School, Japan; Okayama
University, Japan; Okayama University Hospital, Japan
Relations Between Accuracy of Vessel Measurement and Physical
Image Quality Characteristics in Multi-detector CT Scanner [#6124]

Yoshiharu Azuma, Takuya Akagawa, Hiroyuki Hamaguchi, Sachiko
Goto and Tetsuhiro Sumimoto

Okayama University Medical School, Japan; Okayama
University, Japan

Session TuF3: Frequency, Microwave and Laser I&M Systems

*Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: C. Svelto, Politecnico di Milano, Italy*

Novel Interferometric Method for the Measurement of Laser
Wavelength/Frequency-Modulation Sensitivity [#6262]

Michele Norgia, Alessandro Pesatori and Cesare Svelto
Politecnico di Milano, Italy

Efficiency Measurement of Waterjet Orifices by a Novel Electro-Optical
Technique [#6459]

Massimiliano Annoni, Loredana Cristaldi, Michele Norgia and
Cesare Svelto

Politecnico di Milano, Italy

Absolute Laser Frequency Stabilization to R(3) Absorption Line of HI
at 1541.06 nm [#6473]

Michele Norgia, Alessandro Pesatori, Gianluca Galzerano, Elio Bava
and Cesare Svelto

Politecnico di Milano, Italy; I.N.R.I.M Politecnico di Torino, Italy

Extraction of Dispersive Material Parameters Using Vector Network
Analyzers and Genetic Algorithms [#6366]

Jianmin Zhang, Marina Koledintseva, David Pommerenke, James
Drewniak and Konstantin Rozanov

University of Missouri-Rolla, USA, United States; University of
Missouri-Rolla, USA, United States; Russian Academy of Sciences,
Russia, Russia

Dual-Polarized Microwave Near-Field Reflectometer for Non-Invasive
Inspection of Carbon Fiber Reinforced Polymer (CFRP) Strengthened
Structures [#6018]

Sergey Kharkovsky, Adam Craig Ryley, Vivian Stephen and Reza
Zoughi

University of Missouri-Rolla, United States

Inspection of Spray On Foam Insulation (SOFI) Using Microwave and
Millimeter Wave Synthetic Aperture Focusing and Holography [#6628]

Joseph T Case, Frank L Hepburn and Reza Zoughi

University of Missouri - Rolla, United States; NASA Marshall
Space Flight Center, United States

Thickness Measurements of Plastic Sheets during the Manufacturing
Process: Comparison of Errors with Soft X-ray Thickness and the New

Laser Measuring Systems [#6156]

Fumio Tojo, Syunzou Hirakawa, Toshiyasu Toyoda and Mineo Itoh Yamabun Electronics Co., Ltd, Japan;
Graduate School of Kinki University, Japan

Session TuF4: Telecommunications

*Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: D.Cmuz , University of Zagreb, Croatia*

Programmable Logic Controller System for Controlling and Monitoring Home Application Using Mobile Network [#6056]

Abdulmohsen Alheraish, Waleed Alomar and Mohammed Abu-al-ela King Saud University, Saudi Arabia

The Back-Projection Algorithm based on Electric Lines of Force for Single Drive Electrode ERT [#6065]

Wuling Zhao and Feng Dong
School of Automation, Tianjin University, China

Error concealment for 3G-324M mobile videophones [#6152]

Sang-Wook Sohn, Hun Choi, Jae-Won Suh and Hyeon Deok Bae Chungbuk National University, South Korea;

Chungbuk National University, South Korea

Measurement of the properties of a plasma column used as a radiating element [#6190]

Graziano Cerri, Roberto De Leo, Valter Mariani Primiani and Paola Russo

Università Politecnica delle Marche, Italy

Measurement Apparatus Electromagnetic Susceptibility To Zigbee Transmitters [#6203]

Giovanni Betta, Domenico Capriglione, Luigi Ferrigno and Gianfranco Miele

University of Cassino, Italy

Session TuF5: Measurement Microsystems

*Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: S. Sulis, University of Cagliari, Italy*

Jitter Analysis of PWM Scheme in High Speed Serial Link [#6583]

Rui Tang, Yong-Bin Kim, Minsu Choi and Fabrizio Lombardi
Northeastern University, United States; University of Missouri-Rolla, United States

Application of the Integrated Micro Acceleration Measurement System in Target Recognition [#6024]

Jinhui Lan and Yixin Yin
University of Science and Technology Beijing, China

An Hybrid Micro-Force Sensing Device for Mechanical Cell Characterization [#6055]

Maxime Girot, Mehdi Boukallel and Stephane Regnier
Robotic Laboratory of Paris, France

Noise Consideration for Micromachined Digital Accelerometers [#6061]

Martin Kollar and Linus Michaeli
Technical University of Kosice, Slovakia

Consideration for a New Micromachined Accelerometer Capacitive

Interface Based on Switched Flip-Flop Circuit [#6062]

Martin Kollar and Linus Michaeli
Technical University of Kosice, Slovakia

Autocalibration of MEMS Accelerometer [#6449]

Iuri Frosio, Simone Stuani and Nunzio Alberto Borghese
Computer Science Dep. - University of Milan, Italy

Session TuF6: Instrumentation and Prototype Development 1

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: E. Balestrieri, University of Sannio, Italy

Electronic Gating for Particle/Cell Counting and Sizing, DSP-operated [#6027]

Frank De Bisschop
Ghent University, Belgium

Remote Control for Microscopy Applications [#6263]

Francesca Mighela and Cristian Perra
DIEE - University of Cagliari, Italy

Prototype of Device Based on Hybrid Junctions for Measuring Electromagnetic Conducted Emissions [#6558]

Antonio De Bonitatibus, Claudio De Capua and Annalisa Liccardo
University Parthenope of Naples, Italy; University Mediterranea of Reggio Calabria, Italy; University Federico II of Naples, Italy

The Metrological Characterisation of a Goniometer for the Analysis of Surface Properties [#6237]

Pietro Fiorentin and Alessandro Scroccaro
Dipartimento di Ingegneria Elettrica, Università di Padova, Italy

Single-ended Input to Differential Output Circuits. A Comparative Analysis [#6535]

Roberto Casas, Oscar Casas and Vittorio Ferrari
Technical University of Catalonia, Spain; University of Brescia, Italy

Cross-Correlation and Sine-Fitting Techniques for High Resolution Ultrasonic Ranging [#6573]

Ricardo Queiros, Pedro Girao and Antonio Serra
Instituto de Telecomunicacoes, IST, Portugal

Real-Time Sensing Channel Modelling Based on an FPGA and Real-Time Controller [#6580]

Octavian Postolache, Jose Pereira and Pedro Girao
Instituto de Telecomunicacoes, Portugal; ESTSetubal, Portugal
A FPGA-based General Purpose Multi-Sensor Data Acquisition System with Nonlinear Sensor Characteristic and Environment Compensation [#6587]

Raul Carneiro Martins, Helena Geirinhas Ramos and Paulo Proenca
Instituto de Telecomunicacoes, DEEC, IST, Portugal

Performance Analysis of the Vision Measuring Machine for Spindle Motor [#6635]

Huang Jichang
Data storage Institute, Singapore

Design of a Low-Cost Instrument for Pulse Oximetry [#6540]

Fernando Magadan, Francisco Ferrero, Cecilio Blanco, Juan Carlos Viera and Manuela Vega

- University of Oviedo, Spain
 A New Modular Approach for Low-Cost Electronic Noses [#6569]
 Alessandro Depari, Paolo Ferrari, Alessandra Flammini, Daniele Marioli and Stefano Rosa
 University of Brescia, Italy
 The Microflown, a Novel Approach to Helicopters Interior Noise Testing [#6481]
 Antonio Vecchio, Lorenzo Valent, Adeline Berthe, Koers Alex and de Bree Hans-Elias
 Lms, Belgium; Eurocopter, Germany; Microflown, Netherlands
 A Multibands Wideband Propagation Channel Sounder from 2 to 60 GHz [#6636]
 Jean-Marc Conrat, Patrice Pajusco and Jean-Yves Thiriet
 France Telecom Research and Development, France
 Enhanced Local Void and Temperature Measurements for Highly Transient Two-phase Flows [#6541]
 Eckhard Schleicher, Marco Jose Da Silva and Uwe Hampel
 Forschungszentrum Rossendorf e.V., Germany
 An Experimental Setup for Assessing the Power Closure of Energy Harvesting Systems [#6542]
 Emanuele Lattanzi and Alessandro Bugliolo
 University of Urbino, Italy
 Automated Inspection of Micro Laser Spot Weld Quality Using Optical Sensing and Neural Network Techniques [#6566]
 Jiaqing Shao and Yong Yan
 University of Kent, United Kingdom
 Mobile System for the Localization of Shipping Containers in a Maritime Terminal [#6625]
 Edith Pulido Herrera, Miguel Ribo, Axel Pinz, Ricardo Quiros and German Fabregat
 Universitat Jaume I Castellon, Spain; Graz University of Technology, Austria
 Extending a Short-range Wireless Instrumentation Bus to a Geographic Network [#6225]
 Luigi Ferrigno, Vincenzo Paciello and Antonio Pietrosanto
 DAEIMI, University of Cassino, Italy; DIIIIE, University of Salerno, Italy
 How to Measure and Estimate the Power Quality Parameters in Ship Systems? [#6104]
 Tomasz Tarasiuk and Janusz Mindykowski Gdynia Maritime University, Poland

Session TuF7: Testing and Diagnosis Systems

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: S. Moisa, University of Iasi, Romania

- Diagnostic Algorithm and Architecture for High Pressure Waterjet Pump [#6265]
 Massimiliano Annoni, Loredana Cristaldi and Massimo Lazzaroni
 Politecnico di Milano, Italy; Università degli Studi di Milano, Italy
 A Procedure to Test Tolerance and Faulty States for Measurement Instrumentation [#6293]

Claudio De Capua and Rosario Morello
DIMET-University Mediterranea of Reggio Calabria, Italy
A Just-in-Time Compiler for a Reconfigurable Testing Platform [#6352]
Mohammad El-Kadri, Voicu Groza, Rami Abeilmona and
Mansour Assaf
University of Ottawa, Canada
Research of Synthesized Fault Diagnose for Flat Wheel Detecting
System [#6505]
Ping He, Song Teng and Yi Shen
Harbin Institute of Technology, China

Session TuF8: Temperature, Moisture and Humidity Measurements

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: C. Lu, Harbin Institute of Technology, China

Conversion of the Relative Humidity in SF6 Gas-Insulated Equipment
Based on the Polanyi Adsorption Potential Theory [#6001]

Chao Lu and Xiaoguang Hu

Harbin Institute of Technology, China; Beijing University of
Aeronautics and Astronauts, China

Application of an Optical Temperature Measurement System on ZnO
Surge Arrester Experiments [#6533]

Tarso Ferreira, Edson da Costa, Max Neri and Estacio Neto

Department of Electrical Engineering, Federal Un, Brazil

Soil Moisture Assessment by Means of Compressional and Shear
Wave Velocities: a theoretical analysis [#6246]

Laura Fabbiano, Filippo Attivissimo, Nicola Giaquinto,

Gregorio Andria and Francesco Adamo

Polytechnic of Bari, Italy

A Technique for Die Surface Temperature Measurement of High-Voltage
Power Electronic Components using Coated Thermocouple Probes
[#6311]

Thomas Salem, Dimeji Ibitayo and Bruce Geil

United States Naval Academy, United States; United States Army

Research Laboratory, United States

A Distance Compensated Telemetric Humidity Sensor Based on the
Parasitic Capacitance Variation [#6219]

Daniele Marioli, Emilio Sardini, Mauro Serpelloni and Andrea Taroni

Department of Electronic Automation, University, Italy

Optical fiber probe for humidity monitoring based on a new reflection
sensing technique for detecting thermal lens [#6025]

Atsushi Yurai and Takuji Nakanishi

Osaka Sangyo University, Japan

Indirect measurement of the temperature in a resistive furnace [#6129]

Lucilene Mouzinho, Joao Viana Fonseca Neto, Benedito Luciano,

Raimundo Freire and Sebastian Catunda

Cefet-ma, Brazil; Ufma, Brazil; Ufcg, Brazil

Session TuF9: Chemical and Biological Measurements

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: J. Jakubowski, Military University of Technology, Poland

A New Method for the Flowrate Measurement of Gas Liquid Two-Phase

Flow [#6098]

Dai-liang Xie, Wen-jun Li, Fang Wang, Jian-guang Zheng and Yong-jun Zheng

China Jiliang University, China

TSM Acoustic Wave Sensors for Liquid Media based on Miller Oscillators [#6102]

