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Welcome Message from the Chairpersons

On behalf of the organizing, technical and local committees of IEEE International Instrumentation and Measurement Technology Conference (I2MTC 2014), we welcome you to Montevideo. Here in Uruguay we are all concerned with sustainable development, and so it has been chosen as the theme of the conference. Our excellent and broad technical program covers the traditional span of instrumentation and measurement fields, and reflecting the main theme, the program also contains many sessions dealing with issues related to it.

As usual, we start with a full day of tutorials offering more than a dozen fascinating topics. We have three esteemed keynote speakers who set the tone for the three days of the conference which consists of five parallel tracks of oral and one track of poster presentations. They are Dr. Pasquale Arpaia, from the CERN, Dr. David Leibrandt from NIST and the recipient of the IEEE 2014 Keithley Award, Thomas Linnenbrik. We appreciate and we are very much thankful to them for coming and sharing their knowledge and experiences with us.

This is the first time the IMTC Conference is held in Latin-America and in the southern hemisphere as well. Our local chapter, one of the few and oldest IMS Chapters in Region 9, is very, very happy and proud of making history and hosting this Conference. Most appropriately, this year also marks the silver anniversary of the Uruguayan Section, and for our volunteers this Conference is the most significant part of the Celebration activities.

It is with a great satisfaction that we are honored to receive in our Country the presence of so many scientists and engineers from all over the world. Enjoy Montevideo; it is a nice city that strongly conserves its Spanish and European heritage. Just in front of the Conference hotel – which was built in the 50's and enlarged later– is the main square, with the old and the new President's houses, and the very nice, 160 years old, "Solis Theater" which bears the name of the Spanish ship captain that discovered our land. You will find the old city through the gate of the Citadel, the fort that protected the port and the old city that lies to the west. We also encourage you to visit the country.

Again, welcome, and please do enjoy the Conference and your stay.

Juan Carlos Miguez, General Chair



Daniel Slomovitz, Technical Chair



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I²MTC 2014 Keynote Speakers

Pasquale Arpaia

*European Organization for Nuclear Research (CERN), Geneva, Switzerland
University of Sannio, Benevento, Italia*



Keynote Tuesday, May 13, 2014

"Beyond the Higgs boson hunting: high-performance instrumentation and measurement technologies for testing and tuning particle accelerators at CERN"

David R. Leibrandt

National Institute of Standards and Technology, USA



Keynote Wednesday, May 14, 2014

"Optical atomic clocks - measurement at the 17th decimal place"

Thomas Linnenbrink

*2014 Keithley Award Winner
Tegnovations, LLC, USA*



Keynote Thursday, May 15, 2014

"Realizing the Inherent Performance of Modern ADCs in Real Systems"

I²MTC 2014 Conference Sponsor



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La energía que nos une

UTE is a company of the Uruguayan State, which generates, transmits, distributes and commercializes electrical energy throughout the country. Its purpose is to work for the electric service within a framework of economic, social and environmental sustainability, to reach all households and activities of the country, reliably, with a level of quality that satisfies our society and at the lowest price possible.



30 years generating energy and linking two nations The Joint Technical Commission of Salto Grande is a binational organization created by Argentina and Uruguay in order to make necessary modifications to the use of the Uruguay river rapids in the Salto Grande.

Since its inception, it was responsible for studies and projects and later the construction and commissioning of the Salto Grande Hydroelectric Complex, which was the first hydraulic binational and multi-purpose facility in Latin America.

Our Mission is producing and supplying electrical energy through the use of the Uruguay River and the effective administration of the Salto Grande Hydroelectric Complex , preserving the environment, contributing to socioeconomic development and integration of Argentina and Uruguay.

Our Vision is to be a reliable, transparent and sustainable organization , a leader in the efficient supply of clean energy, recognized in the community and formed by a team of workers who are proud of belonging.



The National Research and Innovation Agency (ANII) is a Uruguayan government entity that promotes and encourages research and application of new knowledge to the productive and social realities.

Its most important goal is to be a key player in the continuous process of developing an equitable society. It is an agent of change, with a unique vision of driving Uruguay's productive and social development in such areas as science, technology, quality of work, social inclusion, and business innovation.

Its role is to promote and support the successful exchange between authorities, entrepreneurs and the research community. Provide funding, sustainment and the necessary tools required for building new business undertakings and projects. Act as the link between public and private organizations, coordinating and actively promoting dialog and generating productive guidelines among ministries, universities, business enterprises and social organizations.

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With over 50 years in the area of test and measurement instrumentation, Coasin Instruments SA attends day to day needs of the scientific and technological communities of the country, promoting and giving support to premium brands.



The URSEA is a state institution, created to defend users, and contribute to national development through the regulation, supervision and advice in the areas of energy, combustibles and water.

Our main goal is that every Uruguayan has access to all products and services related to electricity, fuel, gas, and water with quality, continuity, security and at a suitable price.

I²MTC 2014 Exhibitors



La energía que nos une

UTE is a company of the Uruguayan State, which generates, transmits, distributes and commercializes electrical energy throughout the country. Its purpose is to work for the electric service within a framework of economic, social and environmental sustainability, to reach all households and

activities of the country, reliably, with a level of quality that satisfies our society and at the lowest price possible.



With over 50 years in the area of test and measurement instrumentation, Coasin Instruments SA attends day to day needs of the scientific and technological communities of the country, promoting and giving support to premium brands.

Awards and Distinctions

Each year the IEEE Instrumentation and Measurement Society accepts nominations for its Awards. The AdCom Awards Committee manages the nominations process, reviews the candidates, and recommends a slate. The slate of candidates is then submitted to the Society AdCom for approval and the awards are presented at our annual Awards Banquet held as part of the I²MTC conference. The Awards Committee is pleased to announce the 2013 winners.

2013 Transactions Outstanding Associate Editors

Salvatore Baglio, *University of Catania, Italy*

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George Xiao, *Institute for Microstructural Science, National Research Council, Canada*

IEEE Instrumentation and Measurement Society Andy Chi Best Paper Award

The I&M Society Andy Chi Best Paper Award is awarded to recognize an author or authors of a paper published in the IEEE Transactions on Instrumentation and Measurement.

The 2013 Andy Chi Best Paper Award is given for the paper: *Analyzing the Windkessel model as a potential candidate for correcting oscillometric blood pressure measurements.*

The recipients are:

Wendy Van Moer, *University of Gävle, Sweden*

Kurt Barbé, *Vrije Universiteit Brussel, Belgium*

Danny Schoors, *Vrije Universiteit Brussel, Belgium*

IEEE Instrumentation and Measurement Society Outstanding Young Engineer Award

The I&M Outstanding Young Engineer Award recognizes an outstanding young I&M member who has distinguished him or herself through achievements, which are technical, of exemplary service to the I&M Society, or a combination of both, early in their career. The nominee must not have reached their 39th birthday and must be an I&M member at the time of nomination.

The 2013 Outstanding Young Engineer Award recipient is:



Mohammad Tayeb Ghasr

*Missouri University of Science and Technology
USA*

"For outstanding contributions to real-time microwave imaging and nondestructive testing systems development."

Mohammad Tayeb Ghasr (S'01 - M'10 – SM'12) received his B.S. in electrical engineering degree (*Magna Cum laude*) from the American University of Sharjah (AUS), Sharjah, in 2002 and his M.S. degree in electrical engineering from the University of Missouri-Rolla, Rolla, in 2004 and the Ph.D. degree in electrical engineering from Missouri University of Science and Technology (Missouri S&T), MO, USA in 2009.

Currently, he is an Assistant Research Professor with the Applied Microwave Nondestructive Testing Laboratory (*amntl*), Electrical and Computer Engineering Department, Missouri University of Science and Technology (Missouri S&T). He has over 85 journal papers, conference proceedings and presentations, and technical reports. He has nine awarded and pending patents to his credit. His research interests include microwave and millimeter-wave instrumentation and measurement, RF circuits, antennas, and numerical electromagnetic analysis. He is a recipient of the 2013 H. A. Wheeler Prize Paper Award of the IEEE Antennas and Propagation Society.

IEEE Instrumentation and Measurement Society Technical Award

The I&M Technical Award is given to an individual or group of individuals for outstanding contribution or leadership in advancing instrumentation design or measurement technique.

The 2013 Technical Award recipient is:



Robert X. Gao

*University of Connecticut
USA*

“For significantly advancing the state-of-the-art in electrical capacitance tomography instrument design.”

Robert Gao received his Ph.D. from the Technical University of Berlin, Germany, in 1991. His research aims to improve the observability of dynamical systems and processes for better understanding of the underlying physics and better control. Topics of his research include sensing methodology, design and characterization of instrument systems, multi-resolution analysis for time series and image processing, and energy-efficient sensor networks, with applications in health care, cyber physical systems, and intelligent manufacturing.

He has developed graduate courses on mechatronics and advanced measurement systems, and supervised over 40 Ph.D./M.S. students and postdocs. He is a PI/Co-PI of over 55 federal and industry-sponsored projects, a co-author/co-editor of two books and over 280 refereed journal and conference papers, and holds four patents.

Dr. Gao was an Associate Editor for the *IEEE Transactions on Instrumentation and Measurement* (2000–2008 and 2010–2013) and *Journal of Dynamic Systems, Measurement, and Control* (2005-2008) of the American Society of Mechanical Engineers (ASME). Currently he is an Associate Editor for the ASME *Journal of Manufacturing Science and Engineering*, and *Mechatronics*, a journal of the International Federation of Automatic Control (IFAC). He was a Distinguished Lecturer of the *IEEE Electron Devices Society* (2008-2013). His awards include the *Instrumentation and Measurement Society's* Technical Award (2013) and Outstanding Associate Editor Award (2012), the *US National Science Foundation CAREER* Award (1996), and several Best Paper/Best Student Paper awards. He is a Fellow of the IEEE and ASME, and an elected Member of the Connecticut Academy of Science and Engineering (CASE).

IEEE Instrumentation and Measurement Society Career Excellence Award

The I&M Society Career Excellence Award is awarded to recognize a lifetime career of meritorious achievement and outstanding technical contribution by an individual in the field of instrumentation and measurement.

The 2013 Career Excellence Award recipient is:



Massimo D'Apuzzo
Universita' di Napoli Federico II
Italy

"For lifelong activity and outstanding achievement in pioneering the use of microcontrollers in electrical measurements."

Massimo D'Apuzzo has been Full Professor of Electrical and Electronic Measurements since 1986. He is currently affiliated with the Dept. of Electrical Engineering and Information Technologies of the University of Naples Federico II, Italy.

Massimo D'Apuzzo carried out a proficuous and intense scientific activity in the area of Instrumentation and Measurement. He has headed research groups involved in the research activities in the field of general metrology, as well as in the definition, design and experimental validation of innovative methodologies for the characterization and performance assessment of dynamic systems, analog-to-digital converters and transducers. His most innovative and influencing scientific contributions are referred to three themes: (i) use of microprocessor for measurements on electrical systems, (ii) automatic instrument fault detection and isolation and (iii) power measurement on wireless communication systems.

Massimo D'Apuzzo has been academic tutor and scientific mentor of several PhD fellows and collaborators, most of whom are now leading academics of Electrical and Electronic Measurements in prestigious Italian universities or occupy managing positions in industrial companies. He has founded and is Director of the Center for Advanced Metrology Services of the University of Naples Federico II.

He was President of the Italian Group of Electrical and Electronic Measurements, Head of the Department of Electrical Engineering of the University of Naples Federico II, member of the Academic Senate and President of the Scientific and Technological School of the same University.

2014 I&M Society Fellows

Mohammad Alam

University of South Alabama
Mobile, AL, USA

"For contributions to pattern recognition and high resolution image reconstruction."

Kim Fowler

Kansas State University
Manhatta, KS, USA

"For contributions to mission-critical and safety-critical systems engineering."

2013 I&M Society Senior Member Elevations

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I²MTC Tradition

The first *IEEE Instrumentation and Measurement Technology Conference* was held in 1984 aboard the Queen Mary in Long Beach, California, but its origins stretch back nearly 20 years earlier to the *Electrical and Electronic Measurement and Test Instrument Conference* held each year from 1966 until 1981 in Ottawa, Canada. The latter was revived by the IEEE Instrumentation and Measurement Society with a new focus on all aspects of instrumentation and measurement. The following list contains locations and themes of the I²MTC conferences:

- 1984 – Long Beach, CA, USA, *Automation-Quality-Productivity*
- 1985 – Tampa, FL, USA, *Measurement Science*
- 1986 – Boulder, CO, USA, *Standards of Excellence*
- 1987 – Boston, MA, USA, *The Changing Face of I&M Technologies*
- 1988 – San Diego, CA, USA, *Intelligence in Instrumentation*
- 1989 – Washington, DC, USA, *Persuasive I&M Technology – A Resource*
- 1990 – San Jose, CA, USA, *Emerging Measurement Technologies*
- 1991 – Atlanta, GA, USA, *Enhancing Productivity with Instrumentation and Measurement Technologies*
- 1992 – Meadowlands, NJ, USA, *Smart People, Smart Instruments, Smart Measurements*
- 1993 – Irvine, CA, USA, *Innovative Ideas for Industry*
- 1994 – Hamamatsu, JAPAN, *Advanced Technologies in Instrumentation and Measurement*
- 1995 – Waltham, MA, USA, *I3C – Integrating Intelligent Instrumentation and Control*
- 1996 – Brussels, BELGIUM, *Quality Measurements – The Indispensable Bridge between Theory and Reality (No Measurements? No Science!)*
- 1997 – Ottawa, CANADA, *Sensing, Processing, Networking*
- 1998 – St. Paul, MN, USA, *Where Instrumentation is Going*
- 1999 – Venice, ITALY, *Measurements for the New Millennium*
- 2000 – Baltimore, MD USA, *Smart Connectivity: Integrating Measurement and Control*
- 2001 – Budapest, HUNGARY, *Rediscovering Measurement in the Age of Informatics*
- 2002 – Anchorage, AK, USA, *The Frontier of Instrumentation and Measurement*
- 2003 – Vail, CO, USA, *Instrumentation and Measurement at the Summit*
- 2004 – Lake Como, ITALY, *From the Electrometer to the Networked Instruments: A Giant Step toward a Deeper Knowledge*
- 2005 – Ottawa, CANADA, *The 22nd Reunion*
- 2006 – Sorrento, ITALY, *A View on the New Technologies for Instrumentation and Measurement*
- 2007 – Warsaw, POLAND, *Synergy of Science and Technology in Instrumentation and Measurement*
- 2008 – Victoria, British Columbia, CANADA, *Advances in the Science of Measurement Technology*
- 2009 – Singapore, *Always On: Instrumentation and Measurement in the Networked World*
- 2010 – Austin, TX, USA, *Innovative and Integrated Applications of I&M*
- 2011 – Binjiang, Hangzhou, CHINA, *Instrumentation and Measurement for Improving Quality of Life*
- 2012 – Graz, Austria, *Smart Measurements for a Sustainable Environment*
- 2013 – Minneapolis, MN, USA, *Instrumentation and Measurement for Life*

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PROGRAM SCHEDULE - Monday, May 12, 2014 - Tutorials

8:00 - 6:00				
Registration				
MEASUREMENT BASICS	NOISE & SIGNAL PROCESSING	MEASUREMENT TOPICS	SENSORS & INSTRUMENTATION	
Conference Room	Gauguin	Renoir D	Renoir E	
<i>How to model measurement activity and define uncertainty</i> Alessandro Ferrero Politecnico di Milano, Italy	<i>Biomedical Instrumentation amplifiers</i> Alfredo Arnaud Electrical Engineering Department at Universidad Catolica del Uruguay		<i>Advanced Sensors and Instrumentation</i> Subhas Mukthropadhyay Massey University, New Zealand	
10:30 - 11:00				
COFFEE BREAK - 4th Floor Foyer				
<i>Measurement Uncertainty Quantification</i> Daniel Watzenig Graz University of Technology, Austria	<i>Noise measurements in electronic devices</i> Fabien Pascal Institut d'Electronique du Sud (IES laboratory), France	<i>New developments in the field of atmospheric monitoring</i> Erna Frins Instituto de Fisica, Facultad de Ingenieria, Universidad de la Republica, Uruguay	<i>Reliable Flow Measurement</i> Anton Fuchs Graz University of Technology, Austria	
11:00 - 12:30				
12:30 - 2:00				
LUNCH - Grand Ballroom				

PROGRAM SCHEDULE - Monday, May 12, 2014 - Tutorials			
MEASUREMENT BASICS	NOISE & SIGNAL PROCESSING	MEASUREMENT TOPICS	SENSORS & INSTRUMENTATION
<p>Conference Room</p> <p><i>Methodology of Measurement</i> Dario Petri Department of Industrial Engineering, University of Trento, Italy</p>	<p>Gauguin</p> <p><i>Noise in Classical and Quantum Measurements</i> Fabio da Silva National Institute of Standards and Technology, USA</p>	<p>Renoir D</p> <p><i>Advances in Microwave Materials Characterization for NDT of Complex Structures: Theory, Methods, and Applications</i> Kristen M. Donnell Missouri University of Science and Technology, USA</p>	<p>Renoir E</p> <p><i>Temperature Sensors: From sense of touch towards smart dust</i> Conrado Rossi-Alcardi Universidad de la Republica, Uruguay</p>
COFFEE BREAK - 4th Floor Foyer			
<p>4:00 - 5:30</p>	<p><i>Blind Signal Identification for Emerging Intelligent Radio Systems</i> Octavia Dobre Memorial University of Newfoundland, Canada</p>	<p><i>Alkali atoms at the heart of photonic devices</i> Horacio Failache Instituto de Física, Facultad de Ingeniería, UdelAR, Uruguay</p>	<p><i>CMOS-based microsystems for biomedical applications</i> Diego Barretino University of Applied Sciences of Southern Switzerland (SUPSI)</p>
TUTORIAL SPEAKER RECEPTION - 4th Floor Foyer			
5:30 - 6:30			

PROGRAM SCHEDULE - Tuesday, May 13, 2014

Registration						
7:30 - 6:00	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
8:30 - 8:45	OPENING SESSION					
8:45 - 9:45	Keynote 1: Beyond the Higgs boson hunting: high performance instrumentation and measurement technologies for testing and tuning particle accelerators at CERN Pasquale Arpaia					
9:45 - 10:00	Announcements					
10:00 - 10:30	COFFEE BREAK - 4th Floor Foyer					
10:30- 12:30	S1A: Energy and Power Systems (part 1)	S1B: Measurement Systems and Theory (part 1)	SS3: Emerging methods for measuring, modeling and instrumentation in medical applications	S1D: Measurement of Electric and Magnetic Quantities	S1E: Measurement Applications	Poster Sessions: PS1T, PS1U, PS1V, PS1W, PS1X
12:30 - 2:00	LUNCH - Grand Ballroom					

PROGRAM SCHEDULE - Tuesday, May 13, 2014

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
2:00 - 3:45	S2A: Energy and Power Systems (part 2)	S2B: Measurement Systems and Theory (part 2)	S2C: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (part 1)	S2D: Measurement of Materials and Mechanical Quantities	S2E: Measurement Applications (part 2)	
3:45 - 4:15	COFFEE BREAK - 4th Floor Foyer					
4:15 - 6:00	S3A: Energy and Power Systems (part 3)	S3B: Measurement Systems and Theory (part 3)	S3C: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (part 2)	S3D: Real-Time Measurement		
7:30 - 9:30	WELCOME RECEPTION - THEATER					

Poster Sessions:
 PS3T, PS3U,
 PS3V, PS3W,
 PS3X, PS3Y

PROGRAM SCHEDULE - Wednesday May 14, 2014

Registration						
7:30 - 6:00						
	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
8:30 - 9:15	Keynote 2: Optical atomic clocks - measurement at the 17th decimal place David R. Leibbrandt					
9:15 - 10:30	S4A: Advances in Instrumentation and Measurement Developments and Techniques (part 1)	SS2P1: Impedance Spectroscopy for Measurement and Sensor Solutions (part 1)	S4C: Best practices in Instrumentation and Measurement Education	S4D: Wireless Sensors (part 1)	SS5P1: SS5: Smart Transducers and Sensors (part 1)	
10:30 - 11:00	COFFEE BREAK - 4th Floor Foyer					
11:00 - 12:45	S5A: Advances in Instrumentation and Measurement Developments and Techniques (part 2)	SS2P2: Impedance Spectroscopy for Measurement and Sensor Solution (part 2)		S5D: Wireless Sensors (part 2)	SS5P2: SS5: Smart Transducers and Sensors (part 2)	Poster Sessions: PS5T, PS5U, PS5V, PS5W, PS5X, PS5Y

