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Simone Corbellini (Politecnico di Torino, Italy)
Giovanni Gigante (Università di Roma La Sapienza, Italy)
Sabrina Grassini (Politecnico di Torino, Italy)
Franco Meddi (Università di Roma La Sapienza, Italy)
Marco Parvis (Politecnico di Torino, Italy)
Marco Piantanida (Politecnico di Torino, Italy)

3C4: Electromagnetic Measurements I

Chair: *Kathleen A. Kramer (University of San Diego, USA)*

Distributed Data Acquisition Unit Based on GPS and ZigBee for Electromagnetic Exploration 981

Chen Rujun (BGP,CNPC, China)
He Zhanxiang (BGP,CNPC, China)
Cai Zixing (Central South University, China)
Qiu Jieting (BGP,CNPC, China)
He Lanfang (BGP,CNPC, China)

Analytical and FEM Modelling of an Electromagnetic Sensor with an H-Shaped Ferrite Core Used for Monitoring the Hot Transformation Steel 986

Wuliang Yin (University of Manchester, United Kingdom)
Wenqian Zhu (University of Manchester, United Kingdom)
Anthony Peyton (University of Manchester, United Kingdom)
Henk Ploegaert (Corus Research Development & Technology, The Netherlands)

A Direct Reconstruction Method of Electromagnetic Tomography (EMT) for High Permeability and Low Conductivity Distributions 990

Zhang Cao (Beihang University, China)
Lijun Xu (Beihang University, China)
Huaxiang Wang (Tianjin University, China)

Characterization of Inductance Gradients in Electromagnetic Launchers 994

Alessandra Petri (University of Pisa, Italy)
Bernardo Tellini (University of Pisa, Italy)
Roberto Ferrero (Politenico di Milano, Italy)

3D4: Image Processing IV

Chair: *Rafik Goubran (Carleton University, Canada)*

3D Shape Scanner Using Multiple Light Sources 998

Hiroyuki Ukida (The University of Tokushima, Japan)
Yoshio Tanimoto (Kibikogen Rehabilitation Center, Japan)
Tetsuya Sano (System Enterprise Co., Ltd, Japan)
Hideki Yamamoto (Kibikogen Rehabilitation Center, Japan)

The development of a Low Cost Digital Spinneret Inspection System 1003

Chun-Jen Chen (National Applied Research Laboratories, Taiwan)
Wenyuh Jywe (Formosa University, Taiwan)
Min-Wei Hung (Assiant Researcher, Taiwan)

Chien-Liang Lin (National Applied Research Laboratories, Taiwan)
Jeffery Hung (Advantage Scientific, Inc., Taiwan)
Terry Lin (Advantage Scientific, Inc., Taiwan)

Illumination Invariant Measurement of Mechanical Dimensions Using a Multiple Segmentation Method 1008

Kevin Ohliger (Westcoast University of Applied Sciences, Germany)
Torsten Edeler (Westcoast University of Applied Sciences, Germany)
Stephan Hussmann (Westcoast University of Applied Sciences, Germany)
Alfred Mertins (University of Luebeck, Germany)

Design of an Automated Inspection System for Large Scale Convex Surfaces 1014

Veronika Putz (Johannes Kepler University of Linz, Austria)
Bernhard G. Zagar (Johannes Kepler University of Linz, Austria)

3E4: Industrial Applications IV

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

A Fibre Optic Sensor for Ambiguity Measurement of Apparent Strain Produced by Electrical Strain Gauge-Transient-Heating-Effect 1020

Mohamed Wakad (King Saud University, Saudi Arabia)
Tarek D Elsarnagawy (King Saud University, Saudi Arabia)

Automatic Defect Cluster Extraction for Semiconductor Wafers 1024

Melanie Ooi (Monash University, Malaysia)
Eric Sim (Monash University, Malaysia)
Ye Chow Kuang (Monash University, Malaysia)
Lindsay Kleeman (Monash University, Australia)
Chris Chan (Freescale Semiconductor, Malaysia)
Serge Demidenko (Monash University, Malaysia)

