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Tuesday, May 13

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Session Chair: Jose Pereira (EST Setúbal, Portugal)

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Wednesday, May 14

8:00 AM - 9:45 AM

3A1: WED_1 / Special Session # 15 - Measurement Applications of Intelligent Data Processing

Room: Lecture Theatre

Session Chairs: Annamaria Varkonyi-Koczy (Budapest University of Technology and Economics, Hungary) and Fabrizio Russo (University of Trieste, Italy)

***Learning Multi-Sensor Confidence using Difference of Opinions* 809**

M. Anwar Hossain (University of Ottawa, Canada)
Pradeep Kumar Atrey (University of Ottawa, Canada)
Abdulmotaleb El Saddik (University of Ottawa, Canada)

***A Vector Approach to Quality Assessment of Color Images* 814**

Fabrizio Russo (University of Trieste, Italy)
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Paolo Carbone (University of Perugia, Italy)

***Fast Anytime Fuzzy Frequency Estimation of Multisine Signals* 819**

Annamaria Varkonyi-Koczy (Budapest University of Technology and Economics, Hungary)

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Mickael Germain (University of Sherbrooke, Canada)
Jean-Marc Boucher (ENST Bretagne, France)
Goze Benie (Université DE Sherbrooke, Canada)

3A2: WED_2 / Sensors and Transducers (I)

Room: Saanich 1

Session Chair: Peter Wide (Örebro University, Sweden)

***Versatile Sensor Front End for Low-Depth Modulation Capacitive Sensors* 830**

Thomas Bretterkieber (Technical University of Graz, Austria)
Hubert Zangl (Technical University of Graz, Austria)
Mario Motz (Infineon Technologies Austria AG, Austria)
Tobias Werth (Infineon Technologies Austria AG, Austria)
Dirk Hammerschmidt (Infineon Technologies Austria AG, Austria)

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Andrea Scozzari (CNR IGG, Italy)
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Georg Kaniak (Vienna University of Technology, Austria)
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Paul Annus (Tallinn University of Technology, Estonia)
Andrei Krivoshei (Tallinn University of Technology, Estonia)
Mart Min (Tallinn University of Technology, Estonia)
Toomas Parve (Tallinn University of Technology, Estonia)

3A3: WED_3 / Special Session # 11 - Distributed systems for monitoring, diagnosis and control of electrical power systems

Room: Saanich 2

Session Chairs: Gabriele D'Antona (Politecnico di Milano, Italy) and Carlo Muscas (University of Cagliari, Italy)

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Yuko Work (University of South Carolina, USA)
Yan Shi (University of South Carolina, USA)
Antonello Monti (University of South Carolina, USA)
Andrea Carta (University of Cagliari, Italy)
Carlo Muscas (University of Cagliari, Italy)

***A Decentralized Observer for Electrical Power Systems: Implementation and Experimental Validation* 859**

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Ugo Ghisla (Politecnico di Milano, Italy)
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Ferdinanda Ponci (University of South Carolina, USA)

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Gabriele D'Antona (Politecnico di Milano, Italy)
Carlo Muscas (University of Cagliari, Italy)
S. Sulis (University of Cagliari, Italy)

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Ferdinanda Ponci (University of South Carolina, USA)
Aalhad Deshmukh (University of South Carolina, USA)

3A4: WED_4 / Digital Signal Processing (III)

Room: Oak Bay 1

Session Chair: Shlomo Engelberg (Jerusalem College of Technology, Israel)

***Novel Modified Methods of the Dependent Count for High Precision and Fast Measurements of Frequency-Time Parameters of Electrical Signals* 876**

Sergey Yurish (Universitat Politecnica de Catalunya (UPC), Spain)

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Piet Broersen (Delft University of Technology, The Netherlands)

***Window Sharpening* 890**

Shlomo Engelberg (Jerusalem College of Technology, Israel)
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Assaf Vaknin (Jerusalem College of Technology, Israel)

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Alberto Amato (Polytechnic of Bari, Italy)
Marco Calabrese (Polytechnic of Bari, Italy)
Vincenzo Di Lecce (Polytechnic of Bari, Italy)

3A5: WED_5 / Electrical & Power Measurements (III)

Room: Oak Bay 2

Session Chair: Massimo Lazzaroni (Politecnico di Milano, IT)

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Geert Deconinck (K.U.Leuven, Belgium)

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Marco Laracca (University of Cassino, Italy)

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Nicolae Budisan ("Politehnica" University of Timisoara, Romania)
Voicu Groza (University of Ottawa, Canada)
Octavian Prostean ("Politehnica" University of Timisoara, Romania)
Ioan Filip ("Politehnica" University of Timisoara, Romania)
Marius Biriescu ("Politehnica" University of Timisoara, Romania)
Iosif Szeidert ("Politehnica" University of Timisoara, Romania)
Mihail Stern (Cleanfield Alternative Energy Inc., Canada)

***Diagnostics and Prognostics of Electric Cables in Ship Power Systems via Joint Time-Frequency Domain Reflectometry* 917**
Jingjiang Wang (University of South Carolina, USA)
Philip Crapse (University of South Carolina, USA)
Yong-June Shin (University of South Carolina, USA)
Roger Dougal (University of South Carolina, USA)

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Room: Esquimalt

Session Chair: Johan Schoukens (Vrije Universiteit Brussel, Belgium)

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Kurt Barbé (Vrije Universiteit Brussel, Belgium)

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Rik Pintelon (Vrije Universiteit Brussel, Belgium)

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Feng Ding (Carleton University, Canada)
Peter Liu (Carleton University, Canada)

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Trevor Burton (Carleton University, Canada)
Franck Beaucoup (Broadcom Corp., Canada)
Rafik Goubran (Carleton University, Canada)

3A7: WED_7 / Special Session # 02 B - Sensors for Health Monitoring (II)

Room: Buckingham

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

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Aktham Asfour (University Joseph Fourier, France)

Vincent Auboiron (INSERM, France)

A System for Monitoring Workers' Safety in an Unhealthy Environment by means of Wearable Sensors .. 951

Simone Corbellini (Politecnico di Torino, Italy)

Franco Ferraris (Politecnico di Torino, Italy)

Marco Parvis (Politecnico di Torino, Italy)

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

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

Coaxial double slot antenna Design for Interstitial Hyperthermia in Muscle Using a Finite Element Computer Modeling 961

Mario Cepeda (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)

Arturo Vera (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)

Lorenzo Leija (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)

Citlalli Trujillo (Centro de Investigación y de Estudios Avanzados del IPN, Mexico)

3A8: WED_8 / TUE_24 / Mechanical Measurements (II)

Room: Balmoral

Session Chair: Stephen A. Dyer (Kansas State University, USA)

Eddy Current Testing of Conductive Materials 964

Helena Ramos (Institute of Telecommunication, Instituto Superior Tecnico, Portugal)

Artur Ribeiro (Institute of Telecommunication, Portugal)

P. Ježdík (Czech Technical University, Czech Republic)

J. Neškudla (Czech Technical University, Czech Republic)

Studies of the Accuracy of Clamp-on Transit Time Ultrasonic Flowmeters 969

Dharshanie Mahadeva (University of Cambridge, United Kingdom)

Roger Baker (University of Cambridge, United Kingdom)

Jim Woodhouse (University of Cambridge, United Kingdom)

Robust Estimation of Blow-by and Compression Ratio for Large Diesel Engines based on Cylinder Pressure Traces 974

Daniel Watzenig (Technical University of Graz, Austria)

Gerald Steiner (Technical University of Graz, Austria)

Martin Sommer (Technical University of Graz, Austria)

Comparative Analysis and Numerical Simulation of the Macro-mechanical Models of Shape Memory Alloy 979

Walter Valenzuela (Federal University of Campina Grande, Brazil)

Walber Lima (Federal University of Campina Grande, Brazil)

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

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

10:15 AM - 12:00 PM

3B1: WED_9 / Special Session # 12 - Sensors, Instrumentation and Measurement Systems and Algorithms for Robotics

Room: Lecture Theatre

Session Chairs: Gourab Sen Gupta (Massey University, New Zealand) and Christopher Messom (Massey University, New Zealand)

Design of a Contactless Battery Charger for Micro-robots 985
Subhas Mukhopadhyay (Massey University, New Zealand)
Gourab Sen Gupta (Massey University, New Zealand)
B.J. Lake (Massey University, New Zealand)

Obstacle Avoidance in a Collaborative Environment 991
Gourab Sen Gupta (Massey University, New Zealand)
Serge Demidenko (Massey University, New Zealand)
Christopher Messom (Massey University, New Zealand)

Classifier and Feature Based Stereo for Mobile Robot Systems 997
Christopher Messom (Massey University, New Zealand)
A. L. Barczak (Massey University, New Zealand)

Towards a Simple Mobile Robot with Obstacle Avoidance and Target Seeking Capabilities using Fuzzy Logic 1003
Anuradha Menon (Monash University Malaysia, Malaysia)
Rini Akmeiliawati (Monash University, Malaysia)
Serge Demidenko (Massey University, New Zealand)

3B2: WED_10 / Special Session # 16 - RF and Microwave Sensing Technology and Applications

Room: Saanich 1

Session Chairs: Samir Trabelsi (U. S. Department of Agriculture, USA) and Stuart Nelson (U. S. Department of Agriculture, USA)

Study of Fruit Permittivity Measurement for Quality Detection 1009
Stuart Nelson (U. S. Department of Agriculture, USA)
Wenchuan Guo (Northwest Agriculture and Forestry University, China)
Samir Trabelsi (U. S. Department of Agriculture, USA)

A Non - Invasive Approach for Moisture Measurements through Patch Antennas 1012
Andrea Cataldo (University of Salento, Italy)
Giuseppina Monti (University of Salento, Italy)
Giuseppe Cannazza (University of Salento, Italy)
Egidio De Benedetto (University of Salento, Italy)
Luciano Tarricone (University of Lecce, Italy)
Mariagrazia Cipressa (University of Salento, Italy)

An Experimental UWB Distance Measurement System 1016
Alessio De Angelis (University of Perugia, Italy)
Marco Dionigi (University of Perugia, Italy)
Antonio Moschitta (University of Perugia, Italy)
Riccardo Giglietti (University of Perugia, Italy)
Paolo Carbone (University of Perugia, Italy)

Practical Microwave Meter for Sensing Moisture and Density in Granular Materials 1021
Samir Trabelsi (U. S. Department of Agriculture, USA)
Stuart Nelson (U. S. Department of Agriculture, USA)
Micah Lewis (The University of Georgia, USA)

3B3: WED_11 Virtual Systems (II)

Room: Saanich 2

Session Chair: Wieslaw Winiecki (Warsaw University of Technology, Poland)

***A Curvilinear Avatar with Avatar Collision Detection Scheme in Collaborative Virtual Environments* 1027**

Ziad Sakr (University of Trinidad and Tobago, Trinidad and Tobago)

Chanan Sudama (University of Trinidad and Tobago, Trinidad and Tobago)

***Multi-Core Programming Approach in the Real-Time Virtual Instrumentation* 1031**

Wieslaw Winiecki (Warsaw University of Technology, Poland)

Piotr Bilski (Warsaw Agricultural University, Poland)

***Customized Configuration and Management of Measurement Procedures on PDA* 1037**

Domenico Luca Carni (University of Calabria, Italy)

Domenico Grimaldi (University of Calabria, Italy)

Francesco Lamonaca (Univeristy of Calabria, Italy)

Alfonzo Nastro (University of Calabria, Italy)