PROGRAM SCHEDULE - Wednesday May 14, 2014

	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
12:45 - 2:30	AWARDS LUNCH - Grand Ballroom					
2:30 - 3:45	S6A: Advances in Instrumentation and Measurement Developments and Techniques (part 3)	SS2P3: Impedance Spectroscopy for Measurement and Sensor Solutions (part 3)	S6C: Non-invasive Measurement Techniques and Instrumentation (part 1)	SS 1P1: Nanotechnology applications in Measurement and Instrumentation (part 1)	SS7P1: Energy Harvesting for Autonomous Measurement Systems: methodologies and devices (part 1)	
3:45 - 4:15	COFFEE BREAK - 4th Floor Foyer					
4:15 - 6:00	S7A: Advances in Instrumentation and Measurement Developments and Techniques (part 4)	S7B: IEEE Standard 21451 Workgroup Meeting	S7C: Non-invasive Measurement Techniques and Instrumentation (part 2)	SS 1P2: Nanotechnology applications in Measurement and Instrumentation	SS7P2: Energy Harvesting for Autonomous Measurement Systems: methodologies and devices (part 2)	Poster Sessions: PST1, PSTU, PSTV, PSTW, PSTX, PSTY
7:00 - 10:00	GALA DINNER - Grand Ballroom					

PROGRAM SCHEDULE - Thursday May 15, 2014

Registration						
7:30 - 6:00	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
	Keynote 3: Realizing the Inherent Performance of Modern ADCs in Real Systems Thomas Linnenbrink 2014 Keithley Award Winner					
8:30 - 9:15						
9:15 - 10:30	S8A: Signal & Image Processing Techniques (part 1)	S8B: Measurement and Instrumentation for Industrial Applications (part 1)	SS4P1: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 1)	S8D: Non-Invasive Measurement Techniques and Instrumentation (part 3)	S8E: Sensors and Sensor Fusion (part 1)	
10:30 - 11:00	COFFEE BREAK - 4th Floor Foyer					
	S9A: Signal & Image Processing Techniques (part 2)	S9B: Measurement and Instrumentation for Industrial Applications (part 2)	SS4P2: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 2)	S9D: Data Acquisition Systems and Techniques (part 1)	S9E: Sensors and Sensor Fusion (part 2)	Poster Sessions: PS9T, PS9U, PS9W, PS9X, PS9Y, PS9Z
11:00 - 12:45						
12:45 - 2:00	Lunch					

PROGRAM SCHEDULE - Thursday, May 15, 2014						
	Track 1	Track 2	Track 3	Track 4	Track 5	Track 6
	Conference Room	Gauguin	Cezanne	Renoir D	Renoir E	Picasso
2:00 - 3:45	S10A: Signal & Image Processing Techniques (part 3)	S10B: Measurement and Instrumentation for Industrial Applications (part 3)	SS4P3: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 3)	S10D: Data Acquisition Systems and Techniques (part 2)	S10E: Energy and Power Systems (part 4)	
3:45 - 4:15	COFFEE BREAK - 4th Floor Foyer					
4:15 - 6:00	S11A: Signal & Image Processing Techniques (part 4)	S11B: Measurement and Instrumentation for Industrial Applications (part 4)		S11D: Advances in Instrumentation and Measurement Developments and Techniques (part 5)		Poster Sessions: PS11U, PS11V, PS11W, PS11X

Monday, May 12 – Tutorials

Session 1

09:00 - 10:30

Room: Conference Room

How to model measurement activity and define uncertainty

Alessandro M Ferrero (Politecnico di Milano, Italy)

Room: Gauguin

Biomedical instrumentation amplifiers

Alfredo Arnaud (Electrical Engineering Department at Universidad Catolica del Uruguay, Uruguay)

Room: Renoir E

Advanced Sensors and Instrumentation

Subhas Mukhopadhyay (Massey University, New Zealand)

10:30 - 11:00

Coffee Break

Room: 4th Floor Foyer

Session 2

11:00 - 12:30

Room: Conference Room

Measurement Uncertainty Quantification

Daniel Watzenig (Graz University of Technology, Austria)

Room: Gauguin

Noise measurements in electronic devices

Fabien Pascal (Institut d'Electronique du Sud (IES laboratory), France)

Room: Renoir D

New developments in the field of atmospheric monitoring

Erna Frins (Instituto de Física, Facultad de Ingeniería, Universidad de la República, Uruguay)

Room: Renoir E

Reliable Flow Measurement

Anton Fuchs (Graz University of Technology & Virtual Vehicle, Austria)

12:30 - 2:00

Lunch

Room: Grand Ballroom

Session 3
2:00 - 3:30

Room: Conference Room
Methodology of Measurement

Dario Petri (Department of Industrial Engineering, University of Trento, Italy)

Room: Gauguin
Noise in Classical and Quantum Measurements

Fabio da Silva (National Institute of Standards and Technology, USA)

Room: Renoir D
Advances in Microwave Materials Characterization for NDT of Complex Structures: Theory, Methods, and Applications

Kristen M. Donnell (Missouri University of Science and Technology, USA)

Room: Renoir E
Temperature Sensors: From sense of touch towards smart dust

Conrado Rossi-Aicardi (Universidad de la Republica & NanoWattICs, Uruguay)

3:30 - 4:00
Coffee Break
Room: 4th Floor Foyer

Session 4
4:00 - 5:30

Room: Gauguin
Blind Signal Identification for Emerging Intelligent Radio Systems

Octavia Dobre (Memorial University of Newfoundland, Canada)

Room: Renoir D
Alkali atoms at the heart of photonic devices

Horacio Failache (Instituto de Física, Facultad de Ingeniería, Universidad de la Republica Uruguay)

Room: Renoir E
CMOS-based microsystems for biomedical applications

Diego Barretino (University of Applied Sciences of Southern Switzerland (SUPSI), Switzerland)

Tuesday, May 13

8:30 - 8:45

Opening Session

Room: Conference Room

8:45 - 9:45

Keynote: Beyond the Higgs boson hunting: high performance instrumentation and measurement technologies for testing and tuning particle accelerators at CERN

Keynote Speaker: *Pasquale Arpaia (European Organization for Nuclear Research (CERN), Geneva, Switzerland, University of Sannio, Benevento, Italia)*

Room: Conference Room

9:45 - 10:00

Announcements

Room: Conference Room

10:00 - 10:30

Coffee Break

Room: 4th Floor Foyer

10:00 - 12:30

PS1T: Advances in Instrumentation and Measurement Developments and Techniques (Part 1)

Room: Picasso

Chair: *Mihaela Albu (Politehnica University of Bucharest, Romania)*

Implementation of Vernier TDCs in 8-bit Microcontroller

Lars Bengtsson (University of Gothenburg, Sweden)

A Biofeedback Interactive Boxing System for Optimal Performance

Mohamad.Eid (New York University Abu Dhabi & New York University, UAE)

Chen-Jung Mei (New York University Abu Dhabi, UAE)

Claire Marie Thomas (New York University Abu Dhabi, UAE)

Design and Implementation of High-Performance Master/Slave Memory Controller with Microcontroller Bus Architecture

Shashisekhar Ramagundam (Troy University, USA, University of Ottawa, Canada)

Sunil R. Das (University of Ottawa, Canada)

Scott Morton (Troy University, USA)

Satyendra N. Biswas (Kaziranga University, India)

Voicu Groza (University of Ottawa, Canada)

Mansour H. Assaf (The University of the South Pacific (USP) & Faculty of Science & Technology, Fiji)

Emil M. Petriu (University of Ottawa, Canada)

Calibration of Accelerometer with Multicomponent Inputs

Wei Guan (Beijing University of Aeronautics & Astronautics (BUAA), P.R. China)

Xueming Dong (Changcheng Institute of Metrology & Measurement, P.R. China)

Xiaofeng Meng (Beijing University of Aeronautics & Astronautics (BUAA), P.R. China)

The Effect of a Particle Trajectory through the Measurement Volume on the Accuracy of the Laser Doppler Frequency Estimation

Janusz Kulon (University of South Wales, United Kingdom)

Lu Zhang (North China Electric Power University, P.R. China)

A Low-power Design of a Bridge Scour Monitoring System

Yu-Chieh Chen (Department of Electrical Engineering, National Tsing-Hua University & Instrument Technology Research Center, Advanced Electronic System Division, Taiwan)
Tai-Shan Liao (Instrument Technology Research Center, Taiwan)
Kuo-Cheng. Huang (Instrument Technology Research Center, Taiwan)
Hsin Chen (Department of Electrical Engineering, National Tsing Hua University, Taiwan)

10:00 - 12:30

PS1U (Poster Session): Measurement and Instrumentation for Industrial Applications (part 1)

Room: Picasso

Chair: *Diego Barrettino (University of Applied Sciences of Southern Switzerland (SUPSI), Switzerland)*

External visual interface for a Nikon 6D autocollimator

Guillermo Bergues (Universidad Tecnológica Nacional - FRC Argentina)
Ana Georgina Flesia (Universidad Nacional de Córdoba & Conicet, Argentina)
Clemar Schurrer (Universidad Tecnológica Nacional - FRC & CEMETRO, Argentina)
Luis Canali (Universidad Tecnológica Nacional - FRC, Argentina)
Guillermo Ames (Universidad Tecnológica Nacional - FRC, Argentina)

Evaluation of Transducer Configurations for Ultrasound Cross-Correlation Flowmeters

Michael Vogt (Ruhr-University, Germany)
Martin Gevers (Ruhr-Universität Bochum, Germany)
Thomas Musch (Ruhr-Universität Bochum, Germany)

Measurement Platform of Mains Zero Crossing Period for Powerline Communication

Souha Souissi (SUPCOM, Tunisia)
Ons Bel Hadj Rhouma (High School of Communication, Tunisia)
Chiheb Rebai (Ecole Supérieure des Communications de Tunis (SUP'COM), Tunisia)

Accurate DC-DC Power Converters as Hydro Turbine Speed Governor Power Supply

Pablo Thomasset Trakalo (IEEE Uruguay Secretary - PES/I&M Chapter Chair, Uruguay)
C.H. Dr. G. Terra (Power Plant Maintenance Manager, UTE, Uruguay)

A High Spatial and Temporal Resolution Film Thickness Sensor in Oil - Water Flows

Adriana Bonilla Riaño (University of Campinas, Brazil)
Antonio Carlos Bannwart (University of Campinas, Brazil)
H-M Prasser (Institut für Energietechnik, ETH, Switzerland)
Julien Dupont (Institut für Energietechnik, ETH, Switzerland)
Oscar M. H. Rodriguez (University of Sao Paulo (USP), Brazil)

Condition Monitoring of Brushless DC Motors with Non-Stationary Dynamic Conditions

Jose Francisco Zubizarreta-Rodriguez (University Centre for Field Robotics, University of Sydney, Australia)
Shrihari Vasudevan (University Centre for Field Robotics, The University of Sydney, Australia)

10:00 - 12:30

PS1V (Poster Session): Signal & Image Processing Techniques (Part 1)

Room: Picasso

Chair: *Consolatina Liguori (University of Salerno, Italy)*

A study of bone age evaluation based on hand knuckles radiogram

Chih-Yen Chen (Instrument Technology Research Center & Instrument Technology Research Center, Taiwan)

Chi-Wen Hsieh (National Chiayi University, Taiwan)

Hsian-Chuan Liu (Taipei Veterans General Hospital, Taiwan)

Tai-Lang Jong (National Tsing Hua University, Taiwan)

Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)

Chui-Mei Tiu (Taipei Veterans General Hospital, Taiwan)

Yi-Hong Chou (Taipei Veterans General Hospital, Taiwan)

Segmentation of Pigmented Skin Lesions Using Non-negative Matrix Factorization

Pablo G. Cavalcanti (Universidade Federal do Rio Grande do Sul, Brazil)

Jacob Scharcanski (Universidade Federal do Rio Grande do Sul, Brazil, Brazil)

César Martínez (Universidad Nacional del Litoral, Argentina)

Leandro E. Di Persia (Universidad Nacional del Litoral, Argentina)

Artificial Immune Algorithm Based Signal Reconstruction for Compressive Sensing

Dan Li (Harbin Institute of Technology, P.R. China)

Chunli Shi (China Electronic Equipment System Engineering Corporation, P.R. China)

Qiang Wang (Harbin Institute of Technology, P.R. China)

Yi Shen (Harbin Institute of Technology, P.R. China)

Yan Wang (Harbin Institute of Technology, P.R. China)

10:00 - 12:30

PS1W (Poster Session): Software Development for Measurement and Instrumentation Support

Room: Picasso

Chair: *Daniel Izquierdo (UTE Laboratory, Uruguay)*

Images from high-voltage impulse discharges evaluated with a developed graphical software

Sergio Dias Carvalho Silva (Federal University of Paraiba, Brazil)

Ruy Alberto Altafim (Federal University of Paraiba, Brazil)

Antonio Carlos Cavalcanti (Federal University of Paraiba, Brazil)

Daniel Rodrigo Falconi (University of Sao Paulo, Brazil)

Ruy Alberto Corrêa Altafim (University of Sao Paulo, Brazil)

Estimation of physiological body parameters from smart garment data

Ritaban Dutta (CSIRO ICT, Australia)

Aruneema Das (University of Tasmania, Australia)

Paul Betty (University of Manchester, UK)

Data Reading and Monitoring System of Bearingless Machine

Jossana Ferreira (Federal University of Rio Grande do Norte, Brazil)

Andres Ortiz Salazar (Federal University of Rio Grande do Norte, Brazil)

Diego Moura (Federal University of Rio Grande do Norte, Brazil)

Software Development for Acquisition and Data Management in Optical Sensor Networks

Adam Santos (Federal University of Pará, Brazil)
Moisés Felipe Silva (Federal University of Pará, Brazil)
Claudio Jr. Sales (Federal University of Para, Brazil)
Cindy Fernandes (Federal University of Pará, Brazil)
Marco Sousa (UFPA, Brazil)
Joao Crisostomo Weyl Costa (UFPA, Brazil)
Remo Souza (Federal University of Pará, Brazil)

10:00 - 12:30

PS1X (Poster Session): Student Poster Contest

Room: Picasso

Chair: *Bernardo Tellini (University of Pisa, Italy)*

Frequency-domain Phase Measurement Algorithms for Distribution Systems

Grazia Barchi (University of Trento, Italy)
Daniele Fontanelli (University of Trento, Italy)
David Macii (University of Trento, Italy)
Dario Petri (University of Trento, Italy)

Integrated programmable analog front-end architecture for physiological signal acquisition

Julian Oreggioni (Universidad de la República, Uruguay)
Fernando Silveira (Universidad de la República, Uruguay)

Finite Element Aided Measurement of Stress Fields in Different Bone Layers Subject to Therapeutic Ultrasonic Excitation

Wenlei Pan (Harbin Institute of Technology, P.R. China)
Yi Shen (Harbin Institute of Technology, P.R. China)
Ting Liu (Harbin Institute of Technology, P.R. China)
Renlong Yu (Harbin Institute of Technology, P.R. China)
Ping Fu (Harbin Institute of Technology, P.R. China)

Transducer with Thermal Sigma-Delta Modulator

Valter da Conceição Rosa (Federal University of Bahia, Brazil)
Amauri Oliveira (Federal University of Bahia, Brazil)

Phase-Shift and Information Measures for Retinal Motion Detection and Compensation with Optimized Parameter Selection

Lucas R. ScharDOSim (UFRGS, Brazil)
Jacob Scharcanski (UFRGS, Brazil)

High precision on-loom yarn density measurement in woven fabrics

Dorian Schneider (RWTH Aachen University, Germany)
Dorit Merhof (RWTH Aachen University, Germany)

Performance Assessment of the Rotational Speed Measurement System Based on a Single Electrostatic Sensor

Lijuan Wang (North China Electric Power University, P.R. China)
Yonghui Hu (North China Electric Power University, P.R. China)
Yong Yan (University of Kent, United Kingdom)
Xiangchen Qian (North China Electric Power University, P.R. China)

10:30 - 12:30

S1A: Energy and Power Systems (Part 1)

Room: Conference Room

Chair: *Jorge Fernandez Daher (IEEE IMS Chapter, Uruguay)*

Measuring Micro-amp Inductor Currents in Switched-inductor DC-DC Power Supplies

Andres A. Blanco (Georgia Institute of Technology, USA)

Gabriel A. Rincón-Mora (Georgia Institute of Technology, USA)

Characterization of an Arbitrary Medium Voltage Signal Generator

Marco Faifer (Politecnico di Milano, Italy)

Roberto Ottoboni (Politecnico di Milano, Italy)

Sergio Toscani (Politecnico di Milano, Italy)

Paolo Mazza (RSE S.p.A., Italy)

Claudio Cherbaucich (RSE S.p.A., Italy)

Evaluation of Comparing Algorithms used in Chopped Impulse Transformer Measurements

Jose Joskowicz (Universidad de la República & Facultad de Ingenieria, Uruguay)

Gabriel Slomovitz (Huawei, Uruguay)

Daniel Slomovitz (ITEL, Uruguay)

Alignment and Interconnection of Photovoltaics on Electric and Hybrid Electric Vehicles

Christian Schuss (University of Oulu, Finland)

Harald Gall (ams AG, Austria)

Klaus Eberhart (ams AG, Austria)

Hannes Illko (ams AG, Austria)

Bernd Eichberger (Graz University of Technology, Austria)

Improvement of Interconnections of Low-cost, Low-power Photovoltaics

Christian Schuss (University of Oulu, Finland)

Bernd Eichberger (Graz University of Technology, Austria)

Timo Rahkonen (University of Oulu, Finland)

10:30 - 12:30

S1B: Measurement Systems and Theory (Part 1)

Room: Gauguin

Chair: *John Dyer (University of Oklahoma, USA)*

Inverse Boundary Value Problems with Uncertain Boundary Values and Their Relevance to Inclinometer Measurements

Paul O'Leary (University of Leoben, Austria)

Matthew Harker (University of Leoben, Austria)

1 GHz Automatic 2-Port Vector Network Analyzer Using Common Laboratory Instruments

Alejandro Henze (Universidad Tecnológica Nacional & UTN - FRBA, Argentina)

G. Monasterios (Universidad Tecnológica Nacional & UTN - FRBA, Argentina)

F. Ponce (Universidad Tecnológica Nacional & UTN - FRBA, Argentina)

S. Giordano (Universidad Tecnológica Nacional & UTN - FRBA, Argentina)

J. Ceconi (Universidad Tecnológica Nacional & UTN - FRBA, Argentina)

Simultaneous Multi-Camera Calibration Based on Phase-Shift Measurements on Planar Surfaces

Michal Rapczynski (Otto-von-Guericke University Magdeburg, Germany)

Erik Lilienblum (Otto-von-Guericke University Magdeburg, Germany)

Sebastian von Enzberg (Otto-von-Guericke University Magdeburg, Germany)

Ayoub Al-Hamadi (Otto-von-Guericke University Magdeburg, Germany)

A New Approach To Uncertainty Evaluation in Complex Measurement Systems - J. Barry Oakes Advancement Award Recipient

Marco Prioli (Politecnico di Milano, Italy)

10:30 - 12:30

SS3: Emerging methods for measuring, modeling and instrumentation in medical applications

Room: Cezanne

Chair: *Wendy Van Moer (Vrije Universiteit Brussel, Belgium)*

Emerging methods for measuring, modeling and instrumentation in medical applications

Federico de Mula (CCC Medical Devices, Uruguay)

Unstable gait assessment with a portable analysis system

Fernando Bagalciague (Laboratorio de Otoneurología, Uruguay)

Cecilia San Román (Laboratorio de Otoneurología & CSR, Uruguay)

Enrique Ferreira (Universidad Católica del Uruguay, Uruguay)

Mariana Arocena (Laboratorio de Otoneurología, Uruguay)

Nicolas Peña (Universidad Católica del Uruguay, Uruguay)

Hamlet Suárez (Laboratorio de Otoneurología, Uruguay)