Eye Diagram Measurements and Equalization with Real-time Burst Sampling 1030

Ali Motafakker-Fard (University of California Los Angeles, USA)
Shalabh Gupta (IIT Bombay, India)
Bahram Jalali (University of California Los Angeles, USA)

Performance Evaluation of a Web-Service-Based DMCS 1033

Vítor Viegas (Polytechnic Institute of Setubal, Portugal)
Pedro Girão (Instituto de Telecomunicações, Portugal)
Jose Costa Pereira (ESTSetúbal, Portugal)

Thursday, May 6

8:00 AM - 9:45 AM

4A1: Medical Measurements I

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

Pulse rate measurement from transmittance photoplethysmography in cycle ergometer test 1039

Sonnia M López-Silva (Instituto de Microelectrónica de Madrid, Spain)
María Luisa Dotor (Instituto de Microelectrónica de Madrid, Spain)
Juan Pedro Silveira (Instituto de Microelectrónica de Madrid, Spain)
Romano Giannetti (Universidad Pontificia Comillas, Spain)
Francisco Miguel-Tobal (Universidad Complutense de Madrid, Spain)
Amaia Bilbao (Universidad Complutense de Madrid, Spain)
M. Galindo (Universidad Complutense de Madrid, Spain)
Pilar Martín-Escudero (Universidad Complutense de Madrid, Spain)

Heart Rate Reliability for the Smart Rollator 1044

Ji Gang (Carleton University, Canada)
Adrian D.C. Chan (Carleton University, Canada)
Aysegul Cuhadar (Carleton University, Canada)

Design and Characterisation of a Single Element Tri-axial Piezoelectric Transducer for In-shoe Force Measurement 1048

Zhiguang Geng (University of Kent, United Kingdom)
Matthew Pepper (University of Kent, United Kingdom)
Yong Yan (University of Kent, United Kingdom)

Measuring Chest Movement Using an Array of Unobtrusive Pressure Sensors 1053

Daphne Townsend (Carleton University, Canada)
Rafik Goubran (Carleton University, Canada)
Monique Frize (Carleton University, Canada)
Frank Knoefel (SCO Health Service, Canada)

4B1: Particle Detection

Chair: *Cindy K Harnett (University of Louisville, USA)*

The LHCb Silicon Tracker, first operational results 1057

Daniel Esperante (University of Santiago de Compostela, Spain)

Integration of a 16-Channel Low Power CMOS Instrumentation Chain for Electron and Charged Particle Detection in Astrophysics 1063

Florent Bouyjou (LOSE, France)
Hélène Tap-Béteille (LOSE, France)
J-A. Sauvaud (Université de Toulouse, France)
R. Molina (Université de Toulouse, France)
C. Aoustin (Université de Toulouse, France)

Impedance Spectroscopy of a Vibrating Wire for Viscosity Measurements 1067

Fernando M. Janeiro (Instituto de Telecomunicações, Portugal)
Pedro M. Ramos (Instituto de Telecomunicações, Portugal)
João Fareleira (Centro de Química Estrutural, Portugal)
João Diogo (Centro de Química Estrutural, Portugal)
Dáuria Máximo (Centro de Química Estrutural, Portugal)
Fernando J. P. Caetano (Universidade Aberta, Portugal)

Improving Celerity of Heavy Metals Measurements 1073

Miguel D. Pereira (ESTSetúbal, Portugal)
Octavian Postolache (Instituto de Telecomunicações, Portugal)
Pedro Silva Girão (Instituto de Telecomunicações, Portugal)

4C1: Electromagnetic Measurements II

Eddy Current Modeling and Measuring in Fast-Pulsed Resistive Magnets 1078

Pasquale Arpaia (Università del Sannio, Italy)
Marco Buzio (CERN, Switzerland)
Giancarlo Golluccio (CERN, Italy)
Giuseppe Montenero (Università del Sannio, Italy)

Development of Control system in electromagnetic acquisition station based on ARM and Linux 1082

Jieting Qiu (Central South University, China)
Rujun Chen (BGP,CNPC, China)
Zhanxiang He (BGP,CNPC, China)
Kailin Qiu (BGP,CNPC, China)