***Real-Time Monitoring Visualization Through On-Line Simulation* 1042**

Azzedine Boukerche (University of Ottawa, Canada)

Regina Araujo (Federal University of Sao Carlos, Brazil)

Fabio M. Iwasaki (Federal University of Sao Carlos, Brazil)

Ednaldo Pizzolato (Federal University of Sao Carlos, Brazil)

3B4: WED_12 / Digital Signal Processing (IV)

Room: Oak Bay 1

Session Chair: Jerome Blair (National Security Technologies, LLC, USA)

***Security Instrument using Talker Identification and Microphone Arrays in Variable Noisy Environments* 1046**

Ahmad Rami Abu-El-Quran (Carleton University, Canada)

Rafik Goubran (Carleton University, Canada)

Adrian Chan (Carleton University, Canada)

***Self-Organized Classification of On-load Tap Changers Acoustic Signatures* 1051**

Eduardo Simas Filho (Federal University of Rio de Janeiro, Brazil)

Luiz Alberto De Almeida (Federal University of Bahia, Brazil)

***An Adaptive Watermarking Algorithm for MP3 Compressed Audio Signals* 1057**

Bingwei Chen (University of Ottawa, Canada)

Jiying Zhao (University of Ottawa, Canada)

Dali Wang (Christopher Newport University, USA)

***Correlative Closeness Function for Eye Array* 1061**

Hedayat Alghassi (University of British Columbia, Canada)

Shahram Tafazoli (University of British Columbia, Canada)

Peter Lawrence (University of British Columbia, Canada)

3B5: WED_13 / Electrical & Power Measurements (IV)

Room: Oak Bay 2

Session Chair: Anton Fuchs (Technical University of Graz, Austria)

***A high impedance voltage buffer for wideband measurements* 1065**

Andrea Mariscotti (Università di Genova, Italy)

<i>A Rogowski coil for high voltage applications</i>	1069
Andrea Mariscotti (Università di Genova, Italy)	
Luis Vaccaro (Università di Genova, Italy)	
<i>A Maximum Power Point Tracker Control of a Photovoltaic System</i>	1074
Barna Szabados (McMaster University, Canada)	
Fangnan Wu (McMaster University, Canada)	
<i>Measurements of EM Emission in Rail Launcher Operation</i>	1080
Bernardo Tellini (University of Pisa, Italy)	
Markus Schneider (French-German Research Institute of Saint-Louis, France)	
Alessandra Petri (University of Pisa, Italy)	
Riccardo Ciolini (University of Pisa, Italy)	
3B6: WED_14 / Image Processing and Pattern Recognition (II)	
Room: Esquimalt	
Session Chair: Alberto Vallan (Politecnico di Torino, IT)	
<i>Vision based Fire/Flood Alarm Surveillance System via Robust Detection Strategy</i>	1085
Jie-Ci Yang (National Taiwan University of Science and Techology, Taiwan)	
Chin-Lun Lai (Oriental Institute of Technology, Taiwan)	
<i>Elimination of gridlines in X-ray image</i>	1091
Toshinori Maruyama (Okayama University, Japan)	
Hideki Yamamoto (Okayama University, Japan)	
<i>Image Analysis of Metallic Ropes for the Measurement of the Lay Length</i>	1097
Alberto Vallan (Politecnico di Torino, Italy)	
Filippo Molinari (Politecnico di Torino, Italy)	
<i>A Single-class Support Vector Machine Translation Algorithm To Compensate For Non-stationary Data In Heterogeneous Vision-based Sensor Networks</i>	1102
Jason Rhineland (Carleton University, Canada)	
Peter Liu (Carleton University, Canada)	
3B7: WED_15 / A/D and D/A Converters (II)	
Room: Buckingham	
Session Chair: Pasquale Daponte (University of Sannio, Italy)	
<i>A New Calibration Method for Sampling Clock Skew in Time-Interleaved ADC</i>	1107
Zheng Liu (Shizuoka University, Japan)	
Kazutaka Honda (Shizuoka University, Japan)	
Shoji Kawahito (Research Institute of Electronics, Japan)	
<i>ADC Standard Harmonization: Comparison of Test Methods</i>	1111
Eulalia Balestrieri (University of Sannio, Italy)	
Pasquale Daponte (University of Sannio, Italy)	
Sergio Rapuano (University of Sannio, Italy)	
<i>Loopback Test and Error Correction of Data Converters</i>	1117
Domenico Alessandro Lampasi (University of Rome Sapienza, Italy)	
Antonio Moschitta (University of Perugia, Italy)	
Paolo Carbone (University of Perugia, Italy)	

3B8: WED_16 / Soft Computing Techniques for Measurements (II)

Room: Balmoral

Session Chair: Imre Rudas (Budapest Tech Polytechnical Institution, Hungary)

***Neural Networks for Environmental Recognition and Navigation of a Mobile Robot* 1123**

Moufid Harb (University of Ottawa, Canada)

Rami Abielmona (Larus Technologies Corporation, Canada)

Kamal Naji (Damascus University, Syria)

Emil Petriu (University of Ottawa, Canada)

***Bearing Fault Detection in Adjustable Speed Drives via a Support Vector Machine with Feature Selection using a Genetic Algorithm* 1129**

Kaptan Teotrakool (University of Missouri-Columbia, USA)

Michael Devaney (University of Missouri-Columbia, USA)

Levent Eren (Bahcesehir University, Turkey)

***Embedded Instrumentation Systems Architecture* 1134**

Nikita Visnevski (GE Global Research, USA)

***Data Fusion Methods based on Fuzzy Theory for Wind Speed Measurement using Ultrasonic Transducers* 1140**

Juan Mauricio Villanueva (Pontificia Universidade Catolica do Rio de Janeiro, Brazil)

Sebastian Catunda (Universidade Federal do Maranhão, Brazil)

Ricardo Tanscheit (Pontificia Universidade Catolica do Rio de Janeiro, Brazil)

12:00 PM - 1:30 PM

Poster C: Poster Session 3

Room: Palm Court & Crystal Ballroom

Session Chair: Thomas Whalen (Communications Research Centre, Canada)

***An Automatic Light Monitoring System with Light-to-Frequency Converter for Flower Planting* 1146**

Wei-Cheng Kuo (National Chiao Tung University, Taiwan)

Cheng-Ta Chiang (Industrial Technology Research Institute, Taiwan)

Yu-Chung Huang (National Chiao Tung University, Taiwan)

***A Manageable Web-based Video Streaming System for On-Line Monitoring of Remote Laboratory Experiment* 1150**

Jian-Wei Lin (National Taiwan University of Science and Technology, Taiwan)

Yuan-Cheng Lai (IM, National Taiwan University of Science and Technology, Taiwan)

***Real Time Bunch-by-Bunch Luminosity Monitor for BEPCII* 1155**

Wang Yonggang (University of Science and Technology of China, P.R. China)

Zhang Tao (University of Science and Technology of China, P.R. China)

Xu Zi-zong (University of Science and Technology of China, P.R. China)

Shan Qing (University of Science and Technology of China, P.R. China)

Hu Tao (Chinese Academy of Sciences, P. R. China)

***A Sigma-Delta Resistance to Digital Converter Suitable for Differential Resistive Sensors* 1159**

Madhu Mohan (Indian Institute of Technology Madras, India)

Boby George (Technical University of Graz, Austria)

Jagadeesh Kumar (Indian Institute of Technology Madras, India)

***Soft sensor design for a Sulfur Recovery Unit using a clustering based approach* 1162**

Salvatore Graziani (University of Catania, Italy)

Giuseppe Napoli (Università degli Studi di Messina, Italy)

Maria Xibilia (Università degli Studi di Messina, Italy)

<i>Modeling IPMC Actuators for Model Reference Motion Control</i>	1168
Kyriakos Tsiakmakis (Aristotle University of Thessaloniki, Greece)	
Jordi Brufau (University of Barcelona, Spain)	
Manel Puig-Vidal (University of Barcelona, Spain)	
Theodore Laopoulos (Aristotle University of Thessaloniki, Greece)	
<i>A Technique for Detecting Materials Characteristics using Mechanical Impacts and a Multilayer Neural Network</i>	1174
Erik Molino-Minero-Re (Polytechnic University of Catalonia, Spain)	
Mariano López-García (Polytechnic University of Catalonia, Spain)	
Antoni Mànuel-Làzaro (Polytechnic University of Catalonia, Spain)	
Alfonso Carlosena (Public University of Navarra, Spain)	
Shahram Shariat-Panahi (Polytechnic University of Catalonia, Spain)	
<i>Analysis and Optimization of the Acquisition Times in the Magnetic Resonance Imaging</i>	1179
Gregorio Andria (Polytechnic of Bari, Italy)	
Filippo Attivissimo (Polytechnic of Bari, Italy)	
Giuseppe Cavone (Polytechnic of Bari, Italy)	
Anna Lanzolla (Polytechnic of Bari, Italy)	
<i>Battery Squeezing under Low-Power Pulsed Loads</i>	1184
Maria Teresa Penella (Polytechnic University of Catalonia, Spain)	
Manel Gasulla (Polytechnic University of Catalonia, Spain)	
<i>A new method for the on-line voidage measurement of gas-oil two-phase flow</i>	1189
Xia Li (Zhejiang University, P.R. China)	
Zhiyao Huang (Zhejiang University, P.R. China)	
Baoliang Wang (Zhejiang University, P.R. China)	
Haiqing Li (Zhejiang University, P.R. China)	
<i>Measurement of Polycyclic Aromatic Hydrocarbons by using Molecularly Imprinted Polymers</i>	1194
Joaquin Gonzalez Norriella (University of Oviedo, Spain)	
Juan Campo Rodriguez (University of Oviedo, Spain)	
Marta Valledor (University of Oviedo, Spain)	
Francisco Ferrero (University of Oviedo, Spain)	
JM Traviesa (University of Oviedo, Spain)	
JM Costa (University of Oviedo, Spain)	
R Pereiro (University of Oviedo, Spain)	
A Sanz-Medel (University of Oviedo, Spain)	
<i>Thermal Sigma-Delta Modulator: A Temperature Measurement Application</i>	1198
Georgina Freitas (Federal University of Campina Grande, Brazil)	
Alan Sá (Federal University of Campina Grande, Brazil)	
Ligia Palma (Universidade Federal da Bahia, Brazil)	
Raimundo Freire (Federal University of Campina Grande, Brazil)	
Amauri Oliveira (Universidade Federal da Bahia, Brazil)	
<i>An Electronic Instrumentation Course as Part of a Multidisciplinary Learning Project</i>	1202
Juan Campo Rodriguez (University of Oviedo, Spain)	
Francisco Ferrero (University of Oviedo, Spain)	
Marta Valledor (University of Oviedo, Spain)	
Juan Carlos Alvarez-Alvarez (Universidad de Oviedo, Spain)	
Juan Carlos Alvarez-Anton (Universidad de Oviedo, Spain)	
Juan Carlos Viera (Universidad de Oviedo, Spain)	