Characteristics of Baseband Digital Signal Transmission for Intrabody Communications

Zibo Cai (Victoria University, Australia)

MirHojjat Seyedi (Victoria University, Australia)

Daniel T. H. Lai (Victoria University, Australia)

Francois Rivet (University of Bordeaux IMS Laboratory, France)

RFID - Hybrid Scene Analysis-Neural Network System for 3D Indoor Positioning, Optimal system arrangement approach

Bartosz Jachimczyk (Gdansk University of Technology, Poland)

Damian Dziak (Gdansk University of Technology, Poland)

Wlodek J. Kulesza (Blekinge Institute of Technology, Sweden)

10:30 - 12:30

S1D: Measurement of Electric and Magnetic Quantities

Room: Renoir D

Chair: *Juan Pechiar (Universidad de la República, Uruguay)*

GMI Magnetic Sensor Operating with A Direct Digital Synthesizer (DDS)

Manel Zidi (University of Grenoble, National Polytechnic Institute of Grenoble & Electrical Engineering Laboratory Grenoble, France)

Aktham Asfour (University of Grenoble, National Polytechnic Institute of Grenoble & Electrical Engineering Laboratory Grenoble, France)

Jean-Paul Yonnet (University of Grenoble, National Polytechnique Institute of Grenoble, France)

Low Cost Measurement Equipment for the Accurate Calibration of Voltage and Current Transducers

Gabriella Crotti (Istituto Nazionale di Ricerca Metrologia, Italy)

Daniele Gallo (Second University of Naples, Italy)

Domenico Giordano (Istituto Nazionale di Ricerca Metrologia, Italy)

Carmine Landi (Second University of Naples, Italy)

Mario Luiso (Second University of Naples, Italy)

Claudio Cherbaucich (RSE S.p.A., Italy)

Paolo Mazza (RSE S.p.A., Italy)

RFID Chip Characterization through S-Parameter Measurements and Gene Expression Programming

Fernando M. Janeiro (Universidade de Évora, Portugal)

Jorge R. Costa (Instituto de Telecomunicações / ISCTE-IUL, Portugal)

Carlos A. Fernandes (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)

Pedro M. Ramos (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)

DC-compensated Current Transformer

Pavel Ripka (Czech Technical University in Prague, Czech Republic)

Karel Draxler (Czech Technical University in Prague, Czech Republic)

Renata Styblikova (Czech Metrology Institute, Czech Republic)

10:30 - 12:30

S1E: Measurement Applications (Part 1)

Room: Renoir E

Chair: *Fabien Pascal (University of Montpellier, France)*

Microwave Detection of Carbonation in Mortar Using Dielectric Property Characterization

Ashkan Hashemi (Missouri University of Science and Technology & Applied Microwave Nondestructive Testing Laboratory, USA)

Kristen M Donnell (Missouri Missouri University of Science and Technology & Applied Microwave Nondestructive Testing Laboratory, USA))

Reza Zoughi (Missouri University of Science and Technology & Applied Microwave Nondestructive Testing Laboratory, USA))

Marc Knapp (Georgia Institute of Technology, USA)

K.E. Kurtis (Georgia Institute of Technology, USA)

Estimation of a 4-Port Scatter Matrix from 2-Port Measurements

Markus Neumayer (Graz University of Technology, Austria)

Thomas Bretterkieber (Graz University of Technology, Austria)

Embedded Microcontroller using GPS as a Security Resource for Disabled People

Jesús Cabal-Aragón (Universidad de Guanajuato, Mexico)

Juan Pomárico-Franquiz (University of Guanajuato, Mexico)

Yuriy S. Shmaliy (Universidad de Guanajuato, Mexico)

Oscar Vera-Almanza (University of Guanajuato, Mexico)

Measurement imperfections impact on the performance of digitally predistorted power amplifiers

Tingxiao Yang (University of Gävle, Sweden)

Efrain Zenteno (The Royal Institute of Technology KTH & University of Gävle, Sweden)

Niclas Björnsell (University of Gävle, Sweden)

Effect of the Wingtip Shape on the Performance of an Averaging Pitot Tube Flow Sensor

Huanjie Zan (Tianjin University, P.R. China)

Lijun Sun (Tianjin University, P.R. China)

Chao Sun (Tianjin University, P.R. China)

Yong Yan (University of Kent, United Kingdom)

12:30 - 2:00

Lunch

Room: Grand Ballroom

2:00 - 3:45

S2A: Energy and Power Systems (Part 2)

Room: Conference Room

Chair: Pablo Thomasset Trakalo (*IEEE Uruguay Secretary - PES/I&M Chapter Chair, Uruguay*)

Improving Availability of Distributed PMU in Electrical Substations using Wireless Redundant Process Bus

Paolo Castello (University of Cagliari, Italy)
Paolo Ferrari (University of Brescia, Italy)
Alessandra Flammini (University of Brescia, Italy)
Carlo Muscas (University of Cagliari, Italy)
Paolo Attilio Pegoraro (University of Cagliari, Italy)
Stefano Rinaldi (University of Brescia, Italy)

Synchronization Requirements of a Power Quality Measurement System for the Distribution Grid

Davide Della Giustina (A2A Reti Elettriche SpA, Italy)
Paolo Ferrari (University of Brescia, Italy)
Alessandra Flammini (University of Brescia, Italy)
Stefano Rinaldi (University of Brescia, Italy)

Comparison between radial and axial permanent magnet generators for low speed application

Velington de Aquino Neumann (Universidade Federal do Rio Grande do Sul, Brazil)
Roberto Petry Hornrich (Universidade Federal do Rio Grande do Sul, Brazil)

A Space Vector Based Approach for Synchrophasor Measurement

Sergio Toscani (Politecnico di Milano, Italy)
Carlo Muscas (University of Cagliari, Italy)

2:00 - 3:45

S2B: Measurement Systems and Theory (Part 2)

Room: Gaugin

Chair: Kristen M Donnell (*Missouri University of Science and Technology, USA*)

Measurement and Instrumentation in the Classroom Damped Oscillatory Systems

John W. Dyer (University of Oklahoma & MARIP, LLC, USA)
David Sandmann (University of Oklahoma USA)
John E. Fagan (University of Oklahoma, USA)

Research on Dynamic Calibration and Dynamic Compensation of K-type Thermocouple

Hao Feng (The North University of China, P.R. China)
Chenyang Zhao (North University of China, P.R. China)
Yani Xie (North University of China, P.R. China)
Wenlian Wang (North University of China, P.R. China)
Xia Zhang (North University of China, P.R. China)
Zhijie Zhang (North University of China, P.R. China)

Numerical Simulation and Experimental Study of the Vortex Flow Around a Bluff Body in Horizontal Gas-liquid Two-phase Flow

Hongjun Sun (Tianjin University, P.R. China)
Jinxia Li (Tianjin University, P.R. China)
Chao Wang (Tianjin University, P.R. China)
Yong Yan (University of Kent, United Kingdom)
Yonghui Hu (North China Electric Power University, P.R. China)

Monte-Carlo parameter uncertainty analysis under dynamical and operational measurement conditions

Kurt Barbé (Vrije Universiteit Brussel, Belgium)

Lee Gonzales-Fuentes (Vrije Universiteit Brussel, Belgium)

Oscar Olarte (Vrije Universiteit Brussel, Belgium)

Lieve Lauwers (Vrije Universiteit Brussel, Belgium)

2:00 - 3:45

S2C: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (Part 1)

Room: Cezanne

Chair: *Franco Simini (Universidad de la Republica, Uruguay)*

A simple measuring system for early detection of haemolysis during haemodialysis

Stefano Cattini (University of Modena and Reggio Emilia, Italy)

Luigi Rovati (University of Modena and Reggio Emilia, Italy)

Mario Bernabei (University of Modena and Reggio Emilia, Italy)

Domenico Cianciavichia (Bellco Srl, Italy)

Paolo Monari (Egicon Srl, Italy)

Alberto Sicuri (Egicon Srl, Italy)

A Portable Dosimetric System Based on a CMOS Image Sensor for Radiation Protection in Interventional Radiology

Elia Conti (University of Perugia & INFN, Italy)

Pisana Placidi (University of Perugia, Italy)

Daniel Magalotti (University of Modena and Reggio Emilia, Italy)

Lucia Bissi (INFN, Italy)

Massimiliano Paolucci (ASL3-Foligno, Italy)

Andrea Scorzoni (University of Perugia, Italy)

Leonello Servoli (INFN, Italy)

Aegis: A Biofeedback Adaptive Alarm System Using Vibrotactile Feedback

Lan Duong (New York University Abu Dhabi, UAE)

Maedot Andargie (New York University Abu Dhabi, UAE)

Jeffrey Chen (New York University Abu Dhabi, UAE)

Nikolas Giakoumidis (New York University, USA)

Mohamad Eid (New York University Abu Dhabi & New York University, UAE)

Heat Therapy HIFU Transducer Electrical Impedance Modeling by using FEM

Raquel Martinez (CINVESTAV, Mexico)

Arturo Vera (CINVESTAV, Mexico)

Lorenzo Leija (CINVESTAV, Mexico)

2:00 - 3:45

S2D: Measurement of Materials and Mechanical Quantities

Room: Renoir D

Chair: *Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)*

Cure-State Monitoring of Concrete and Mortar Specimens using Smart Aggregates

Kwok Chung (University of Western Sydney, Australia)

Sergey Kharkovsky (University of Western Sydney, Australia)

Qingzhao Kong (University of Houston, USA)

Gangbing Song (University of Houston, USA)

Development of a mechanical strain sensor based on time reversal of ultrasonic guided waves

Alan Kubrusly (Pontifical Catholic University of Rio de Janeiro, Brazil)
Jean Pierre von der Weid (Pontifical Catholic University of Rio de Janeiro, Brazil)
Arthur Braga (Pontifical Catholic University of Rio de Janeiro, Brazil)
Nicolás Pérez (University of the Republic, Uruguay)
Julio Cezar Adamowski (University of São Paulo, Brazil)
Timoteo Francisco de Oliveira (University of São Paulo, Brazil)

Thermal cycling effect on a shape memory and piezoelectric heterostructure

Cícero Souto (Federal University of Paraíba – UFPB, Brazil)
Rosiane Silva (Federal University of Paraíba – UFPB, Brazil)
Alexandre Castro (Federal University of Paraíba – UFPB, Brazil)
Alexsandro Santos (Universidade Federal da Paraíba, Brazil)
Rebeca Souza (Federal University of Paraíba – UFPB, Brazil)

Time-efficient dynamic analysis of structures exhibiting Nonlinear Peak Bending

Christian Sprock (University of Paderborn, Germany)
Walter Sextro (Universität Paderborn, Germany)

2:00 - 3:45

S2E: Measurement Applications (part 2)

Room: Renoir E

Chair: Jose Joskowicz (*Universidad de la República y Facultad de Ingeniería, Uruguay*)

A controlled-temperature hot-wire anemometer with voltage feedback linearization

Leonardo de Araujo (Federal University of Rio Grande do Norte, Brazil)
Sebastian Yuri Cavalcanti Catunda (Federal University of Rio Grande do Norte, Brazil)
Carlos E T Dorea (Federal University of Rio Grande do Norte, Brazil)
Raimundo Freire (Universidade Federal de Campina Grande - PB, Brazil)

Applications of Smart Metering and Home Appliances' Power Signatures

Marius Marcu (Politehnica University of Timisoara, Romania)
Cosmin Cernazanu (Politehnica University of Timisoara, Romania)

Performance Evaluation of a Sensor-Based System Devised to Minimize Commercial Losses in Street Lighting Networks

Guilherme Marcio Soares (Federal University of Juiz de Fora, Brazil)
Alcindo G. B. Almeida (Federal University of Juiz de Fora, Brazil)
Raphael M. Mendes (Federal University of Juiz de Fora, Brazil)
Estêvão Coelho Teixeira (Federal University of Juiz de Fora, Brazil)
Henrique A.C. Braga (Federal University of Juiz de Fora, Brazil)
Missael N. Machado (Federal University of Espírito Santo, Brazil)
Raphael S. Broetto (Federal University of Espírito Santo, Brazil)
Murillo V.H.B. Castro (Federal University of Espírito Santo, Brazil)
Helder O. Gomes Filho (Federal University of Espírito Santo, Brazil)
Flávio Miguel Varejão (Federal University of Espírito Santo, Brazil)
José G. Pereira Filho (Federal University of Espírito Santo, Brazil)
André Candeia (EDP, Brazil)
Rafael Sousa (EDP, Brazil)

An application of the Random-Fuzzy variables for the safeguard of underwater cultural heritage

Emma Angelini (Politecnico di Torino, Italy)
Sabrina Grassini (Politecnico di Torino, Italy)
Marco Parvis (Politecnico di Torino, Italy)
Marco Prioli (Politecnico di Milano, Italy)
Simona Salicone (Politecnico di Milano, Italy)

3:45 - 4:15

Coffee Break

Room: 4th Floor Foyer

3:45 - 6:00

PS3T (Poster Session): Advances in Instrumentation and Measurement Developments and Techniques (part 2)

Room: Picasso

Chair: *Paolo Carbone (University of Perugia, Italy)*

Effects of Stray Capacitances on High Voltage Current Transformers

Gonzalo Aristoy (UTE, Uruguay)

Daniel Slomovitz (UTE, Uruguay)

Alejandro Santos (UTE, Uruguay)

Modular Test RF Instrumentation and Measurement for a Hybrid Computing Digital Wideband Receiver

Kiran George (Cal State Fullerton, USA)

Chien-In Henry Chen (Wright State University, USA)

Improving Adjacent Channel Power Measurements of Wireless Standards

Alejandro Buritica (National Instruments, USA)

Yupeng Jia (National Instruments, USA)

Andy Hinde (National Instruments, USA)

Prototype for the Estimation and Evaluation of Walking Velocity Using Acceleration Transducers

Felipe Tondo (University of Caxias do Sul, Brazil)

Ricardo Becker (University of Caxias do Sul, Brazil)

Luciano Salerno (University of Caxias do Sul, Brazil)

Standard for Electric Distorted Waveforms

Leonardo Trigo (UTE, Uruguay)

Inés Camacho (UTE, Uruguay)

Daniel Slomovitz (UTE, Uruguay)

Automated Sensing, Interpretation and Conversion of Facial and Mental Expressions into Text Acronyms using Brain-Computer Interface Technology

Kiran George (California State University Fullerton, USA)

Adrian Iniguez (California State University Fullerton, USA)

Hayden Donze (California State University Fullerton, USA)

Defect Evaluation Using the Phase Information of an EC-GMR Sensor

Peng Gao (Tianjin University, P.R. China)

Chao Wang (Tianjin University, P.R. China)

Yang Li (Tianjin University, P.R. China)

Fanwei Li (Tianjin University, P.R. China)

Yong Yan (University of Kent, United Kingdom)

Yonghui Hu (North China Electric Power University, P.R. China)

3:45 - 6:00

PS3U (Poster Session): Measurement and Instrumentation for Industrial Applications

Room: Pavilion

Chair: *Leonardo Trigo (UTE, Uruguay)*

A System for Dynamic Contact Resistance with Arduino Platform on MV and HV Circuit Breaker

Ronimack Trajano de Souza (Federal Institute of Paraíba, João Pessoa, Brazil)

Edson Guedes da Costa (Federal University of Campina Grande, Brazil)

Jaiberth Fernandes de Araújo (Campina Grande Federal University - UFCG, Brazil)

Euler C. Tavares Macêdo (Federal University of Paraíba, Brazil)

Testing Protocols for Battery Characterization

Daniele Gallo (Second University of Naples, Italy)

Carmine Landi (Second University of Naples, Italy) Mario Luiso (Second University of Naples, Italy)

Aniello Rosano (Second University of Naples, Italy)

Marco Landi (University of Salerno, Italy)

Vincenzo Paciello (University of Salerno, Italy)

A Low Cost Smart Meter Network for a Smart Utility

Gianluca Aurilio (Second University of Naples, Italy)

Daniele Gallo (Second University of Naples, Italy)

Carmine Landi (Second University of Naples, Italy)

Mario Luiso (Second University of Naples, Italy)

Giorgio Graditi (ENEA, Italy)

Metrological Characterization of a Cold Plate Test Bench

Massimo Lazzaroni (Università degli Studi di Milano, INFN, Italy)

Mauro Citterio (INFN Milano, Italy)

Stefano Latorre (INFN Milano, Italy)

Agostino Lanza (INFN Milano, Italy)

Paolo Cova (University of Parma, INFN Pavia, Italy)

Nicola Delmonte (Università di Parma, INFN Pavia, Italy)

Francesco Giuliani (Università di Parma, Italy)

Closed-Loop Control Systems in a Platform for Fouling Detection

Thamiles Rodrigues de Melo (Federal University of Campina Grande, Brazil)

Jaidilson Jo Silva (Federal University of Campina Grande, Brazil)

J. S. Rocha Neto (Federal University of Campina Grande, Brazil)

3:45 - 6:00

PS3V (Poster Session): Measurement Signal & Image Processing Techniques (part 2)

Room: Picasso

Chair: *Voicu Groza (University of Ottawa, Canada)*

Segmenting a Signal Based on a Local Property Using Multicore Processors

Lee Barford (Measurement Research Laboratory, Agilent Technologies, USA)

Kristen Keenan (Agilent Technologies, USA)

Sub-pixel straight lines detection for measuring through machine vision

Ana Georgina Flesia (Universidad Nacional de Córdoba & Conicet, Argentina)

Guillermo Ames (Universidad Tecnológica Nacional - FRC, Argentina)

Guillermo Bergues (Universidad Tecnológica Nacional - FRC, Argentina) Luis Canali (Universidad Tecnológica Nacional - FRC, Argentina)

Clemar Schurrer (Universidad Tecnológica Nacional - FRC, CEMETRO, Argentina)

Online visual inspection of defects in the assembly of electromechanical parts

Giuseppe Di Leo (University of Salerno, Italy)

Consolatina Liguori (University of Salerno, Italy)

Alfredo Paolillo (University of Salerno, Italy)

Antonio Pietrosanto (University of Salerno, Italy)

Enrico Adiatori (Bitron, Alatri plant, Italy)

Fabrizio Promutico (Bitron, Alatri plant, Italy)

Managing the uncertainty for face classification with 3D features

Giovanni Betta (University of Cassino and Southern Lazio & DIEI, Italy)

Domenico Capriglione (University of Cassino and Southern Lazio & DIEI, Italy)

Michele Gasparetto (Politecnico di Milano, Italy)

Emanuele Zappa (Politecnico di Milano, Italy)

Consolatina Liguori (University of Salerno, Italy)

Alfredo Paolillo (University of Salerno, Italy)

Comparative analysis between impulsive detection methods applied on partial discharge acoustic signals

Clovis Ferreira dos Reis (Computer Systems Department, Federal University of Paraiba, Brazil)

Ruy Alberto Pisani Altafim (Computer Systems Department, Federal University of Paraiba, Brazil)

Yvan Gutnik (University of São Paulo, Brazil)

Ruy Alberto Corrêa Altafim (University of São Paulo, Brazil)

Antonio Carlos Cavalcanti (Informatics Department, Federal University of Paraiba, Brazil)

Spectral-Spatial Hyperspectral Image Classification via SVM and Superpixel Segmentation

Zhi He (Harbin Institute of Technology, P.R. China)

Yue Shen (Harbin Institute of Technology, P.R. China)

Miao Zhang (Harbin Institute of Technology, P.R. China)

Qiang Wang (Harbin Institute of Technology, P.R. China)

Yan Wang (Harbin Institute of Technology, P.R. China)

Renlong Yu (Harbin Institute of Technology, P.R. China)

3:45 - 6:00

PS3W (Poster Session): Wireless Sensors (Part 1)

Room: Picasso

Chair: *Daniele Fontanelli (University of Trento, Italy)*

Switched-Capacitor Pulse-Width Programmable Gain Integrating Amplifier

Michel Santana de Deus (Federal University of Rio Grande do Norte, Brazil)

Sebastian Yuri Cavalcanti Catunda (Federal University of Rio Grande do Norte, Brazil)

Vincent Bourguet (Federal University of Rio Grande do Norte, Brazil)

Diomadson R Belfort (Federal University of Rio Grande do Norte, Brazil)