Loreto Rodriguez-Pardo, Jose Farina, Claude Gabrielli, Hubert Perrot and Remi Brendel

Dpto. T. Electronica, Universidad de Vigo, Spain; L. Interfaces et Systemes Electrochimiques, CNRS, France; L. Physique et Metrologie des Oscillateurs, CNRS, France

On-line Voidage Measurement of Two-phase Flow Based on Ant System Algorithm [#6146]

Qiangwei Li, Zhiyao Huang, Baoliang Wang and Haiqing Li
Zhejiang University, China

Nondestructive Acoustical Method for the Needs of the Assessment of Decay in Trees [#6189]

Jacek Jakubowski and Marek Piszczek

Military University of Technology, Poland

Design of A Low-Cost Portable Potentiostat for Amperometric Biosensors [#6194]

Francisco Javier Ferrero, Jose Ramon Blanco, Juan Carlos Campo, Juan Carlos Anton and Jose Manuel Pingarron

University of Oviedo, Spain; Complutense University of Madrid, Spain

Diagnosing human's airway disease by negative pressure impulses method [#6595]

Piotr Piwowar

AGH University of Science and Technology, Poland

Characterization of a completely user - independent algorithm for the segmentation of carotid artery ultrasound images [#6634]

Silvia Delsanto, Filippo Molinari, Pierangela Giustetto, William Liboni and Sergio Badalamenti

Politecnico di Torino, Italy; SCN, Presidio Sanitario Gradenigo, Torino, Italy

Novel Method of Local Corrosion Events Characterization by Electrochemical Noise Analysis [#6051]

Janusz Smulko

Gdansk Univ. of Technology, Poland

Oil-Water Interface Level Sensor Based on an Electrode Array [#6230]

Ramon Casanella, Oscar Casas and Ramon Pallas-Areny

Technical University of Catalonia, Spain

Resolving Complex Chemical Processes: Comparison of Monitoring by Ultrasound with Other Measurement Methods [#6277]

Kirill Shafran, Cc Perry, Vladimir Ivchenko, Richard Challis and Andrew Holmes

Nottingham Trent University, United Kingdom; The University of Nottingham, United Kingdom

Estimation of Characteristic Parameters for Objective Diagnostic in Parkinson Disease and Comparison with Standard Clinical Tests [#6284]

Anna Maria Lucia Lanzolla, Filippo Attivissimo, Nicola Giaquinto,

Nicola Sasanelli and Livio Quagliarella

Polytechnic of Bari, Italy; University of Bari, Italy

A supervised algorithm for water classification by volta metric measurements [#6288]

Andrea Scozzari, Nicola Acito and Giovanni Corsini

IGG CNR (Pisa), Italy; Univ. of Pisa, Italy

Estimation of Soil Properties Using a Combination of Spectral and Scalar Sensor Data [#6332]

Colin Christy and Stephen Dyer

Veris Technologies, United States; Kansas State University United States

Soil Type Characterization for Moisture Measurement by Impedance Spectroscopy [#6638]

Andrey Tetyuev, Olfa Kanoun and Hans-Rolf Traenkler

IMA, University of the Bundeswehr Munich, Germany

Session TuF10: Magnetic Measurements 2

Tuesday, April 25, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: P. Arpaia, University of Sannio, Italy

Measurement Techniques for Magnetic Characterization of Fe-Si Alloys [#6507]

V. Permiakov, L. Dupre, J. Melkebeek, P. Tant and J. Driesen

EELAB-EESA, Ghent University, Belgium; ELECTA ESAT, K. U. Leuven, Belgium

Digital Signal Processing Approach for Measurements of Non-Stationary Magnetic Field Through a Rotating Coils System [#6509]

Leopoldo Angrisani, Luca Bottura, Alessandro Masi and Rosario Schiano Lo Moriello

University of Naples Federico II, Italy; CERN, Switzerland

On the Use of Wavelet Transform for the Quench Precursors Characterization in the LHC Superconducting Dipole Magnets [#6589]

Marco Calvi, Leopoldo Angrisani, Luca Bottura, Alessandro Masi and Andrzej Siemko

CERN, Geneva, Switzerland; University of Naples, Italy

A Hall Plate Based Instrument to Measure the Snapback in the LHC Superconducting Dipole Magnets [#6537]

Nicholas Sammut, Eva Benedico-Mora, Luca Bottura, Peter Galbraith and David Giloteaux

CERN and University of Malta, Malta; European Organisation for Nuclear Research, Switzerland

Measurement of Magnetic Axis in Accelerator Magnets: Critical Comparison of Methods and Instruments [#6520]

Marco Buzio, Luca Bottura, Nikolay Smirnov and Stefano Pauletta

CERN, Geneva, Switzerland

Welcome Party

6:00PM-7:00PM, Swimming pool area

Wednesday, April 26

Session WeA1: ADC Forum 3

Wednesday, April 26, 8:30AM-10:10AM, Room: Sirene,

Chair: S. Max, LTX, USA

- 8:30AM Digital Converter for Differential Capacitive Sensors [#6278]
N. Madhu Mohan, Amol R. Shet and V. Jagadeesh Kumar
Indian Institute of Technology Madras, India; Defence
Research and Development Laboratory, India
- 8:50AM S-D Modulator with Thermoresistive Sensor Frequency Response [#6432]
Ligia Souza Palma, Amauri Oliveira, Raimundo C. S. Freire and Adhemar de Barros Fontes
Federal University of Bahia-DEE, Brazil;
Federal University of Campina Grande-DEE, Brazil
- 9:10AM Two Time-Interleaved ADC Channel Structure: Analysis and Modeling [#6551]
Maher Jridi, Guillaume Monnerie, Lilian Bossuet and Dominique Dallet
IXL Laboratory, UMR CNRS 5818 - ENSEIRB, France
- 9:30AM Accurate Digital Synthesis of Sinewaves [#6627]
Domenico Alessandro Lampasi, Antonio Moschitta and Paolo Carbone
University La Sapienza, Rome, Italy;
University of Perugia, Italy
- 9:50AM AWG Waveform Compensation by Maximum Entropy Method [#6355]
Fang Xu
Teradyne Inc., United States

Session WeA2: Imaging Systems and Techniques 4

Wednesday, April 26, 8:30AM-10:10AM, Room: Nettuno #1,

Chair: C. Svelto, Politecnico di Milano, Italy

- 8:30AM Infrared Imaging to Measure Temperature Changes of the Extremities caused by Cigarette Smoke and Nicotine Gums [#6187]
Michael Blank and Christian Kargel
MedIT, Carinthia University of Applied Sciences, Austria;
MedIT, Carinthia University of Applied Sciences, Austria
- 8:50AM Displacement Estimators for Real-time Ultrasonic Strain and Blood Flow Imaging with Improved Spatial Resolution [#6309]
Andreas Eder, Thomas Arnold, Pierre Elbischger, Martin Kaefer and Christian Kargel
MedIT, Carinthia University of Applied Sciences, Austria;
MedIT, Carinthia University of Applied Sciences, Austria
- 9:10AM A Hybrid Frequency-Space Approach for Shape

- Measurement by Shadow Moire' [#6497]
 Antonino Marco Siddiolo and Leonardo D'Acquisto
 Dipartimento di Meccanica, Università di Palermo, Italy
- 9:30AM Effects of Wavelets Selection on Performances of
 Hyperspectral Image Fusion [#6502]
 Qiang Wang and Yi Shen
 Harbin Institute of Technology, China
- 9:50AM Improvement of PupilMouse [#6528]
 Yoshinobu Ebisawa and Yuji Nurikabe
 Faculty of Engineering, Shizuoka University, Japan

Session WeA3: Uncertainty 1

Wednesday, April 26, 8:30AM-10:10AM, Room: Nettuno #3,

Chair: A. Ferrero, Politecnico di Milano, Italy

- 8:30AM An Original Fuzzy Ordering for the Comparison of
 Measurement Results [#6012]
 Alessandro Ferrero and Simona Salicone
 Politecnico di Milano - Milano, Italy
- 8:50AM Precision Materials Tester Using a Pendulum and a
 Digitizer [#6135]
 Yusaku Fujii
 Gunma University, Japan
- 9:10AM Evaluation of Touch Trigger Probe Measurement
 Uncertainty Using FEA [#6412]
 Mohd Rizal Salleh, Qing Ping Yang and Barry Jones
 Brunel University, United Kingdom
- 9:30AM An Investigation Over Superconductive Inductive e
 Capacitive Components for High Precision Measurements
 [#6091]
 Umberto Pogliano, Giorgio Boella and Danilo Serazio
 Ist. Nazionale Ricerca Metrologica, Italy

Session WeA4: Special Session on Multimedia Tools for Education in Instrumentation and Measurement 1

Wednesday, April 26, 8:30AM-10:10AM, Room: Nettuno #4,

Chair: D. Grimaldi, University of Calabria, Italy

- 8:30AM Educational Virtual Instrumentation Application for
 System Identification [#6197]
 Mircea Popa, Raul Ionel, Voicu Groza and Marius Marcu
 University "Politehnica" Timisoara, Romania; University
 of Ottawa, Canada
- 8:50AM A Proposal of Virtual Laboratory Structure [#6239]
 Remigiusz Rak, Marcin Godziemba-Maliszewski and
 Andrzej Majkowski
 Warsaw University of Technology, Poland
- 9:10AM Remote Laboratory Activities to Support Experimental
 Session for Undergraduate Course of Measurements for
 Diagnostics and Quality [#6315]
 Carmine Landi, Annalisa Liccardo and Nello Polese
 DIE-Second University of Naples, Italy;
 DIEL-University Federico II of Naples, Italy

- 9:30AM LabWeb1451: Remotely Accessible Virtual Laboratory for Transducer Electronic Data Sheets Creation and Testing [#6379]
Nicola Ulivieri and Santina Rocchi
Department of Information Engineering, Università di Siena, Italy
- 9:50AM On the Use of Video-Streaming Technologies for Remote Monitoring of Instrumentation [#6513]
Nadia Ranaldo, Sergio Rapuano, Maria Riccio and Francesco Zoino
Department of Engineering, University of Sannio, Italy; Didagroup S.p.A., Italy

Session WeA5: Signal Processing 1

*Wednesday, April 26, 8:30AM-10:10AM, Room: Nettuno #6,
Chair: P. M.T. Broersen, Delft University, Netherlands*

- 8:30AM Persistent Misconceptions in Autocorrelation Estimation [#6008]
Piet M.T. Broersen
Dept of Multi Scale Physics, Delft University, Netherlands
- 8:50AM Cepstrum Thresholding Scheme for Nonparametric Estimation of Smooth Spectra [#6013]
Petre Stoica and Niclas Sandgren
Uppsala University, Sweden
- 9:10AM Application of undersampled Hilbert Transform to complex modulate signals [#6048]
Yaoying Lin and Volker Hans
Helmut-Schmidt University, Germany; University of Duisburg-Essen, Germany
- 9:30AM Comparison of Filter Design Methods to generate Analytic Signals [#6073]
Laurent Vanbeylen and Johan Schoukens
Vrije Universiteit Brussel, Belgium
- 9:50AM DFT Frequency Estimation Threshold Level with Windowed Data [#6191]
Stefan Schuster, Stefan Scheiblhofer and Andreas Stelzer
University Linz, Institute for Information/Comm., Austria

Coffee Break

10:10AM-10:30AM, Room: Foyer Sirene

Session WeB1: ADC Forum 4 - ADC Calibration and Analysis

*Wednesday, April 26, 10:30AM-12:10PM, Room: Sirene,
Chair: N. Björnsell, KTH, Sweden*

- 10:30AM Particularities of the Cyclic A/D Converters ENOB Definition and Measurement [#6606]
Anatoliy Platonov and Lukasz Malkiewicz
Warsaw University of Technology, Poland
- 10:50AM Digitally Self-Calibrated Pipeline ADC [#6471]
Olivier Bernal, Francis Bony, Marc Lescure and Pierre Laquerre

- 11:10AM Laboratoire d'Electronique de l'E.N.S.E.E.I.H.T, France
Continuous Gain Calibration of Parallel Delta Sigma
A/D Converters [#6287]
Alma Delic-Ibukic and Donald Hummels
University of Maine, United States
- 11:30AM Selecting Test Frequencies for Two-Tone Phase Plane
analysis of ADCs, Part II [#6482]
Jerome Balir
Bechtel Nevada, United States
- 11:50AM Robust Sine Wave Fitting in ADC Testing [#6596]
Attila Sarhegyi and Istvan Kollar
Budapest University of Technology and Economics,
Hungary