Multifunctional Configurable USB Data Acquisition System	1206
Zeljka Lucev (University of Zagreb, Croatia)	
Hrvoje Dzapov (University of Zagreb, Croatia)	
Mario Cifrek (University of Zagreb, Croatia)	
Sensor Signal Processing for Autonomous Wireless Sensors	1210
Sebastian Bicelli (University of Brescia, Italy)	
Alessandro Depari (University of Brescia, Italy)	
Alessandra Flammini (University of Brescia, Italy)	
Daniele Marioli (University of Brescia, Italy)	
Mauro Serpelloni (University of Brescia, Italy)	
Emiliano Sisinni (University of Brescia, Italy)	
Andrea Taroni (University of Brescia, Italy)	
Soil moisture assessment by means of MEMS tri-axial accelerometers	1216
Francesco Adamo (Polytechnic of Bari, Italy)	
Filippo Attivissimo (Polytechnic of Bari, Italy)	
Laura Fabbiano (Polytechnic of Bari, Italy)	
Nicola Giaquinto (Polytechnic of Bari, Italy)	
Maurizio Spadavecchia (Polytechnic of Bari, Italy)	
Model Based Synchronization for Weak Signal Detection	1219
Ajeesh Kurian (University of Calgary, Canada)	
Henry Leung (University of Calgary, Canada)	
Magnetic Resonance Angiography of Renal Arteries using Contrast Behavior between Water and Fat during the Transient Phase of Steady State of Signal on Balanced Turbo Field Echo Sequence	1223
Katsuhiko Kida (Okayama Red Cross General Hospital, Japan)	
Sachiko Goto (Okayama University, Japan)	
Yoshiharu Azuma (Okayama University, Japan)	
Design and Analysis of A Fast Infrared Tracking System with Winner-Take-All Implementation	1229
Jia-Wen Zhong (National Changhua University of Education, Taiwan)	
Shu-Jung Chen (National Changhua University of Education, Taiwan)	
Shen Chih-Hsiung (National Changhua University of Education, Taiwan)	
Low-Power High-Responsivity CMOS Temperature Sensor	1234
Jefferson Dantas (Federal University of Campina Grande, Brazil)	
Haulisson Costa (Federal University of Campina Grande, Brazil)	
João Dantas (Federal University of Campina Grande, Brazil)	
Francisco Filho (Federal University of Campina Grande, Brazil)	
Fernando de Sousa (Federal University of Campina Grande, Brazil)	
Raimundo Freire (Federal University of Campina Grande, Brazil)	
Molecular orientation depth profiling of LC thin film under shear flow by near-field birefringence response	1239
Jing Qin (Tokyo University of Agriculture and Technology, Japan)	
Norihiro Umeda (Tokyo University of Agriculture and Technology, Japan)	
Development of an open-air type laser absorption atmospheric gas monitor with ability of reducing the fluctuation of incident optical power.....	1243
Naoki Kagawa (Fukuyama University, Japan)	
Masaki Sutou (Fukuyama University, Japan)	

<i>The Network Analyser (HP8510C) as a Transfer Instrument for Power Sensor Calibration</i>	1249
F. Aldossary (Brunel University, United Kingdom)	
Z. Huneiti (University of Hail, Saudi Arabia)	
Z. Hunaiti (Anglia Ruskin University, United Kingdom)	
W. Balachandran (Brunel University, United Kingdom)	
<i>Frequency response of Measurement Current Transformers</i>	1254
Antonio Cataliotti (University of Palermo, Italy)	
D. Di Cara (University of Palermo, Italy);	
P. A. Di Franco (University of Palermo, Italy);	
A. E. Emanuel (Worcester Polytechnic Institute, USA)	
S. Nuccio (University of Palermo, Italy)	
<i>Shortened square wave waveforms in synchronous signal processing</i>	1259
Paul Annus (Tallinn University of Technology, Estonia)	
Mart Min (Tallinn University of Technology, Estonia)	
Jaan Ojarand (ELIKO, Estonia)	
<i>Human-Instrument Symbiotic Partnership for Multimodal Environment Perception</i>	1263
Emil Petriu (University of Ottawa, Canada)	
Thomas Whalen (Communications Research Centre, Canada)	
Imre Rudas (Budapest Tech Polytechnical Institution, Hungary)	
Dorina Petriu (Carleton Univeristy, Canada)	
Marius Cordea (University of Ottawa, Canada)	
<i>An harmonic test condition for the metrological characterization and the operating principle identification of reactive static meters</i>	1269
Antonio Cataliotti (University of Palermo, Italy)	
Valentina Cosentino (University of Palermo, Italy)	
Alessandro Lipari (University of Palermo, Italy)	
Salvatore Nuccio (University of Palermo, Italy)	
<i>Radiometric Transmitter with Combined Resonance Scintillation Detection System</i>	1274
Konstantinos Athanassiadis (Alexander Technological and Educational Institute of Thessaloniki, Greece)	
V. A. Chudakov (International Sakharov Environmental University, Republic of Belarus)	
O.M. Anshakov (Belarusian State University, Republic of Belarus)	
<i>Sensitivity analysis of Voltage Transformer compensation to the accuracy of the primary current transducer</i>	1277
Aldo Baccigalupi (University of Naples Federico II, Italy)	
Annalisa Liccardo (University of Naples Federico II, Italy)	
<i>A Low Cost Device for the Compensation of Voltage Transformers</i>	1282
Aldo Baccigalupi (University of Naples Federico II, Italy)	
Annalisa Liccardo (University of Naples Federico II, Italy)	
<i>Experimental Verification of a Two-State Model for the Cumulative Distribution Function of GSM Passive Radar Clutter</i>	1288
Antonio De Maio (University of Naples Federico II, Italy)	
Goffredo Foglia (Elettronica S.P.A., Italy)	
Nicola Pasquino (University of Naples Federico II, Italy)	
Michele Vadursi (University of Naples "Parthenope", Italy)	

1:30 PM - 3:15 PM

3C1: WED_17 / Special Session # 10 A - Imaging Systems and Techniques (I)

Room: Lecture Theatre

Session Chair: George Giakos (The University of Akron, USA)

***A Novel Vision-based Method for Real-time Extracting Vehicle Flow Information on a Road* 1294**

Jiajia Tan (Fudan University, P.R. China)

Jian Qiu Zhang (Fudan University, P.R. China)

Bo Hu (Fudan University, P.R. China)

Jun He (Science and Technology Commission of Shanghai Municipality, P.R. China)

***Microwave detection of dielectric structures by using a tomographic approach* 1300**

Andrea Salvadè (University of Applied Sciences of Southern Switzerland, Switzerland)

Matteo Pastorino (University of Genoa, Italy)

Ricardo Monleone (University of Applied Sciences of Southern Switzerland, Switzerland)

Thomas Bartesaghi (University of Applied Sciences of Southern Switzerland, Switzerland)

Giovanni Bozza (University of Genoa, Italy)

Andrea Randazzo (University of Genoa, Italy)

***Improving the Detection and Localization of Anatomical Landmark Points in Infrared Images Using Symmetry and Region Specific Constraints* 1306**

Christophe Herry (Carleton University, Canada)

Rafik Goubran (Carleton University, Canada)

Monique Frize (Carleton University, Canada)

***A Classification Method for Wood Types using Fluorescence Spectra* 1312**

Paolo Camorani (Università degli Studi di Parma, Italy)

Marco Badiali (IMAL s.r.l., Italy)

Daniela Francomacaro (IMAL s.r.l., Italy)

Marco Gamassi (University of Milan, Italy)

Vincenzo Piuri (University of Milan, Italy)

Fabio Scotti (University of Milan, Italy)

Marco Zanasi (IMAL s.r.l., Italy)

3C2: WED_18 / Special Session # 09 - Measurement and Networking

Room: Saanich 1

Session Chairs: Claudio Narduzzi (Università di Padova, Italy) and Leopoldo Angrisani (University of Naples Federico II, Italy)

***Taxonomies of distributed measurement systems via UDDI registry* 1316**

Fabrizio Ciancetta (University of L'Aquila, Italy)

Giovanni Bucci (University of L'Aquila, Italy)

Carmine Landi (Second University of Naples, Italy)

***Joint pdf Plots: Telling Beetles from Ants in Network Traffic Measurement by Cross-Domain Analysis* .. 1322**

Giada Giorgi (University of Padova, Italy)

Claudio Narduzzi (University of Padova, Italy)

***Measurements for Networking: An Overview* 1328**

Leopoldo Angrisani (University of Naples Federico II, Italy)

Claudio Narduzzi (University of Padova, Italy)

A New Instrument Based on Cyclic Spectral Analysis for Power Measurements in Digital Telecommunications Systems 1334
Leopoldo Angrisani (University of Naples Federico II, Italy)
Rosario Schiano Lo Moriello (University of Naples Federico II, Italy)
Michele Vadursi (University of Naples "Parthenope", Italy)

3C3: WED_19/ Special Session # 03 C - Recent developments in microwave measurements

Room: Saanich 2

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

Advanced nonlinearity analysis of a 6GHz wideband receiver 1340
Stephane Bronckers (Vrije Universiteit Brussel /IMEC, Belgium)
Gerd Vandersteen (Vrije Universiteit Brussel, Belgium)
Jonathan Borremans (Vrije Universiteit Brussel/IMEC, Belgium)
Koen Vandermot (Vrije Universiteit Brussel, Belgium)
Geert Van der Plas (IMEC, Belgium)
Yves Rolain (Vrije Universiteit Brussel, Belgium)

Temperature Measurement by Microwave Radiometry in Industrial Applications 1344

Pierre-Yves Cresson (IEMN - University of Lille, France)
Clarisse Ricard (IEMN - University of Lille, France)
Luc Dubois (IEMN - University of Lille, France)
Sébastien Vaucher (EMPA, Switzerland)
Tuami Lasri (IEMN - University of Lille, France)
Joseph Pribetich (IEMN - University of Lille, France)

Uncertainty Consideration in Sampling for High Resolution Fourier Transform Spectroscopy 1350

Nawaf Almoayed (Tufts University, USA)
Mohammed Afsar (Tufts University, USA)

Dynamic Kernel Function Fast Fourier Transform with Variable Truncation Scheme for Wideband Signal Detection 1354

George Lee (Wright State University, USA)
Vivek Sarathy (Wright State University, USA)
Henry Chen (Wright State University, USA)

3C4: WED_20 / Special Session # 13 B- Energy Harvesting and Management: towards credible deployments in wireless sensor networks and systems (II)

Room: Oak Bay 1

Session Chair: Cesare Alippi (Politecnico di Milano, Italy)

Studying the Feasibility of Energy Harvesting from Broadcast RF Station for WSN 1360
T. Sogorb (Politechnic University of Valencia, Spain)
J. Llario (Politechnic University of Valencia, Spain)
Jose Pelegri-Sebastia (Politechnic University of Valencia, Spain)
R. Lajara (Politechnic University of Valencia, Spain)
J. Alberola (Politechnic University of Valencia, Spain)

Energy Harvesting for Online Condition Monitoring of High Voltage Overhead Power Lines 1364

Hubert Zangl (Technical University of Graz, Austria)
Thomas Bretterkieber (Technical University of Graz, Austria)
Georg Brasseur (Technical University of Graz, Austria)

Alternative Energy Sources for Sensor Nodes: Rationalized Design for Long-Term Deployment 1370
Alex Weddell (University of Southampton, United Kingdom)
Nick Harris (University of Southampton, United Kingdom)
Neil White (University of Southampton, United Kingdom)

Autonomous Sensor System with RF Link and Thermoelectric Generator for Power Harvesting 1376
Simone Dalola (University of Brescia, Italy)
Vittorio Ferrari (University of Brescia, Italy)
Michele Guizzetti (University of Brescia, Italy)
Daniele Marioli (University of Brescia, Italy)
Emilio Sardini (University of Brescia, Italy)
Mauro Serpelloni (University of Brescia, Italy)
Andrea Taroni (University of Brescia, Italy)