Compensation of Third-Harmonic Field Error in LHC Main Dipole Magnets 1087

Pasquale Arpaia (Università del Sannio, Italy)
Marco Buzio (CERN, Switzerland)
Lucio Fiscarelli (CERN, Switzerland)
Giuseppe Montenero (Università del Sannio, Italy)
Juan Garcia Perez (CERN, Switzerland)
Louis Walckiers (CERN, Switzerland)

Theoretical and Experimental Foundation of Dual-Loaded Dipole Scatterer as an Embedded Sensor 1091

Kristen M. Donnell (Missouri University of Science and Technology, USA)
Mohamed A Abou-Khousa (Robarts Research Institute, Canada)
Mesay Belayneh (Missouri University of Science and Technology, USA)
Reza Zoughi (Missouri University of Science and Technology, USA)

4D1: Image Processing V

Chair: Jorge Daher (I&M Society, Uruguay)

Image Analysis for Crack Detection 1096

Luka Kufrin (Instituto de Telecomunicacoes, Croatia)
Octavian Adrian Postolache (Instituto de Telecomunicações, Portugal)
Artur L. Ribeiro (Instituto de Telecomunicações, Portugal)
Helena Ramos (Instituto de Telecomunicacoes, Portugal)

Eddy Current Image Normalization in NDT of Aluminum Plates 1101

Luka Kufrin (Instituto de Telecomunicacoes, Croatia)
Artur L. Ribeiro (Instituto de Telecomunicações, Portugal)
Helena Ramos (Instituto de Telecomunicacoes, Portugal)

FFT-based imaging processing for cultural heritage monitoring 1106

Emma Angelini (Politecnico di Torino, Italy)
Sabrina Grassini (Politecnico di Torino, Italy)
Marco Piantanida (Politecnico di Torino, Italy)
Simone Corbellini (Politecnico di Torino, Italy)
Franco Ferraris (Politecnico di Torino, Italy)
Alessandra Neri (Politecnico di Torino, Italy)
Marco Parvis (Politecnico di Torino, Italy)

Measurement of Handwriting Skills for Japanese Calligraphy 1112

Tetsuya Sano (System Enterprise Co., Ltd, Japan)
Hiroyuki Ukida (The University of Tokushima, Japan)
Hideki Yamamoto (Kibikogen Rehabilitation Center, Japan)

4E1: Smart Sensors

Chair: Gourab Sen Gupta (Massey University, New Zealand)

Quantitative Evaluation of Self Compensation Algorithms Applied in Intelligent Sensors 1116

Jose Rivera-Mejia (Instituto Tecnológico de Chihuahua, Mexico)
Mariano Carrillo-Romero (Instituto Tecnológico de Chihuahua, Mexico)
Gilberto Herrera-Ruiz (Universidad Autónoma de Queretaro, Mexico)

Approach to the Validation Function of Intelligent Sensors Based on Error's Predictors 1121

Jose Rivera-Mejia (Instituto Tecnológico de Chihuahua, Mexico)
Ernesto A Arzabala-Contreras (Instituto Tecnológico de Chihuahua, Mexico)
Ángel G. León-Rubio (Instituto Tecnológico de Chihuahua, Mexico)

Design of a Management Information Base (MIB) for a Smart Sensor Network 1126

Syed Hussain (University of Houston, USA)
Deniz Gurkan (University of Houston, USA)
Suman Gumudavelli (Mobitrum Corporation, USA)

Eigenvalue-Based Signal Detector for an Automatic Modulation Classifier 1131

Luca De Vito (University of Sannio, Italy)
Daniele Domenico Napolitano (University of Sannio, Italy)
Sergio Rapuano (University of Sannio, Italy)
Maurizio Villanacci (University of Sannio, Italy)

8:00 AM – 11:45 PM

4F1-2: Poster Session IV

- Industrial Applications Track V-

Energy Accounting in Presence of Unbalances: The Case Study of a Photovoltaic Plant 1145

Rosario Morello (University Mediterranea of Reggio Calabria, Italy)
Rosario Carbone (University Mediterranea of Reggio Calabria, Italy)
Claudio De Capua (University Mediterranea of Reggio Calabria, Italy)
Antonella Meduri (University Mediterranea of Reggio Calabria, Italy)