Session Web2: Doctoral Students “Giorgio Savastano” Award

Wednesday, April 26, 10:30AM-12:10PM, Room: Nettuno #1,

Chair: M. Savastano, CNR, Italy

- 10:30AM HYCAM: A RCS Measurement and Analysis System for
Time-Varying Targets [#6458]
Yoann Paichard, Juan Carlos Castelli, Gerard Bobillot
and Philippe Dreuillet
Onera, France
- 10:50AM Fast-Settling Envelope Detectors [#6450]
Juan Pablo Alegre, Santiago Celma, Concepcion Aldea
and Belen Calvo
University of Zaragoza, Spain
- 11:10AM Some Critical Notes on DAC Time Domain Specifications
[#6478]
Eulalia Balestrieri
University of Sannio, Italy
- 11:30AM Multiple Fault Models for Timed FSMs [#6370]
Samrat S. Batth, M. Umit Uyar, Yu Wang and Mariusz A.
Fecko
The City College and Graduate Center of the CUNY,
United States; Telcordia Technologies Inc., United States
- 11:50AM Far-Field Microcontroller Based Automated Microwave
Measurement System for Characterization of Dielectric
Permittivity of High-Loss Materials [#6616]
Ugur Cem Hasar
Ataturk University, Turkey

Session Web3: Calibration

Wednesday, April 26, 10:30AM-12:10PM, Room: Nettuno #3,

Chair: R. Ottoboni, Politecnico di Milano, Italy

- 10:30AM Spatial Calibration Procedure for Infrared Line Scanners
[#6017]
Ruben Usamentiaga, Daniel Garcia, Diego Gonzalez and
Julio Molleda
University of Oviedo, Spain
- 10:50AM A Current Source for Picoamperemeter Calibration [#6204]

- Luca Callegaro, Vincenzo D'Elia and Bruno Trincherà
INRIM Istituto Nazionale di Ricerca Metrologica, Italy
- 11:10AM In-situ Calibration of Pollutant Measuring-units by
Means of Remotely-Controlled Traveling Standards
[#6539]
Alessio Carullo, Sabrina Grassini and Simone Corbellini
Dip. di Elettronica - Politecnico di Torino, Italy; Dip. di
Scienza dei Materiali ed Ing. Chimica, Italy
- 11:30AM Calibration by an Enhanced Full Least Squares Method
[#6568]
Gabriele D'Antona and Luca Rocca
Dip. Elettrotecnica-Politecnico di Milano, Italy
- 11:50AM On-line Sensor Modeling Using a Neural Kalman Filter
[#6107]
Stephen Stubberud, Kathleen Kramer and J. Antonio
Geremia
ANZUS, Inc., United States; University of San Diego,
United States; Applied Micro Circuits Corp., United States

**Session WeB4: Special Session on Multimedia Tools
for Education in Instrumentation and Measurement 2**

Wednesday, April 26, 10:30AM-12:10PM, Room: Nettuno #4,

Chair: W. Winięcki, Warsaw University of Technology, Poland

- 10:30AM A Multi-tiered Framework for Virtual Instrumentation
System (VIS) [#6586]
Gourab Sen Gupta, Andreas Buhler, Serge Demidenko,
Chris Messom and Subhas Mukhopadhyay
Massey University, New Zealand; Monash University,
Malaysia
- 10:50AM Comparison of Internet and Dedicated Communication
Protocols for Instrumentation and Measurement Systems
using Short Range Wireless Networks [#6619]
Axel Sikora, Dirk Lill and Voicu Groza
University of Cooperative Education Loerrach, Germany;
SRI Wireless Communication, Germany; SITE University
of Ottawa, Canada
- 11:10AM Universal Laboratory Networking System (ULabNet)
[#6637]
Miguel F. Montes, Peter J. Lesniewski, John C. Thomas,
Matthew Golczak and Janusz Swiatczak
University of South Australia School of EIE, LLSMS,
Australia; IT Consultant, Adelaide, South Australia,
Australia; University of South Australia, ITSS, Australia
- 11:30AM Overview on the Development of Remote Didactical
Laboratories: from LabVIEW to Web Services [#6517]
Aldo Baccigalupi, Claudio De Capua and Annalisa Liccardo
DIS-University Federico II of Naples, Italy;
DIMET-University "Mediterranea" Reggio Calabria, Italy;
DIEL- University Federico II of Naples, Italy
- 11:50AM Remote Didactic Laboratory "G. Savastano": the Italian
Experience for the e-learning at the Technical Universities in

the Field of the Electrical and Electronics Measurements
[#6642]

A. Baccigalupi, P. Carbone, Pasquale Daponte, C. De
Capua and Alessandro Ferrero
Dept. of Comp. Science, Federico II, Naples, Italy; DIEI,
University of Perugia, Italy; Faculty of Engineering,
University of Sannio, Italy; University “Mediterranea” of
Reggio Calabria, Italy; Politecnico di Milano, Italy

Session WeB5: Signal Processing 2

Wednesday, April 26, 10:30AM-12:10PM, Room: Nettuno #6,

Chair: R. Pintelon, Vrije Universiteit Brussel, Belgium

- 10:30AM Autoregressive Order Selection for Irregularly Sampled
Data [#6015]
Piet M.T. Broersen
Dept of Multi Scale Physics, Delft University, Netherlands
- 10:50AM Continuous-Time Noise Modelling from Sampled Data
[#6028]
Rik Pintelon, Johan Schoukens and Patrick Guillaume
Vrije Universiteit Brussel, dept. ELEC, Belgium; Vrije
Universiteit Brussel, dept. MECH, Belgium
- 11:10AM Measurement of IEC Groups and Subgroups using
Advanced Spectrum Estimation Methods [#6162]
Antonio Bracale, Guido Carpinelli, Zbigniew Leonowicz,
Tadeusz Lobos and Jacek Rezmer
Universita degli Studi di Napoli “Federico II”, Italy;
Wroclaw University of Technology, Poland
- 11:30AM Filtering of Randomly-Sampled, Time-Stamped
Measurements [#6383]
Lee Barford
Agilent Technologies, United States
- 11:50AM Stable Approximation of Unstable Transfer Function
Models [#6398]
Laszlo Balogh and Rik Pintelon
Technical University of Budapest, Hungary; Vrije
Universiteit Brussel, Belgium

Lunch

12:10PM-1:30PM, Room: Citrus Garden

Session WeC1: ADC Forum 5 - ADC Calibration and Testing I

Wednesday, April 26, 1:30PM-3:10PM, Room: Sirene,

Chair: V.Haasz, Czech Technical University in Prague, Czech Republic

- 1:30PM Analysis of the Residual Spectrum in ADC Dynamic
Testing [#6297]
Dusan Agrez
University of Ljubljana, Slovenia
- 1:50PM Algorithm to Remove Spectral Leakage, Close-in Noise,
and its Application to Converter Test [#6310]
Fang Xu
Teradyne Inc., United States

- 2:10PM Fast Change of Windows Properties [#6314]
Marek Jaskula
Szczecin University of Technology, Poland
- 2:30PM Measuring Volterra Kernels of Analog to Digital
Converters Using a Stepped Three-tone Scan [#6157]
Niclas Bjorsell, Daniel Ronnow and Peter Handel
University of Gavle, Sweden; Royal Institut of Technology,
Sweden
- 2:50PM Characterization of Delta-Sigma Converters by Means of
the Sine-fit Algorithm [#6440]
Emilia Nunzi
DIEI - University of Perugia, Italy

Session WeC2: Soft-computing for Intelligent I&M Systems 1

Wednesday, April 26, 1:30PM-3:10PM, Room: Nettuno #1,

Chair: A. R. Varkonyi-Koczy, BUTE, Dept. of Measurement and Inf. Systems, Hungary

- 1:30PM High Dynamic Range Image Reproduction Methods
[#6608]
Annamaria R. Varkonyi-Koczy and Andras Rovid
BUTE, Dept. of Measurement and Inf. Systems, Hungary
- 1:50PM A Composite Neural Gas-Elman Network that Captures
Real-World Elastic Behavior of 3D Objects [#6232]
Ana-Maria Cretu, Jochen Lang and Emil M. Petriu
SITE, University of Ottawa, Canada
- 2:10PM A Decision Aiding System based on Choquet Integral
Applied to Quality Evaluation of Composite Material
Parts [#6516]
Sylvie Jullien, Lionel Valet, Gilles Mauris, Philippe
Bolon and Sylvie Teyssier
LISTIC, University of Savoie, France; LISTIC,
University de Savoie, France; Schneider Electric, France
- 2:30PM Neuro-Fuzzy Logic Application for Hyperspectral
Remote Sensing [#6407]
Iryna Petrosyuk, Pavlo Molchanov, Yulia Podobna,
Vincent Contarino and Olga Asmolova
NTUniversity of Ukraine, Ukraine, Ukraine; AMPAC,
USA; NTUniversity of Ukraine, Ukraine, Ukraine;
Regional University of Economy, Ukraine; Naval Air
Systems Command Research and Engineeri, United States

Session WeC3: Special Session on Software Metrics

Wednesday, April 26, 1:30PM-3:10PM, Room: Nettuno #3,

Chair: G. Canfora, RCOST, University of Sannio, Italy

- 1:30PM Metrology and Software Measurement: a Comparison of
some Basic Characteristics [#6381]
Paolo Carbone, Luigi Buglione, Luca Mari and Dario Petri
University of Perugia, Italy; Atos Origin Italia SpA,
Italy; Università Carlo Cattaneo, Italy; University of
Trento, Italy

- 1:50PM Measuring Object Coupling in OCL Expressions: A Cognitive Theory-Based Approach [#6410]
Bocco Genero, Luis Reynoso and Esperanza Manso
University of Castilla-la Mancha, Spain; University of Comahue, Argentina; University of Valladolid, Spain
- 2:10PM A Proposal and Empirical Validation of Metrics to Evaluate the Maintainability of Software Process Models [#6154]
Felix Garcia, Francisco Ruiz and Corrado Aaron Visaggio
University of Castilla-La Mancha, Spain; University of Sannio, Italy
- 2:30PM Non Invasive Monitoring of a Distributed Maintenance Process [#6280]
Maria Teresa Baldassarre, Danilo Caivano and Giuseppe Visaggio
University of Bari, Italy
- 2:50PM A Perspective on Non Invasive Software Management [#6267]
Andrea Janes, Marco Scotto, Alberto Sillitti and Giancarlo Succi
Free University of Bolzano, Italy

Session WeC4: Automated Test 1

Wednesday, April 26, 1:30PM-3:10PM, Room: Nettuno #4,

Chair: V.Groza, University of Ottawa, Canada

- 1:30PM Instrumentation and Analysis Methods for the Measurement of Profiles using Light Sectioning [#6021]
Paul O'Leary, Peter Schalk, Ronald Ofner and Anton Gferrer
Institute for Automation, University of Leoben, Austria; Institute for Geometry, TU Graz, Austria
- 1:50PM Mixed Test Pattern Generation Using a Single Parallel LFSR [#6010]
Cleonilson Souza, Raimundo Freire and Francisco Assis
Federal University of Campina Grande, Brazil
- 2:10PM Study of the Normal Generalized Stochastic Petri nets and its Application in Testing System [#6110]
Huiqin Zhan and Jun Gu
University of Electronic Science and Technology, China
- 2:30PM Study on Intelligent Analysis System for Engine Fault Diagnosis [#6137]
Chen Guojin, Zhu Miaofen, Wang Yaka, Hu Yihuai and Liu Bin
Hangzhou Dianzi University, China; Research Institute for Automation of China Light, China; Shanghai Maritime University, China; Zhejiang University, China

Session WeC5: Signal Processing 3

Wednesday, April 26, 1:30PM-3:10PM, Room: Nettuno #6,

Chair: R. Morawski, Warsaw University of Technology, Poland

- 1:30PM Signal Decomposition and Baseline Optimization in Spectrum Reconstruction [#6077]
Roman Z. Morawski and Andrzej Miekina
Warsaw University of Technology, Poland

- 1:50PM Cyclic Spectral Analysis-Based Approach for Power Measurement in Digital Communication Systems in the Presence of In-Channel Interference [#6090]
Leopoldo Angrisani, Antonio Napolitano and Michele Vadursi
Università degli Studi di Napoli Federico II, Italy;
Università degli Studi di Napoli "Parthenope", Italy
- 2:10PM Multichannel Blind Deconvolution of Transient Impulsive Signals [#6164]
Pablo Lecumberri, Marisol Gomez and Alfonso Carlosena
Universidad Publica de Navarra, Spain
- 2:30PM Unknown Signal Detection Using a Digital Total-Power Radiometer with Finite Internal Precision [#6170]
Sami Koivu, Janne J. Lehtomaki, Harri Saarnisaari and Markku Juntti
University of Oulu, Finland
- 2:50PM Uniform-Distributed Noise Generator Based on a Chaotic Circuit [#6244]
Tommaso Addabbo, Massimo Alioto, Ada Fort, Santina Rocchi and Valerio Vignoli
University of Siena, Italy