3C5: WED_21 / Special Session # 14 - Robotic Tactile Sensing and Perception

Room: Oak Bay 2

Session Chair: Pierre Payeur (University of Ottawa, Canada)

New Test Structure for Tactile Display using Laterally Driven Tactos 1381
Ramiro Velazquez (Universidad Panamericana, Mexico)
S. Gutierrez (Universidad Panamericana, Mexico)

A Plastic Optical Fiber Sensor for Vibration Measurements 1387
Alessandro Buffa (Politecnico di Torino, Italy)
Guido Perrone (Politecnico di Torino, Italy)
Alberto Vallan (Politecnico di Torino, Italy)

Low-noise Instrumentation for the Measurement of Piezoresistive AFM Cantilever Deflection in Robotic Nanobiocharacterization Applications 1392
Jorge Otero (University of Barcelona, Spain)
Manel Puig-Vidal (University of Barcelona, Spain)

Modelling Contact Forces for 3D Interactive Peg-in-Hole Virtual Reality Operations 1397
Jilin Zhou (University of Ottawa, Canada)
Nicolas D. Georganas (University of Ottawa, SITE, Canada)
Emil Petriu (University of Ottawa, Canada)
Xiaojun Shen (University of Ottawa, Canada)
Francois Marlic (University of Ottawa, Canada)

3C6: WED_22 / Sensors and Transducers (II)

Room: Esquimalt

Session Chair: Azzedine Boukerche (University of Ottawa, Canada)

Radon alpha-ray detector based on a high-resistivity-silicon BJT and a low-cost readout electronics 1403
Luigi Rovati (University of Modena and Reggio Emilia, Italy)
G. Verzellesi (University of Modena and Reggio Emilia, Italy)
M. Bonaiuti (University of Modena and Reggio Emilia, Italy)
G. Batignani (INFN Pisa and University of Pisa, Italy)
L. Bosisio (INFN Trieste and University of Trieste, Italy)
G.-F. Dalla Betta (INFN Padova and University of Trento, Italy)
G. Giacomini (INFN Trieste and University of Trieste, Italy)
C. Piemonte (Fondazione Bruno Kessler-IRST, Italy)
N. Zorzi (Fondazione Bruno Kessler-IRST, Italy)

Wake-Up Methods to Extend Battery Life Time of Wireless Sensor Nodes 1407
Thomas Wendt (IMTEK Institute of Microsystemtechnology, University of Freiburg, Germany)
Leonhard Reindl (University of Freiburg, Germany)

Model and experimental characterization of dynamic behaviour of low power Carbon Monoxide MOX with pulsed temperature profile 1413
Sebastian Bicelli (University of Brescia, Italy)
Alessandro Depari (University of Brescia, Italy)
Guido Faglia (University of Brescia, Italy)
Alessandra Flammini (University of Brescia, Italy)
Ada Fort (University of Siena, Italy)
Marco Mugnaini (University of Siena, Italy)
Andrea Ponzoni (University of Brescia, Italy)
Valerio Vignoli (University of Siena, Italy)

Optical 2D Displacement and Strain Sensor for Creep Testing of Material Samples in Transparent Fluids 1419
Markus Brandner (Technical University of Graz, Austria)
Thomas Thurner (Technical University of Graz, Austria)
Gerhard Kukutschki (Technical University of Graz, Austria)
Norbert Enzinger (Technical University of Graz, Austria)

3C7: WED_23 / Signal detection & classification

Room: Buckingham

Session Chair: Ferdinanda Ponci (University of South Carolina, USA)

Sensor fusion based testing station for unbalanced load estimation in horizontal washing machines 1424
Yingqin Yuan (Whirlpool Corporation, USA)

A Few Notes on Variance of Frequency Estimated Applying Analytical Leakage Compensation 1429
Nikica Hlupic (University of Zagreb, Croatia)
Danko Basch (University of Zagreb, Croatia)
Kresimir Fertalj (University of Zagreb, Croatia)

A Tool for Working Condition and Nozzles Classification for Water Jet Systems 1435
Massimo Lazzaroni (Politecnico di Milano, Italy)
Stefano Ferrari (Università di Milano, Italy)
Loredana Cristaldi (Politecnico di Milano, Italy)
Massimiliano Annoni (Politecnico di Milano, Italy)

An Improved Method for the Automatic Digital Modulation Classification 1441
Luca De Vito (University of Sannio, Italy)
Sergio Rapuano (University of Sannio, Italy)
Maurizio Villanacci (University of Sannio, Italy)

3C8: WED_24 / Mechanical Measurements (III)

Room: Balmoral

Session Chair: Antoni Garcia (Technical University of Catalonia, Spain)

Inductive Probe for Flaw Detection in non-Magnetic Metallic Plates Using Eddy-Currents 1447
Artur Ribeiro (Institute of Telecommunication, Portugal)
Helena Ramos (Institute of Telecommunication, Instituto Superior Tecnico, Portugal)

An Investigation on Wireless Communication and Power Supply Through Metal Tank Walls 1452
Hubert Zangl (Technical University of Graz, Austria)
Anton Fuchs (Technical University of Graz, Austria)
Thomas Bretterkieber (Technical University of Graz, Austria)
Michael Moser (Technical University of Graz, Austria)
Gert Holler (Technical University of Graz, Austria)

Optical Instrument for Real-Time Ultrasonic Welder Inspection 1458
Michele Norgia (Politecnico di Milano, Italy)
Massimiliano Annoni (Politecnico di Milano, Italy)
Cesare Svelto (Politecnico di Milano, Italy)

Simultaneous Measurement of Bulk and Contact Resistance of Conductive Materials for Fuel Cells 1462
Eduard Okel (Universität Kassel, Germany)
Bastian Schaar (Volkswagen AG, Germany)
Olfa Kanoun (Chemnitz University of Technology, Germany)

3:45 PM - 5:30 PM

3D1: WED_25 / Special Session # 06 - Varied Input Sensor Systems
Room: Lecture Theatre
Session Chair: Olfa Kanoun (Chemnitz University of Technology, Germany)

Beamforming-Based Acoustic Imaging for Distance Retrieval 1466
Aime' Lay-Ekuakille (University of Lecce, Italy)
Amerigo Trotta (Polytechnic of Bari, Italy)
Giuseppe Vendramin (University of Lecce, Italy)

On-line Estimation of Fresh Milk Composition by means of VIS-NIR Spectrometry and Partial Least Squares Method (PLS) 1471
Carlos Carleos (Oviedo University, Spain)
Jesus Baro (Valladolid University, Spain)
Miguel Perez (University of Oviedo, Spain)
Rocio Muñiz (Oviedo University, Spain)
Norberto Corral (Oviedo University, Spain)

On the Dynamic Thermal System Behavior of a Glow Plug 1476
Heidi Dumele (University of Bundeswehr Munich, Germany)
Maximilian Prager (Technical University Munich, Germany)
Michael Horn (University of Bundeswehr Munich, Germany)

Rod Shape Testing by High Frequency Eddy Current 1482
Jens Weidenmueller (University of Applied Sciences Remagen, Germany)
Christoph Knopf (University of Applied Sciences Remagen, Germany)
Christian Sehestedt (University of Applied Sciences Koblenz, Remagen, Germany)
Joerg Himmel (University of Applied Sciences Koblenz, Remagen, Germany)

3D2: WED_26 / Special Session # 08 A - Design, Manufacturing and Test of Reliable System-on-Chip (SoC) and System-in-Package (I)

Room: Saanich 1

Session Chair: Sunil Das (University of Ottawa, Canada)

Improved Test Efficiency in Cores-Based System-on-Chips Using ModelSim Verification Tool 1487

Sunil Das (University of Ottawa, Canada)
Junfeng Li (University of Ottawa, Canada)
Altaf Hossain (University of Ottawa, Canada)
Amiya Nayak (SITE, University of Ottawa, Canada)
Emil Petriu (University of Ottawa, Canada)
Satyendra Biswas (Georgia Southern University, USA)
Wen Jone (University of Cincinnati, USA)

A Design Method for Ultra-High Speed for A New Wave Pipeline-based Circuit 1493

Tao Feng (JP Morgan Chase, USA)
Zachary Patitz (Oklahoma State University, USA)
Nohpill Park (Oklahoma State University, USA)

A Novel Approach To Automated Testing To Increase Software Reliability 1499

Marcantonio Catelani (University of Florence, Italy)
Lorenzo Ciani (University of Florence, Italy)
Valeria Scarano (University of Florence, Italy)
Alessandro Bacioccola (University of Florence, Italy)

Logic Built-In Self-Test for Core-Based Designs on System-on-a-Chip 1503

Kiran George (California State University, Fullerton, USA)
Henry Chen (Wright State University, USA)

3D3: WED_27 / Automotive & transportation

Room: Saanich 2

Session Chair: Sergey Yurish (Universitat Politecnica de Catalunya (UPC), Spain)

Embedded Microcontroller and Sensors Based Front End Loader Control System 1509

Subhas Mukhopadhyay (Massey University, New Zealand)
Gourab Sen Gupta (Massey University, New Zealand)
J. W. Howarth (Massey University, New Zealand)

A Novel Seat Occupancy Detection System based on Capacitive Sensing 1515

Boby George (Technical University of Graz, Austria)
Hubert Zangl (Technical University of Graz, Austria)
Thomas Bretterkieber (Technical University of Graz, Austria)
Georg Basseur (Technical University of Graz, Austria)

Implementation Problems in Inertial Road-Profiling: An Overview 1520

Stephen A. Dyer (Kansas State University, USA)
Justin Dyer (Stanford University, USA)

On a Simple Method for Estimating International Roughness Index Using a Profilograph 1526

Justin Dyer (Stanford University, USA)
Stephen A. Dyer (Kansas State University, USA)
Dwight D. Day (Kansas State University, USA)
John J. Devore (Kansas State University, USA)

3D4: WED_28 / Medicine & Health Care

Room: Oak Bay 1

Session Chair: Mel Siegel (Carnegie Mellon University, USA)

***Lung Ventilation Monitoring Incorporating Prior Information by Electrical Impedance Tomography* 1531**

Xiaoyan Chen (Tianjin University, P.R. China)
Huaxiang Wang (Tianjin University, P.R. China)
Xiaolei Shi (Tianjin University, P.R. China)
Yong Yan (University of Kent, United Kingdom)
Ziqiang Cui (Tianjin University, P.R. China)

***Digital Pulse Volume Based Endothelial Function Detector for Early Stage Formation of Atherosclerosis* 1537**

An-Bang Liu (Tzu-Chi General Hospital, Taiwan)
Tsang-Chih Wu (National Dong Hwa University, Taiwan)
Chun-Ho Lee (National Dong Hwa University, Taiwan)
Cyuan-Cin Liu (National Dong Hwa University, Taiwan)
Hsien-Tsai Wu (National Dong Hwa University, Taiwan)

***Skin-Color-Compensated Colorimeter for Detection and Classification of Pressure Ulcers* 1542**

Sanna Gaspard (Carnegie Mellon University, USA)
Todd Przybycien (Carnegie Mellon University, USA)
Mel Siegel (Carnegie Mellon University, USA)

3D5: WED_29 / Electrical & Power Measurements (V)

Room: Oak Bay 2

Session Chair: Alessandro Ferrero (Politecnico di Milano, Italy)

***Estimation of the Component Parameters for the Evaluation of the Power Quality Disturbances in the Frequency Domain* 1548**

Dusan Agrez (University of Ljubljana, Slovenia)