Remote Monitoring of Building Structural Integrity by a Smart Wireless Sensor Network 1150

Rosario Morello (University Mediterranea of Reggio Calabria, Italy)
Claudio De Capua (University Mediterranea of Reggio Calabria, Italy)
Antonella Meduri (University Mediterranea of Reggio Calabria, Italy)

-Special Session on "Measurements for RAMS Analysis" V-

**Evolutionary Design of Lifting Scheme Wavelet-Packet Adaptive Filters for Elevator
Fault Detection 1155**

Pasquale Arpaia (University of Sannio, Italy)
Ernesto De Matteis (University of Sannio, Italy)
Giuseppe Montenero (University of Sannio, Italy)
Carlo Manna (University of Naples Federico II, Italy)

**Condition monitoring system for characterization of electric motor ball bearings with distributed fault
using fuzzy inference tools 1159**

Luis Navarro (Technical University of Catalonia, Spain)
Miguel Delgado (Technical University of Catalonia, Spain)
Julio Urresty (Technical University of Catalonia, Spain)
Jordi Cusido (Technical University of Catalonia, Spain)
Luis Romeral (Technical University of Catalonia, Spain)

**A New Approach for Real Time Fault Diagnosis in Induction Motors based on Vibration
Measurement 1164**

Cesar da Costa (Universidade Estadual Paulista, Brazil)
Mauro Hugo Mathias (Universidade Estadual Paulista, Brazil)
Pedro Ramos (Instituto de Telecomunicações, Portugal)
Pedro Silva Girão (Instituto de Telecomunicações, Portugal)

Condition Based Maintenance Through Electrical Signature Analysis: a Case Study 1169

Loredana Cristaldi (Politecnico di Milano, Italy)
Marco Faiifer (Politecnico di Milano, Italy)
Marco Rossi (Politecnico di Milano, Italy)
Sergio Toscani (Politecnico di Milano, Italy)
Massimo Lazzaroni (Università di Milano, Italy)

-Telecommunications II-

Performance evaluation and optimization of UHF RFID systems 1175

Matteo Bertocco (University of Padova, Italy)
Andrea Dalla Chiara (University of Padova, Italy)
Alessandro Sona (University of Padova, Italy)

**Propagation Measurements and Modeling for Monitoring and Tracking in Animal
Husbandry Applications 1181**

José Maurício Neto (Federal University of Campina Grande, Brazil)
Juan J. Cruz Silva (Federal University of Campina Grande, Brazil)
Tony Carlos Cavalcanti (Federal University of Campina Grande, Brazil)
Diego Rodrigues (Universidade Federal de Campina Grande, Brazil)
J. S. Rocha Neto (Federal University of Campina Grande, Brazil)
Ian A Glover (University of Strathclyde, United Kingdom)

**An Efficient Experimental Approach for the Uncertainty Estimation of QoS parameters in Communication
Networks 1186**

Leopoldo Angrisani (University of Naples Federico II, Italy)
Erasmus Atteo (ITS S.M Capua Vetere, Italy)
Domenico Capriglione (University of Cassino, Italy)
Luigi Ferrigno (University of Cassino, Italy)
Gianfranco Miele (University of Cassino, Italy)

Performance Measurement and Queueing Analysis of Parallel Connection Servers with Different Dispatch Probabilities 1192

Chung-Ping Chen (Fu Jen Catholic University, Taiwan)
Ying-Wen Bai (Fu Jen Catholic University, Taiwan)
Bao-Li Hu (Fu Jen Catholic University, Taiwan)
Cheng-Yu Chung (Fu Jen Catholic University, Taiwan)

Cell Classification in Mobile Networks with Reservoir Computing 1198

Peng Yu (Harbin Institute of Technology, China)
Guo Jia (Harbin Institute of Technology, China)
Xiyuan Peng (Harbin Institute of Technology, China)

Development of an Indoor Wireless Personal Area Network Based on Mechanically Steered Millimeter-Wave Lens Antenna 1202