Coffee Break

3:10PM-3:30PM, Room: Foyer Sirene

Session WeD1: ADC Forum 6 - ADC Calibration and Testing II

Wednesday, April 26, 3:30PM-5:10PM, Room: Sirene,

Chair: P. Carbone, University of Perugia, Italy

- 3:30PM Fast ADC Testing by Repetitive Histogram Analysis [#6182]
Antonio Cruz Serra, Francisco Alegria, Linus Michaeli, Peter Michalko and Jan Saliga
Technical University of Lisbon, Portugal; Technical University of Kosice, Slovakia
- 3:50PM The Histogram Test of ADCs is Unbiased by Phase Noise [#6346]
Francisco Correa Alegria and Antonio Cruz Serra
Instituto de Telecomunicacoes / IST, Portugal
- 4:10PM Uncertainty of the Estimates of Sine Wave Fitting of Digital Data in the Presence of Additive Noise [#6347]
Francisco Correa Alegria and Antonio Cruz Serra
Instituto de Telecomunicacoes / IST, Portugal
- 4:30PM Dynamic Testing of A/D Converters using the Multiple Coherence Function [#6214]
Troy Richards
DRDC Atlantic, Canada

Session WeD2: Virtual Instrumentation

Wednesday, April 26, 3:30PM-5:10PM, Room: Nettuno #1,

Chair: E. Petriu, University of Ottawa, Canada

- 3:30PM Virtual Instrument for Testing of Current and Voltage Transformers [#6185]

- 3:50PM Madhu N. Mohan, Bobby George and Jagadeesh V. Kumar
EE Dept., IIT Madras, India; EE Dept., IIT Madras, India
Virtual Instrument for the Measurement of Haemo-dynamic Parameters Using Photo plethysmograph [#6307]
K. Ashoka Reddy, J. Rezuana Bai, Bobby George, N. Madhu Mohan and V. Jagadeesh Kumar
EE Dept., IIT Madras, India; EE Dept., IIT Madras, India; EE Dept., IIT Madras, India
- 4:10PM Multi-Agent Systems: an Example of Dynamic Reconfiguration [#6318]
Ferdinanda Ponci, Aalhad Deshmukh, Antonello Monti, Loredana Cristaldi and Roberto Ottoboni
University of South Carolina, United States; Politecnico di Milano, Italy
- 4:30PM VR-Based Hand Rehabilitation using a Haptic-Based Framework [#6600]
Ismail Shakra, Mauricio Orozco, Abdulmotaleb El Saddik, Shervin Shirmohammadi and Ed Lemaire
University of Ottawa, Canada
- 4:50PM An Automatic Power Consumption Measurement Procedure for Bluetooth Modules [#6377]
David Macii and Luca Negri
DIT-University of Trento, Italy; Politecnico di Milano, Italy

Session WeD3: Student Award Session

Wednesday, April 26, 3:30PM-5:10PM, Room: Nettuno #3,

Chair: R.Dyer, Kansas State University, USA

- 3:30PM Instrumentation and Measurement of a Power Distribution System Laboratory for Network Reconfiguration Studies [#6326]
Valentina Cecchi, Xiaoguang Yang, Karen Miu and Chika Nwankpa
Drexel University, United States
- 3:50PM Embedded Narrow Pulse Measurement in Digital CMOS [#6249]
Mona Safi-Harb and Gordon W. Roberts
McGill University, Canada
- 4:10PM Compensation of Temperature-Drift Errors in Fundamental-Mode Orthogonal Fluxgates [#6120]
Anton Plotkin, Eugene Paperno, Alexander Samohin and Ichiro Sasada
Ben-Gurion University of the Negev, Israel; Kyushu University, Japan
- 4:30PM Understanding the Nonlinearity of a Mixer Using Multisine Excitations [#6207]
Koen Vandermot, Wendy Van Moer, Johan Schoukens and Yves Rolain
Vrije Universiteit Brussel, Belgium

Session WeD4: Automated Test 2

Wednesday, April 26, 3:30PM-5:10PM, Room: Nettuno #4,

Chair: Vincenzo Piuri, University of Milan, Italy

- 3:30PM A Fault Diagnosis Method of Analog Electronic Circuits for the Mixed-Signal Systems Controlled by Microcontrollers [#6166]
Zbigniew Czaja
Gdansk University of Technology, Faculty of Elec, Poland
- 3:50PM A Versatile and Compact USB System for Electrical and Thermal Characterization of Non-Volatile Memories [#6215]
Davide Baderna, Alessandro Cabrini, Laura Gobbi and Guido Torelli
University of Pavia, Italy
- 4:10PM Modeling of Industrial Measurement System Considering Human Factor [#6320]
Jenny Wirandi, Wlodek Kulesza and Alexander Lauber
University of Kalmar, Sweden; University of Linkoping, Sweden
- 4:30PM Real-Time Tree Foliage Estimation Using a Ground Laser Scanner [#6196]
Jordi Palacin, Jose Antonio Salse, Ricardo Sanz, Manel Ribes-Dasi and Joan Masip
University of Lleida, Spain
- 4:50PM A Distributed Measurement System for Locating Transient-Voltage Sources [#6272]
Lorenzo Peretto, Renato Sasdelli, Elisa Scala and Roberto Tinarelli
University of Bologna, Italy

Session WeD5: Signal Processing 4

*Wednesday, April 26, 3:30PM-5:10PM, Room: Nettuno #6,
Chair: I. Kollar, Budapest University of Technology and Economics,
Hungary*

- 3:30PM Fourier Analysis of Time-Stamped Signals Using a Small Number of Samples [#6425]
Lee Barford
Agilent Technologies, United States
- 3:50PM Optimal Design of Wavelet Filters Based on Lifting Scheme by Means of Cultural Algorithms [#6470]
Pasquale Arpaia, Carmine Romanucci and Antonio Zanesco
University of Sannio, Italy; University of Naples, Italy
- 4:10PM Ultrasound Pulse Coding for Robust Obstacle Detection Using a Long Cane [#6356]
Raymond Frenkel and Robert Gao
University of Massachusetts Amherst, United States
- 4:30PM Improvement of the Current Loop Circuit for AC and DC Applications Based on Digital Signal Processing [#6142]
Vladimir Gureyev, Alexey L'vov and Viktor Pylskiy
Saratov State Technical University, Russian Federation

Session WeD6: National Instruments Seminar

Wednesday, April 26, 1:30PM-3:10PM, Room: Nettuno #2

Wireless Data Acquisition Technologies
Jason Mulliner, National Instruments

Session WeF1: Automated Test and Measurement Systems 3

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: H.M.Geirinhas, Instituto de Telecomunicacoes, DEEC, IST, Portugal

Implementation of the Digital Logic for Reading-Out a 16x16 Pixel X-Ray Detector Array [#6199]

Vincenzo Ferragina, Piero Malcovati, Nicoletta Ratti, Ivan Cappelluti and Giuseppe Bertuccio

University of Pavia, Italy; Alcatel Alenia Space, Italy; Polytechnic of Milano, Italy

Potentiodynamic Approach for Determination of Organic Additives Concentration in Electroplating Solutions [#6446]

Marko Petkovsek, Bostjan Pevec, Ciril Zevnik and Danijel Voncina

Univ. of Ljubljana, Fac. of Electrical Eng., Slovenia

An Automatic Alignment Procedure for a 4-Source Photometric Stereo Technique applied to Scanning Electron Microscopy [#6344]

Ruggero Pintus, Simona Podda and Massimo Vanzi

University of Cagliari, Italy

Incipient Fault Diagnosis in Electrical Drives by Tuned Neural Networks [#6345]

Antonia Azzini, Loredana Cristaldi, Massimo Lazzaroni, Antonello Monti and Ferdinanda Ponci

Università degli Studi di Milano, Italy; Politecnico di Milano, Italy; University of South Carolina, United States

On Board Detection, Classification and Evaluation of Nonlinearities [#6178]

Wojciech Toczek and Michal Kowalewski

Gdansk University of Technology, Poland

Remote Robot Task Monitoring Using IDAC [#6330]

Kostas Tarchanidis, Theodore Pachidis, John Lygouras and John Koutras

Kavala Institute of Technology, Greece; DUTH, Greece; Elect. Eng. Student, Greece

Low-Cost Low-Power Self-Test Design and Verification of On-Chip ADC for System-on-a-Chip Applications [#6367]

Chien-In Henry Chen, Vivek Chandrasekhar and Kumar Yelamarthi

Wright State University, United States; Intel Corp., United States
Instrumentation of Real-Time Embedded Systems for Performance Analysis [#6403]

Richard G. Scottow, Andrew B.T. Hopkins and Klaus D. McDonald-Maier

University of Essex, United Kingdom

Design and Implementation of an Embedded Remote Electronic Measurement System [#6063]

Ying-Wen Bai and Cheng-Yu Hsu

Fu Jen Catholic University, Taiwan

Characterization of a High Resolution Acquisition System for Marine Geophysical Applications [#6298]

Shahram Shariat Panahi, Francisco Alegria and Antoni Manuel

Technical University of Catalonia (UPC), Spain; Technical University of Lisbon (IST), Portugal
Measurement of Housing Thermal Resistances in Industrial Motors [#6391]

Aldo Boglietti and Alberto Vallan
Politecnico di Torino, Italy

An Automated Instrumentation for Performance Evaluation of MOSFET Radiation Sensors [#6495]

Panagiotis Tsardaklis, Theodore Laopoulos, Stelios Siskos and Gerard Sarra Bayrouse

Aristotle University of Thessaloniki, Greece; National Center for Scientific Research (CNRS), France

Session WeF2: Instrumentation and Prototype Development 2

*Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: A. Platonov, Warsaw University of Technology, Poland*

A Cryptographic System for Brand Authentication and Material Traceability in the Textile Industry [#6397]

Simone Corbellini, Franco Ferraris and Marco Parvis
Dip. di Elettronica - Politecnico di Torino, Italy

Design of Low Cost Virtual Sensors [#6328]

Ignacio Penarrocha, Roberto Sanchis and Pedro Albertos

Universitat Jaume I, Spain; Universidad Politecnica de Valencia, Spain

Three Dimensional Ultrasonic Ranging Using a Split Diaphragm Capacitive Sensor [#6354]

Andrew Oldford and Vlastimil Masek
Memorial University of Newfoundland, Canada

A Simulation Framework for Rapid Development of Microprocessor Based Measurement Systems [#6475]

Simone Corbellini, Franco Ferraris and Marco Parvis
Dip. di Elettronica - Politecnico di Torino, Italy

Weld Quality Inspection Based on On-line Measured Indentation from Servo Encoder in Resistance Spot Welding [#6434]

Xiaoyun Zhang, Yansong Zhang and Guanlong Chen
Shanghai JiaoTong University, China

Design and Application of an Electromagnetic Induction System Using Multi-sensor Array [#6392]

Seong-wook Park
Ieee, Korea (South)

A Sensor Signal Digitalization Module for High-Temperature Environment Applications [#6439]

Goran Horak, Darko Vasic, Vedran Bilas and Ognjen Krkac
University of Zagreb, Croatia

Measurement Of Respiratory Flow With Ultrasonic Sensor Using The Technique Of Forced Oscillations [#6404]

Will Almeida, Raimundo Freire, Francisco Santos, Sebastian Catunda and Bruno Costa

Ufcg, Brazil; Ufma, Brazil

Session WeF3: Waveform Measurement, Analysis, and Generation

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: M.Kollar, Technical University of Kosice, Slovak Rep.