***An Electronic Current Transformer Based on Rogowski Coil* 1554**

Marco Faifer (Politecnico di Milano, Italy)
Roberto Ottoboni (Politecnico di Milano, Italy)

***A VI Based Tool for Inverter fed Induction Motor Diagnostic* 1560**

Loredana Cristaldi (Politecnico di Milano, Italy)
Marco Faifer (Politecnico di Milano, Italy)
Massimo Lazzaroni (Politecnico di Milano, Italy)
Sergio Toscani (Politecnico di Milano, Italy)

***A Time-Domain Approach Based on the IEEE Std 1459-2000 for the detection of Loads Producing Harmonic Distortion* 1566**

Antonio Cataliotti (University of Palermo, Italy)
Valentina Cosentino (University of Palermo, Italy)

3D6: WED_30 / Telecommunications (II)

Room: Esquimalt

Session Chair: Marco Parvis (Politecnico di Torino, Italy)

***Nonlinear Distortion Measurements of Discrete-Time Radio Receivers* 1572**

Arnd Geis (IMEC, Leuven, Belgium)
Gerd Vandersteen (Vrije Universiteit Brussel, Belgium)
Yves Rolain (Vrije Universiteit Brussel, Belgium)

<i>Measuring Gain Imbalance and Quadrature Error in WiMAX Transmitters</i>	1577
Leopoldo Angrisani (University of Naples Federico II, Italy)	
Aniello Napolitano (University of Naples Federico II, Italy)	
Michele Vadursi (University of Naples "Parthenope", Italy)	
<i>Real Time Spectrum Analyzer Including an Automatic Digital Modulation Classifier</i>	1582
Luca De Vito (University of Sannio, Italy)	
Sergio Rapuano (University of Sannio, Italy)	
Maurizio Villanacci (University of Sannio, Italy)	
<i>Measuring true signal parameters in digital wireless systems in the presence of in-channel interference</i>	1588
Leopoldo Angrisani (University of Naples Federico II, Italy)	
Aniello Napolitano (University of Naples Federico II, Italy)	
Rosario Schiano Lo Moriello (Università degli Studi di Napoli Federico II, Italy)	
3D7: WED_31 / Measurement-Data Management (II)	
Room: Buckingham	
Session Chair: Peter Liu (Carleton University, Canada)	
<i>Fault detection in atomic clock frequency standards affected by mean and variance changes and by an additive periodic component: the GLRT approach</i>	1594
Emilia Nunzi (University of Perugia, Italy)	
Paolo Carbone (University of Perugia, Italy); Patrizia Tavella (INRIM, Italy)	
<i>A Measuring System for the Assurance of the Cold-Chain Integrity</i>	1598
Alessio Carullo (Politecnico di Torino, Italy)	
Simone Corbellini (Politecnico di Torino, Italy)	
Marco Parvis (Politecnico di Torino, Italy)	
L. Reyneri (Politecnico di Torino, Italy)	
Alberto Vallan (Politecnico di Torino, Italy)	
<i>On iterative parameter estimation algorithms for OE and OEMA systems</i>	1603
Feng Ding (Carleton University, Canada)	
Peter Liu (Carleton University, Canada)	
3D8: WED_32 / Sensors and Transducers (III)	
Room: Balmoral	
Session Chair: Carmine Landi (Second University of Naples, Italy)	
<i>Direct Interface Circuit for Differential Capacitive Sensors</i>	1609
Ferran Reverter (Technical University of Catalonia, Spain)	
Oscar Casas (Technical University of Catalonia, Spain)	
<i>An Integrated Interface for Leaky Capacitive Sensor with Emphasis on Humidity Sensor</i>	1613
Ali Heidary (Delft University of Technology, The Netherlands)	
Gerard Meijer (Delft University of Technology, The Netherlands)	
<i>Design and Characterization of an Electric Field Based Medium Voltage Transducer</i>	1617
Lorenzo Peretto (University of Bologna, Italy)	
Elisa Scala (University of Bologna, Italy)	
Roberto Tinarelli (University of Bologna, Italy)	
<i>A Precision Integrated Interface Circuit for Thermopile Based Sensors</i>	1623
Qi Jia (Delft University of Technology, The Netherlands)	
Xiujun Li (Delft University of Technology, The Netherlands)	
Gerard Meijer (Delft University of Technology, The Netherlands)	

Thursday, May 15

8:00 AM - 9:45 AM

4A1: THU_1 / Special Session # 02 C - Sensors for Health Monitoring (III)

Room: Lecture Theatre

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

A Novel Method of Measurement of Oxygen Saturation in Arterial Blood 1627

Ashoka Reddy (Research Scholar, India)

Boby George (Technical University of Graz, Austria)

Madhu Mohan (Indian Institute of Technology Madras, India)

Jagadeesh Kumar (Indian Institute of Technology Madras, India)

A Label-free CMOS DNA Microarray based on Charge Sensing 1631

Erik Anderson (Stanford University, USA)

Jonathan Daniels (Stanford University, USA)

Heng Yu (Stanford Genome Technology Center, USA)

Thomas Lee (Stanford University, USA)

Nader Pourmand (University of California, Santa Cruz, USA)

Applying Analysis Tools of Heart Rate Variability Upon Determining P-Wave Interval Of ECG 1637

Karuppanan Balasubramanian (European University of Lefke, Turkey)

Akin Cellatoglu (European University of Lefke, Turkey)

Potential Application of the Modulated Scatterer Technique to Multilayered Material Evaluation and Health Monitoring 1643

Kristen Munoz (Missouri University of Science and Technology, USA)

Amy Perrey (Missouri University of Science and Technology, USA)

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

4A2: THU_2 / Signal Processing

Room: Saanich 1

Session Chair: Piet Broersen (Delft University of Technology, The Netherlands)

Electromagnetic Characterization of Two-Layer Dielectrics Using Two Flanged Rectangular Waveguides 1648

Milo Hyde (Air Force Institute of Technology, USA)

Michael Havrilla (Air Force Institute of Technology, USA)

Bias Removal in Higher Order Sinusoidal Input Describing Functions. 1653

Pieter Nuij (Eindhoven University of Technology, The Netherlands)

Maarten Steinbuch (Eindhoven University of Technology, The Netherlands)

Okko Bosgra (Eindhoven University of Technology, The Netherlands)

Leakage Evaluation of heating coil tube in thermal oil boiler by using Acoustic Emission and data classification technique 1659

Jirapong Lim (King Mongkut's Institute of Technology, Thailand)

Tonphong Kaewkongka (Chulalongkorn University, Thailand)

<i>Implantation Dynamic Testing and Calibration Techniques</i>	1663
Jing Zu (North University of China, P.R. China) Tiehua Ma (North University of China, P.R. China) Zhijie Zhang (North University of China, P.R. China) Dongxing Pei (North University of China, P.R. China) Jinbiao Fan (North University of China, P.R. China) Xin'e Li (North University of China, P.R. China)	
4A3: THU_3 / Special Session # 08 B - Design, Manufacturing and Test of Reliable System-on-Chip (SoC) and System-in-Package (II)	
Room: Saanich 2	
Session Chair: Serge Demidenko (Massey University, New Zealand)	
<i>Verification of Ethernet IP Core MAC Design Using Deterministic Test Methodology</i>	1669
Mansour Assaf (The University of Trinidad & Tobago, Trinidad and Tobago) Sunil Das (University of Ottawa, Canada) Wael Hermas (University of Ottawa, Canada) Emil Petriu (University of Ottawa, Canada) Satyendra Biswas (Georgia Southern University, USA)	
<i>Performance Analysis for Clock and Data Recovery Circuits under Process Variation</i>	1675
X. Pan (University of Cincinnati, USA) Wen Jone (University of Cincinnati, USA) Sunil Das (University of Ottawa, Canada)	
<i>Stability and Static Noise Margin Analysis of Low-Power SRAM</i>	1681
Rajasekhar Keerthi (Wright State University, USA) Henry Chen (Wright State University, USA)	
<i>Improving Efficiency of IC Burn-In Testing</i>	1685
Yong Han Ng (Freescale Semiconductor, Malaysia) Yew Hock Low (Freescale Semiconductor, Malaysia) Serge Demidenko (Massey University, New Zealand)	
4A4: THU_4 / Digital Signal Processing (IV)	
Room: Oak Bay 1	
Session Chair: Peter Liu (Carleton University, Canada)	
<i>ICA Based Feature Extraction from One-Dimensional Signal for Machine Condition Monitoring</i>	1690
Qingbo He (The Chinese University of Hong Kong, Hong Kong) Ruxu Du (The Chinese University of Hong Kong, Hong Kong) Fanrang Kong (University of Science and Technology of China, P.R. China)	
<i>On consistency of multi-innovation extended stochastic gradient algorithms with colored noises</i>	1695
Li Yu (Jiangnan University, P.R. China) Feng Ding (Jiangnan University, P.R. China) Peter Liu (Carleton University, Canada)	
<i>Calculation of Measurements Uncertainties in Case of Asynchronous Sampling of Complex AC Signals</i>	1701
Predrag Petrovic (Technical Faculty Cacak, Serbia and Montenegro)	

<i>On the Efficient Digital Implementation of Nonlinear Congruential Generators derived from the Rényi Chaotic Map</i>	1707
Tommaso Addabbo (University of Siena, Italy)	
Ada Fort (University of Siena, Italy)	
Marco Mugnaini (University of Siena, Italy)	
Santina Rocchi (University of Siena, Italy)	
Valerio Vignoli (University of Siena, Italy)	
4A5: THU_5 / Sensor Networks	
Room: Oak Bay 2	
Session Chair: Yuyin Song (NIST, USA)	
<i>Assessment of Out-of-Channel Interference Effects on IEEE 802.15.4 Wireless Sensor Networks</i>	1712
Matteo Bertocco (University of Padova, Italy)	
Giovanni Gamba (University of Padova, Italy)	
Alessandro Sona (University of Padova, Italy)	
<i>Aspect Oriented-based Software Synchronization in Automatic Measurement Systems</i>	1718
Pasquale Arpaia (University of Sannio, Italy)	
Mario Luca Bernardi (University of Sannio, Italy)	
Giuseppe Di Lucca (University of Sannio, Italy)	
Vitaliano Inglese (CERN - University of Naples Federico II, Switzerland)	
Giovanni Spiezia (CERN - University of Naples Federico II, Switzerland)	
<i>Are IEEE 802.11 Wireless Networks Appropriate for Video Streaming in the Presence of Interference? An Experimental Answer</i>	1722
Leopoldo Angrisani (University of Naples Federico II, Italy)	
Aniello Napolitano (University of Naples Federico II, Italy)	
Alessandro Sona (University of Padova, Italy)	
<i>Sensor Network based on IEEE 1451.0 and p1451.2-RS232</i>	1728
Eugene Song (NIST, USA); Kang Lee (NIST, USA)	
4A6: THU_6 / Image Processing and Pattern Recognition (III)	
Room: Esquimalt	
Session Chair: Octavian Postolache (Institute of Telecommunication, Portugal)	
<i>Multi-Sensor Data Fusion using Geometric Transformations for Gas Transmission Pipeline Inspection</i> .	1734
Joseph Oagaro (US Army, USA)	
Shreekanth Mandayam (Rowan University, USA)	
<i>Homomorphic Filtering of colour images using a Spatial Filter Kernel in the HSI colour space</i>	1738
Uche Nnolim (University of Kent, United Kingdom)	
Peter Lee (University of Kent, United Kingdom)	
<i>Real-time Ultrasonic Imaging and Advancements in Non-conventional Methods</i>	1744
Gunti Gunarathne (The Robert Gordon University, United Kingdom)	
<i>Metrological performances of camera self-calibration techniques</i>	1750
Costantino D'Argenio (University of Salerno, Italy)	
Giuseppe Di Leo (University of Salerno, Italy)	
Alfredo Paolillo (University of Salerno, Italy)	
Antonio Pietrosanto (University of Salerno, Italy)	