Jorge R. Costa (Instituto de Telecomunicações, Portugal)
Eduardo B. Lima (Instituto de Telecomunicações, Portugal)
Carla R. Medeiros (Instituto de Telecomunicações, Portugal)
Tomas Radil (Instituto de Telecomunicações, Portugal)
Raul C Martins (Instituto de Telecomunicações, Portugal)
Pedro M. Ramos (Instituto de Telecomunicações, Portugal)
Carlos A. Fernandes (Instituto de Telecomunicações, Portugal)

Improving Measurement Techniques for Testing Digital Broadcasting Systems 1207

Gorka Prieto-Agujeta (University of the Basque Country, Spain)
Manuel Velez (University of the Basque Country, Spain)
Iñaki Eizmendi (University of the Basque Country, Spain)
Gorka Berjon (University of the Basque Country, Spain)
Carlos Fernández (University of the Basque Country, Spain)
Pablo Angueira (University of the Basque Country, Spain)
David de la Vega (University of the Basque Country, Spain)

Reducing Power Consumption of Image Transmission Over IEEE 802.15.4/ZigBee Sensor Network 1211

Vedran Bilas (University of Zagreb, Croatia)
Vana Jelacic (University of Zagreb, Croatia)

Computer Security Aspects in Industrial Instrumentation and Measurements 1216

Massimo Lazzaroni (University of Milan, Italy)
Vincenzo Piuri (University of Milan, Italy)
Carlos A Maziero (Pontifical Catholic University of Paraná, Brazil)

Design and Performance Measurement of Efficient IDEA (International Data Encryption Algorithm) Crypto-Hardware using Novel Modular Arithmetic Components 1222

Rajashekhhar Modugu (Missouri University of Science and Technology, USA)
Yong-Bin Kim (Northeastern University, USA)
Minsu Choi (Missouri University of Science and Technology, USA)

Context-Aware Social Networks Mashup: A Personalized Web Perspective 1228

Md. Abdur Rahman (University of Ottawa, Canada)
Sadek Hamdan (University of Ottawa, Canada)
Abdulmotalieb El Saddik (University of Ottawa, Canada)
Wail Gueaieb (University of Ottawa, Canada)

10:00 AM - 11:45 AM

4A2: Medical Measurements II

Chair: Voicu Z. Groza (University of Ottawa, Canada)

Flexible Dry Electrode for Recording Surface Electromyogram 1234
Adrian D.C. Chan (Carleton University, Canada)
Edward Lemaire (University of Ottawa, Canada)

Improvement of Oscillometric Blood Pressure Estimates Through Suppression of Breathing Effects 1238
Silu Chen (University of Ottawa, Canada)
Miodrag Bolic (University of Ottawa, Canada)
Voicu Z. Groza (University of Ottawa, Canada)
Hilmi R Dajani (University of Ottawa, Canada)
Izmail Batkin (University of Ottawa, Canada)
Sreeraman Rajan (DRDC-Ottawa, Canada)

A Prototype of an Integrated Blood Pressure and Electrocardiogram Device for Multi-Parameter Physiologic Monitoring 1244
Saif Ahmad (University of Ottawa, Canada)
Silu Chen (University of Ottawa, Canada)
Karen Soueidan (University of Ottawa, Canada)
Izmail Batkin (University of Ottawa, Canada)
Miodrag Bolic (University of Ottawa, Canada)
Hilmi R Dajani (University of Ottawa, Canada)
Voicu Z. Groza (University of Ottawa, Canada)

Uncertainty evaluation in a fuzzy classifier for microcalcifications in digital mammography 1250
Alessandro Ferrero (Politecnico di Milano, Italy)
Simona Salicone (Politecnico di Milano, Italy)
Arianna Mencattini (University of Rome Tor Vergata, Italy)
Giulia Rabottino (University of Rome Tor Vergata, Italy)
Marcello Salmeri (University of Rome Tor Vergata, Italy)

4B2: Temperature Measurements

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

Comparing temperature measurement using infrared line scanners and the wedge method 1256
Ruben Usamentiaga (University of Oviedo, Spain)
Daniel F Garcia (University of Oviedo, Spain)
Julio Molleda (University of Oviedo, Spain)
Francisco Bulnes (University of Oviedo, Spain)
Jesus Perez (Arcelor Mittal, Spain)