Fernando Rangel de Sousa (Federal University of Santa Catarina, Brazil)

Flexible Wireless Sensor Network for smart lighting applications

Renato F. Fernandes, Jr. (University of São Paulo, Brazil)

Cleber C. Fonseca (University of São Paulo, Brazil)

Dennis Brandão (University of São Paulo, Brazil)

Paolo Ferrari (University of Brescia, Italy)

Alessandra Flammini (University of Brescia, Italy)

Angelo Vezzoli (University of Brescia, Italy)

Algorithm for Estimation of Energy Consumption of Industrial Wireless Sensor Networks

Nodes

Ivan Müller (Federal University of Rio Grande do Sul, Brazil)

Jean Michel Winter (Federal University of Rio Grande do Sul, Brazil)

Valner Brusamarello (Federal University of Rio Grande do Sul, Brazil)

Carlos E Pereira (Federal University of Rio Grande do Sul, Brazil)

João Cesar Netto (Federal University of Rio Grande do Sul, Brazil)

3:45 - 6:00

PS3X (Poster Session): Measurement of Electric and Magnetic Quantities

Room: Picasso

Chair: *Matias Miguez (Universidad Catolica del Uruguay, Uruguay)*

DC-bias effect on dielectric properties of multiwalled carbon nanotubes SDBS/PEDOT:PSS nanocomposites

Abderrahmane Benchirouf (Technische Universität Chemnitz, Germany)

Abdulkadir Sanli (Technische Universität Chemnitz, Germany)

Olfa Kanoun (Chemnitz University of Technology, Germany)

Christian Müller (Technische Universität Chemnitz, Germany)

S. Palaniyappan (Technische Universität Chemnitz, Germany)

Ravikant Sharma (Technische Universität Chemnitz, Germany)

Evaluation of Uncertainties in Testing of Losses in Power Transformers by Monte Carlo Method

Marcelo Lourenço (Universidade Federal de Goiás, Brazil)

Adalberto José Batista (Universidade Federal de Goiás, Brazil)

Wander Gonçalves da Silva (Universidade Federal de Goiás, Brazil)

Measurement of Rail Current Distribution in Rail Launchers

Roberto Ferrero (University of Pisa, Italy)

Mirko Marracci (University of Pisa, Italy)

Bernardo Tellini (University of Pisa, Italy)

Fluxgate magnetometer vector feedback homogeneity and its influence on sensor parameters

Vojtech Petrucha (Czech Technical University in Prague, Czech Republic)

Michal Janošek (Czech Technical University in Prague, Czech Republic)

Marco A. Azpúrua (Instituto de Ingeniería, Venezuela)

Characterization of Magnetite Nanoparticles

Anna Maria Raspolli Galletti (University of Pisa, Italy)

Elisa Bertolucci (University of Pisa, Italy)

Mirko Marracci (University of Pisa, Italy)

Bernardo Tellini (University of Pisa, Italy)

Ciro Visone (University of Sannio, Italy)

Detection and Monitoring of Leakage Currents in Distribution Line Insulators

Marcelo Martins Werneck (Universidade Federal do Rio de Janeiro, Brazil)

Daniel M. Santos (Universidade Federal do Rio de Janeiro, Brazil)

Fábio V. B. de Nazaré (Universidade Federal do Rio de Janeiro, Brazil)

José L. da Silva Neto (Universidade Federal do Rio de Janeiro, Brazil)

Regina C. Allil (Universidade Federal do Rio de Janeiro, Brazil)

Bessie de Assumpção Ribeiro (Universidade Federal do Rio de Janeiro, Brazil)

Cesar C. Carvalho (Universidade Federal do Rio de Janeiro, Brazil)

Fábio Lancelotti (AMPLA, Brazil)

Calibration procedure for triaxial magnetometers without a compensating system or moving parts

Ales Zikmund (Czech Technical University in Prague, Czech Republic)

Michal Janosek (Czech Technical University in Prague, Czech Republic)

3:45 - 6:00

PS3Y (Poster Session): Sensors and Sensor Fusion

Room: Picasso

Chair: *Daniel Izquierdo (UTE Laboratory, Uruguay)*

Using Portable Device Sensors to Recognize Height Changing Modes of Motion

Mostafa Elhoushi (Trusted Positioning Inc., Queen's University, Canada)

Jacques Georgy (Trusted Positioning Inc., Canada)

Ahmed Wahdan (Trusted Positioning Inc., Canada)

Michael Korenberg (Queen's University, Canada)

Aboelmagd Noureldin (Queen's University, Royal Military College of Canada, Canada)

Identification of Environmental Influences in Electronic Nose Measurement Data

Maximilian Fechteler (TU Berlin, Germany)

Matthias Blankenburg (Fraunhofer Institute for Production Systems and Design Technology, Germany)

Jörg Krüger (Fraunhofer Institute for Production Systems and Design Technology, Germany)

Ultrasonic Time-of-Flight Estimation based on Maximum Likelihood Data Fusion using Triangular Distribution

Lucas de Morais Toledo (Universidade Federal da Paraíba, Brazil)

Juan Moises Mauricio Villanueva (Universidade Federal da Paraíba, Brazil)

Sebastian Yuri Cavalcanti Catunda (Federal University of Rio Grande do Norte, Brazil)

Raimundo Carols Silvério Freire (Universidade Federal de Campina Grande, Brazil)

4:15 - 6:00

S3A: Energy and Power Systems (Part 3)

Room: Conference Room

Chair: *Mihaela Albu (Politehnica University of Bucharest, Romania)*

Characterization of optical ageing effects on Ruthenium based Dye-Sensitized Solar Cells

Lorenzo Ciani (University of Florence, Italy)

Marcantonio Catelani (University of Florence, Italy)

Lorenzo Donati (University of Florence, Italy)

Monica Scaringella (University of Florence, Italy)

Enzo Perrotta (University of Florence, Italy)

Mara Bruzzi (University of Florence, Italy)

Identification of Multiple Harmonic Sources in Cyber-Physical Energy System using Supervised Independent Component Analysis

Jiangwei Wu (Tsinghua University, P.R. China)

Xue Wang (Tsinghua University, P.R. China)

Youda Liu (Tsinghua University, P.R. China)

Xinyao Sun (Tsinghua University, P.R. China)

Dynamic Synchrophasor Estimation in the Presence of Decaying DC Offsets

Daniel Belega (University of Timișoara, Romania)

Dario Petri (University of Trento, Italy)

Non-intrusive Sensing Based Multi-model Collaborative Load Identification in Cyber-Physical Energy Systems

Xinyao Sun (Tsinghua University, P.R. China)

Xue Wang (Tsinghua University, P.R. China)

Youda Liu (Tsinghua University, P.R. China)

Jiangwei Wu (Tsinghua University, P.R. China)

4:15 - 6:00

S3B: Measurement Systems and Theory (Part 3)

Room: Gauguin

Chair: *Jacob Scharcanski (UFRGS, Brazil)*

Bayesian Estimation of Electrical Transformer Parameters

Markus Neumayer (Graz University of Technology, Austria)

Thomas Bretterklieber (Graz University of Technology, Austria)

Hubert Zangl (Alpen Adria University, Austria)

On the Usage of Dirac Delta Functions with Nonlinear Argument in High Order I/O Integrals

Huber Nieto-Chaupis (Universidad Nacional de Ingeniería & Universidad Nacional Mayor de San Marco, Peru)

Water Temperature Estimation In Induction Cooker For Higher Energy Efficiency

Gabriele D'Antona (Politecnico di Milano Italy)

Nima Seifnarahi (Politecnico di Milano University, Italy)

Gianpiero Santacatterina (Whirlpool R&D Srl., Italy)

Franco Brindani (Whirlpool R&D Srl., Italy)

A measurement application of conditional possibility distributions

Alessandro Ferrero (Politecnico di Milano, Italy)

Marco Prioli (Politecnico di Milano, Italy)

Simona Salicone (Politecnico di Milano, Italy)

4:15 - 6:00

S3C: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (part 2)

Room: Cezanne

Chair: *Kurt Barbé (VUB, Belgium)*

Body Sensor Network for Posturometric Studies

Marco Sala (University of Applied Sciences of Southern Switzerland, Switzerland)

Paolo Cunzolo (University of Applied Sciences of Southern Switzerland, Switzerland)

Diego Barrettino (University of Applied Sciences of Southern Switzerland, Switzerland)

Design and theoretical analysis of a bidirectional calorimetric flow sensor

Arlindo G.S. Barreto Neto (Instituto Federal de Paraíba, Brazil)

Antonio Marcus Nogueira Lima (Universidade Federal de Campina, Brazil)

Cleumar da Silva Moreira (Universidade Federal de Campina, Brazil)

Helmut Neff (Universidade Federal de Campina, Brazil)

Digital Assessment of Facial Acne Vulgaris

Aamir Saeed Malik (Universiti Teknologi Petronas, Malaysia)

Roshalinie Ramli (Universiti Teknologi Petronas, Malaysia)

Ahmad Fadzil M. Hani (Universiti Teknologi Petronas Malaysia)

Yasir Salih (Universiti Teknologi Petronas, Malaysia)

Felix Boon-Bin Yap (Dermatology, HKL, Malaysia)

Humaira Nisar (University Tunku Abdul Rahman, Malaysia)

Inclinometer Based Low-cost Biofeedback Balanceboard for Injury Rehabilitation

Manish Makwana (Massey University, New Zealand)

Gourab Sen Gupta (Massey University, New Zealand)

4:15 - 6:00

S3D: Real-Time Measurement

Room: Renoir D

Chair: *Conrado Rossi (Universidad de la República, Uruguay)*

GEULMóvil -Real-Time Ultraviolet Radiation Index Mobile Network

Carlos Briozzo (Hospital Pasteur - Universidad de la República, Uruguay)

Alvaro Díaz Berenguer (Hospital Pasteur - Universidad de la República, Uruguay)

Freddy Kugelmass (Hospital Pasteur - Universidad de la República, Uruguay)

Eduardo Peri (Hospital Pasteur - Universidad de la República, Uruguay)

Gianfranco Premuda (Hospital Pasteur - Universidad de la República, Uruguay)

Franco Simini (Hospital Pasteur - Universidad de la República, Uruguay)

Real-time Ultrasonic Imaging for Multi-layered Objects with Synthetic Aperture Focusing Technique

Chun Yang (Tsinghua University, P.R. China)

Kaihuai Qin (Tsinghua University, P.R. China)

Yazhe Li (Tsinghua University, P.R. China)

Hurst Parameter Based Detection of Multiple Super Regenerative Receivers Using MVDR

Vivek Thotla (Missouri University of Science and Technology, USA)

Maciej Zawodniok (Missouri University of Science and Technology, USA)

Indoor Positioning System Using Geo-Magnetic Field

Abhinav Saxena (Missouri University of Science and Technology, USA)

Maciej Zawodniok (Missouri University of Science and Technology, USA)

7:30 - 9:30

Welcome Reception - Theater

Wednesday, May 14

08:30 - 09:15

K2: Optical atomic clocks - measurement at the 17th decimal place

Keynote Speaker: *David R. Leibrandt (Time and Frequency Division of the National Institute of Standards and Technology, USA)*

Room: Conference Room

09:15 - 10:30

S4A: Advances in Instrumentation and Measurement Developments and Techniques (part 1)

Room: Conference Room

Chair: *Alessandro M Ferrero (Politecnico di Milano, Italy)*

Accelerometer Transverse Sensitivity Testing with Double Turntable Centrifuge

Wei Guan (Beijing University of Aeronautics & Astronautics, P.R. China)

Xiaofeng Meng (Beijing University of Aeronautics & Astronautics, P.R. China)

Xueming Dong (Changcheng Institute of Metrology & Measurement, P.R. China)

Embedded Measurement System for Non-Destructive Testing using New Eddy Currents Planar Array Probe

Ruben Abrantes (Instituto Superior Técnico, Portugal)

Pedro M. Ramos (Instituto de Telecomunicações, Portugal)

Luis S. Rosado (Instituto Superior Técnico, Portugal)

Moisés Piedade (Instituto Superior Técnico, Portugal)

Reliable Noise and Vibration Data Acquisition and Processing for Automotive Applications

Andreas Fritz (Virtual Vehicle Research Center, Austria)

Johann Payer (Virtual Vehicle Research Center, Austria)

Anton Fuchs (Virtual Vehicle Research Center, Austria)

Michael Lieschneegg (Virtual Vehicle Research Center, Austria)

09:15 - 10:30

SS2P1: Impedance Spectroscopy for Measurement and Sensor Solutions (part 1)

Room: Gauguin

Chair: *Olfa Kanoun (Chemnitz University of Technology, Germany)*

Impedance Spectroscopy for MEMS based Sensors

Subhas Mukhopadhyay (Massey University, New Zealand)

Detection and Location of Single Cable Fault by Impedance Spectroscopy

Qinghai Shi (Technische Universität Chemnitz, Germany)

Olfa Kanoun (Technische Universität Chemnitz, Germany)

09:15 - 10:30

S4C: Best practices in Instrumentation and Measurement Education

Room: Cezanne

Chair: *Joseph Cortner (Boston Scientific, USA)*

09:15 - 10:30

S4D: Wireless Sensors (part 1)

Room: Renoir D

Chair: *Mihaela Albu (Politehnica University of Bucharest, Romania)*

An Adaptive Low-Power Receiver Architecture for IEEE 802.15.4 Standard

Maico Caisel dos Santos (Federal University of Rio Grande do Sul, Brazil)

Luigi Carro (Federal University of Rio Grande do Sul, Brazil)

Timestamping of IEEE 802.15.4 CSS by CORDIC-based Chirp Interpolation

Reinhard Exel (Danube University Krems, Austria)

Thomas Bigler (Danube University Krems, Austria)

Tilo Sauter (Danube University Krems, Austria)

Paolo Ferrari (University of Brescia, Italy)

Mattia Rizzi (University of Brescia, Italy)

Alessandra Flammini (University of Brescia, Italy)

Simulation of Shading Effects on the Power Output of Solar Modules for Enhanced Efficiency in Photovoltaic Energy Generation

Christian Viehweger (Chemnitz University of Technology, Germany)

Benedict Hartmann (Chemnitz University of Technology, Germany)

Thomas Keutel (Chemnitz University of Technology, Germany)

Olfa Kanoun (Chemnitz University of Technology, Germany)

09:15 - 10:30

SS5P1: SS5: Smart Transducers and Sensors (part 1)

Room: Renoir E

Chair: *Rosario Morello (University Mediterranea of Reggio Calabria, Italy)*

The current state of the art of the Standards for Smart Transducers and Sensors

Kang B Lee (NIST, USA)

Normalizing Transducer Signals: An Overview of a Proposed Standard

Gustavo Monte (Universidad Tecnológica Nacional, Argentina)

Zheng Liu (Toyota Technological Institute, Japan)

Francesco Abate (University of Salerno, Italy)

Victor Huang (Better World - IES Standards, USA)

Vincenzo Paciello (University of Salerno, Italy)

Antonio Pietrosanto (University of Salerno, Italy)

10:30 - 12:45

PS5T: Energy and Power Systems (part 1)

Room: Picasso

Chair: *Juan Moises Mauricio Villanueva (Universidade Federal da Paraíba, Brazil)*

Dual Data Aggregation for Power Quality Assessment

Mihaela Albu (Politehnica University of Bucharest, Romania)

Impact of Pseudo-Measurements from new Load Profiles on State Estimation in Distribution Grids

Tim Schlösser (RWTH Aachen University, Germany)

Andrea Angioni (RWTH Aachen University, Germany)

Ferdinanda Ponci (RWTH Aachen University, Germany)

Antonello Monti (RWTH Aachen University, Germany)

2-Stage Grid-Connected and Stand-Alone PV Inverter Implemented With a Renewable Energy Developer's KIT

Henrique Chaves (Federal University of Santa Maria, Brazil)

Juliano Grigulo (Federal University of Santa Maria, Brazil)

Leonardo Bertagnolli (Federal University of Santa Maria, Brazil)

Luiz A. C. Lopes (Concordia University, Canada)

Design of an Isolated Medium-Frequency Medium-Voltage High-Power Three-Level H-Bridge DC/DC Converter

Fei Xiao (Naval University of Engineering, P.R. China)

Guorun Yang (Naval University of Engineering, P.R. China)

Xuexin Fan (Naval University of Engineering, P.R. China)

Zhen Xie (Naval University of Engineering, P.R. China)

Ruitian Wang (Naval University of Engineering, P.R. China)

Xiaotao Han (Huazhong University of Science and Technology, P.R. China)

FPGA versus DSP for Wavelet Transform based Voltage Sags Detection

Ernano Arrais Jr. (Federal University of Rio Grande do Norte, Brazil)

Valentin O. Roda (Universidade Federal do Rio Grande do Norte, Brazil)

Cecílio M. S. Neto (Federal University of Rio Grande do Norte, Brazil)

Ricardo L. A. Ribeiro (Federal University of Rio Grande do Norte, Brazil)

Flávio B. Costa (Federal University of Rio Grande do Norte, Brazil)

Design and Optimization of a Power Inductive Link

Valner J. Brusamarello (Federal University of Rio Grande do Sol, Brazil)

Rodrigo W. Porto (Federal University of Rio Grande do Sol, Brazil)

Ricardo Azambuja (Plymouth University, United Kingdom)

Ivan Müller (Federal University of Rio Grande do Sul, Brazil)

Fernando Rangel de Sousa (Federal University of Santa Catarina, Brazil)

Spectral Estimation Technique for Nonstationary Signals of Power Systems

Attilio Di Nisio (Politecnico di Bari, Italy)

Francesco Adamo (Polytechnic of Bari, Italy)

Giuseppe Cavone (Politecnico di Bari, Italy)

Mario Savino (Politecnico di Bari, Italy)

Maurizio Spadavecchia (Politecnico di Bari, Italy)

Photovoltaic-thermoelectric modules: a feasibility study

Filippo Attivissimo (Polytechnic of Bari, Italy)

Anna Maria Lucia Lanzolla (Polytechnic of Bari, Italy)

Davide Passaghe (Politecnico di Bari, Italy)

M. Paul (University of Glasgow, UK)

D. Gregory (University of Glasgow, UK)

A. Know (University of Glasgow, UK)

10:30 - 12:45

PS5U: Measurement and Instrumentation for Industrial Applications (part 3)

Room: Picasso

Chair: Carlo Muscas (University of Cagliari, Italy)

Measurements Methodology for the Reliability Evaluation of Intelligent Power Modules

Antonio Cataliotti (University of Palermo, Italy)

Dario Di Cara (National Research Council, Institute of Intelligent System for Automation (ISSIA), Italy)

Giuseppe Marsala ((CNR), Istituto di Studi sui Sistemi Intelligenti per Automazione (ISSIA), Italy)

Antonella Ragusa ((CNR), Istituto di Studi sui Sistemi Intelligenti per Automazione (ISSIA), Italy)

Giovanni Tinè ((CNR), Istituto di Studi sui Sistemi Intelligenti per Automazione (ISSIA), Italy)

Improved RBD analysis for reliability assessment in industrial application

Marcantonio Catelani (University of Florence, Italy)

Lorenzo Ciani (University of Florence, Italy)

Matteo Venzi (University of Florence, Italy)

Application of Open-Ended Coaxial Probes for Detection of Sand Production from Petroleum Wells

Steven Hilgedick (Missouri University of Science and Technology, USA)

Jaswanth Vutukury (Missouri University of Science and Technology, USA)

Kristen M Donnell (Missouri University of Science and Technology, USA)

Point of Load for LHC Experiments: Testing the Behaviour in Hostile Environment

Massimo Lazzaroni (Università degli Studi di Milano, Italy)

Mauro Citterio (INFN Milano, Italy)

Stefano Latorre (INFN Milano, Italy)

Agostino Lanza (INFN Pavia, Italy)

Giorgio Spiazzi (University of Padova, INFN Padova, Italy)

A Measurement Technique for Quality Control of Windings for Cast Resin Power Transformers

Edoardo Fiorucci (University of L'Aquila, Italy)

Giovanni Bucci (University L'Aquila, Italy)

Flavio D'Innocenzo (University of L'Aquila, Italy)

Mario Luiso (Second University of Naples, Italy)

Prediction of Pollutant Emissions of Biomass Flames Using Digital Imaging, Contourlet Transform and Radial Basis Function Network Techniques