Accurate Interleaved Sampling of Repetitive Ultrasonic Waveforms:
Two Clock Timing Architecture and its FPGA Implementation
[#6054]

Vladimir Ivchenko, Alexander Kalashnikov, Richard Challis,
Barrie Hayes-Gill and Andrew Holmes

University of Nottingham, United Kingdom

Frequency Accuracy Improvement in the Direct Digital Synthesis for
the Wave Form Generators [#6430]

Camilo Quintans

University of Vigo, Spain

DBF Factors for Fast Estimation of Waveform Distortion in Ship
Systems - Case Study [#6453]

Tomasz Tarasiuk

Gdynia Maritime University, Poland

Cancellation of Harmonic Interference Using Multi-rate Signal
Processing Techniques [#6525]

Lijun Xu and Jun Han

Institute of Cancer Research, United Kingdom; Capital Normal
University, China

Wavelet and PSD as a Fault Detection Techniques [#6400]

Jordi Cusido, Atanasi Jornet, Luis Romeral, Juan Antonio Ortega
and Antoni Garcia

Electronic Engineering Dept., UPC, Spain; Electric Engineering
Dept., UPC, Spain

Architecture And Algorithms For Generating General-Purpose
Modulation Signals [#6447]

Hua Wang, Jingming Kuang, Yan Chen, Yanan Xie and Xiang Xie

Beijing Institute of Technology, China

A Digital Multichannel Bioimpedance Analyser: Signal Processing
Task and its Solution [#6487]

Paul Annus, Alar Kuusik, Raul Land, Olev Martens and Ants
Ronk

Competence Centre ELIKO, Estonia; Department of Electronics,
Tallinn University of, Estonia

Session WeF4: Signal Processing 5

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene, Chair: F.

Dong, School of Automation, Tianjin University, China

On the Accuracy of Generalized Hammerstein Models for Nonlinear
Active Noise Control [#6034]

Giovanni Sicuranza and Alberto Carini

DEEI - University of Trieste, Italy; STI - University of Urbino,
Italy

A Method for Signal Processing of Coriolis Mass Flowmeter Based on
Combining AR Model Spectrum Estimation with DFT [#6181]

Penghui Niu and Yaqing Tu

Logistical Engineering University, China

Dynamic Compensation of Phase Distortion in Time-Varying Butterworth Filters [#6188]

Roman Kaszynski and Jacek Piskorowski
Szczecin University of Technology, Poland

An Algorithm for Estimation of Amplitude and Phase of a Vibration Signal Used for Determination of Rotating Mass Unbalance [#6372]

Andrzej Podgorski and Pawel Charazka
Warsaw University of Technology, Poland; Ksentec, Poland

Automatic Selection of Optimal Sample Rate for Band-Pass Signals [#6394]

Leopoldo Angrisani and Michele Vadursi
Università degli Studi di Napoli Federico II, Italy

Two-phase Flow Regime Recognition in Horizontal Pipe Based on the Positional Information of Measured Data of ERT [#6074]

Chao Tan and Feng Dong
School of Automation, Tianjin University, China

Reconstructing a Band-limited Function Using Empirical Orthogonal Functions [#6032]

Jianfeng Weng
Zhejiang University of Science and Technology, China

Session WeF5: Signal Processing 6

*Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: J. Han, Harbin Institute of Technology, China*

A New Method for Variance Estimation of White Noise Corrupting a Signal [#6451]

Jun Han and Lijun Xu
Capital Normal University, China; Institute of Cancer Research,
United Kingdom

Advanced Signal Processing for Reduction of False Alarm Rate of Metal Detectors for Humanitarian Mine Clearance [#6070]

Hendrik Krueger, Hartmut Ewald, Thomas Fechner and Swen Bergeler
University of Rostock, Germany

Room Acoustics Measurement System Design using Simulation [#6016]

Dan Neculescu, Wei Zhang, William Weiss and Sasiadek Jurek
Dept of Mech Eng, Univ of Ottawa, Canada; Dept of Theatre,
Univ of Ottawa, Canada; Dept of MAE, Carleton univ, Canada

Uncertainty Effects of Data Compression in Measurement Applications [#6613]

Vincenzo Cacciatore, Alessio Carullo, Marco Parvis and Alberto Vallan

Dip. di Elettronica - Politecnico di Torino, Italy

Passivity Enforcement of a Transfer Function [#6253]

Tom D'haene and Rik Pintelon
Vrije Universiteit Brussel, department ELEC, Belgium

A Clamping Circuit Architecture Implementing Charges Injection Reduction Techniques [#6468]

Pierre Laquerre, Olivier Bernal and Marc Lescure
Laboratoire d'Electronique de l'Enseeiht (LEN7), France

Session WeF6: Uncertainty 2

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: S.Salicone, Politecnico di Milano, Italy

An Improved Method for the Evaluation of Uncertainty of Channel Power Measurement with a Spectrum Analyzer [#6208]

Matteo Bertocco, Alessandro Sona and Piero Zanchetta

University of Padova, Italy

A Fuzzy Approach to represent Measurement Data affected by both A-type and B-type Uncertainty [#6452]

Claudio De Capua and Emilia Romeo

DIMET, University "Mediterranea" of Reggio Cala, Italy;
DIMET, University "Mediterranea" of Reggio Cal, Italy

The Interaction Between Metrological Parameters and Industrial Process Simulation Requirements for Equipment Scale-Up/Down by means of Dimensional Analysis [#6510]

Fragiskos Batzias

University of Piraeus, Greece

Signal Processing with Compensation - Always Better? [#6445]

Roman Kaszynski and Michal Krasodowski

Szczecin University of Technology, Poland

Data Uncertainty Sensitivity Analysis for Reduced Complexity SVM Classifiers [#6618]

Michele Gubian, Andrea Boni and Dario Petri

University of Trento, Italy

Self-Calibration Methods in Measurement Channels for Linear and Non-Linear Conversion Functions Case. [#6632]

Waclaw Gawedzki

AGH - University of Science and Technology, Poland

Session WeF7: Soft-computing for Intelligent I&M Systems 2

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: F.Russo, University of Trieste, Italy

Genetic Optimization in Nonlinear Systems for Active Noise Control: Accuracy and Performance Evaluation [#6523]

Fabrizio Russo and Giovanni Sicuranza

D.E.E.I. - University of Trieste, Italy

A New Instrument for the Measurement of Very Close Tones [#6088]

Maria Grazia D'Elia, Consolatina Liguori, Vincenzo Paciello and Alfredo Paolillo

DIIE -University of Salerno, Italy

Model Selection for Power Efficient Analysis of Measurement Data [#6210]

Andrea Boni, Anna Marconato, Bruno Caprile and Dario Petri

DIT - University of Trento, Italy; ITC - irst, Italy

Simulation Modeling of Neural-Based Method of Multi-Sensor Output Signal Recognition [#6622]

Iryna Turchenko, Volodymyr Kochan, Anatoly Sachenko, Roman Kochan and Andrew Stepanenko

Ternopil State Economic University, Ukraine

Session WeF8: Multimedia Tools for Education in Instrumentation and Measurement 3

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: F. Zoino, University of Sannio, Italy

Remote Didactic Laboratory “G. Savastano”: the Italian Experience for the E-learning at the Technical Universities in the Field of the Electrical and Electronic Measurements, Overview on Didactic Experiments [#6643]

Domenico Grimaldi, Pasquale Daponte

University of Calabria, Italy; University of Sannio, Italy

Preamble Sampling MAC Protocol for Low Power Wireless Sensor Networks with IEEE 802.15.4 Transceivers [#6245]

Juan Jose Perez Solano, Jose Pelegri Sebastia and Abraham Menendez

University of Valencia, Spain; Politechnical University of Valencia, Spain

A Flexible GPS-based System for Synchronized Phasor Measurement in Electric Distribution Networks [#6273]

Andrea Carta, Nicola Locci, Carlo Muscas and Sara Sulis

University of Cagliari, Italy

Intelligent Sensor Network Applied to ISFETs Sensors: Measurement and Characterisation [#6378]

Silvia Casans Berga, A. Edith Navarro Anton, Diego Ramirez, Beatriz Marco Cifre and Javier Prieto Gil

Universidad de Valencia, Spain

Session WeF9: Networked and Distributed Measurement

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: L. Tomaciello, Telsey Telecommunications, Italy

A Web-based Environment Experiment System Using Microsoft .NET and COM [#6035]

Jian-Wei Lin, Yuan-Cheng Lai, Hsin-Hsu Peng and Wilson Wu

National Taiwan University of Science and Techno, Taiwan;

Electronics Testing Center, Taiwan

Petri Nets in Measuring Systems Design [#6387]

Robert Lukaszewski and Wieslaw Winiecki

Warsaw University of Technology, Poland

Internet-enabled Calibration Services: Aspects of Laboratory Information System Security [#6427]

Marko Jurcevic, Roman Malaric and Mladen Borsic

Faculty of electrical engineering and computing, Croatia

Scalability Measurement of a Proxy based Personalized Multimedia repurposing systems [#6426]

M. Shamim Hossain and Abdulmotaleb El saddik

University of Ottawa, Canada

From the Traditional Multimeter to the “wireless multimeter networking” [#6598]

Sebastian Bicelli, Alessandra Flammini, Daniele Marioli, Emiliano Sisinni and Andrea Taroni

University of Brescia - DEA, Italy

Session WeF10: Electrical and Power Measurements 2

Wednesday, April 26, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: C.De Capua, University of Reggio Calabria, Italy

A Method for Testing Instruments for Transient Detection in Electric Power System Voltages [#6009]

Alessandro Ferrero and Simona Salicone
Politecnico di Milano - Milano, Italy

The Performance Evaluation of IEC Flicker Meters in Realistic Conditions [#6026]

Giovanni Bucci, Fabrizio Ciancetta, Edoardo Fiorucci and Fabio Di Nicola
DIEI - Università di L'Aquila, Italy

Measurement by the Software Design for the Power Consumption of Streaming Media Servers [#6180]

Chia-Hung Lien, Ming-Fong Liu, Ying-Wen Bai, Chi-Hsiung Lin and Ming-Bo Lin

NTUST University, Taiwan; Fu Jen Catholic University, Taiwan
Uncertainty Evaluation of a THD Meter based on FPGA platform [#6444]

Claudio De Capua, Emilia Romeo and Giovanni Zoccali
DIMET, University "Mediterranea" of Reggio Calabria, Italy

Frequency and Amplitude Tracking of Time-varying Harmonics and Interharmonics in Power Systems [#6454]

Massimo D'Apuzzo and Mauro D'Arco
Dip. Ing. Elettrica Università 'Federico II', Italy

The Calibration of Loop Impedance Meters: a Proposal. [#6240]

Marco Faifer, Gianmaria Foglia, Roberto Perini and Luca Rocca
Politecnico di Milano, Italy

A New Methodological Approach to Quality Assurance of Energy Meters under Non-Sinusoidal Conditions [#622]

Daniele Gallo, Carmine Landi, Nicola Pasquino and Nello Polese
Second University of Naples, Italy; University of Naples Federico II, Italy

Cocktail

7:00PM-07:30PM, Sorrento Lounge

Gala Dinner & Music Entertainment

7:30PM-10:00PM, S.Antonio Restaurant

Thursday, April 27

Session ThA1: Distinguished Lecturer evaluation

Thursday, April 27, 7:00AM-10:10AM, Room: Nettuno #1,

Chair: K. Fowler, IEEE I&M Magazine, Editor-in-Chief

Session ThA2: Special Session on Autonomous Sensors

Thursday, April 27, 8:30AM-10:10AM, Room: Nettuno #3,

Chair: R.Pallàs-Areny, Technical University of Catalonia, Spain

- 8:30AM Transient Power Consumption in Signal Amplifiers with Switched Supply Voltages [#6543]
Roberto E. Serrano Finetti and Ramon Pallas-Areny
Castelldefels School of Technology - EPSC, Spain
- 8:50AM Synchronous Demodulator for Autonomous Sensors [#6552]
Ramon Casanella, Oscar Casas, Marco Ferrari, Vittorio Ferrari and Ramon Pallas-Areny
Technical University of Catalonia, Spain; University of Brescia, Italy
- 9:10AM Autonomous Sensor Module with Piezoelectric Power Harvesting and RF Transmission of Measurement Signals [#6554]
Marco Ferrari, Vittorio Ferrari, Daniele Marioli and Andrea Taroni
University of Brescia, Italy, Italy
- 9:30AM Energy Harvesting from PZT Pyroelectric Cells [#6561]
Angel Cuadras, Manel Gasulla, Alessio Ghisla and Vittorio Ferrari
Technical University of Catalonia, Spain; University of Brescia, Italy
- 9:50AM Energy-Management for Power Aware Portable Sensor Systems [#6639]
Olfa Kanoun and Hans-Rolf Traenkler
IMA, University of the Bundeswehr Munich, Germany