4A7: THU_7 / Analog & mixed signal processing;
Room: Buckingham
Session Chair: Mark Yeary (University of Oklahoma, USA)

***A Fast Interface for Low-value Capacitive Sensors with Improved Accuracy* 1756**
Roumen Nojdelov (Velista - Roumen Nojdelov, Bulgaria)
Stoyan Nihtianov (Delft University of Technology, The Netherlands)

***Compact Digital Receiver Development for Radar Based Remote Sensing* 1761**
Mark Yeary (University of Oklahoma, USA)
Redmond Kelley (University of Oklahoma, USA)
John Meier (University of Oklahoma, USA)
S. Ong (University of Oklahoma, USA)
Robert Palmer (University of Oklahoma, USA)

***Introducing a New Measurement Method for Magnetostrictive Linear Displacement Transducers* 1766**
Paolo Ferrari (University of Brescia, Italy)
Alessandra Flammini (University of Brescia, Italy)
Daniele Marioli (University of Brescia, Italy)
Emiliano Sisinni (University of Brescia, Italy)
Andrea Taroni (University of Brescia, Italy)

4A8: THU_8 / Environment Monitoring
Room: Balmoral
Session Chair: Octavian Postolache (Institute of Telecommunication, Portugal)

***The influence of the uncertainty on monitoring stack emissions in a waste-to-energy plant* 1771**
Giorgio Buonanno (University of Cassino, Italy)
Giorgio Ficco (University of Cassino, Italy)
Consolatina Liguori (University of Salerno, Italy)
Antonio Pietrosanto (University of Salerno, Italy)

***Distributed Instrumentation and Geographic Information System for Dolphins' Environment Assessment* 1777**
Octavian Postolache (Institute of Telecommunication, Portugal)
Pedro Girão (Institute of Telecommunication, Portugal)
G. Patricio (EST Setúbal, Portugal)
J. Sacramento (EST Setúbal, Portugal)
Patricia Macedo (EST Setúbal, Portugal)
Jose Pereira (EST Setúbal, Portugal)

***Switched Thermal Anemometer* 1783**
Lino Marques (University of Coimbra, Portugal)
Grzegorz Tomaszewski (Institute for Systems and Robotics, Portugal)
Anibal de Almeida (University of Coimbra, Portugal)

***SALAMANDER: A Distributed Sensor System for Aquatic Environmental Measurements* 1787**
Cindy Harnett (University of Louisville, USA)
Sarah Courtney (Eastern Kentucky University, USA)
Christopher Kimmer (University of Louisville, USA)

10:15 AM - 12:00 PM

4B1: THU_9 / Special Session # 10 B - Imaging Systems and Techniques (II)

Room: Lecture Theatre

Session Chair: Matteo Pastorino (University of Genoa, Italy)

***Efficient Photosensitizers for Transillumination and Optical Imaging* 1793**

George Giakos (The University of Akron, USA)
P. Bathini (The University of Akron, USA)
K. Valluru (The University of Akron, USA)
S. Paturi (The University of Akron, USA)
K. Ambadipudi (The University of Akron, USA)
S. Sukumar (The University of Akron, USA)
B.Mandadi (The University of Akron, USA)

***A Novel 24 GHz One-Shot, Rapid and Portable Microwave Imaging System* 1798**

Mohammad Ghasr (Missouri University of Science and Technology, USA)
Mohamed Abou-Khousa (Missouri University of Science and Technology, USA);
Sergiy Kharkovsky (Missouri University of Science and Technology, USA)
Reza Zoughi (Missouri University of Science and Technology, USA)
David Pommerenke (Missouri University of Science and Technology, USA)

***NDT on Aluminium Aircraft Plates based on Eddy Current Sensing and Image Processing* 1803**

Octavian Postolache (Institute of Telecommunication, Portugal)
Jose Pereira (EST Setúbal, Portugal)
Helena Ramos (Institute of Telecommunication, Portugal)
Artur Ribeiro (Institute of Telecommunication, Portugal)

***Optical Active Molecules used as Molecular Contrast Agents for Enhanced Imaging* 1809**

George Giakos (The University of Akron, USA)
S.Atreya Paturi (The University of Akron, USA)
K. Valluru (The University of Akron, USA)
P. Bathini (The University of Akron, USA)
K.Ambadipudi (The University of Akron, USA)
V. Adya (The University of Akron, USA)
S. Sukumar (The University of Akron, USA)
D. Sheffer (The University of Akron, USA)

4B2: THU_10 / Human-Computer Interfaces (II)

Room: Saanich 1

Session Chair: Mart Min (Tallinn University of Technology, Estonia)

***Relating GSR Signals to traditional Usability Metrics: Case Study with an anthropomorphic Web Assistant* 1814**

Pierfrancesco Foglia (University of Pisa, Italy)
Cosimo Antonio Prete (University of Pisa, Italy)
Michele Zanda (IMT Lucca Institute for Advances Studies, Italy)

***A scheme for VR-enhanced bilateral teleoperation with time delay* 1819**

Iliia Polushin (Carleton University, Canada)
Jason Rhineland (Carleton University, Canada)
Peter Liu (Carleton University, Canada)
Chung-Horng Lung (Carleton University, Canada)

M-IAR: Biologically Inspired Routing Protocol for Wireless Multimedia Sensor Networks 1823
Md. Abdur Rahman (University of Ottawa, Canada)
Reza GhasemAghaei (University of Ottawa, Canada)
Abdulmotaleb El Saddik (University of Ottawa, Canada)
Wail Gueaieb (University of Ottawa, Canada)

Prediction-based Haptic Data Reduction and Compression in Tele-Mentoring Systems 1828
Nizar Sakr (University of Ottawa, Canada)
Jilin Zhou (University of Ottawa, Canada)
Nicolas Georganas (University of Ottawa, Canada)
Jiyong Zhao (University of Ottawa, Canada)
Xiaojun Shen (University of Ottawa, Canada)

4B3: THU_11 / Special Session # 08 C- Design, Manufacturing and Test of Reliable System-on-Chip (SoC) and System-in-Package (III)

Room: Saanich 2

Session Chair: Nohpill Park (Oklahoma State University, USA)

Developing Automated Test System for ADSL Equipment 1833
Tariq Syed (University of Ottawa, Canada)
Sunil Das (University of Ottawa, Canada)
Satyendra Biswas (Georgia Southern University, USA)
Emil Petriu (University of Ottawa, Canada)

A Floorprint-based Defect Tolerance for Nano-scale Application-Specific IC 1839
Sanghyun Ahn (Korea Military Academy, Korea)
Zachary Patitz (Oklahoma State University, USA)
Nohpill Park (Oklahoma State University, USA)

Acceleration of IC verification process using advanced flexible modular measurement systems and software architectures 1845
Anton Pirker-Frühaufl (University of Technics Vienna, Austria)
Wolfgang Gallent (KAI-Kompetenzzentrum Automobil- und Industrie-Elektronik, Austria)
Matthias Kunze (Infineon Technologies AG, Austria)
Georg Pelz (Infineon Technologies AG, Austria)

Programmable Analog Signal Conditioning Circuit for Integrated Systems 1848
Diomadson Belfort (Universidade Federal do Maranhão, Brazil)
Sebastian Catunda (Universidade Federal do Maranhão, Brazil)
Fernando de Sousa (Federal University of Campina Grande, Brazil)
João Dantas (Federal University of Campina Grande, Brazil)
Raimundo Freire (Federal University of Campina Grande, Brazil)

4B4: THU_12 / Digital Signal Processing (V)

Room: Oak Bay 1

Session Chair: Matthew Hunter (DME Corporation, USA)

Direct IF Synthesis of Vector Modulated Signals using Real-Time Signal Processing 1853
Matthew Hunter (DME Corporation, USA)
Wasfy B. Mikhael (University of Central Florida, USA)
Achilleas G. Kourtellis (DME Corporation, USA)

Proposal of an Information Signal Measurement Method in Display Image Contained in Electromagnetic Noise Emanated from a Personal Computer 1859
Hidenori Sekiguchi (National Institute of Information and Communications Technology, Japan)
S. Seto (National Institute of Information and Communications Technology, Japan)

<i>Behavioral Power Amplifier Modeling Using the LASSO</i>	1864
David Wisell (Ericsson AB, Sweden)	
Joakim Jalden (Vienna University of Technology, Austria)	
Peter Handel (Royal Institute of Technology, Sweden)	
<i>A Computationally Efficient HMM-Based Handwriting Verification System</i>	1868
Mehran Talebinejad (University of Ottawa, Canada)	
Ali Miri (University of Ottawa, Canada)	
Adrian Chan (Carleton University, Canada)	
4B5: THU_13 Electrical & Power Measurements (VI)	
Room: Oak Bay 2	
Session Chair: Branislav Djokic (National Research Council, Canada)	
<i>Dynamic characterization and position estimation of electromechanical contactors</i>	1873
Antoni Garcia (Technical University of Catalonia, Spain)	
Jordi Riba (Technical University of Catalonia, Spain)	
Javier Rosero (Technical University of Catalonia, Spain)	
Jordi Cusido (Technical University of Catalonia, Spain)	
Juan Ortega (Technical University of Catalonia, Spain)	
<i>A Novel and Simple Method for VT and CT Calibration</i>	1879
Arnaldo Brandolini (Politecnico di Milano, Italy)	
Marco Faifer (Politecnico di Milano, Italy)	
Roberto Ottoboni (Politecnico di Milano, Italy)	
<i>A High-Resolution Hybrid Digital Wattmeter for Measurements at High Voltage</i>	1885
Branislav Djokic (National Research Council, Canada)	
Eddy So (National Research Council, Canada)	
<i>An Electro-Optic Hybrid Multifunctional Instrument for 3-Phase Current Measurements</i>	1889
Sergey Zadvornov (IRE RAS, Canada)	
Alexander Sokolovsky (IRE RAS, Russia)	
4B6: THU_14 / Sensors and Transducers (IV)	
Room: Esquimalt	
Session Chair: Jesus Ureña (University of Alcalá, Spain)	
<i>In-situ monitoring of Carbon Dioxide Emissions from a Diesel Automobile using a Mid-Infrared Optical Fibre Based Point Sensor</i>	1891
Gerard Dooly (University of Limerick, Ireland)	
Jim Mulrooney (University of Limerick, Ireland)	
Edoardo Merlone-Borla (Centro Ricerche Fiat, Italy)	
Gili Flavia (Centro Ricerche Fiat, Italy)	
John Clifford (University of Limerick, Ireland)	
Colin Fitzpatrick (University of Limerick, Ireland)	
Elfed Lewis (University of Limerick, Ireland)	
<i>Automated Registration System of the Density Change at the Depth of Composite Materials, in High Temperature Conditions</i>	1895
Konstantinos Athanassiadis (Alexander Technological and Educational Institute of Thessaloniki, Greece)	
V. A. Chudakov (International Sakharov Environmental University, Republic of Belarus)	
O.M. Anshakov (Belarusian State University, Republic of Belarus)	
P. Tsardaklis (Aristotle University of Thessaloniki, Greece)	

Novel Distance Sensor Principle based on Objective Laser Speckles 1898
Thomas Thurner (Technical University of Graz, Austria)