Nan Li (North China Electric Power University, P.R. China)

Gang Lu (University of Kent, United Kingdom)

Xinli Li (North China Electric Power University, P.R. China)

Yong Yan (University of Kent, United Kingdom)

10:30 - 12:45

PS5V: Signal & Image Processing Techniques (part 3)

Room: Picasso

Chair: Giovanni Betta (University of Cassino, Italy)

Proposal and analysis of new algorithms for wideband spectrum sensing in cognitive radio

Leopoldo Angrisani (University of Naples Federico II, Italy)

Giovanni Betta (University of Cassino and Southern Lazio, Italy)

Domenico Capriglione (University of Cassino and Southern Lazio, Italy)

Gianni Cerro (*University of Cassino and Southern Lazio, Italy*)
Luigi Ferrigno (*University of Cassino and Southern Lazio, Italy*)
Gianfranco Miele (*University of Cassino and Southern Lazio, Italy*)

Acceleration with FPGA for blocks and subblocks edge pattern classification in DCT domain images

Javier Vega-Pineda (*Instituto Tecnológico de Chihuahua, Mexico*)
José Rivera-Mejía (*Instituto Tecnológico de Chihuahua, Mexico*)
Rafael Sandoval-Rodriguez (*Instituto Tecnológico de Chihuahua, Mexico*)
Gerardo Trujillo-Schiaffino (*Instituto Tecnológico de Chihuahua, Mexico*)

Code detection based on Generalized Cross-Correlation in DS-CDMA Underwater Applications

Carlos De Marziani (*National University of Patagonia San Juan Bosco, CONICET, Argentina*)
Joaquín Aparicio (*University of Alcalá, Spain*)
Ana Jiménez (*University of Alcalá, Spain*)
Jesús Ureña (*University of Alcalá, Spain*)
Fernando Álvarez (*University of Extremadura, Spain*)
Alvaro Hernández (*University of Alcalá, Spain*)
José Manuel Villadangos (*University of Alcalá, Spain*)
María del Carmen Pérez (*University of Alcalá, Spain*)
Enrique García (*University of Alcalá, Spain*)
Daniel Ruiz (*University of Alcalá, Spain*)
Rómulo Alcoleas (*National University of Patagonia San Juan Bosco, Argentina*)

Sample Covariance Matrix Eigenvalues Based Blind SNR Estimation

Mohamed Hamid (*The Royal Institute of Technology, University of Gävle, Sweden*)
Niclas Björnsell (*University of Gävle, Sweden*)
Slimane Ben Slimane (*CoS, Sweden*)

An Inexpensive Attitude Determination System for the Uruguayan Cubesat, AntelSat

Matías Tassano (*Universidad de la República, Uruguay*)
Pablo Monzón (*Universidad de la República, Uruguay*)
Javier Ramos (*Universidad de la República, Uruguay*)
Gustavo De Martino (*Universidad de la República, Uruguay*)
Juan Pechiar (*Universidad de la República, Uruguay*)

Texture Analysis Using Income Inequality Metrics

Gabriel Thomas (*University of Manitoba, Canada*)
Manickavasagan Annamalai (*Sultan Qaboos University, Oman*)

10:30 - 12:45

PS5W: Measurement Applications (part 1)

Room: Picasso

Chair: Subhas Mukhopadhyay (*Massey University, New Zealand*)

Measurement of bottom velocities and shear stresses by ferrofluids at the sea bottom

Vincenzo Marletta (*University of Catania, Italy*)
Bruno Andò (*University of Catania, Italy*)
Salvatore Baglio (*University of Catania, Italy*)
Rosaria E. Musumeci (*University of Catania, Italy*)
Enrico Foti (*University of Catania, Italy*)

Use of a Lock-in Amplifier for Calibrating an Instrument Current Transformer

Karel Draxler (*Czech Technical University, Czech Republic*)
Renata Styblikova (*Czech Metrology Institute, Czech Republic*)

Cooperative and Self Organizing Paradigm for Wide Area Synchronized Monitoring of Smart Grids: performance analysis in real operating scenarios

Domenico Capriglione (DIEI University of Cassino, Italy)

Luigi Ferrigno (DIEI University of Cassino, Italy)

Vincenzo Paciello (University of Salerno, Italy)

Antonio Pietrosanto (University of Salerno, Italy)

Alfredo Vaccaro (University of Sannio, Italy)

A Low Cost Multi-Sensor Approach for Early Warning in Structural Monitoring of Buildings and Structures

Bruno Andò (University of Catania, Italy)

Salvatore Baglio (University of Catania, Italy)

Antonio Pistorio (University of Catania, Italy)

Subpicosecond-resolution time-to-digital converter with multi-edge coding in independent coding lines

Ryszard Szplet (Military University of Technology, Poland)

Dominiak Sondej (Military University of Technology, Poland)

Grzegorz Grzęda (Military University of Technology, Poland)

An improved scale factor calibration model of MEMS gyroscopes

Qijian Tang (Tianjin University, P.R. China and Brunel University, UK)

Xiangjun Wang (Tianjin University, P.R. China)

Qingping Yang (Brunel University, UK)

Changzheng Liu (Tianjin University, P.R. China)

10:30 - 12:45

PS5X: Measurement Systems and Theory

Room: Picasso

Chair: Jose Joskowicz (Universidad de la República & Facultad de Ingeniería, Uruguay)

Evaluation of wavelet analysis performance in multiphase level measurement using ultrasonic sensors

Karolie Nobre Dantas Grassi (Universidade Federal de Campina Grande, Brazil)

Juan Moises Mauricio Villanueva (Universidade Federal da Paraíba, Brazil)

Raimundo C. S. Freire (Universidade Federal de Campina Grande, Brazil)

Loading Effects on the Photoelectric Response of Dry Bacteriorhodopsin Sensors

Teemu Tukiainen (Lappeenranta University of Technology, Finland)

Joonas Talvitie (Lappeenranta University of Technology, Finland)

Mikko Kuisma (Lappeenranta University of Technology, Finland)

Pertti Silventoinen (Lappeenranta University of Technology, Finland)

Lasse Lensu (Lappeenranta University of Technology, Finland)

Robust Fault Detection for Linear Switched Interval Systems

Jiawei Wang (Harbin Institute of Technology, P.R. China)

Shen Yi (Harbin Institute of Technology, P.R. China)

Qiang Wang (Harbin Institute of Technology, P.R. China)

Sensor system for unsteady flow characteristics in a sonic nozzle with vapor condensation

Chao Wang (Tianjin University, P.R. China)

Hongbing Ding (Tianjin University, P.R. China)

Yakun Zhao (Tianjin University, P.R. China)

Yong Yan (University of Kent, UK, North China Electric Power University, P.R. China)

Yonghui Hu (North China Electric Power University, P.R. China)

A precise measurement method for the position of telescope's fiber tips

MingChi Feng (University of Science and Technology of China, P.R. China)

YongGang Gu (University of Science and Technology of China, P.R. China)

Chao Zhai (University of Science and Technology of China, P.R. China)

10:30 - 12:45

PS5Y: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (part 1)

Room: Picasso

Chair: *Anton Fuchs (Graz University of Technology & Virtual Vehicle, Austria)*

Design and Implementation of Fall Detection and Voice Response Detection in a Smart Phone

Ying-Wen Bai (Fu Jen Catholic University, Taiwan)

Chia-Hao Yu (Fu Jen Catholic University, Taiwan)

Hsiao-Chian Wu (Fu Jen Catholic University, Taiwan)

Development of a Fatigue-Tracking System for Monitoring Human Body Movement

Haiwei Dong (University of Ottawa, Canada)

Izaskun Ugalde (New York University Abu Dhabi, UAE)

Abdulmoteleb El Saddik (University of Ottawa, Canada)

A Simplified Approach to the Assessment of Photobiological Safety of LED sources

Pietro Fiorentin (University of Padova, Italy)

Alessandro Scroccaro (University of Padova, Italy)

MHz-Band RF Signal Propagation Characteristics on Human Body for Intra-body communication

Masaki Ishida (Kyoto Institute of Technology, Japan)

Tomonori Nakamura (Kyoto Institute of Technology, Japan)

Mami Nozawa (Kyoto Institute of Technology, Japan)

Naoto Watanabe (Kyoto Institute of Technology, Japan)

Yuichi Kado (Kyoto Institute of Technology, Japan)

Mitsuru Shinagawa (Hosei University, Japan)

In vivo measurements for construction an anatomical thoracic atlas for Electrical Impedance Tomography (EIT) Methods for EIT regularizations

T.H.S. Sousa (Polytechnic School of University of São Paulo, Brazil)

E.D.L.B Camargo (Polytechnic School of University of São Paulo, Brazil)

A.R.C. Martins (Faculty of Veterinary Medicine of University of São Paulo, Brazil)

C. Biasi (University Paulista, Brazil)

A.C.B.C.F. Pinto (Faculty of Veterinary Medicine of University of São Paulo, Brazil)

R.G. Lima (Polytechnic School of University of São Paulo, Brazil)

11:00 - 12:45

S5A: Advances in Instrumentation and Measurement Developments and Techniques (part 2)

Room: Conference Room

Chair: *Matthew Harker (University of Leoben, Austria)*

Optical properties of thin VO₂-films at the phase transition: design aspects for a fiber-optic thermometer

Luís Hermano Casado de Lima Junior (Universidade Federal de Campina Grande, Brazil)

Antonio Marcus Nogueira Lima (Universidade Federal de Campina Grande, Brazil)

Luiz Alberto Luz de Almeida (Universidade Federal do ABC, Brazil)

Carlos Ferreira (Instituto Militar de Engenharia, Brazil)

Helmut Neff (Federal University of Campina Grande, Brazil)

An ASIC for the Measurement of Low Frequency Noise in MOS Transistors

Matias Miguez (Universidad Católica del Uruguay, Uruguay)
Alfredo Arnaud (Universidad Católica del Uruguay, Uruguay)
Joel Gak (Universidad Católica del Uruguay, Uruguay)
Rafael Puyol (Universidad Católica del Uruguay, Uruguay)

Non-contact Conductance Measurement of Nanosize Objects using Resonant Cavity

Jan Obrzut (National Institute of Standards and Technology, USA)
Nathan Orloff (National Institute of Standards and Technology, USA)
Oleg Kirillov (National Institute of Standards and Technology, USA)

Feature Selection and Classification Algorithm for Non-destructive Detecting of High-speed Rail Defects Based on Vibration Signals

Mingjian Sun (Harbin Institute of Technology, P.R. China)
Yan Wang (Harbin Institute of Technology, P.R. China)
Xin Zhang (Harbin Institute of Technology, P.R. China)
Yipeng Liu (Harbin Institute of Technology, P.R. China)
Qiang Wei (Harbin Institute of Technology, P.R. China)
Yi Shen (Harbin Institute of Technology, P.R. China)
Naizhang Feng (Harbin Institute of Technology, P.R. China)

11:00 - 12:45

SS2P2: Impedance Spectroscopy for Measurement and Sensor Solutions (part 2)

Room: Gauguin

Chair: *Olfa Kanoun (Chemnitz University of Technology, Germany)*

Embedded Viscosity Measurement System using a Vibrating-Wire Sensor

José Santos (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)
Fernando M. Janeiro (Universidade de Évora, Portugal)
Pedro M. Ramos (Instituto de Telecomunicações, Portugal)

Optimization of Multisine Excitation for a Bioimpedance Measurement Device

Jaan Ojarand (ELIKO Competence Centre, Estonia)
Paul Annus (ELIKO Competence Centre, Estonia)
Mart Min (Tallinn University of Technology, Estonia)
Maksim Gorev (Tallinn University of Technology, Estonia)
Peeter Ellervee (Tallinn University of Technology, Estonia)

Glucose Characterization Based on Electrochemical Impedance Spectroscopy

Oscar Olarte (Vrije Universiteit Brussel, Belgium)
Kurt Barbé (Vrije Universiteit Brussel, Belgium)
Wendy Van Moer (Vrije Universiteit Brussel, Belgium)
Yves Van Ingelgem (University of Gävle, Sweden)

Introducing Molecular Selectivity in Rapid Impedimetric Sensing of Phthalates

Asif Iqbal Zia (Massey University, New Zealand)
Subhas C. Mukhopadhyay (Massey University, New Zealand)
Pak L. Yu (Massey University, New Zealand)
Ibrahim H. Al-Bahadly (Massey University, New Zealand)
Chinthaka P. Gooneratne (King Abdullah University of Science and Technology, Saudi Arabia)
Jürgen Kosel (King Abdullah University of Science and Technology, Saudi Arabia)

11:00 - 12:45

S5D: Wireless Sensors (part 2)

Room: Renoir D

Chair: *Helena G. Ramos (Instituto de Telecomunicacoes, Instituto Superior Tecnico, Portugal)*

An Accurate Indoor Position-Measurement System Using Mutually Coupled Resonating Circuits

Guido De Angelis (University of Perugia, Italy)
Alessio De Angelis (University of Perugia, Italy)
Marco Dionigi (University of Perugia, Italy)
Mauro Mongiardo (University of Perugia, Italy)
Antonio Moschitta (University of Perugia, Italy)
Paolo Carbone (University of Perugia, Italy)

A Particle Filter for Robust Calibration of RF Ranging Systems

Alessio De Angelis (University of Perugia, Italy)
Guido De Angelis (University of Perugia, Italy)
Paolo Carbone (University of Perugia, Italy)

Improvement of the efficiency of MISO configuration in inductive power transmission in case of coils misalignment

Bilel Kallel (Technische Universität Chemnitz, Germany, University of Sfax, Tunisia)
Olfa Kanoun (Technische Universität Chemnitz, Germany)
Thomas Keutel (Technische Universität Chemnitz, Germany)
Christian Viehweger (Technische Universität Chemnitz, Germany)

11:00 - 12:45

SS5P2: SS5: Smart Transducers and Sensors (part 2)

Room: Renoir E

Chair: *Rosario Morello (University Mediterranea of Reggio Calabria, Italy)*

Testing System for IEEE 1451.5-802.11 Standard-based Wireless Sensors

Kang Lee (NIST, USA)
Eugene Song (NIST, USA)
Fred Proctor (NIST, USA)

Low Power AMT Acquisition Network Based on ZigBee and GPS

Rujun Chen (Central South University, P.R. China)
Xuefeng Zhao (Champion Geophysical Technology Ltd., P.R. China)
Xiaolu Xi (Nanjing University of Science and Technology, P.R. China)
Hongchun Yao (Champion Geophysical Technology Ltd., P.R. China)
Haicheng Yang (Nanjing University of Science and Technology, P.R. China)
Jieting Qui (Champion Geophysical Technology Ltd., P.R. China)
Hai Dong (Champion Geophysical Technology Ltd., P.R. China)
Fabao Yan (Champion Geophysical Technology Ltd., P.R. China)
Shenglong Tan (Champion Geophysical Technology Ltd., P.R. China)
Ruijie Shen (Champion Geophysical Technology Ltd., P.R. China)
Hong Wu (Champion Geophysical Technology Ltd., P.R. China)
Xing HE (Central South University, P.R. China)

A reconfigurable WSN node based on ISO/IEC/IEEE 21451 Standard

Jean Guevara (Universidad Católica de Asunción, Paraguay)
Enrique A. Vargas (Universidad Católica de Asunción, Paraguay)
Arturo Fatecha (Universidad Católica de Asunción, Paraguay)
Federico Barrero (Universidad de Sevilla, Spain)

A Smart Energy Meter for Power Grids

Rosario Morello (University Mediterranea of Reggio Calabria, Italy)
Claudio De Capua (University Mediterranea of Reggio Calabria, Italy)
Gianluca Lipari (University Mediterranea of Reggio Calabria, Italy)
Mariacarla Lugarà (University Mediterranea of Reggio Calabria, Italy)

14:30 - 15:45

S6A: Advances in Instrumentation and Measurement Developments and Techniques (part 3)

Room: Conference Room

Chair: *Juan Pechiar (Universidad de la República, Uruguay)*

Implementation of a FPGA-based data acquisition and processing system for image sensors employed in SPR biosensing

Eduardo G Pereira (Universidade Federal de Campina Grande, Brazil)

Leiva Casemiro Oliveira (Universidade Federal de Campina Grande, Brazil)

Marcos Morais (Universidade Federal de Campina Grande, Brazil)

Antonio Marcus Nogueira Lima (Universidade Federal de Campina Grande, Brazil)

Helmut Neff (Universidade Federal de Campina Grande, Brazil)

Smartphone based, portable optical biosensor utilizing surface plasmon resonance

Carlos A. deSousa-Filho (Universidade Federal de Campina Grande, Universidade Federal de Paraíba, Brazil)

Antonio Marcus Nogueira Lima (Universidade Federal de Campina, Brazil)

Helmut Neff (Universidade Federal de Campina Grande, Brazil)

Non-destructive Photoacoustic Detecting Method for High-speed Rail Surface Defects

Mingjian Sun (Harbin Institute of Technology, P.R. China)

Xiangwei Lin (Harbin Institute of Technology, P.R. China)

Zhenghua Wu (Harbin Institute of Technology, P.R. China)

Yipeng Liu (Harbin Institute of Technology, P.R. China)

Yi Shen (Harbin Institute of Technology, P.R. China)

Naizhang Feng (Harbin Institute of Technology, P.R. China)

14:30 - 15:45

SS2P3: Impedance Spectroscopy for Measurement and Sensor Solutions (part 3)

Room: Gauguin

Chair: *Olfa Kanoun (Chemnitz University of Technology, Germany)*

Distribution of Relaxation Times for Effect Identification and Modeling of Impedance Spectra

Paul Büschel (Technische Universität Chemnitz, Germany)

Thomas Günther (Technische Universität Chemnitz, Germany), Germany)

Olfa Kanoun (Technische Universität Chemnitz, Germany), Germany)

An Arduino-based EIS with a Logarithmic Amplifier for Corrosion Monitoring

Simone Corbellini (Politecnico di Torino, Italy)

Emma Angelini (Politecnico di Torino, Italy)

Marco Parvis (Politecnico di Torino, Italy)

Franco Ferraris (Politecnico di Torino, Italy)

Sabrina Grassini (Politecnico di Torino, Italy)

Investigation of the Electrode Surface of a Liquid Quality Sensor by Local Impedance Spectroscopy

Ahmed Fendri (Technische Universität Chemnitz, Germany)

Amine Abdelkafi (Reichenhainer Technische Universität Chemnitz, Germany)

Frank Wendler (Technische Universität Chemnitz, Germany)

Paul Büschel (Technische Universität Chemnitz, Germany)

Thomas Günther (Technische Universität Chemnitz, Germany)

Abderrahmane Benchirouf (Technische Universität Chemnitz, Germany)

Roman Gruden (Technische Universität Chemnitz, Germany)

Olfa Kanoun (Technische Universität Chemnitz, Germany)

14:30 - 15:45

S6C: Non-invasive Measurement Techniques and Instrumentation (part 1)

Room: Cezanne

Chair: Markus Neumayer (Graz University of Technology, Austria)

GMR Versus Differential Coils in Velocity Induced Eddy Current Testing

Helena G. Ramos (Instituto de Telecomunicacoes, Instituto Superior Tecnico, Portugal)

Tiago Rocha (Instituto de Telecomunicacoes, Instituto Superior Tecnico, Portugal)

Artur L. Ribeiro (Instituto de Telecomunicacoes, Instituto Superior Tecnico, Portugal)

Dário Pasadas (Instituto de Telecomunicacoes, Instituto Superior Tecnico, Portugal)

Highly Sensitive Microwave Resonant Near-Field Sensor for Precise Aqueous Glucose Detection in Microfluidic Medical Applications

Udo Schwerthoeffer (University of Erlangen-Nuremberg, Germany)

Dietmar Kissinger (University of Erlangen-Nuremberg, Germany)

Robert Weigel (University of Erlangen-Nuremberg, Germany)

Anterior Cruciate Ligament Reconstruction Follow-up Instrumentation based on Centre of Rotation Videofluoroscopy Determination: Development of an original equipment, CINARTRO, and first clinical use

Franco Simini (Universidad de la Republica, Uruguay)

Dario Santos (Universidad de la República, Uruguay)

14:30 - 15:45

SS1P1: Nanotechnology applications in Measurement and Instrumentation (part 1)