Session ThA3: Special Session on Medical Measurement and Instrumentation

Thursday, April 27, 8:30AM-10:10AM, Room: Nettuno #4,

Chair: Marco Parvis, Politecnico di Torino, Italy

- 8:30AM Carbohydrate Detection Failure Analysis via Biosensing [#6483]
Christina Siontorou and Fragiskos Batzias
University of Piraeus, Greece
- 8:50AM Galvanical Coupling for Data Transmission through the Human Body [#6489]
Marc Simon Wegmueller, Michael Oberle, Norbert Felber, Niels Kuster and Wolfgang Fichtner
Swiss Federal Institute of Technology ETH Zurich, Switzerland; Foundation for Research on IT in Society IT'IS, Switzerland

- 9:10AM A Navigation System for Visually Impaired [#6498]
Franjo Cecelja, Vanja Garaj, Ziad Hunaiti and Wamadeva Balachandran
United Kingdom
- 9:30AM Ultrasound Pulse Optimization for the Measurement of the Contrast Agent Responses [#6504]
Simone Curletto and Andrea Trucco
DIBE, University of Genoa, Italy
- 9:50AM A Method of Synchronous Sampling in Multifrequency Bioimpedance Measurements [#6579]
Mart Min, Toomas Parve, Paul Annus and Toivo Paavle
Tallinn University of Technology, Estonia

Session ThA4: Special Session on Electromagnetic Compatibility Measurements in the Industrial and Telecommunication World

Thursday, April 27, 8:30AM-10:10AM, Room: Nettuno #6,

Chair: N.Pasquino, University of Naples, Italy

- 8:30AM Experimental Evaluation of the Incidence of Operating Conditions on Uncertainty of Conducted Emissions Generated by Power Drive Systems [#6169]
Daniele Gallo, Mario Luiso and Nicola Pasquino
Second University of Naples, Italy; University of Naples Federico II, Italy
- 8:50AM EMI Measurements from ESD between Charged Insulators [#6127]
Mirko Marracci, Bernardo Tellini, Massimo Macucci and Massimo Agostinelli
University of Pisa, Italy; C.I.S.A.M., Italy
- 9:10AM Efficient Characterization of Magnetic Field Sources [#6290]
Matteo Bertocco, Fabrizio Dughiero, Cristiano Greggio, Elisabetta Sieni and Alessandro Sona
University of Padova, Italy; University of Padova, Italy
- 9:30AM Development of a Measuring Device for the Parasitic Inductance of the DC-link Backplane of an Inverter [#6615]
Bruno Bolsens, Jeroen Van den Keybus, Johan Driesen and Ronnie Belmans
Katholieke Universiteit Leuven, Belgium

Coffee Break

10:10AM-10:30AM, Room: Foyer Sirene

Session ThB1: Signal Processing 7

Thursday, April 27, 10:30AM-12:10PM, Room: Nettuno #1,

Chair: D.Petri, University of Trento, Italy

- 10:30AM Macromodeling of IC output buffers from in-place measurements [#6186]
Igor Simone Stievano, Ivan A. Maio and Flavio G. Canavero
Dip. Elettronica, Politecnico di Torino, Italy
- 10:50AM Estimation of the Instantaneous Periodic Parameters in

- the Frequency Domain [#6159]
Dusan Agrez
University of Ljubljana, Slovenia
- 11:10AM A Demodulation Technique for the Sensing Circuit of a MEMS Gyroscope [#6242]
Emilia Nunzi, Riccardo Antonello, Paolo Carbone, Roberto Oboe and Ernesto Lasalandra
DIEI - University of Perugia, Italy; DEI - University of Padova, Italy; DEI - University of Trento, Italy; STMicroelectronics - MEMS Business Unit - Milan, Italy
- 11:30AM Readout and Control Electronics for a Microelectromechanical Gyroscope [#6617]
Mikko Saukoski, Lasse Aaltonen, Teemu Salo and Kari Halonen
Helsinki University of Technology, Finland; VTI Technologies Oy, Finland
- 11:50AM Instrumentation Design for Gate and Drain Low Frequency Noise Measurements [#6486]
Gino Giusi, Felice Crupi, Carmine Ciofi and Calogero Pace
DFMTFA, University of Messina, Italy; DEIS, University of Calabria, Italy

Session ThB2: Identification, Control, and Distributed Monitoring

Thursday, April 27, 10:30AM-12:10PM, Room: Nettuno #3,

Chair: Y. Rolain, Vrije Universiteit Brussel, Belgium

- 10:30AM Non-parametric Noise Models extracted from Overlapping Sub-records [#6202]
Kurt Barbe and Johan Schoukens
Vrije Universiteit Brussel, dep. ELEC, Pleinlaan, Belgium
- 10:50AM Optimum Settings for Measuring Frequency Response Functions with Weighted Overlapped Segment Averaging [#6236]
Jerome Antoni and Johan Schoukens
University of Technology of Compiègne, France; Vrije Universiteit Brussel, Belgium
- 11:10AM Acoustic-Based Liquid Level Determination in Process Vessels Using PVDF Sensors [#6411]
Edgar R. Sanchez-Galicia, Trevor A York, Hugh Stitt and Peter Jackson
SISP Group, The University of Manchester, United Kingdom; Johnson Matthey Catalysts, United Kingdom; Tracerco, Johnson Matthey, United Kingdom
- 11:30AM Multi-Agent System Information Fusion for Environment Monitoring [#6324]
Rami Abielmona, Emil Petriu and Thom Whalen
SITE, University of Ottawa, Canada; Communications Research Center Canada, Canada

Session ThB3: Medical Measurement and Instrumentation

Thursday, April 27, 10:30AM-12:10PM, Room: Nettuno #4,

Chair: S. Rapuano, University of Sannio, Italy

- 10:30AM In-vivo Blood Characterization System [#6323]
Blagoy Iliev, Gheorghe Pop and Gerard Meijer
Delft University of Technology, Netherlands; Heartcenter
UMCN St Radboud, Nijmegen, Netherlands
- 10:50AM Automatic Analytical Modeling of EIS Data by Evolutive
Programming Based on Cultural Algorithms [#6467]
Pasquale Arpaia, Fabrizio Clemente and Antonio Zanesco
University of Sannio (BN), Italy; National Research
Council, Italy
- 11:10AM A New Low-cost Reader System for ELISA Plates Based
on Automated Analysis of Digital Pictures [#6477]
Jesus Angel Baro de la Fuente, Miguel Angel Perez Garcia,
Juan Carlos Gonzalez Cueli and Dionisio Cifuentes
CC. Agroforestales, ETSIIAA, Universidad de Vall,
Spain; ATE, ETSIIG, Universidad de Oviedo, Gijon,
Spain; Sersia Cantabria, S. L., Torrelavega, Spain
- 11:30AM Automated Oxidase-Coupled Amperometric Microsensor
with Integrated Electrochemical Actuation System for
Continuous Sensing of Saccharoids [#6577]
Yadunandana Yellambalase, Jongwon Park, Chang-Soo
Kim, Minsu Choi and Nohpill Park
Dept of ECE, Univ of Missouri-Rolla, United States;
Dept of CS, Oklahoma State Univ, United States
- 11:50AM Wavelet and Fourier Analysis of Short-term
Rabbit cardiovascular Oscillation [#6590]
Gabriela Postolache, Octavian Postolache and Pedro
Silva Girao
ESS, Univ. Atlantica, Lisbon, Portugal; Institute of
Telecommunications, IMG, Lisbon, Portugal

Session ThB4: Dielectric, Magnetics, EMC Measurements 1

Thursday, April 27, 10:30AM-12:10PM, Room: Nettuno #6,

Chair: M. Bertocco, University of Padova, Italy

- 10:30AM A Resonant Measurement System for Characterization of
Hysteresis Cycle in Soft Ferrites [#6118]
Romano Giannetti, Santiago Lizon-Martinez, Guilelmo
Robles and Bernardo Tellini
Univ. Pontificia Comillas de Madrid, Spain; Univ. Carlos
III de Madrid, Spain; Univ. degli Studi di Pisa, Italy
- 10:50AM Three-axes Teslameter With Integrated Hall Probe Free
From the Planar Hall Effect [#6384]
Dragana Popovic, Sasa Dimitrijevic, Marjan Blagojevic,
Pavel Kejik and Enrico Schurig
SENIS GmbH, Zug, Switzerland, Switzerland; EPFL
Swiss Federal Institute of Technology, Laus, Switzerland
- 11:10AM TDR Permittivity Measurements of High Dielectric
Constant Films [#6386]
Jan Obrzut and Ryusuke Nozaki
National Institute of Standards and Tech., United States;
Hokkaido University, Japan
- 11:30AM An Experimental Technique for Estimating

the ESR and Reactance Intrinsic Value of Aluminium Electrolytic Capacitors [#6437]
Acacio Amaral and Antonio Cardoso
Polytechnic Institute of Coimbra, Portugal; University of Coimbra, Portugal

11:50AM Tools for Multipoles Magnetic Metrology at SOLEIL [#6421]
Arnaud Madur, Fabrice Marteau, Chamseddine Benabderrahmane and Pascale Brunelle
Synchrotron SOLEIL, France

Lunch

12:10PM-1:30PM, Room: Citrus Garden

Session ThC1: Instrumentation and Prototype Development 3

Thursday, April 27, 1:30PM-3:10PM, Room: Nettuno #1,

Chair: K.Fowler, IEEE I&M Magazine, Editor-in-Chief

- 1:30PM A DVB-S2 Signal Generator with Forward Satellite Channel Impairments [#6075]
Panayiotis Savvopoulos and Theodore Antonakopoulos
Department of Electrical Engineering, Greece
- 1:50PM Development of a Fully Digital and Low Frequency NMR System for Polarization Measurement of Hyperpolarized Gases [#6514]
Aktham Asfour, Jean-Noel Haycinthe and Jean-Louis Levieil
Unite Mixte INSERM / Universite Joseph Fourier, France; Radiology and Medical Informatics Department, Switzerland
- 2:10PM A Novel Approach to Multilanguage Remote Teaching: Magnetic Measurement Experiment [#6492]
Drago Cmk, Mladen Borsic and Rapuano Sergio
Faculty of Electrical Engineering and Computing, Croatia; Faculty of Engineering, Benevento, Italy
- 2:30PM Real-time Phase Noise Meter Based on ADSP Sharc Processor [#6094]
Leopoldo Angrisani, Mauro D'Arco, Charles Greenhall and Rosario Schiano Lo Moriello
Università di Napoli, Italy; Jet Propulsion Laboratory (CIT), United States
- 2:50PM Dedicated Instrumentation for Single-Electron Effects Detection in Si Nanocrystal Memories [#6500]
Calogero Pace, Felice Crupi, Salvatore Lombardo and Gino Giusi
University of Calabria, Italy; IMM, Consiglio Nazionale delle Ricerche, Italy; University of Messina, Italy

Session ThC2: Special Session on System-on-Chip (SoC) Design and Test 2

Thursday, April 27, 1:30PM-3:10PM, Room: Nettuno #3,

Chair: S. Demidenko, Monash University, Malaysia

1:30PM A Software-Based Method for Test Vector Compression

- in System-on-a-Chip [#6046]
 Satyen Biswas and Sunil R. Das
 Georgia Southern University, United States; University
 of Ottawa, Canada
- 1:50PM Interactive BIST for Embedded Cores in SOC: Partial
 Matching and Control Sequence [#6418]
 Taweesak Reungpeerakul, Douglas Kay and Samiha
 Mourad
 Santa Clara University, United States; Cisco, United
 States Minor Out Isls; Santa Clara University, United
 States Minor Out Isls
- 2:10PM A Digitally Reconfigurable Sensor Interface for SOC
 Using Delta-Sigma Modulators [#6582]
 Eric Fabris, Luigi Carro and Sergio Bampi
 Federal University of Rio Grande do Sul, Brazil
- 2:30PM Analysis and Generation of Test Sequences Based on
 Hamming Code and Its Modifications [#6611]
 Serge Demidenko, Alexander Ivanyukovich and Leonid
 Makhnist
 Monash University Malaysia, Malaysia; Microsoft Corp.,
 United States; Institute of Modern Knowledge, Belarus