Compact RF Sensors for Monitoring Thermo-physiological Comfort of Sportswear 1262
Ada Ferri (Politecnico di Torino, Italy)
Simone Corbellini (Politecnico di Torino, Italy)
Marco Parvis (Politecnico di Torino, Italy)
Roberta Splendore (Associazione Tessile e Salute, Italy)

Design and Calibration of a Flow-Following Sensor Prototype for Operation up to 175°C 1268
Edward Liu (University of British Columbia, Canada)
Shahriar Mirabbasi (University of British Columbia, Canada)
Tim Graham (University of British Columbia, Canada)
Chad Bennington (University of British Columbia, Canada)

A CMOS Relative Ultrasound Energy Measurement Circuit with Temperature Compensation 1274
Chengbin Lu (University of Queensland, Australia)
Adam Postula (University of Queensland, Australia)

4C2: Electromagnetic Measurements III

Chair: *Ferdinanda Ponci (RWTH Aachen University, Germany)*

Induction defectoscope based on uniform eddy current probe with GMRs 1278

Octavian Postolache (Instituto de Telecomunicações, Portugal)
Artur Lopes Ribeiro (Instituto de Telecomunicações, Portugal)
Helena Ramos (Instituto de Telecomunicações, Portugal)

A Reconfigurable Digital Signal Processing System for Eddy Currents Non-Destructive Testing 1284

Luis Rosado (Instituto Superior Técnico, Portugal)
Moisés Piedade (Instituto Superior Técnico, Portugal)
Pedro M. Ramos (Instituto de Telecomunicações, Portugal)
Telmo Santos (Faculdade de Ciências e Tecnologia, Portugal)
Pedro Vilaça (IDMEC, Instituto Superior Técnico, Portugal)

A low power measurement system for the atmospheric electric field 1290

Ada Fort (University of Siena, Italy)
Marco Mugnaini (University of Siena, Italy)
Valerio Vignoli (University of Siena, Italy)
Santina Rocchi (University of Siena, Italy)
Federico Perini (INAF-IRA, Italy)
Jader Monari (INAF-IRA, Italy)
Franco Fiocchi (INAF-IRA, Italy)
Marco Schiaffino (INAF-IRA, Italy)

Accuracy Evaluation of a Grid Islanding Impedance Detection System 1295

Ada Fort (University of Siena, Italy)
Marco Mugnaini (University of Siena, Italy)
Santina Rocchi (University of Siena, Italy)
Valerio Vignoli (University of Siena, Italy)
Enrico Simoni (BORRI Industrial Power Solutions, Italy)

4D2: Microwave Measurements

Chair: *Lee A. Barford (Agilent Research Laboratories, USA)*

Microwave Resonant Switched-Slot Probe with Perpendicular Coaxial Feed 1299

Sergiy Kharkivskiy (Missouri University of Science and Technology, USA)
Keong Kam (Missouri University of Science and Technology, USA)
Mohammad T Ghasr (Missouri University of Science and Technology, USA)
Andrew McClanahan (Missouri University of Science and Technology, USA)
Mohamed A Abou-Khousa (Robarts Research Institute, Canada)
Reza Zoughi (Missouri University of Science and Technology, USA)
Ignacio Perez (Office of Naval Research, USA)

Microwave Moisture Meter for Granular and Particulate Materials 1304

Samir Trabelsi (U. S. Department of Agriculture, USA)
Stuart O Nelson (U. S. Department of Agriculture, USA)

Moisture Insensitive Microwave Mass Flow Detector for Particulate Solids 1309

Andreas Penirschke (TU Darmstadt, Germany)
Aleksandar Angelovski (TU Darmstadt, Germany)
Rolf Jakoby (TU Darmstadt, Germany)

Unintentional Radiation from Shielded Transformers 1314

James McLean (TDK R&D Corp, USA)
Robert Sutton (TDK R&D Corp, USA)