Room: Renoir D

Chair: Aime' Lay-Ekuakille (University of Salento, Italy)

Automatic Image Detection of Halloysite Clay Nanotubes as a Future Ultrasound Theranostic Agent for Tumoral Cell Targeting and Treatment

Sergio Casciaro (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Giulia Soloperto (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Francesco Conversano (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Ernesto Casciaro (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Antonio Greco (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Stefano Loporatti (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Aimè Lay-Ekuakille (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Giuseppe Gigli (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

14:30 - 15:45

SS7P1: Energy Harvesting for Autonomous Measurement Systems: methodologies and devices (part 1)

Room: Renoir E

Chair: Salvatore Baglio (University of Catania, Italy)

Energy-autonomous wind speed smart sensor

Jeanne Elizabeth de Paula Braquehais (Federal Institute of Education, Science and Technology of Paraíba - IFPB, Brazil)

Antonio Augusto Lisboa de Souza (Federal University of Paraíba, Brazil)

A Non-Isolated DC-DC converter for Renewable Energy Based Portable Measuring Instruments

Zubair Rehman (Massey University, New Zealand)
Ibrahim Al-Bahadly (Massey University, New Zealand)
Subhas Mukhopadhyay (Massey University, New Zealand)

Energy harvesting using magnetic induction considering different core materials

Maraiza Prescila dos Santos (Federal University of Paraíba., Brazil)
Débora A. Vieira (Federal University of Paraíba, Brazil)
Yuri P. M. Rodriguez (Federal University of Paraíba, Brazil)
Cleilson Protásio de Souza (Federal University of Paraíba, Brazil)
Tarcisio O. de Moraes, Jr. (Universidade Federal de Campina, Brazil)
Raimundo C. S. Freire (Universidade Federal de Campina Grande, Brazil)

15:45 - 18:00

PS7T: Measurement of Materials and Mechanical Quantities

Room: Picasso

Chair: *Alejandro Santos (UTE, Laboratory, Uruguay)*

Development of Mechanical Measurement System Applied for Electroplastic Effect Research

Xiaotao Han (Huazhong University of Science and Technology, P.R. China)
Lantao Huang (Huazhong University of Science and Technology, P.R. China)
Jiangtao Shi (Huazhong University of Science and Technology, P.R. China)
Binbin Ni (Huazhong University of Science and Technology, P.R. China)
Xinyu Duan (Huazhong University of Science and Technology, P.R. China)
Qi Chen (Huazhong University of Science and Technology, P.R. China)

Online Particle Size Measurement through Acoustic Emission Detection and Signal Analysis

Yonghui Hu (North China Electric Power University, P.R. China)
Xiaobing Huang (North China Electric Power University, P.R. China)
Xiangchen Qian (North China Electric Power University, P.R. China)
Lingjun Gao (University of Kent, United Kingdom)
Yong Yan (University of Kent, United Kingdom, North China Electric Power University, P.R. China)

15:45 - 18:00

PS7U: Measurement and Instrumentation for Industrial Applications (part 4)

Room: Picasso

Chair: *Marcelo Brehm (UTE, Uruguay)*

A Main Converter for future LHC experiments: Features Measurement and Reliability considerations

Massimo Lazzaroni (Università degli Studi di Milano, INFN Milano, Italy)
Mauro Citterio (INFN Milano, Italy)
Stefano Latorre (INFN Milano, Italy)
Agostino Lanza (INFN Pavia, Italy)
Paolo Cova (University of Parma, INFN Pavia, Italy)
Nicola Delmonte (Università di Parma, INFN Pavia, Italy)
Francesco Giuliani (Università di Parma, Italy)

Measuring the Excitation Current in Transformers Using Hall Effect Sensors

Vanderson Lima Reis (CDMI-IFAM, Universidade Federal de Campina Grande, Brazil)
Raimundo C. S. Freire (Universidade Federal de Campina Grande, Brazil)
Benedito A. Luciano (Universidade Federal de Campina, Brazil)
Petrov C. Lobo (Universidade Federal de Campina, Brazil)
Ewaldo Santana (University of State of Maranhao, Brazil)

A New Approach to Noise Measurement and Analysis in an Industrial Facility

Daniel P. Martins (Universidade Federal de Campina Grande, Brazil)

Marcelo S. Alencar (Federal University of Campina, Brazil)

Liquid Level Measurement System based on a Coherent Optical Sensor

Dario Melchionni (Politecnico di Milano, Italy)

Alessandro Pesatori (Politecnico di Milano, Italy)

Michele Norgia (Politecnico di Milano, Italy)

Thermal Property Measurement Using a Thermal Wave Generator

Tassio Silva (Universidade Federal da Paraíba, Brazil)

Marcéu Adissi (Federal Institute of Paraíba, Brazil)

Lamartine Daniel (Federal University of Paraíba, Brazil)

Ruan Gomes (Federal Institute of Paraíba, Brazil)

Abel Lima Filho (Federal University of Paraíba, Brazil)

Francisco Belo (Universidade Federal da Paraíba, Brazil)

Wideband Measurement Method for Prognosis of Soldering Failure on Electronic Boards

Valeria L. Scarano (Politecnico di Bari, Italy)

Francesco Adamo (Polytechnic of Bari, Italy)

Maurizio Spadavecchia (Politecnico di Bari, Italy)

Attilio Di Nisio (Politecnico di Bari, Italy)

Gregorio Andria (Politecnico di Bari, Italy)

Nicola Giaquinto (Politecnico di Bari, Italy)

15:45 - 18:00

PS7V: Signal & Image Processing Techniques (part 4)

Room: Picasso

Chair: *Giovanni Betta (University of Cassino, Italy)*

X-ray Pulsar Signal Denoising Based on EMD with Adaptive Thresholding

Xiaoyu Li (Harbin Institute of Technology, P.R. China)

Jing Jin (Harbin Institute of Technology, P.R. China)

Min Wang (Harbin Institute of Technology, P.R. China)

Yipeng Liu (Harbin Institute of Technology, P.R. China)

Shen Yi (Harbin Institute of Technology, P.R. China)

FPGA-based Matrix Inversion Using an Iterative Chebyshev-type Method in the Context of Compressed Sensing

Hector Daniel Rico-Aniles (INAOE, Mexico)

Juan Manuel Ramirez-Cortes (INAOE, Mexico)

Jose de Jesus Rangel-Magdaleno (INAOE, Mexico)

Broken Bar Detection on Squirrel Cage Induction Motors with MCSA and EMD

Ricardo Valles-Novo (INAOE, Mexico)

Jose Rangel-Magdaleno (INAOE, Mexico)

Juan Ramirez-Cortes (INAOE, Mexico)

Hayde Peregrina-Barreto (INAOE, Mexico)

Roberto Morales-Caporal (Instituto Tecnológico de Apizaco, Mexico)

Hyperspectral Image Classification with Multivariate Empirical Mode Decomposition-based Features

Zhi He (Harbin Institute of Technology, P.R. China)

Miao Zhang (Harbin Institute of Technology, P.R. China)

Yi Shen (Harbin Institute of Technology, P.R. China)

Qiang Wang (Harbin Institute of Technology, P.R. China)

Yan Wang (Harbin Institute of Technology, P.R. China)

Renlong Yu (Harbin Institute of Technology, P.R. China)

Experimental Validation of Minimum Variance Unbiased Estimator of Structural Scattering Coefficient for an RFID antenna Using Linear Model

Shadi Ebrahimi-Asl (Missouri University of Science and Technology, USA)
Mohammadhossein Behgam (Missouri University of Science and Technology, USA)
Maciej Zawodniok (Missouri University of Science and Technology, USA)
Mohammad Tayeb Ghasr (Missouri University of Science and Technology, USA)

15:45 - 18:00

PS7W: Measurement Applications (part 2)

Room: Picasso

Chair: *Mirko Marracci (University of Pisa, Italy)*

Signal Separation of Gas Sensor Data for Application in Counterfeit Detection

Matthias Blankenburg (Fraunhofer Institute for Production Systems and Design Technology, Germany)
Maximilian Fechteler (Technische Universität Berlin, Germany)
Jörg Krüger (Fraunhofer Institute for Production Systems and Design Technology, Germany)

Experimental characterization of series arc faults in AC and DC electrical circuits

Giovanni Artale (Università di Palermo, Italy)
Valentina Cosentino (Università di Palermo, Italy)
Antonio Cataliotti (University of Palermo, Italy)
Giuseppe Privitera (STMicroelectronics, Italy)

Frequency dependent failure region definition for supercapacitors

Mirko Marracci (University of Pisa, Italy)
Bernardo Tellini (University of Pisa, Italy)
Marcantonio Catelani (University of Florence, Italy)
Lorenzo Ciani (University of Florence, Italy)

A Platform for Multipurpose Goniometric Measurements

Matías Presso (Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina)
Silvano R. Rossi (Universidad Nacional del Centro de la Provincia de Buenos Aires, Argentina)
Carlos Posse (LAL-CIC, Argentina)

Neutrinos-Angra Detector Slow-Control Module Design and Implementation Status

Karine Oliveira (Federal University of Bahia, Brazil)
Gilvan Farias (Federal University of Bahia, Brazil)
Manoel Silva (Federal University of Bahia, Brazil)
Paulo C. M. A. Farias (Federal University of Bahia, Brazil)
Eduardo Simas Filho (Federal University of Bahia, Brazil)
Herman Lima Jr (Brazilian Center for Physics Research, Brazil)

The on-site DGA Detecting and Analysis System Based on the Fourier Transform Infrared Instrument

AnXin Zhao (Xi'an JiaoTong University, P.R. China)
XiaoJun Tang (Xi'an Jiaotong University, P.R. China)
ZhongHua Zhang (Xi'an Jiaotong University, P.R. China)
JunHua Liu (Xi'an Jiaotong University, P.R. China)

15:45 - 18:00

PS7X: Data Acquisition Systems and Techniques

Room: Picasso

Chair: *Daniele Fontanelli (University of Trento, Italy)*

Towards flexible parallel sigma delta modulator for software defined radio receiver

Rihab Lahouli (University of Carthage, Tunisia)

Manel Ben-Romdhane (University of Carthage, Tunisia)

Chiheb Rebai (University of Carthage, Tunisia)

Dominique Dallet (University Bordeaux, France)

Network Design and Characterization of a Wireless Active Guardrail System

Pasquale Daponte (University of Sannio, Italy)

Luca De Vito (University of Sannio, Italy)

Gianluca Mazzilli (University of Sannio, Italy)

Sergio Rapuano (University of Sannio, Italy)

Ioan Tudosa (University of Sannio, Italy)

Range Expansion of Mobile Wireless System by Cooperative Transmission based on Glowworm Swarm Optimization

Wenbin Zheng (Harbin Institute of Technology, P.R. China)

Hongtao Yin (Harbin Institute of Technology, P.R. China)

Jiafeng Fu (Heilongjiang University, P.R. China)

Ping Fu (Harbin Institute of Technology, P.R. China)

Bing Liu (Harbin Institute of Technology, P.R. China)

Wenlei Pan (Harbin Institute of Technology, P.R. China)

QoS Analysis of Routing Protocols in Wireless Sensor Networks in the Monitoring of Wind Farms

Felipe D.M. Oliveira (Universidade Estadual do Rio Grande do Norte, Brazil)

Rodrigo S. Semente (Universidade Federal do Rio Grande do Norte, Brazil)

Tálison A.C. Melo (Universidade Federal do Rio Grande do Norte, Brazil)

Andrés Ortiz Salazar (Universidade Federal do Rio Grande do Norte, Brazil)

CRYSEED: An Automatic 8-bit Cryptographic Algorithm Developed with Genetic Programming

Rodrigo S. Semente (Universidade Federal do Rio Grande do Norte, Brazil)

Felipe D.M. Oliveira (Universidade Estadual do Rio Grande do Norte, Brazil)

Andrés Ortiz Salazar (Universidade Federal do Rio Grande do Norte, Brazil)

15:45 - 18:00

PS7Y: Measurement, Instrumentation & Methodologies Related to Healthcare Systems (part 2)

Room: Picasso

Chair: *Leonardo Trigo (UTE, Uruguay)*

Upper arm rehabilitation for stroke patients using computer controlled functional electrical stimulation and motion sensors

Aruneema Das (University of Tasmania, Australia)

David Howard (University of Salford, UK)

Laurence Kenney (University of Salford, UK)

Sun Mindxu (University of Salford, UK)

Ritaban Dutta (CSIRO, Australia)

Multichannel EMG acquisition system for arm and forearm signal detection

A. Ruvalcaba (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)
Lorenzo Leija (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)
Alvaro Altamirano (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)
Arturo Vera (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)
Cinthya Toledo (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)
Roberto Muñoz (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)

An event polarized paradigm for ADL detection in AAL context

Bruno Andò (University of Catania, Italy)
Salvatore Baglio (University of Catania, Italy)
Cristian Orazio Lombardo (University of Catania, Italy)
Vincenzo Marletta (University of Catania, Italy)
Elisa Antonella Pergolizzi (University of Catania, Italy)
Antonio Pistorio (University of Catania, Italy)

Measuring Skin-electrode Impedance Variation of Conductive Textile Electrodes under Pressure

Bahareh Taji (University of Ottawa, Canada)
Sherwin Shirmohammadi (University of Ottawa, Canada)
Voicu Groza (University of Ottawa, Canada)

Thermal Characterization of a Thin Film Heater on Glass Substrate for Lab-on-Chip Applications

Andrea Scorzoni (University of Perugia, Italy)
Michele Tavernelli (University of Perugia, Italy)
Pisana Placidi (University of Perugia, Italy)
Paolo Valigi (University of Perugia, Italy)
Domenico Caputo (Sapienza University of Rome, Italy)
Giampiero de Cesare (Sapienza University of Rome, Italy)
Giulia Petrucci (Sapienza University of Rome, Italy)
Augusto Nascetti (Sapienza University of Rome, Italy)

Neck Model Optimization using Genetic Algorithms with Objective Function Output Feedback

Javier Vargas (Universidad del Norte, Colombia)
Eduardo E Zurek (Universidad del Norte, Colombia)
Roque J. Hernandez (Universidad del Norte, Colombia)
Oscar Hernandez (Universidad del Norte, Colombia)

16:15 - 18:00

STA: Advances in Instrumentation and Measurement Developments and Techniques (part 4)

Room: Conference Room

Chair: *Subhas Mukhopadhyay (Massey University, New Zealand)*

A reconfigurable CMOS pixel for applying tone mapping on high dynamic range images

Luiz Carlos Gouveia (University of Glasgow, United Kingdom)
Waqas Mughal (University of Glasgow, United Kingdom)
Bhaskar Choubey (University of Oxford, United Kingdom)

Sensing and Decoding of Visual Stimuli using Commercial Brain Computer Interface Technology

Kiran George (California State Fullerton, USA)
Adrian Iniguez (California State University Fullerton, USA)
Hayden Donze (California State University Fullerton, USA)

Improved data extraction algorithm for biosensors utilizing surface plasmon resonance sensing

Eduardo G Pereira (Universidade Federal de Campina Grande, Brazil)
Leiva Casemiro Oliveira (Universidade Federal de Campina Grande, Brazil)
Marcos R.A. Morais (Universidade Federal de Campina Grande, Brazil)
Antonio Marcus Nogueira Lima (Universidade Federal de Campina, Brazil)
Helmut Neff (Federal University of Campina Grande, Brazil)

Tomographic Imaging Based Measurement of Three-dimensional Geometric Parameters of a Burner Flame

Md. Moinul Hossain (University of Kent, UK)
Gang Lu (University of Kent, UK)
Yong Yan (University of Kent, UK)

16:15 - 18:00

S7B: IEEE Standard 21451 Workgroup Meeting

Room: Gauguin

Chair: *Victor Huang (IEEE, USA)*

16:15 - 18:00

S7C: Non-invasive Measurement Techniques and Instrumentation (part 2)

Room: Cezanne

Chair: *Georg Brasseur (Graz University of Technology, Austria)*

Hermetically Sealed Microwave Probe for in-situ Detection of Black Powder in Gas Pipelines

Mohamed A Abou-Khousa (The Petroleum Institute, UAE)
Ahmed Al-Durra (The Petroleum Institute, UAE)
Khaled Al-Wahedi (The Petroleum Institute, UAE)

Optimized Complex Signals for Eddy Current Testing

Giovanni Betta (University of Cassino and Southern Lazio, Italy)
Luigi Ferrigno (University of Cassino and Southern Lazio, Italy)
Marco Laracca (University of Cassino and Southern Lazio, Italy)
Pietro Burrascano (University of Perugia, Italy)
Marco Ricci (University of Perugia, Italy)

Low Frequency Ultrasound NDT of Power Cable Insulation

Gabriel Thomas (University of Manitoba, Canada)
Arezoo Emadi (University of Manitoba, Canada)
Jose Mijares-Chan (University of Manitoba, Canada)
Douglas Andrew Buchanan (University of Manitoba, Canada)

Code-Division-Multiplexing Using Orthogonal Codes for Fast Electrical Impedance Tomography

Martin Gevers (Ruhr-Universität Bochum, Germany)
Patrik Gebhardt (Ruhr-Universität Bochum, Germany)
Thomas Musch (Ruhr-Universität Bochum, Germany)
Michael Vogt (Ruhr-Universität Bochum, Germany)

16:15 - 18:00

SS1P2: Nanotechnology applications in Measurement and Instrumentation (part 2)

Room: Renoir D

Chair: Aime' Lay-Ekuakille (University of Salento, Italy)

Design and Simulation of 10 MHz MEMS Oscillator

Syamsi Taufik (International Islamic University Malaysia, Malaysia)

Ahmad Anwar Zainuddin (International Silterra Malaysia, Lot 8, Phase II Kulim Hi-Teck Park, Malaysia)

Sheroz Khan (Inetrnational Islamic University Malaysia, Malaysia)

Anis N. Nordin (International Islamic University Malaysia, Malaysia)

Laser Fluence and Exposure Time Effects on Optoacoustic Signal from Gold Nanorods for Enhanced Medical Imaging

Giulia Soloperto (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Francesco Conversano (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Ernesto Casciaro (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Antonio Greco (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

Giuseppe Gigli (Università del Salento, Italy)

Aimè Lay-Ekuakille (University of Salento, Italy)

Sergio Casciaro (National Council of Research, Institute of Clinical Physiology, Lecce, Italy)

GF(2 4) Multiplier in Hardware Using Discrete Neural Network

Vanderson Lima Reis (CMDI-IFAM, IFTO, Brazil)

Wendell E. M. Costa (IFTO, Universidade Federal de Campina Grande, Brazil)

Raimundo C. S. Freire (Universidade Federal de Campina Grande - PB, Brazil)

Francisco M. de Assis (Universidade Federal de Campina Grande, Brazil)

Ewaldo Santana (University of State of Maranhao, Brazil)

16:15 - 18:00

SS7P2: Energy Harvesting for Autonomous Measurement Systems: methodologies and devices (part 2)

Room: Renoir E

Chair: Salvatore Baglio (University of Catania, Italy)

Performance Characterization of different nonlinear-transduction mechanisms for piezoelectric energy harvesting

Carlo Trigona (DIEEI University of Catania, Italy)

Felice Maiorca (DIEEI University of Catania, Italy)

F. Giusa (DIEEI University of Catania, Italy)

A. Noto (DIEEI, Italy) (DIEEI University of Catania, Italy)

Bruno Andò (DIEEI University of Catania, Italy)

Salvatore Baglio (DIEEI University of Catania, Italy)

Electrodynamic Resonant Energy Harvester for Low Frequencies and Amplitudes

Sonia Bradai (Technishce Universität Chemnitz, Germany, University of Sfax, Tunisia)

Slim Naifar (Technishce Universität Chemnitz, Germany, University of Sfax, Tunisia)

Thomas Keutel (Technishce Universität Chemnitz, Germany)

Olfa Kanoun (Technishce Universität Chemnitz, Germany)

Design of a vibration energy harvester by twin lateral magnetolectric transducers

Sonia Bradai (Technishce Universität Chemnitz, Germany, University of Sfax, Tunisia)

Slim Naifar (Technishce Universität Chemnitz, Germany, University of Sfax, Tunisia)

Thomas Keutel (Technishce Universität Chemnitz, Germany)

Olfa Kanoun (Technishce Universität Chemnitz, Germany)