Session ThC3: Automated Test, Robotics, Industrial Aut. 1

Thursday, April 27, 1:30PM-3:10PM, Room: Nettuno #4,

Chair: A.Baccigalupi, University of Naples, Italy

- 1:30PM On a New Graph Theory Approach to Designing Zero-
 Aliasing Space Compressors for Built-In Self-Testing [#6161]
 Sunil R. Das, Altaf Hossain, Emil M. Petriu, Mansour H
 Assaf and Mehmet Sahinoglu
 University of Ottawa, Canada; Troy State University,
 United States
- 1:50PM Fault Detection and Diagnosis for Multi-Level Cell Flash
 Memories [#6303]
 Robert Martin, Wen-Ben Jone and Sunil Das
 Intel Corporation, United States; University of Cincinnati,
 United States; University of Ottawa, Canada
- 2:10PM An Improved Fault Simulation Approach Based on Verilog
 with Application to ISCAS Benchmark Circuits [#6172]
 Sunil R. Das, Sujoy Mukherjee, Emil M. Petriu, Mansour
 H Assaf and Mehmet Sahinoglu
 University of Ottawa, Canada; Troy State University,
 United States
- 2:30PM Robot Position Identification by Actively Localizing
 Sound Beacons [#6198]
 Jie Huang, Satoshi Ishikawa, Michiko Ebana, Huakang
 Li and Qunfei Zhao
 The University of Aizu, Japan; Shanghai Jiao Tong
 University, China
- 2:50PM Detection and Estimation of Nonlinear Distortions in
 Industrial Robots [#6296]
 Erik Wernholt and Svante Gunnarsson
 Linkoping University, Sweden

Session ThC4: Sensors, Transducers, Smart Sensors 1

Thursday, April 27, 1:30PM-3:10PM, Room: Nettuno #6,

Chair: K.Lee, NIST, USA

- 1:30PM Two-Stage Differential Charge and Transresistance Amplifiers [#6043]
Marco Massarotto, Alfonso Carlosena Garcia and Antonio J. Lopez-Martin
Public Univ. of Navarra, Univ. of Brescia, Spain; Public University of Navarra, Spain
- 1:50PM IEEE 1588-based Synchronization System for a Displacement Sensor Network [#6571]
Paolo Ferrari, Alessandra Flammini, Daniele Marioli and Andrea Taroni
University of Brescia, Italy
- 2:10PM A Wireless Environmental Monitoring System Based on the IEEE 1451.1 Standards [#6641]
Kang Lee and Eugene Song
National Institute of Standards and Technology, United States
- 2:30PM High-speed Complex Admittance/Permittivity Needle Probe for Investigation of Multiphase Flows [#6100]
Marco Jose Da Silva, Falk Brueckner, Eckhard Schleicher and Uwe Hampel
Forschungszentrum Rossendorf e.V., Germany
- 2:50PM A Novel Fiber-Optic Tapered Long-Period Bragg Grating Sensor for Pressure Monitoring [#6460]
Wojtek Bock, Jiahua Chen, Predrag Mikulic and Tinko Eftimov
Universite du Quebec en Outaouais, Canada

Coffee Break

3:10PM-3:30PM, Room: Foyer Sirene

Session ThD1: Chapters

Thursday, April 27, 3:30PM-5:10PM, Room: Nettuno #1,

Chair: R. A. Dyer, Kansas State University, USA

Session ThD2: Non-invasive Instrumentation and Measurement 1

Thursday, April 27, 3:30PM-5:10PM, Room: Nettuno #3,

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

- 3:30PM Non-invasive Testing of Quality of Pork Meat: Novel Planar Electromagnetic Sensors Based Approach [#6004]
Subhas Mukhopadhyay, Chinthaka Gooneratne and Gourab Sen Gupta
Massey University, New Zealand, New Zealand
- 3:50PM Synthetic Aperture Focusing Technique in High-Frequency Ultrasound Imaging to Locate Layer Delamination [#6329]
Stefan Rupitsch, Florian Maier and Bernhard Zagar
University Linz, Inst. Measurement Technology, Austria

- 4:10PM Innovative facilities for subsurface imaging [#6420]
Adriana Brancaccio, Giovanni Leone, Francesco Soldovieri and Rocco Pierri
Seconda Università di Napoli, Italy;
Università Mediterranea di Reggio Calabria, Italy;
IREA-CNR, Italy
- 4:30PM Liquid Dielectric Property Determination Using Monopole Probes Operating At Microwave Frequencies [#6165]
Amer Zakaria, Anas Shatat, Nasser Qaddoumi and Mubarak Khalid
American University of Sharjah, United Arab Emirates;
Etisalat University College,
United Arab Emirates
- 4:50PM High Accuracy Disbond Thickness Estimation Scheme Employing Multiple-Frequency Near-Field Microwave Measurements [#6234]
Mohamed Abou-Khousa and Reza Zoughi
University of Missouri-Rolla, United States

Session ThD3: Waveform Measurement, Analysis, and Generation

Thursday, April 27, 3:30PM-5:10PM, Room: Nettuno #4,

Chair: M. Yeary, University of Oklahoma, United States

- 3:30PM A Bandwidth Extension Technique for Dynamic Characterization of Power Amplifiers [#6072]
David Wisell, Daniel Ronnow and Peter Handel
Ericsson AB, Sweden; University of Gavle, Sweden;
Royal Institute of Technology, Sweden
- 3:50PM Synchronic filter based on switched capacitor filters for high stability phase-detectors systems [#6289]
Gustavo J. Grillo, Miguel A. Perez and Aldo E. Florencias
Oviedo University, Spain
- 4:10PM Convergence of Least-Squares Multi-Harmonic Fitting Algorithm [#6424]
Pedro Ramos and Antonio Serra
Instituto de Telecomunicacoes, DEEC, IST, UTL, Portugal
- 4:30PM Target Tracking In a Sensor Network Based on Particle Filtering and Power-Aware Design [#6133]
Yan Zhai, Mark Yeary and Jean-Charles Noyer
University of Oklahoma, United States; Universite du Littoral Cote d'Opale, France

Session ThD4: Sensors, Transducers, Smart Sensors 2

Thursday, April 27, 3:30PM-5:10PM, Room: Nettuno #6,

Chair: J.Schmalzel, Rowan University, USA

- 3:30PM Temperature Compensation for a Piezoelectric Fibre-Optic Voltage Sensor [#6629]
Pawel Niewczas, Lukasz Dziuda, Grzegorz Fusiek and James McDonald
University of Strathclyde, United Kingdom; Military Institute of Aviation Medicine, Poland

- 3:50PM The Application of a Stochastic Transducer for Air Flow Measurement [#6082]
Vyngantas Augutis and Marius Saunoris
Kaunas University of Technology, Lithuania
- 4:10PM A Multi-Spectral Analog Photon Counting Readout Circuit for X-Ray Hybrid Pixel Detectors [#6553]
Matteo Perenzoni, David Stoppa, Mattia Malfatti and Andrea Simoni
Center for Scientific and Technological Research, Italy
- 4:30PM Characterisation and Modelling of a Magnetic Biosensor [#6626]
Teresa Almeida, Moises Piedade, Filipe Cardoso, Hugo Ferreira and Paulo Freitas
Instituto Eng. Sistemas Computadores-ID/IST, Portugal;
Instituto Eng. Sistemas Computadores-ID/IST, Portugal;
Instituto Eng. Sistemas Computadores-MN/IST, Portugal
- 4:50PM A High Dynamic Range CMOS Interface for Resistive Gas Sensor Array with Gradient Temperature Control [#6472]
Mattia Malfatti, Matteo Perenzoni, David Stoppa, Andrea Simoni and Andrea Adami
Center for Scientific and Technological Research, Italy

Session ThD5: Microwaves and Nonlinear Measurements: A Happy Marriage?

Thursday, April 27, 3:30PM-5:10PM, Room: Nettuno #2,

Chair: Y.Rolain and W. Van Moer, Vrije Universiteit Brussel, Belgium

- 3:30PM System Identification Approach Applied to Jitter Estimation [#6095]
Frans Verbeyst, Yves Rolain, Johan Schoukens and Rik Pintelon
VUB dep. ELEC / NMDG Engineering BVBA, Belgium;
VUB dep. ELEC, Belgium
- 3:50PM Recent Improvements in Real-Time Load-Pull Systems [#6148]
Andrea Ferrero, Valeria Teppati and Umberto Pisani
Politecnico di Torino, Italy
- 4:10PM A Time Domain Envelope Vectorial Network Analyzer for Non-linear Measurement Based Modeling Accounting Impedance Mismatches [#6093]
Tibault Reveyrand, Arnaud Soury, Francois Macraigne, Gregoire Nanfack and Denis Barataud
Ircom, France; Xpedion Design Systems, France

Session ThF1: Sensors, Transducers, Smart Sensors 3

Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: P.Malcovati, University of Pavia, Italy

A Novel Multifunctional Distributed Optical Fiber Sensor Based on Attenuation [#6044]

Chuantong Wang and Katsunori Shida

Faculty of Science and Engineering, Saga Univ., Japan
Signal Model Based Estimation of Flow Parameters for the Need of
the Electromagnetic Measurement in Open Channels [#6049]

Jacek Jakubowski and Andrzej Michalski

Military University of Technology, Poland; Warsaw University of
Technology, Poland

The Measurement Setup for Gas Detection by Resistance Fluctuations
of Gas Sensors [#6050]

Janusz Smulko

Gdansk Univ. of Technology, Poland

Surface Morphology Measurement and Investigation of A New CMOS
Compatible Thermopile [#6052]

Shu-Jung Chen and Chih-Hsiung Shen

National Changhua University of Education, Taiwan

Development of the Multi-point Thermal Gas-mass Flowmeter
[#6097]

Guo Wei Liang, Qian Min Mao, Dai Liang Xie, Chang Wu Li and
Fang Wang

China Jiliang University, China; Suzhou Institute of Measurement
and Testing, China

Fiber Bragg Grating Magnetic Field Sensor [#6171]

Kalaga Madhav Venu, Kannadorai Ravi Kumar, Sunderajan
Asokan and Talabatulla Srinivas

Indian Institute of Science, India

An Integrated Micro Fluxgate Magnetic Sensor with Sputtered
Ferromagnetic Core [#6175]

Andrea Baschiroto, Enrico Dallago, Piero Malcovati, Marco
Marchesi and Enrico Melissano

University of Lecce, Italy; University of Pavia, Italy; Microelectronic
and Microsystem Institute of CNR, Italy

The Loading Effect of Radio-Frequency Current Probes [#6380]

Carlo F. M. Carobbi and Luigi M. Millanta

University of Florence, Italy

Architecture for Distributed Monitoring based on Smart Sensors and
Web Service [#6401]

Fabrizio Ciancetta, Biagio D'Apice, Daniele Gallo and Carmine
Landi

Dept. Electrical Eng., University of L'Aquila, Italy; Dept. Inform.
Eng., Second University of Naples, Italy

Self-mixing-based Demodulation Technique for Dynamic Fiber Bragg
Grating Strain Sensors [#6508]

Han Cheng Seat, Yue Wang, Thierry Bosch, Weisheng Hu and
Xianfeng Chen

Laboratoire d'Electronique, ENSEEIHT - LEN7, France; SKLAOC-
SAN, Shanghai Jiao Tong University, China; Photonics Research Group,
Aston University, United Kingdom

A Novel Approach to On Line Oil Quality Sensing Through Side-
Polished Optic Fiber [#6526]

Ainhoa Gaston, Ivon Lozano and Joaquin Sevilla

Universidad Publica de Navarra, Spain

A Linear Variable Differential Capacitive Transducer for Sensing
Planar Angles [#6033]

Boby George, Madhu N Mohan and Jagadeesh V Kumar
EE Dept., IIT Madras, India; EE Dept., IIT Madras, India

Session ThF2: Robotics, Industrial Automation 2

*Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: D.Shi, University of Nottingham, United Kingdom*

Fault Diagnosis Based on Petri Model in Machining Process [#6141]

Zhu Miaofen, Chen Guojin and Wang Yaka

Hangzhou Dianzi University, China; Research Institute for
Automation of China Light, China

Online Machining Process Monitoring Using Wavelet Transform and
SPC [#6179]

Dongfeng Shi, Dragos Axinte and Nabil Gindy

The University of Nottingham, United Kingdom

New Techniques for Fault Detection Analysis by Injecting Additional
Frequency Test [#6195]

Jordi Cusido, Javier Rosero, Luis Romeral, Juan Antonio Ortega
and Antoni Garcia

Electronic Engineering Dept., UPC, Spain; Electric Engineering
Dept., UPC, Spain

Robot Position Identification Using Specially Designed Landmarks
[#6193]

Jie Huang, Chunlei Zhao, Yoshitaka Ohtake, Li Huakang and
Qunfei Zhao

The University of Aizu, Japan; Shanghai Jiao Tong University, China

Active Exploration in Building Hierarchical Neural Networks for
Robotics [#6254]

Qinggang Meng and Mark Lee

University of Wales, Aberystwyth, United Kingdom

A Reliable And Robust Methodology For Testing Measurement
Software [#6264]