A novel measurement strategy for volcanic ash fall out estimation based on RTD Fluxgate magnetometers 1904

Bruno Andò (University of Catania, Italy)
Salvatore Baglio (University of Catania, Italy)
Nicola Pitrone (University of Catania, Italy)
Carlo Trigona (University of Catania, Italy)
Adi R. Bulsara (Space and Naval Warfare Center - San Diego, USA)
Visarath In (Space and Naval Warfare Center - San Diego, USA)
Mauro Coltelli (INGV, Italy)
Simona Scollo (INGV, Italy)

4B7: THU_15 / Optical Measurements (II)

Room: Buckingham

Session Chair: Veronica Putz (University of Linz, Austria)

New Learning Algorithm for High-Quality Velocity Measurement from Low-Cost Optical Encoders 1908

Naveen Boggarpu (University College Cork, Ireland)
Richard Kavanagh (University College Cork, Ireland)

Single Shot Estimation of Camera Position and Orientation using SVD 1914

Veronika Putz (University of Linz, Austria)
Bernhard Zagar (University of Linz, Austria)

LED Lamp Flicker Caused by Interharmonics 1920

Taekhyun Kim (The University of Texas at Austin, USA)
Matthew Rylander (The University of Texas at Austin, USA)
Edward Powers (The University of Texas at Austin, USA)
William Grady (The University of Texas at Austin, USA)
Ari Arapostathis (The University of Texas at Austin, USA)

Characterization of a Novel Yb:YLF Laser for Optical Frequency Metrology 1926

Alessandro Pesatori (Politecnico di Milano, Italy)
Michele Norgia (Politecnico di Milano, Italy)
Cesare Svelto (Politecnico di Milano, Italy)
Nicola Coluccelli (Politecnico di Milano, Italy)
Gianluca Galzerano (Politecnico di Milano, Italy)
Alberto Di Lieto (University of Pisa, Italy)
Mauro Tonelli (University of Pisa, Italy)
Paolo Laporta (Politecnico di Milano, Italy)

4B8: THU_16 / Chemical and Microsystem Sensors

Room: Balmoral

Session Chair: Jean-François Lapointe (National Research Council, Canada)

“Bent beam” MEMS Temperature Sensors for Contactless Measurements in Harsh Environments 1930

Bruno Andò (University of Catania, Italy)
Salvatore Baglio (University of Catania, Italy)
Nicola Pitrone (University of Catania, Italy)
Nicolò Savalli (University of Catania, Italy)
Carlo Trigona (University of Catania, Italy)

Smart Capacitive Biosensor Based on a Programmable System-on-Chip, Featuring a Novel Method for Improving the Performance of its Analog Blocks 1935
Lucia Bissi (University of Perugia, Italy)
Pisana Placidi (University of Perugia, Italy)
Andrea Scorzoni (University of Perugia, Italy)

A systematic approach for the automatic signal processing, evaluation and optimization of T-cycled gas sensors 1940
Thomas Fricke (Saarland University, Germany)
Peter Reimann (Saarland University, Germany)
Stephan Horras (Saarland University, Germany)
Eduard Leonhardt (Saarland University, Germany)
Philipp Sahm (Saarland University, Germany)
Andreas Schuetze (Saarland University, Germany)

1:00 PM - 2:45 PM

4C1: THU_17 / Optical Measurements (III)

Room: Lecture Theatre

Session Chair: Thomas Thurner (Technical University of Graz, Austria)

Metrological Characterisation of a Time of Flight CMOS Range Image Sensor 1946
Francesco Leonardi (Columbia University, USA)
Daniele Covi (NeuriCam S.p.A., Italy)
Dario Petri (University of Trento, Italy)

Optical Instrument for Real Time Monitoring of Steam Turbine Grinding 1952
Alessandro Pesatori (Politecnico di Milano, Italy)
Michele Norgia (Politecnico di Milano, Italy)
Cesare Svelto (Politecnico di Milano, Italy)

Response Time of Silicon Photodiodes for EUV/EUV Radiations 1956
Sha Xia (Delft University of Technology, The Netherlands)
Francesco Sarubi (Delft University of Technology, The Netherlands)
Rik Naulaerts (ASML Netherlands B.V., The Netherlands)
Stoyan Nihtianov (Delft University of Technology, The Netherlands)
Lis Nanver (Delft University of Technology, The Netherlands)

Ratiometric Methods for Optical Fiber Instrumentation Based on Luminiscence Sensors 1960
Marta Valledor (University of Oviedo, Spain)
Juan Campo Rodriguez (University of Oviedo, Spain)
Francisco Ferrero (University of Oviedo, Spain)
JC Viera (University of Oviedo, Spain)
Manuela Vega (University of Oviedo, Spain)
Cecilio Viejo (University of Oviedo, Spain)
Israel Barragan (University of Oviedo, Spain)
Jose Manuel Fernandez (University of Oviedo, Spain)
Alfredo Medel (University of Oviedo, Spain)

4C2: THU_18 / Health Care Applications

Room: Saanich 1

Session Chair: Izzet Kale (University of Westminster, United Kingdom)

***Design and Construction of an Automated Laboratory of Electromagnetic Radiation for Oncologic Hyperthermia Research* 1964**

Mario Cepeda (Cinvestav-IPN, Mexico)

Lorenzo Leija (Cinvestav-IPN, Mexico)

Arturo Vera (Cinvestav-IPN, Mexico)

***Contact Location Estimation from a Nonlinear Array of Pressure Sensors* 1969**

Amaya Arcelus (Carleton University, Canada)

Megan Holtzman (Carleton University, Canada)

Idana Veledar (Carleton University, Canada)

Rafik Goubran (Carleton University, Canada)

Heidi Sveistrup (University of Ottawa, Canada)

Paulette Guitard (University of Ottawa, Canada)

***Force Estimation with a Non-Uniform Pressure Sensor Array* 1974**

Megan Holtzman (Carleton University, Canada)

Amaya Arcelus (Carleton University, Canada)

Idana Veledar (Carleton University, Canada)

Rafik Goubran (Carleton University, Canada)

Heidi Sveistrup (University of Ottawa, Canada)

Paulette Guitard (University of Ottawa, Canada)

4C3: THU_19 / Wireless and Telecommunication Systems

Room: Saanich 2

Session Chair: David Macii (University of Trento, Italy)

***A Dual Band MIMO Channel Sounder at 2.2 and 3.5 GHz* 1980**

Hanna Farhat (IETR-INSA De Rennes, France)

Ronan Cosquer (IETR-INSA De Rennes, France)

Guy Grunfelder (IETR-INSA De Rennes, France)

Laurent Le Coq (IETR-INSA De Rennes, France)

Ghais El Zein (IETR-INSA Rennes, France)

***Synchronization Uncertainty Contributions in Wireless Sensor Networks* 1986**

Anton Ageev (University of Trento, Italy)

David Macii (University of Trento, Italy)

Dario Petri (University of Trento, Italy)

***Use of the Channel Impulse Response of the DVB-T Service for the Evaluation of the Reflected Signals of Wind Farms* 1992**

David de la Vega (University of the Basque Country, Spain)

Itsaso Orcajo (University of the Basque Country, Spain)

Ignacio Armentia (Eólicas de Euskadi, Spain)

Unai Gil (University of the Basque Country, Spain)

I. Bikandi (University of the Basque Country, Spain)

Manuel Velez (University of the Basque Country, Spain)

Juan Luis Ordiales (University of the Basque Country, Spain)

Amaia Arrinda (University of the Basque Country, Spain)

4C4: THU_20 / Measurement Systems

Room: Oak Bay 1

Session Chair: Nikita Visnevski (GE Global Research, USA)

***Difficulties on Tree Volume Measurement from a Ground Laser Scanner* 1997**

Jordi Palacin (University of Lleida, Spain)
Tomas Palleja (University of Lleida, Spain)
Marcel Tresanchez (University of Lleida, Spain)
Merce Teixido (University of Lleida, Spain)
Ricardo Sanz (University of Lleida, Spain)
Jordi Llorens (University of Lleida, Spain)
Jaume Arno (University of Lleida, Spain)
Joan Ramon Rosell (University of Lleida, Spain)

***Sensors characterization and control of measurement systems with thermoresistive sensors using feedback linearization* 2003**

Milena Moreira (Universidade Federal da Bahia, Brazil)
Amauri Oliveira (Universidade Federal da Bahia, Brazil)
Carlos Eduardo Dórea (Universidade Federal da Bahia, Brazil)
Péricles Barros (Federal University of Campina Grande, Brazil)
J. S. Rocha Neto (Federal University of Campina Grande, Brazil)

***A non-invasive system for the measurement of the robustness of microprocessor-type architectures against radiation-induced soft errors* 2009**

Hipolito Guzman-Miranda (University of Seville, Spain)
Miguel Aguirre (University of Sevilla, Spain)
Jonathan Tombs (University of Sevilla, Spain)

***A Real-time Instrumentation System for the Study of Regional Deposition of Airborne Particles and Drug Delivery in the Human Respiratory System* 2015**

Gunti Gunarathne (The Robert Gordon University, United Kingdom)
V. Koujalagi (The Robert Gordon University, United Kingdom)
S. Semple (The Robert Gordon University, United Kingdom)
J.G. Ayres (The Robert Gordon University, United Kingdom)

4C5: THU_21 / Electrical & Power Measurements (VII)

Room: Oak Bay 2

Session Chair: Sasa Vlahinic (University of Rijeka, Croatia)

***Designing and tuning an air-cored current transformer for partial discharges pulses measurements* 2021**

Guillermo Robles (University Carlos III, Spain)
Juan Manuel Martínez (University Carlos III, Spain)
Javier Sanz (University Carlos III, Spain)
Bernardo Tellini (University of Pisa, Italy)
Carmine Zappacosta (University of Pisa, Italy)
Mónica Rojas (University Carlos III, Spain)

***Performance Analysis of Power Quality Monitoring Instruments* 2026**

Antonio Delle Femine (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)

<i>A technique for real-time correction of measurement instrument transducers frequency responses</i>	2032
Antonio Delle Femine (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)	
4C6: THU_22 / Image Processing and Pattern Recognition (IV)	
Room: Esquimalt	
Session Chair: Yong Yan (University of Kent, United Kingdom)	
<i>On-line Visual Measurement and Inspection of Welding bead Using Structured Light</i>	2038
Yuan Li (Chinese Academy of Sciences, P.R. China)	
Qing Lin Wang (Beijing Institute of Technology, P.R. China)	
Youfu Li (City University of Hong Kong, Hong Kong)	
De Xu (Chinese Academy of Sciences, P.R. China)	
Min Tan (Chinese Academy of Sciences, P.R. China)	
<i>An easy and accurate calibration procedure for 3-D shape measurement systems based on phase-shifting projected fringe profilometry</i>	2044
Rosario Anchini (University of Salerno, Italy)	
Costantino D'Argenio (University of Salerno, Italy)	
Consolatina Liguori (University of Salerno, Italy)	
Alfredo Paolillo (University of Salerno, Italy)	
<i>A Novel Imaging System for Concurrent Measurement of Particle Velocity and Size Distribution in a Pneumatic Suspension</i>	2050
Robert Carter (University of Kent, United Kingdom)	
Yong Yan (University of Kent, United Kingdom)	
<i>Differentiation between Recycling Refractory Bricks by Texture Analysis</i>	2055
Andrea Guerriero (Polytechnic of Bari, Italy)	
Cataldo Guaragnella (Polytechnic of Bari, Italy)	
Ciriaco Pasquale (Polytechnic of Bari, Italy)	
Fabrizio Quaranta (Polytechnic of Bari, Italy)	
4C7: THU_23 / Sensors and Transducers (V)	
Room: Buckingham	
Session Chair: Alessandra Flammini (University of Brescia, Italy)	
<i>Self-Compensating Excitation of Fluxgate Sensors for Space Magnetometers</i>	2059
Ales Cerman (Danish National Space Center, Denmark)	
J.M.G. Merayo (Danish National Space Center, Denmark)	
P. Brauer (Danish National Space Center, Denmark)	
F. Primdahl (Danish National Space Center, Denmark)	
<i>IPMCs as Vibration Sensors</i>	2065
Paola Brunetto (University of Catania, Italy)	
Luigi Fortuna (University of Catania, Italy)	
Pietro Giannone (University of Catania, Italy)	
Salvatore Graziani (University of Catania, Italy)	
Salvatore Strazzeri (University of Catania, Italy)	