Thursday, May 15

08:30 - 09:15

K3: Realizing the Inherent Performance of Modern ADCs in Real Systems

Keynote Speaker: *Thomas Linnenbrink - 2014 Keithley Award Winner (Teqnovations, LLC, Colorado)*

Room: Conference Room

09:15 - 10:30

S8A: Signal & Image Processing Techniques (part 1)

Room: Conference Room

Chair: *Lee A Barford (Measurement Research Laboratory, Agilent Technologies & University of Nevada, USA)*

Blind Recognition of SC-FDMA Signals Using Second-Order Cyclostationarity

Walid A. Jerjawi (Memorial University of Newfoundland, Canada)

Yahia A. Eldemerdash (Memorial University of Newfoundland, Canada)

Octavia A. Dobre (Memorial University of Newfoundland, Canada)

Measuring the Incidence of Packet Loss on Video Quality in Digital Television

Jose Joskowicz (Universidad de la República & Facultad de Ingeniería, Uruguay)

Rafael Sotelo (Universidad de Montevideo, Uruguay)

A Structured Light Approach for 3d Surface Reconstruction with a Stereo Line-Scan System

Erik Lilienblum (Otto-von-Guericke University Magdeburg, Germany)

Ayoub Al-Hamadi (Otto-von-Guericke University Magdeburg, Germany)

09:15 - 10:30

S8B: Measurement and Instrumentation for Industrial Applications (part 1)

Room: Gauguin

Chair: *Yong Yan (University of Kent, United Kingdom)*

On the Use of Broadband Ultraviolet Detector Calibration

Pietro Fiorentin (University of Padova, Italy)

Alessandro Scroccaro (University of Padova, Italy)

Noise Analysis and Characterization of a Charge-Balancing-Based Capacitive Sensor Interface with Resistive Reference

Ruimin Yang (Delft University of Technology, The Netherlands)

Stoyan Nihitjanov (Delft University of Technology, The Netherlands)

On Road Testing of Control Strategies for Semi-Active Suspensions

Consolatina Liguori (University of Salerno, Italy)

Vincenzo Paciello (University of Salerno, Italy)

Alfredo Paolillo (University of Salerno, Italy)

Antonio Pietrosanto (University of Salerno, Italy)

Paolo Sommella (University of Salerno, Italy)

09:15 - 10:30

SS4P1: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 1)

Room: Cezanne

Chair: *Subhas Mukhopadhyay (Massey University, New Zealand)*

Differential Optical Absorption Spectroscopy System for multi purpose applications

Javier A. Ramos (Universidad de la República, Uruguay)

Matías Osorio (Universidad de la República, Uruguay)

Gastón Belsterli (Universidad de la República, Uruguay)

Erna Frins (Universidad de la República, Uruguay)

Miguel Barreto (Universidad de la República, Uruguay)

Performance Measurement in Wireless Sensor Networks using Time-Frequency Analysis and Neural Networks

Chia-Pang Chen (National Taiwan University, Taiwan)

Joe-Air Jiang (National Taiwan University, Taiwan)

Subhas C. Mukhopadhyay (Massey University, New Zealand)

Nagender Kumar Suryadevara (Massey University, New Zealand)

09:15 - 10:30

S8D: Non-invasive Measurement Techniques and Instrumentation (part 3)

Room: Renoir D

Chair: *Jan Obrzut (National Institute of Standards and Technology, USA)*

SAR Imaging for Inspection of Metallic Surfaces at Millimeter Wave Frequencies

Mohammad Tayeb Ghasr (Missouri University of Science and Technology, USA)

Kuang P. Ying (Missouri University of Science and Technology, USA)

Reza Zoughi (Missouri University of Science and Technoogy, USA)

A simple portable polychromatic pupillometer for human eye annoyance measurement

Mario Bernabei (University of Modena and Reggio Emilia, Italy)

Luigi Rovati (University of Modena and Reggio Emilia, Italy)

Roberto Tinarelli (University of Bologna, Italy)

Lorenzo Peretto (University of Bologna, Italy)

Sensitivity Analysis of Wiener Filter-Based Synthetic Aperture Radar (SAR) Microwave Imaging Technique

Mojtaba Fallahpour (University of Illinois at Urbana Champaign, USA)

Reza Zoughi (Missouri University of Science and Technoogy, USA)

09:15 - 10:30

S8E: Sensors and Sensor Fusion (part 1)

Room: Renoir E

Chair: *Sergey Kharkovsky (University of Western Sydney & UWS, Australia)*

State-dependent and distributed pedestrian tracking using the (C)PHD filter

Johannes Pallauf (Karlsruhe Institute of Technology, Germany)

Fernando Puente León (Karlsruhe Institute of Technology, Germany)

Bearing Estimation of Coherent Signals using Compressive Sampling Array

Yan Jing (Harbin Institute of Technology, P.R. China)

Naizhang Feng (Harbin Institute of Technology, P.R. China)

Yi Shen (Harbin Institute of Technology, P.R. China)

Optimization Design for Coercivity Characteristic of Spin Valve Giant Magneto Resistance

Xiaodong Zhao (Beihang, P.R. China)

Zheng Qian (Bei Hang University, P.R. China)

10:30 - 12:45

PS9T: Energy and Power Systems (part 2)

Room: Picasso

Chair: *Paolo Carbone (University of Perugia, Italy)*

A New Graphic Evaluator of the Voltage Unbalance in Power Networks

Aurelian Crăciunescu (Politehnica University of Bucharest, Romania)

Mihaela Albu (Politehnica University of Bucharest, Romania)

Gloria Stefania Ciumbulea (University Politehnica of Bucharest, Romania)

Cătălina Necula Dumitrică (University Valahia of Targoviste, Romania)

Experimental Investigation on PLC Signal Crossing of Power Transformers

Antonio Cataliotti (Università di Palermo, Italy)

Valentina Cosentino (Università di Palermo, Italy)

Dario Di Cara (National Research Council, Institute of Intelligent System for Automation, Italy)

Salvatore Guaiana (Università di Palermo, Italy)

Nicola Panzavecchia (National Research Council, Institute of Intelligent System for Automation, Italy)

Giovanni Tinè (National Research Council, Institute of Intelligent System for Automation, Italy)

Using Intelligent Systems in Experimental Signal Analysis for Power Transformer Diagnosis

Ivan N Silva (University of São Paulo, Brazil)

Rogério A. Flauzino (University of São Paulo, Brazil)

Danilo Spatti (University of São Paulo, Brazil)

Carlos G. Gonzales (University of Sao Paulo, Brazil) Marcelo Carrapato (University of São Paulo, Brazil)

Paulo I. Costa (University of São Paulo, Brazil)

Thiago Bonfim (University of São Paulo, Brazil)

10:30 - 12:45

PS9U: Advances in Instrumentation and Measurement Developments and Techniques (part 3)

Room: Picasso

Chair: *Leonardo Trigo (UTE, Uruguay)*

On Site Calibration of Current Transformers

Gonzalo Aristoy (UTE, Uruguay)

Daniel Slomovitz (UTE, Uruguay)

Leonardo Trigo (UTE, Uruguay)

Alejandro Santos (UTE, Uruguay)

10:30 - 12:45

PS9W: Measurement Applications (part 3)

Room: Picasso

Chair: *Daniel Izquierdo (UTE Laboratory, Uruguay)*

S-FSK modem design and experimental validation for robust narrowband powerline communication

Mohamed Chaker Bali (University of Carthage, Tunisia)

Chiheb Rebai (University of Carthage, Tunisia)

Automatic prismatic refractive power measuring instrument for eye-protector

Wen-Hong Wu (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Chun-Li Chang (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Chi-Hung Hwang (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

A Computational Intelligence approach to Solar Panel Modelling

Stefano Ferrari (Università degli Studi di Milano, Italy)

Massimo Lazzaroni (Università degli Studi di Milano, INFN Milan, Italy)

Vincenzo Piuri (Università degli Studi di Milano, Italy) Ayse Salman (Doğuş University, Turkey)

Loredana Cristaldi (Politecnico di Milano, Italy)

Marco Faifer (Politecnico di Milano, Italy)

Sergio Toscani (Politecnico di Milano, Italy)

Initial Measurements and Results of a Multi-Channel, Adaptive Pre-distortion System for an Airborne Phased Array Radar

Robert Lee (University of Oklahoma, USA)

Mark Yeary (University of Oklahoma, USA)

Caleb Fulton (University of Oklahoma, USA)

Rafael Rincon (NASA/Goddard Space Flight Center, USA)

Output Dynamic Range of Radiometers Based on Thermoresistive Sensors

Vanuza M. Nascimento (Universidade Federal de Campina Grande - PB, Brazil)

Thais L. V. N. Silva (Universidade Federal de Campina Grande - PB, Brazil)

Viviane S.G. Martins (Universidade Federal de Campina Grande - PB, Brazil)

Petrov C. Lobo (Universidade Federal de Campina Grande - PB, Brazil)

Raimundo C. S. Freire (Universidade Federal de Campina Grande - PB, Brazil)

Use of a Resonant Sensor for Differential Air Pressure Measurements

Karel Draxler (Czech Technical University in Prague, Czech Republic)

Jan Aueservald (Czech Technical University in Prague, Czech Republic)

Jaroslav Helgešik (Czech Technical University in Prague, Czech Republic)

Renata Styblikova (Czech Metrology Institute, Czech Republic)

10:30 - 12:45

PS9X: Non-invasive Measurement Techniques and Instrumentation (part 1)

Room: Picasso

Chair: Sabrina Grassini (Politecnico di Torino & Department of Applied Science and Technology, Italy)

Efficient Feature Extraction for an Automatic Ultrasound Testing Decision Support System

Fábio da C. Cruz (Federal University of Bahia, Brazil)

Eduardo F. Simas Filho (Federal University of Bahia, Brazil)

Maria C. S. Albuquerque (Federal Institute of Bahia, Brazil)

Claudia T. T. Farias (Federal Institute of Bahia, Brazil)

Luciana Martinez (Federal University of Bahia, Brazil)

An investigation of cow feeding behavior using motion sensors

Greg Bishop-Hurley (CSIRO Animal, Food and Health Sciences, Australia)

Dave Henry (CSIRO Animal, Food and Health Sciences, Australia)

Daniel Smith (CSIRO Computational Informatics, Australia)

Ritaban Dutta (CSIRO Computational Informatics, Australia)

James Hill (Tasmanian Institute of Agriculture, University of Tasmania, Australia)

Richard Rawnsley (Tasmanian Institute of Agriculture, University of Tasmania, Australia)

Andrew Hellicar (CSIRO Computational Informatics, Australia)

Greg Timms (CSIRO Computational Informatics, Australia)

Ahsan Morshed (CSIRO Computational Informatics, Australia)

Ashfaqur Rahman (CSIRO Computational Informatics, Australia)

Claire D'Este (CSIRO Computational Informatics, Australia)

Yanfeng Shu (CSIRO Computational Informatics, Australia)

The Evaluation of Blood Flow Velocity and Heart Rate by the Frequency of Oxygen Saturation Fluctuation in Skin Tissue

Hsin-Yi Tsai (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Kuo-Cheng Huang (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Min-Wei Hung (Instrument Technology Research center, National Applied Research Laboratories, Taiwan)

Ching-Ching Yang (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Wen-Tse Hsiao (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Measurements of Microwave Reflection Properties of Early-Age Concrete and Mortar Specimens

Kwok Chung (University of Western Sydney, Australia)

Sergey Kharkovsky (University of Western Sydney, Australia)

Torque Estimation Using Rotor Slots Harmonics on a Three-Phase Induction Motor

Wilton Lacerda Silva (Federal Institute of Bahia, Brazil)

Antonio Marcus Nogueira Lima (Federal University of Campina Grande, Brazil)

Amauri Oliveira (Federal University of Bahia, Brazil)

Representation of Induced and Transferred Charge in Measurement Signal of Electrostatic Sensors

Chao Wang (Tianjin University, P.R. China)

Jingyu Zhang (Tianjin University, P.R. China)

Yishun Zhang (Tianjin University, P.R. China)

Yong Yan (University of Kent, United Kingdom)

10:30 - 12:45

PS9Y: Biomedical Systems

Room: Picasso

Chair: Marco Parvis (Politecnico di Torino, Italy)

Bayesian Fusion of Multiple Sensors for Reliable Heart Rate Detection

Valner Brusamarello (Federal University of Rio Grand do Sul, Brazil)

Gabriel Borges (Federal University of Rio Grand do Sul, Brazil)

Temperature Sensing and Controlling Biological Experiments by Using One Thermoelectric Module

Yu-Chieh Chen (National Tsing-Hua University & Instrument Technology Research Center, Taiwan)

Kuo-Cheng Huang (Instrument Technology Research Center, Taiwan)

Han Chao Chang (Instrument Technology Research Center, Taiwan)

Tai-Lan Huang (Instrument Technology Research Center, Taiwan)

Hsin Chen (National Tsing Hua University, Taiwan)

A reconfigurable control system using EMG

Juliette de Paula Felipe deOliveira (Federal University of Rio Grande do Norte, Brazil)

Ernanno Arrais Junior (Federal University of Rio Grande do Norte, Brazil)

Valentin Oabc Roda (Federal University of Rio Grande do Norte, Brazil)

Optical System for Drop Volume Measurement

Michele Norgia (Politecnico di Milano, Italy)

Alessandro Magnani (Politecnico di Milano, Italy)

Dario Melchionni (Politecnico di Milano, Italy)

Alessandro Pesatori (Politecnico di Milano, Italy)

Design, Implementation and Evaluation of a Brain-Computer Interface Controlled Mechanical Arm for Rehabilitation

Kiran George (California State University Fullerton, USA)

Adrian Iniguez (California State University Fullerton, USA)

Hayden Donze (California State University Fullerton, USA)

Sheeba Kizhakkumthala (California State University Fullerton, USA)

10:30 - 12:45

PS9Z: Real-Time Measurement

Room: Picasso

Chair: Marcelo Brehm (UTE, Uruguay)

Real-time pedestrian detection system with novel thermal features at night

Chun-Fu Lin (National Chiao Tung University & Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Sheng-Fuu Lin (National Chiao Tung University, Taiwan)

Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)

Yu-Chieh Chen (National Tsing-Hua University & Instrument Technology Research Center, Taiwan)

Test Point Optimization Process for a Real-Time Vibration Monitoring System on a Differential Axle Fixed Rig

Martin Santacruz (Universidad Autonoma de Baja California & Universidad Estatal de Sonora, Mexico)

Marco Félix (Universidad Autónoma de Baja California, Mexico)

David Rosas (Universidad Autónoma de Baja California, Mexico)

Juan de Dios Ocampo (Universidad Autónoma de Baja California, Mexico)

Gabriel Luna (Universidad Estatal de Sonora, Mexico)

11:00 - 12:45

S9A: Signal & Image Processing Techniques (part 2)

Room: Conference Room

Chair: *Dan Ionescu (University of Ottawa, Canada)*

Adaptive Noise Tracking for Cognitive Radios under more realistic operation conditions

Lee Gonzales-Fuentes (Vrije Universiteit Brussel, Belgium)

Kurt Barbé (Vrije Universiteit Brussel, Belgium)

Wendy Van Moer (Vrije Universiteit Brussel, Belgium, University of Gavle, Sweden)

Pyramid based Multiscale Anisotropic Diffusion Filter for Ultrasound Image Despeckling

Ting Liu (Harbin Institute of Technology, P.R. China)

Naizhang Feng (Harbin Institute of Technology, P.R. China)

Yi Shen (Harbin Institute of Technology, P.R. China)

Wenlei Pan (Harbin Institute of Technology, P.R. China)

Visual Aircraft Tracking System for Departures

David Sandmann (University of Oklahoma, USA)

John W. Dyer (University of Oklahoma., USA)

John E. Fagan (University of Oklahoma, USA)

Dean Alexander (Federal Aviation Administration, USA)

Greedy Orthogonal Matching Pursuit Algorithm for Sparse Signal Recovery in Compressive Sensing

Jia Li (Harbin Institute of Technology, P.R. China)

Zhaojun Wu (Harbin Institute of Technology, P.R. China)

Hongqi Feng (China Astronaut Research and Training Center, P.R. China)

Qiang Wang (Harbin Institute of Technology, P.R. China)

Yipeng Liu (Harbin Institute of Technology, P.R. China)

11:00 - 12:45

S9B: Measurement and Instrumentation for Industrial Applications (part 2)

Room: Gauguin

Chair: *Alessandra Flammini (University of Brescia, Italy)*

Commercial TiO₂ P25 activation: evaluation of efficacy in photodegradation processes of different radiating sources

Pietro Fiorentin (University of Padova, Italy)

Alessandro Scroccaro (University of Padova, Italy)

Roberta Bertani (University of Padova, Italy)

Matteo Moronato (University of Padova, Italy)

Fabio Simionato (University of Padova, Italy)

Alessandro Zaggia (University of Padova, Italy)

Self-Calibrating Optical 3D Pose Measurement Device for Offshore Sites

Michael Habacher (University of Leoben, Austria)

Matthew Harker (University of Leoben, Austria)

Paul O'Leary (University of Leoben, Austria)

Portable Instrument for Eddy Currents Non-Destructive Testing based on Heterodyning Techniques

Diogo E. Aguiam (Instituto Superior Técnico, Portugal)

Luis S. Rosado (Instituto Superior Técnico, Portugal)

Pedro M. Ramos (Instituto de Telecomunicações, IST, Portugal)

Moisés Piedade (Instituto Superior Técnico, Portugal)

Capacitive Sensor Interface with Improved Dynamic Range and Stability

Roumen Nojdelov (Arsen Development Ltd., Bulgaria)

Stoyan Nihtianov (Delft University of Technology, The Netherlands)

11:00 - 12:45

SS4P2: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 2)

Room: Cezanne

Chair: *Subhas Mukhopadhyay (Massey University, New Zealand)*

Flow Measurement of Gaseous CO₂ Using Averaging Pitot Tubes

Kehinde Adefila (University of Kent, United Kingdom)

Yong Yan (University of Kent, United Kingdom)

Lijun Sun (Tianjin University, P.R. China)

Tao Wang (KROHNE Ltd, United Kingdom)

WSN Based Utility System for Effective Monitoring and Control of Household Power Consumption

Munhaw Kam (Massey University, New Zealand)

Nagender Kumar Suryadevara (Massey University, New Zealand)

Subhas C. Mukhopadhyay (Massey University, New Zealand)

Satinder P.S. Gill (Massey University, New Zealand)

Wireless Sensor Network and Web based Information System for Asthma Trigger Factors Monitoring

Ana Filipa Teixeira (Instituto de Telecomunicações, Instituto Universitario de Lisboa, Portugal)

Octavian Adrian Postolache (Instituto de Telecomunicações, Instituto Universitario de Lisboa, Portugal)

Wireless image-sensor network application for population monitoring of lepidopterous insects pest (moths) in fruit crops

Leonardo Barboni (Universidad de la República, Uruguay)

Mauricio Gonzalez (Universidad de la República, Uruguay)

Javier Schandy (Universidad de la República, Uruguay)

Nicolas Wainstein (Universidad de la República, Uruguay)

Alvaro Gomez (Universidad de la Republica Oriental del Uruguay, Uruguay)

Carlos Croce (Juventud Melilla Cooperativa Agraria R Ltda, Uruguay)

11:00 - 12:45

S9D: Data Acquisition Systems and Techniques (part 1)

Room: Renoir D

Chair: *Joseph Cortner (Boston Scientific, USA)*

Surface Weather Observation via Distributed Devices

Jane Louie Fresco Zamora (Nara Institute of Science and Technology, Japan)

Shigeru Kashihara (Nara Institute of Science and Technoogy, Japan)

Yuzo Taenaka (The University of Tokyo, Japan)

Suguru Yamaguchi (Nara Institute of Science and Technology, Japan)

Naoya Sawada (Nara Institute of Science and Technology, Japan)

Takemi Sahara (Nara Institute of Science and Technology, Japan)

Portable Airborne Data Acquisition for Flight Tests

John W. Dyer (University of Oklahoma, USA)
Benjamin Douglas (University of Oklahoma, USA)
Yih-Ru Huang (University of Oklahoma, USA)
John E. Fagan (University of Oklahoma, USA)