Giovanni Betta, Domenico Capriglione, Antonio Pietrosanto and
Paolo Sommella

University of Cassino, Italy; University of Salerno, Italy

Session ThF3: Non-invasive Instrumentation and Measurement 2

*Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,
Chair: V.Bilas, University of Zagreb, Croatia*

Improved Time-Frequency Distribution Series for Ultrasonic Non-
Destructive Evaluation [#6057]

Xiuli Du and Yi Shen

Harbin Institute of Technology, China

A Model Based Design of Low-Frequency Electromagnetic Systems
for Metal Tube Inspection [#6463]

Darko Vasic, Vedran Bilas and Boris Snajder

Faculty of Electrical Engineering and Computing, Croatia

An SVM Approach to Crack Shape Reconstruction in Eddy Current
Testing [#6279]

Andrea Bernieri, Luigi Ferrigno, Marco Laracca and Mario Molinara

DAEIMI, University of Cassino, Italy

Determining the Step-change Conductivity Profile Within Layered Metal Structures Using Inductance Spectroscopy [#6603]

Wuliang Yin and Tony Peyton

The University of Manchester, United Kingdom

3D-scanning for Weld Distortion Measurements [#6313]

Fredrik Sikstrom, Mikael Ericsson, Per Nylen and Anna-Karin Christiansson

University West, Sweden

A Simple Identification Method for Object Shapes and Materials Using an Ultrasonic Sensor Array [#6442]

Kozo Ohtani and Mitsuru Baba

Hiroshima Institute of Technology, Japan; Ibaraki University, Japan

Simultaneous Non-contact Measurement of Water Level and Conductivity [#6599]

Wuliang Yin, Tony Peyton, Greg Zysko and Richard Denno

The University of Manchester, United Kingdom; Pilkington PLC, United Kingdom

Advances of Barkhausen Emission Measurement [#6079]

Vygantas Augutis, Zilvinas Nakutis and Ramunas Ramanauskas

Kaunas University of technology, Lithuania

Session ThF4: Dielectric, Magnetics, EMC Measurements 2

Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: J. Sheen, National Formosa University, Taiwan

A Low Cost System to Characterize the Dielectric and Pyroelectric Properties of a Ferroelectric Material [#6068]

Bruno Andò, Giuseppe Dimartino, Pietro Giannone and Salvatore Graziani

DIEES - University of Catania, Italy

Relationship Between the Measurement and Motion Bandwidths in Magnetic Tracking [#6121]

Anton Plotkin, Eugene Paperno and Netzer Moriya

Ben-Gurion University of the Negev, Israel; siOnet Ltd., Israel

EMC Testing of Fieldbus Interconnected Intelligent Positioners [#6223]

Andrea Mariscotti, Micaela Caserza Magro and Paolo Pinceti

Dep. Electrical Engineering-University Genova, Italy

Investigate the Optimal Geometry to Minimize Demagnetizing Effect in RTD-Fluxgate [#6281]

Bruno Andò, Salvatore Baglio, Adi Bulsara, Vito Caruso and Vincenzo Sacco

University of Catania - DIEES, Italy; Spawar, Italy; University of Catania - DIEES, United States

Analysis of Effects of Dielectric and Material Characteristics on the Performance of Thick Film Thermistors Using Commercial Software Tools [#6563]

Viktor Maric, Miloljub Lukovic, Ljiljana Zivanov and Obrad Aleksic

University of Novi Sad, Serbia and Montenegro; University of Belgrade, Serbia and Montenegro

Losses of the Parallel-Plate Dielectric Resonator [#6395]

Jyh Sheen

National Formosa University, Taiwan

- Testing Capability Improvement of NMR Interface [#6283]
 Aimè Lay-Ekuakille, Amerigo Trotta and Giuseppe Vendramin
 University of Lecce, Dpt. of Innovation Engineering, Italy;
 Polytechnic Faculty of Bari, Italy
- Nonuniform Low Frequency Magnetic Field Measurements [#6291]
 Elisabetta Sieni and Matteo Bertocco
 University of Padova, Italy
- Measuring the Magnetic Field Attenuation of Nonlinear Shields
 [#6294]
 Bologna Mauro, Romano Giannetti, Mirko Marracci and
 Bernardo Tellini
 Universidad de Tarapaca, Chile; Universidad Pontificia Comillas,
 Spain; University of Pisa, Italy
- Measurement of dielectric and magnetic characteristics of nickel ferri-
 te and strontium ferrite composite from 4.5 to 26.5 GHz frequency
 range [#6325]
 Mi Lin and Mohammed Afsar
 Tufts University, United States
- Millimeter and Submillimeter Wave Dielectric Measurements of
 Household Powders Using Fourier Transform Spectroscopy [#6361]
 Usman Khan, Mohammed Afsar and Nicholas Nguyen
 Tufts University, United States; IEEE Fellow, Chair ECE Dept.
 Tufts University, United States

Session ThF5: Instrumentation and Prototype Development 4

*Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,
 Chair: B Andò, University of Catania, Italy*

- A Microcontroller System for the Human Mechanical Power
 Measurement During Squat Jumps [#6086]
 Giovanni Bucci, Fabrizio Ciancetta, Edoardo Fiorucci, Luciano
 Tedeschini and Renato Manno
 DIEI - Università di L'Aquila, Italy; Fac. Scienze Motorie
 Università di L'Aquila, Italy
- Implementation of Digital Detection Scheme for Closed-Loop FOG
 Based on DSP and FPGA [#6111]
 Junliang Han, Shengmin Ge and Yi Shen
 Harbin Institute of Technology, China
- A Low-Cost Tide Measurement System for Water Quality Assessment
 [#6131]
 Jose Pereira, Octavian Postolache and Pedro Girao ESTSetubal-
 LabIM/IPS, Portugal; Instituto de Telecomunicacoes, IST, Portugal
- ATTEM: An Instrument System Using Transient Electromagnetic
 Pulse for Subsurface Imaging [#6143]
 Zhong Wang, Jun Lin, Shengbao Yu, Yanju Ji and Guohua Zhou
 JiLin University, China
- Biomedical Signal Analysis by a Low-cost Accelerometer Measurement
 System [#6292]
 Livio Quagliarella, Nicola Sasanelli, Giuseppe Cavone and Anna
 Maria Lucia Lanzolla
 University of Bari, Italy; Polytechnic of Bari, Italy
- Novel Peak Detection Algorithms for Pileup Minimization in Gamma
 Ray Spectroscopy [#6209]

Muhammad Wasim Raad and Lahouri Cheded
King Fahad University Petroleum and Minerals, Saudi Arabia
Fine Tuning Design of Control Board Parameters for Sensing Applications
[#6228]

Ada Fort, Valerio Vignoli, Santina Rocchi, Luca Tondi and Maria
Belen Serrano-Santos

University of Siena, Italy
Numerical Modelling and Experimental Study of an AC
Magnetohydrodynamic (MHD) micropump [#6247]

Antonio Affanni and Giovanni Chiorboli
University of Parma, Italy
Mechanical Filters for Accelerometers: Design and Metrological
Characterization [#6256]

Edoardo Alberti, Giovanni Moschioni, Bortolino Saggin and
Marco Tarabini
Politecnico di Milano, Polo Regionale di Lecco, Italy

Session ThF6: Electrical and Power Measurements 3

Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: J.Barros, University of Cantabria, Spain

Limitations in the use of r.m.s. value in power quality analysis [#6011]

Julio Barros and Enrique Perez
University of Cantabria, Spain

Series Sensor Current Loop from a Generalized Impedance Converter
Circuit with Reference Current Input [#6125]

Diego Ramirez-Munoz, Jaime Sanchez Gomez, Silvia Casans
Berga, Candid Reig and A. Edith Navarro
Dep. Electron. Eng., University of Valencia, Spain

Real-Time Digital Multifunction Instrument for Power Quality
Integrated Indexes Measurement [#6260]

Carmine Landi, Daniele Gallo and Nicola Rignano
Second University of Naples, Italy

Stabilising of a Synthetic Loading Test Rig for Large Induction
Machines [#6348]

Barna Szabados and Many Peung
McMaster University, Canada

A New Calibration Method for Current and Voltage Sensors Used in
Power Quality Measurements [#6549]

Pedro Ramos, Nuno Bras and Antonio Cruz Serra
Telecommunications Institute, Portugal

Parameter Sensitivity and Measurement Error Propagation in Torque
Estimation Algorithms for Induction Machines [#6591]

Cindy Bastiaensen, Wim Deprez, Wim Symens and Johan Driesen
Katholieke Universiteit Leuven, Belgium; Flanders' Mechatronics
Technology Center, Belgium

Effects of Windowing on the Measurement of Harmonics and
Interharmonics in the IEC Standard Framework [#6604]

Julio Barros and Ramon Diego
University of Cantabria, Spain

Design and Implementation of a GRID Service for Power Measurement
in Digital Wireless Communication Systems [#6286]

Leopoldo Angrisani, Luigi Battaglia and Rosario Schiano Lo Moriello

University of Naples Federico II - DIS, Italy; Consorzio SESM, Italy

An on-board Monitoring System for Electrical Railway Traction Systems [#6376]

Domenicantonio Grillo, Carmine Landi, Mario Luiso and Nicola Pasquino

Dept. El. Eng., University of Naples Federico II, Italy; Dept. Inform. Eng., Second University of Naples, Italy

A Distributed State Estimator For Electric Power Systems In Avionic And Naval Applications [#6575]

Gabriele D'Antona, Antonello Monti, Ferdinanda Ponci and Luca Rocca

Politecnico di Milano, Italy; University of South Carolina, United States

Session ThF7: Sensors, Transducers, Smart Sensors & Miscellaneous Measurements

Thursday, April 27, 1:30PM-6:00PM, Room: Foyer Sirene,

Chair: P.Payeur, University of Ottawa, Canada

A Semi-Cylindrical Capacitive Sensor with Interface Circuit using for Fluidic Measuring [#6002]

Cheng-Ta Chiang and Yu-Chung Huang

National Chiao Tung University, Taiwan

The Study of a 2D Model and Image Reconstruction Algorithms Based on EIT System [#6047]

Zhang Cao, Huaxiang Wang and Feng Dong

Department of Automation, Tianjin University, China

A Compensation Strategy to Reduce Spring Gravimeter Output for the Effect of Temperature: Experimental Validation [#6067]

Bruno Andò and Daniele Carbone

DIEES, Università di Catania, Italy; INGV, Sez. Catania, Italy

An Assessment on the Accuracy of Time-Domain Reflectometry for Measuring Level and Permittivity of Liquids [#6158]

Andrea Cataldo, Luciano Tarricone, Mariangela Vallone, Filippo Attivissimo and Amerigo Trotta

University of Lecce, Italy; Politecnico di Bari, Italy

Improved Frequency Investigation of IPMC Based Sensors [#6266]

Claudia Bonomo, Luigi Fortuna, Pietro Giannone, Salvatore Graziani and Salvatore Strazzeri

DIEES-University of Catania, Italy

Application of Segmented 2D Probabilistic Occupancy Maps for Mobile Robot Sensing and Navigation [#6359]

Bassel Abou Merhy, Pierre Payeur and Emil Petriu

University of Ottawa, Canada

A DSP Based Prototype for Water Conductivity Measurements [#6490]

Komarek Milan, Martin Novotny, Pedro Ramos and Jose Pereira

Czech Technical University in Prague, Czech Republic; Instituto

de Telecomunicacoes, DEEC, IST, Portugal; ESTSetubal - LabIM, IPS, Portugal

FPGA Frequency Domain Based GPS Coarse Acquisition Processor Using FFT [#6499]

Henry Chen, Sajabi Cyprian, David Lin and James Tsui

Wright State University, United States; Wright Patterson AFB, United States

Absolute Interferometric Measurement of Differential Displacements [#6529]

Minoni Umberto

Università degli Studi di Brescia, Italy

An FPGA based Measurement System for a Fibre Bragg Grating (FBG) Strain Sensor [#6546]

Peter Lee, Oleg Uzenkov and David Webb

University of Kent, Canterbury, Kent, United Kingdom; Aston University, Birmingham, United Kingdom

Novel ferrofluidic Inertial Sensors [#6336]

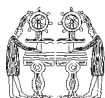
Salvatore Baglio, Paola Barrera and Nicolo Savalli

DIEES - University of Catania, Italy; DIEES- University of Catania, Italy

IEEE 1451.1 Standard and XML Web Services: a Powerful Combination to Build Distributed Measurement and Control Systems [#6480]

Vitor Viegas, Jose Pereira and Pedro Girao

ESTSetubal - LabIM, IPS, Portugal; Telecommunication Institute - IST, Portugal



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APRILE 2006