Characterization of Optical Sensors for Real-Time Measurement of Motorcycle Tilt Angles 2070

Michele Norgia (Politecnico di Milano, Italy)
Cesare Svelto (Politecnico di Milano, Italy)
Ivo Boniolo (Politecnico di Milano, Italy)
Mara Tanelli (Politecnico di Milano, Italy)
Sergio Savaresi (Politecnico di Milano, Italy)

Characterization of Current Transformers in the Presence of Harmonic Distortion 2074

Antonio Cataliotti (University of Palermo, Italy)
D. Di Cara (University of Palermo, Italy)
A. E. Emanuel (Worcester Polytechnic Institute, USA)
S. Nuccio (University of Palermo, Italy)

4C8: THU_24 / Industrial Applications

Room: Balmoral

Session Chair: Joseph Pribetich (IEMN - University of Lille, France)

Digital Measuring System for Monitoring Motor Shaft Parameters on Ships 2079

Hrvoje Dzapò (University of Zagreb, Croatia)
Zoran Stare (University of Zagreb, Croatia)
Nenad Bobanac (BOBLab, Croatia)

Data Processing for the Calibration of an Acoustic Local Positioning System 2085

F. Daniel Ruiz (University of Alcalá, Spain)
Jesus Ureña (University of Alcalá, Spain)
José Jiménez (University of Alcalá, Spain)
José Villadangos (University of Alcalá, Spain)
Juan García (University of Alcalá, Spain)
Alvaro Hernández (University of Alcalá, Spain)
Ana Jiménez (University of Alcalá, Spain)

Multi-sensory system for obstacle detection on railways 2091

Juan García (University of Alcalá, Spain)
Jesus Ureña (University of Alcalá, Spain)
Alvaro Hernández (University of Alcalá, Spain)
Manuel Mazo (University of Alcalá, Spain)
M. Jesus Diaz (University of Alcalá, Spain)

Vision-Based Control of an Inverted Pendulum using Cascaded Particle Filters 2097

Manuel Stuflessner (Technical University of Graz, Austria)
Markus Brandner (Technical University of Graz, Austria)

3:15 PM - 5:00 PM

4D1: THU_25 / Mathematical Modeling of Signals and Systems

Room: Lecture Theatre

Session Chair: Antonio Marcus Lima (Federal University of Campina Grande, Brazil)

A Fractional Model for IPMC Actuators 2103

Riccardo Caponetto (University of Catania, Italy)
Giovanni Dongola (University of Catania, Italy)
Luigi Fortuna (University of Catania, Italy)
Salvatore Graziani (University of Catania, Italy)
Salvatore Strazzeri (University of Catania, Italy)

<i>A Numerical Approach to Simplify the Diffraction Grating Model</i>	2108
Eduardo Zurek (Universidad del Norte, Colombia)	
Wilfrido Moreno (University of South Florida, USA)	
Luis Garcia-Rubio (University of South Florida, USA)	
<i>Accuracy Enhancement of the Power Equation Methodology Used in the Precise Generation of Plane Wave Power Density with a Calculable Antenna</i>	2114
James McLean (TDK R&D Corp, USA)	
Heinrich Foltz (The University of Texas--Pan American, USA)	
Howard Bassen (Health and Human Services, USA)	
Donald Witters (Health and Human Services, USA)	
Robert Sutton (TDK R&D Corp, USA)	
Scott McKnight (TDK, USA); Masa Ito (TDK, USA);	
<i>Stochastic Resonance as a null distortion demodulation</i>	2120
Rogelio Palomo Pinto (Universidad de Sevilla, Spain)	
Jose M. Quero Reboul (Universidad de Sevilla, Spain)	
Alfredo Perez Vega-Leal (Universidad de Sevilla, Spain)	
Jonathan Tombs (Universidad de Sevilla, Spain)	
4D2: THU_26 / Electrical & Power Measurements (VIII)	
Room: Saanich 1	
Session Chair: Lorenzo Peretto (University of Bologna, Italy)	
<i>Time Frequency Analysis Method for the Detection of Winding Deformation in Transformer</i>	2126
Santhi Sathyamurthy (Annamalai University, India)	
Jayashankar Venkataraman (Indian Institute of Technology Madras, India)	
Jagadeesh Kumar (Indian Institute of Technology Madras, India)	
<i>Dimensioning and Characterization of a New Magnetic Induction Tomography Experimental Setup</i>	2131
Nuno Brás (Instituto Superior Técnico, Portugal)	
Alexandre Pestana (Instituto Superior Técnico, Portugal)	
Raul Martins (Institute of Telecommunication, Portugal)	
Antonio Serra (Instituto Superior Técnico, Portugal)	
<i>Induction Motor Broken Bars Online Detection</i>	2137
Fernando Janeiro (U. Évora / I.T. Lisbon, Portugal)	
João Martins (Faculdade de Ciencias e Tecnologia, Portugal)	
Vitor Pires (Instituto Politécnico de Setúbal, Portugal)	
Pedro Ramos (Institute of Telecommunication, IST, Portugal)	
Armando Pires (Instituto Politécnico de Setúbal, Portugal)	
4D3: THU_27 / Microwave Measurements	
Room: Saanich 2	
Session Chair: Dominique Dallet (IMS Laboratory - University Bordeaux, France)	
<i>Solids Volume Fraction Measurement of Gas-Solid Two-Phase Flow Based On Terahertz Time-Domain Spectroscopy Technique</i>	2141
Liu Yian (Zhejiang University, P.R. China)	
Zhiyao Huang (Zhejiang University, P.R. China)	
Ji Haifeng (Zhejiang University, P.R. China)	
Li Haiqing (Zhejiang University, P.R. China)	

Millimeter Wave Complex Permittivity Measurements of High Dielectric Strength Thermoplastics	2146
Nahid Rahman (Tufts University, USA)	
Shu Chen (Tufts University, USA)	
Konstantin A. Korolev (Tufts University, USA)	
Mohammed N. Afsar (Tufts University, USA)	
Rudy Cheung (Microwave Engineering Corporation, USA)	
Maurice Aghion (Microwave Engineering Corporation, USA)	
Polarization Effects on the Millimeter Wave Dielectric Properties of Pesticide	2150
Baris Piyade (Tufts University, USA)	
Usman Khan (Tufts University, USA)	
Mohammed Afsar (Tufts University, USA)	
4D4: THU_28 / Digital Signal Processing (VI)	
Room: Oak Bay 1	
Session Chair: Fernando Janeiro (U. Évora / I.T. Lisbon, Portugal)	
Spectral Observer with Reduced Information Demand	2155
György Orosz (Budapest University of Technology and Economics, Hungary)	
László Sujbert (Budapest University of Technology and Economics, Hungary)	
Gábor Péceli (Budapest University of Technology and Economics, Hungary)	
Frequency Estimation of Power System Signals Using a New Spectrum Leakage Correction Algorithm .	2161
Tomas Radil (Institute of Telecommunication, Portugal)	
Pedro Ramos (Institute of Telecommunication, IST, Portugal)	
Antonio Serra (IST, Technical University of Lisbon, Portugal)	
Low Cost Portable Measurement Equipment for Power Quality Indexes Monitoring	2167
Antonio Delle Femine (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)	
Phase-based Algorithm for 2D Displacement Estimation of Laser Speckle Patterns	2173
Thomas Thurner (Technical University of Graz, Austria)	
Christoph Zechner (Technical University of Graz, Austria)	
4D5: THU_29 / Telecommunications (III)	
Room: Oak Bay 2	
Session Chair: Shervin Shirmohammadi (University of Ottawa, Canada)	
Power Monitoring and Control for Electric Home Appliances Based on Power Line Communication	2179
Chia-Hung Lien (Lee-Ming Institute of Technology, Taiwan)	
Hsien-Chung Chen (Fu Jen Catholic University, Taiwan)	
Ying-Wen Bai (Fu Jen Catholic University, Taiwan)	
Ming-Bo Lin (National Taiwan University of Science and Technology, Taiwan)	
A New Implementation of Beam Forming Network with RF Digital Step Attenuators for Measuring mobile WiMAX Phase Array Antenna Pattern	2185
Yi Hua Chen (Oriental Institute of Technology, Taiwan)	
Dau-Chyrh Chang (Oriental Institute of Technology, Taiwan)	
Model and Measurement of State Dissemination in MMOGs	2190
Dewan Ahmed (University of Ottawa, Canada)	
Shervin Shirmohammadi (University of Ottawa, Canada)	

<i>A Hierarchical HMM Model for Online Gaming Traffic Patterns</i>	2195
Behnoosh Hariri (Sharif University of Technology, Iran)	
Shervin Shirmohammadi (University of Ottawa, Canada)	
Mohammad Reza Pakravan (Sharif University of Technology, Iran)	
4D7: THU_31 / Test and Performance Measurements in Communication Systems	
Room: Buckingham	
Session Chair: Dario Petri (University of Trento, Italy)	
<i>Empirical Analysis of the Sample Correlation for the Planning of Field Trials in the Digital Broadcasting Services at MF Band</i>	2201
David de la Vega (University of the Basque Country, Spain)	
Susana López (University of the Basque Country, Spain)	
Iván Peña (University of the Basque Country, Spain)	
José María Matías (University of the Basque Country, Spain)	
Pablo Angueira (University of the Basque Country, Spain)	
Manuel Velez (University of the Basque Country, Spain)	
Juan Luis Ordiales (University of the Basque Country, Spain)	
<i>Design and Implementation of an Automatic Testing System for MP3 Players</i>	2205
Ying-Wen Bai (Fu Jen Catholic University, Taiwan)	
Chin-Chung Lee (Fu Jen Catholic University, Taiwan)	
<i>Transference Impedance Estimation of IEC60318 Couplers by Image Processing and Finite Element Modelling</i>	2211
Agustin Bravo (Universidad Politécnica de Madrid, Spain)	
Mariano Ruiz (Universidad Politécnica de Madrid, Spain)	
Juan Manuel Lopez (Universidad Politécnica de Madrid, Spain)	
Guillermo de Arcas (Universidad Politécnica de Madrid, Spain)	
Marcos Sumpsi (Universidad Politécnica de Madrid, Spain)	
<i>Performance Measurement and Queueing Analysis with Low Blocking Probability of Serial Connection Networks</i>	2216
Chung-Ping Chen (Fu Jen Catholic University, Taiwan)	
Ying-Wen Bai (Fu Jen Catholic University, Taiwan)	
Yin-Sheng Lee (Fu Jen Catholic University, Taiwan)	