Front-End Electronics of the Neutrinos Angra Project

José Abritta Costa (Federal University of Juiz de Fora, Brazil)
Tony Igor Dornelas (Federal University of Juiz de Fora, Brazil)
Augusto Santiago Cerqueira (Federal University of Juiz de Fora, Brazil)
Rafael Anutnes Nóbrega (Federal University of Juiz de Fora, Brazil)

11:00 - 12:45**S9E: Sensors and Sensor Fusion (part 2)****Room:** Renoir E**Chair:** *Jorge Fernandez Daher (IEEE IMS Chapter, Uruguay)*

Micromirror Array based optical spatial Filter Technique for fast and flexible Velocimetry

Martin Degner (University of Rostock, Germany)
Hendrik Krüger (University of Rostock, Germany)
Hartmut Ewald (University of Rostock, Germany)

Indoor Positioning of Wheeled Devices for Ambient Assisted Living: a Case Study

Payam Nazemzadeh (University of Trento, Italy)
Daniele Fontanelli (University of Trento, Italy)
David Macii (University of Trento, Italy)
Luigi Palopoli (University of Trento, Italy)

Relative Positioning System Using Inter-Robot Ultrasonic Localization Turret

Andrei Stancovici (Politehnica University of Timisoara, Romania)
Mihai V. Micea (Politehnica University of Timisoara, Romania)
Vladimir Cretu (Politehnica University of Timisoara, Romania)
Voicu Groza (University of Ottawa, Canada)

Design and implementation of sensor data fusion for an autonomous quadrotor

Matías Tailanián (Universidad de la República, Uruguay)
Santiago Paternain (Universidad de la República, Uruguay)
Rodrigo Rosa (Universidad de la República, Uruguay)
Rafael Canetti (Universidad de la República, Uruguay)

14:00 - 15:45**S10A: Signal & Image Processing Techniques (part 3)****Room:** Conference Room**Chair:** *Ruqiang Yan (Southeast University, P.R. China)*

Performance Study of Digital Filters Applied to the Readout System of the Neutrinos-Angra Detector

Tiago A. Alvarenga (Universidade Federal de Juiz de Fora, Brazil)
Tony I. Dornelas (Universidade Federal de Juiz de Fora, Brazil)
Dhiogo R. Esterce (Universidade Federal de Juiz de Fora, Brazil)
José A. de C. Vieira (Universidade Federal de Juiz de Fora, Brazil)
Rafael A. Nóbrega (Universidade Federal de Juiz de Fora, Brazil)

Robust Global Minimization of Active Contour Model for Multi-object Medical Image Segmentation

Xuanping Li (Tsinghua University, P.R. China)
Xue Wang (Tsinghua University, P.R. China)
Yixiang Dai (Tsinghua University, P.R. China)

Morphological Analysis of Activated Sludge Flocs and Filaments

Xue-Yong Lee (*University Tunku Abdul Rahman, Malaysia*)
Muhammad Burhan Khan (*University Tunku Abdul Rahman, Malaysia*)
Humaira Nisar (*University Tunku Abdul Rahman, Malaysia*)
Yeap Kim Ho (*University Tunku Abdul Rahman, Malaysia*)
Choon Aun Ng (*University Tunku Abdul Rahman, Malaysia*)
Aamir Saeed Malik (*Universiti Teknologi Petronas, Malaysia*)

QWT Enhanced SVM for Hyperspectral Image Classification

Yue Shen (*Harbin Institute of Technology, P.R. China*)
Hongqi Feng (*China Astronaut Research and Training Center, P.R. China*)
Qiang Wang (*Harbin Institute of Technology, P.R. China*)
Yipeng Liu (*Harbin Institute of Technology, P.R. China*)
Zhi He (*Harbin Institute of Technology, P.R. China*)

14:00 - 15:45

S10B: Measurement and Instrumentation for Industrial Applications (part 3)

Room: Gauguin

Chair: *Renata Styblikova (Czech Metrology Institute, Czech Republic)*

Low cost combined voltage and current transducer for Smart Meters

Gianluca Aurilio (*Second University of Naples, Italy*)
Daniele Gallo (*Second University of Naples, Italy*)
Carmine Landi (*Second University of Naples, Italy*)
Mario Luiso (*Second University of Naples, Italy*)
Giorgio Graditi (*ENEA, Italy*)
Viviana Cigolotti (*ENEA, Italy*)

Sputtered thermocouple array for vial temperature mapping

Marco Parvis (*Politecnico di Torino, Italy*)
Sabrina Grassini (*Politecnico di Torino, Italy*)
Daniele Fulginiti (*Politecnico di Torino, Italy*)
Roberto Pisano (*Politecnico di Torino, Italy*)
Antonello A. Barresi (*Politecnico di Torino, Italy*)

A Tool to Simulate Optical Lithography in NanoCMOs

Tania Maria Ferla (*Universidade Federal do Rio Grande do Sul, Brazil*)
Guilherme Flach (*Universidade Federal do Rio Grande do Sul, Brazil*)
Ricardo Reis (*Universidade Federal do Rio Grande do Sul, Brazil*)

14:00 - 15:45

SS4P3: Sensors and Instrumentation for the Environment and Climate change Monitoring (part 3)

Room: Cezanne

Chair: *Subhas Mukhopadhyay (Massey University, New Zealand)*

A Service Oriented Wireless Sensor Node Management System

Akbar Ghobakhlou (*Auckland University of Technology, New Zealand*)
P. Sallis (*Auckland University of Technology, New Zealand*)
X. Wang (*Auckland University of Technology, New Zealand*)

Environmental Gas Sensing in Complex Environments

Daluwathu M.G. Preethichandra (*Central Queensland University, Australia*)

A resonant micro-cantilever frequency tracking system based on dynamic phase difference

Wei Zhao (Shanghai Institute of Microsystem and Information Technology, P.R. China)
Haitao Yu (Shanghai Institute of Microsystem and Information Technology, P.R. China)
Yanbo Ren (Shanghai Institute of Microsystem and Information Technology, P.R. China)
Pengcheng Xu (Shanghai Institute of Microsystem and Information Technology, P.R. China)
Xinxin Li (Shanghai Institute of Microsystem and Information Technology, P.R. China)

14:00 - 15:45

S10D: Data Acquisition Systems and Techniques (part 2)

Room: Renoir D

Chair: *Alfredo Arnaud (Universidad Católica del Uruguay, Uruguay)*

Characterisation of an Associative Memory Chip for High-Energy Physics Experiments

Alessandro Andreani (Università degli Studi di Milano, Italy)
Alberto Annovi (INFN-LNF, Italy)
Roberto Beccherle (INFN- Sezione di Pisa, Italy)
Matteo Beretta (INFN-LNF, Italy)
Nicolò Biesuz (Università degli Studi di Milano, Italy)
Mauro Citterio (INFN- Sezione di Milano, Italy)
Francesco Crescioli (Laboratoire de Physique Nucléaire et de Hautes Energies (LPNHE), France)
Paola Giannetti (INFN- Sezione di Pisa, Italy)
Valentino Liberali (Università degli Studi di Milano, INFN- Sezione di Milano, Italy)
Seyedruhollah Shojaii (Università degli Studi di Milano, INFN- Sezione di Milano, Italy)
Alberto Stabile (INFN- Sezione di Milano, Italy)

Temperature Controlled Measurement System for Precise Characterization of Electronic Circuits and Devices

Conrado Rossi-Aicardi (Universidad de la Republica & NanoWattICs, Uruguay)
Pablo Aguirre (Universidad de la República & NanoWattICs, Uruguay)

Flexible A/D Converter Architecture Targetting Sparse Signal

Verônica Maria Lima Silva (Federal University of Paraíba, Brazil)
Antonio Augusto Lisboa de Souza (Federal University of Paraíba, Brazil)
Sebastian Yuri Cavalcanti Catunda (Federal University of Rio Grande do Norte, Brazil)

A Maneuverable, Configurable, Low Cost Sensor Deployment Platform

Dale A Carnegie (Victoria University of Wellington, New Zealand)
James McVay (Victoria University of Wellington, New Zealand)

14:00 - 15:45

S10E: Energy and Power Systems (part 4)

Room: Renoir E

Chair: *Marco Faifer (Politecnico di Milano, Italy)*

New Monitoring Approach for Distribution Systems

Mohsen Ferdowsi (RWTH Aachen University, Germany)
Artur Löwen (RWTH Aachen University, Germany)
Padraic McKeever (RWTH Aachen University, Germany)
Antonello Monti (RWTH Aachen University, Germany)
Ferdinanda Ponci (RWTH Aachen University, Germany)
Andrea Benigni (University of South Carolina, USA)

Analysis of the optimal grid resolution for the forecasting of wind energy in different wind farms

Alejandro Gutiérrez (IMFIA-UdelAR, Uruguay)
Gabriel Cazes (IMFIA-UdelAR, Uruguay)
Santiago de Mello (UTE, Uruguay)

Two-Step Procedures for Wide-Area Distribution System State Estimation

Carlo Muscas (University of Cagliari, Italy)
Marco Pau (University of Cagliari, Italy)
Paolo Attilio Pegoraro (University of Cagliari, Italy)
Sara Sulis (University of Cagliari, Italy)
Ferdinanda Ponci (RWTH Aachen University, Germany)
Antonello Monti (RWTH Aachen University, Germany)

Analysis and Implementation of Low-cost FPGA-Based Digital Pulse-width Modulators

Ignacio de León (Universidad de la República, Uruguay)
Gonzalo Sotta (Universidad de la República, Uruguay)
Gabriel Eirea (Universidad de la República, Uruguay)
Julio Perez Acle (Universidad de la República, Uruguay)

15:45 - 18:00

PS11U: Transducers

Room: Picasso

Chair: *Matias Miguez (Universidad Catolica del Uruguay, Uruguay)*

IPMC Frequency Dependent Multiphysics Model considering Electrodes High Surface and Fractional Effects

Riccardo Caponetto (Università degli Studi di Catania, Italy)
Viviana De Luca (Università degli Studi di Catania, Italy)
Salvatore Graziani (Università degli Studi di Catania, Italy)
Francesca Sapuppo (Università' degli Studi di Catania, Italy)
Giovanna Di Pasquale (Università degli Studi di Catania, Italy)

Nano-Displacement Measurements of a New Piezoelectric Flexensional Actuator by Using a High Dynamic Range Interferometry Homodyne Method

Paula Berton (Universidade Estadual Paulista, Brazil)
Jose Galeti (Universidade Estadual Paulista, Brazil)
Ricardo Higuti (Universidade Estadual Paulista, Brazil)
Claudio Kitano (Universidade Estadual Paulista, Brazil)
Emilio Silva (Escola Politécnica da Universidade de São Paulo, Brazil)

15:45 - 18:00

PS11V: Robotics and Controls

Room: Picasso

Chair: *Alejandro Santos (UTE, Laboratory, Uruguay)*

Accelerometer-Based Hand Gesture Recognition System for Interaction in Digital TV

José Ducloux (Universidad Católica de Córdoba, Argentina)
Pedro Colla (Instituto Universitario Aeronáutico, Argentina)
Pablo Petrashin (Universidad Católica de Córdoba, Argentina)
Walter Lancioni (Universidad Católica de Córdoba, Argentina)
Luis Toledo (Universidad Católica de Córdoba, Argentina)

Robot Sensor Data Interoperability and Tasking with Semantic Technologies

Claire D'Este (CSIRO Computational Informatics, Australia)
Ahsan Morshed (CSIRO Computational Informatics, Australia)
Ritaban Dutta (CSIRO Computational Informatics, Australia)

Performance Comparison of Correlation-based Receive Filters in an Ultrasonic Indoor Positioning System

Daniel Ruiz (University of Alcala, Spain)
Enrique García (University of Alcala, Spain)
Jesus Ureña (University of Alcala, Spain)
José M. Villadangos (University of Alcala, Spain)
Juan Jesús García (University of Alcala, Spain)
Carlos De Marziani (University of Alcala, Spain)

Fusion of data from ultrasonic LPS and isolated beacons for improving MR navigation

David Gualda (University of Alcala, Spain)
Jesus Ureña (University of Alcala, Spain)
Juan Carlos García (University of Alcala, Spain)
Enrique García (University of Alcala, Spain)
Daniel Ruiz (University of Alcala, Spain)
Alejandro Lindo (University of Alcala, Spain)

Filter Coordinate Frame Based EKF Method for Celestial Autonomous Orbit Determination

Miao Zhang (Harbin Institute of Technology, P.R. China)
Zhenzhou Lai (Harbin Institute of Technology, P.R. China)
Zhenya Geng (Harbin Institute of Technology, P.R. China)
Shen Yi (Harbin Institute of Technology, P.R. China)

15:45 - 18:00

PS11W: Non-invasive Measurement Techniques and Instrumentation (part 2)

Room: Picasso

Chair: *Sabrina Grassini (Politecnico di Torino & Department of Applied Science and Technology, Italy)*

A Flexible Ultrasonic Velocity Profiler Developing Environment

Cesar Ofuchi (Universidade Tecnológica Federal do Paraná, Brazil)
Fabio Coutinho (Universidade Tecnológica Federal do Paraná, Brazil)
Raquel Rasia (Universidade Tecnológica Federal do Paraná, Brazil)
Lúcia Valeria Ramos de Arruda (Universidade Tecnológica Federal do Paraná, Brazil)
Flavio Neves Jr. (Universidade Tecnológica Federal do Paraná, Brazil)
Rigoberto Morales (Universidade Tecnológica Federal do Paraná, Brazil)

Application of Active Microwave Thermography to Delamination Detection

Ali Foudazi (Missouri University of Science and Technology, USA)
Kristen M Donnell (Missouri University of Science and Technology, USA)
Mohammad Tayeb Ghasr (Missouri University of Science and Technology, USA)

Microwave Imaging with a 3-Axis Multifunctional Scanning System

Sergey Kharkovsky (University of Western Sydney, Australia)
Ranjith Ratnayake (University of Western Sydney, Australia)
Mohammad Tayeb Ghasr (Missouri University of Science and Technology, USA)
Brett Percy (SciWare Pty Ltd, Australia)

Development of NIR optical tomography system for the investigation of two-phase flows

Tiago Vendruscolo (Universidade Tecnológica Federal do Paraná, Brazil)
Marcelo Zibetti (Universidade Tecnológica Federal do Paraná, Brazil)
Rodolfo Patyk (Universidade Tecnológica Federal do Paraná, Brazil)
Guilherme Dutra (Universidade Tecnológica Federal do Paraná, Brazil)
Rigoberto Morales (Universidade Tecnológica Federal do Paraná, Brazil)
Cicero Martelli (Universidade Tecnológica Federal do Paraná, Brazil)
Marco Jose Da Silva (Universidade Tecnológica Federal do Paraná, Brazil)

15:45 - 18:00

PS11X: Wireless Sensors and Systems (part 2)

Room: Picasso

Chair: *Daniele Fontanelli (University of Trento, Italy)*

Smartphone remote control for home automation applications based on acoustic wake-up receivers

Fabian Höflinger (University of Freiburg, Germany)

Gerd Gamm (University of Freiburg, Germany)

Joan Albesa (University of Freiburg, Germany)

Leonhard Reindl (University of Freiburg, Germany)

An Envelope Detector as a Trading Cost Technique for Radiometric Partial Discharge Detection

José Mauricio Ramos de Souza Neto (Federal University of Campina Grande, Brazil)

J. S. Rocha Neto (Federal University of Campina Grande, Brazil)

Euler Tavares Macedo (Federal University of Paraíba, Brazil)

Ian A Glover (University of Huddersfield, United Kingdom)

Martin Judd (University of Strathclyde, United Kingdom)

Simulation & Analysis of WirelessHART Nodes for Real-Time Actuator Application

Qixin Huang (Offenburg University of Applied Sciences, Germany)

Axel Sikora (Offenburg University of Applied Sciences, Germany)

Voicu Groza (University of Ottawa, Canada)

Pouria Zand (University of Twente, The Netherlands)

Self-energy meter in duty-cycle battery operated sensor nodes

Jorge Villaverde (Universidad de la Republica, Uruguay)

Leonardo Steinfeld (Universidad de la República, Uruguay)

Julian Oreggioni (Universidad de la República, Uruguay)

Diego Andrés Bouvier (Universidad de la Republica, Uruguay)

Carlos Fernández (Universidad de la Republica, Uruguay)

16:15 - 18:00

S11A: Signal & Image Processing Techniques (part 4)

Room: Conference Room

Chair: *Mihaela Albu (Politehnica University of Bucharest, Romania)*

A Single Sensor NIR Depth Camera for Gesture Control

Dan Ionescu (University of Ottawa, Canada)

Viorel Suse (University of Ottawa, Canada)

Cristian Gadea (University of Ottawa, Canada)

Bogdan Solomon (University of Ottawa, Canada)

Bogdan Ionescu (Mgestyk Technologies, Canada)

Shahidul Islam (Mgestyk Technologies, Canada)

Marius Cordea (Mgestyk Technologies, Canada)

Evaluating the signal processing chain employed in surface plasmon resonance biosensing

Tiago A T de Sousa (Universidade Federal de Campina Grande, Brazil)

Leiva Casemiro Oliveira (Universidade Federal de Campina Grande & Universidade Federal Rural do Semi-árido, Brazil)

Fernanda Loureiro (Universidade Federal de Campina Grande, Brazil)

Antonio Marcus Nogueira Lima (Universidade Federal de Campina Grande & Center for Electrical Engineering and Informatics, Brazil)

Helmut Neff (Federal University of Campina Grande, Brazil)

16:15 - 18:00

S11B: Measurement and Instrumentation for Industrial Applications (part 4)

Room: Gauguin

Chair: *Rafael Sotelo (Universidad de Montevideo, Uruguay)*

Enhanced Plastic Optical Fiber Sensor for Refractometry Based on Amplitude Modulation

Domingos Rodrigues (Universidade Federal do Rio de Janeiro, Brazil)

Fábio V. B. de Nazaré (Universidade Federal do Rio de Janeiro, Brazil)

Marcelo Werneck (Universidade Federal do Rio de Janeiro, Brazil)

Performance assessment of vibration sensing using smartdevices

Chiara Maria De Dominicis (University of Brescia, Italy)

Alessandro Depari (University of Brescia, Italy)

Alessandra Flammini (University of Brescia, Italy)

Emiliano Sisinni (University of Brescia, Italy)

Luca Fasanotti (Intellimech Consortium, Parco Scientifico tecnologico Kilometro Rosso, Italy)

Marco Tomasini (Intellimech Consortium, Parco Scientifico tecnologico Kilometro Rosso, Italy)

Design and characterization of an ultrasonic indoor positioning technique

Alessio De Angelis (University of Perugia, Italy)

Antonio Moschitta (University of Perugia, Italy)

Paolo Carbone (University of Perugia, Italy)

Massimo Calderini (Società delle Fucine Srl, Italy)

Stefano Neri (Società delle Fucine Srl, Italy)

Renato Borgna (Società delle Fucine Srl, Italy)

Manuelo Peppucci (Società delle Fucine Srl, Italy)

16:15 - 18:00

S11D: Advances in Instrumentation and Measurement Developments and Techniques (part 5)

Room: Renoir D

Chair: *Conrado Rossi-Aicardi (Universidad de la Republica, Uruguay)*

Biocompatible Inkjet Resistive Sensors for Biomedical Applications

Alessandro Dionisi (University of Brescia, Italy)

Michela Borghetti (University of Brescia, Italy)

Emilio Sardini (University of Brescia, Italy)

Mauro Serpelloni (University of Brescia, Italy)

Evaluation of a micromirror array based sensor system for optical velocity measurements using the Spatial Filter Velocimetry approach

Hendrik Krüger (University of Rostock, Germany)

Martin Degner (University of Rostock, Germany)

Hartmut Ewald (University of Rostock, Germany)

A Contactless InkJet Printed Passive Touch Sensor

Bruno Andò (University of Catania, Italy)

Salvatore Baglio (University of Catania, Italy)

Vincenzo Marletta (University of Catania, Italy)

Antonio Pistorio (University of Catania, Italy)

A Set of Virtual Instruments to Simulate Radiation Effects in CMOS Circuits

Walter Bartra (Universidade Federal do Rio Grande do Sul, Brazil)

Ricardo Reis (Universidade Federal do Rio Grande do Sul, Brazil)