4E2: Wireless Sensors I

Chair: *Gourab Sen Gupta (Massey University, New Zealand)*

Fuel Cell Applications in Wireless Sensor Networks 1320

Fabien Chraim (University of California Berkeley, USA)
Sami Karaki (American University of Beirut, Lebanon)

A BE-SOI MEMS for inertial measurement in geophysical applications 1326

Bruno Andò (University of Catania, Italy)
Salvatore Baglio (University of Catania, Italy)
Vincenzo Marletta (University of Catania, Italy)
Nicolò Savalli (University of Catania, Italy, Italy)
Carlo Trigona (University of Catania, Italy)
Daniele Carbone (Istituto Nazionale di Geofisica e Vulcanologia, Italy)
Domenico Patanè (Istituto Nazionale di Geofisica e Vulcanologia, Italy)
S. Rapisarda (Istituto Nazionale di Geofisica e Vulcanologia, Italy)
Luciano Zuccarello (Istituto Nazionale di Geofisica e Vulcanologia, Italy)

Performance Analysis of a Wireless Camera Network Node 1331

Leonardo Gasparini (University of Trento, Italy)
Roberto Manduchi (University of California Santa Cruz, USA)
Massimo Gottardi (Fondazione Bruno Kessler, Italy)
Dario Petri (University of Trento, Italy)

1:00 PM - 2:45 PM

4A3: Medical Measurements III

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

Sit-to-stand Timing Measurements Using Pressure Sensitive Technology 1337

Idana Veledar (Carleton University, Canada)
Amaya I Arcelus (Carleton University, Canada)
Rafik Goubbran (Carleton University, Canada)
Frank Knoefel (SCO Health Service, Canada)
Heidi Sveistrup (University of Ottawa, Canada)
Martin Bilodeau (University of Ottawa, Canada)

Towards Fatigue and Intensity Measurement framework during continuous repetitive activities 1341

Rita Chattopadhyay (Arizona State University, USA)
Gaurav Pradhan (Arizona State University, USA)
Sethuraman Panchanathan (Arizona State University, USA)

A measurement system for EMC analysis of far field disturbance in the range 2-8 GHz 1347

Matteo Bertocco (University of Padova, Italy)
Alessandro Sona (University of Padova, Italy)

A wireless portable behavioral state and physiological signal monitoring system for freely moving rats 1353

Da-Wei Chang (National Cheng Kung University, Taiwan)
Sheng-Fu Liang (National Cheng Kung University, Taiwan)
Chung-Ping Young (National Cheng Kung University, Taiwan)
Fu-Zen Shaw (National Cheng Kung University, Taiwan)
You-De Liu (National Cheng Kung University, Taiwan)
Yi-Che Liu (National Cheng Kung University, Taiwan)
Jing-Jhong Chen (National Cheng Kung University, Taiwan)

4B3: Transportations I

Dynamic Torque Measurement For Automotive Application 1358

Valner Brusamarello (UFRGS, Brazil)
Alexandre Balbinot (Universidade Federal do Rio Grande do Sul, Brazil)
Luiz Gertz (Universidade Luterana do Brasil, Brazil)
André Cervieri (Universidade Luterana do Brasil, Brazil)

Realization of High Speed Mass Storage Data Record Card with CF Card and SDRAM 1363

Qiao Li-yan (Harbin Institute of Technology, China)
Xu Hongwei (Harbin Institute of Technology, China)

4C3: Optical Measurements I

Chair: *Michele Norgia (Politecnico di Milano, Italy)*

Integration of CMOS Avalanche Photodiodes.Evaluation and comparison of their global performances 1373

Emmanuel R Moutaye (LOSE, France)
Hélène Tap-Béteille (LOSE, France)

A Design of NIR Infrared Spectrometer for Pears Sugar Concentration Analysis 1377

Chien-Hung Chen (National Applied Research Laboratories, Taiwan)
Chih-Wen Chen (Instrument Technology Research Center, Taiwan)
Tai-Shan Liao (Instrument Technology Research Center, Taiwan)
Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)

High Resolution LED-Spectroscopy for Sensor Application in Harsh Environment 1382

Martin Degner (University of Rostock, Germany)
Nils Damaschke (University of Rostock, Germany)
Hartmut Ewald (University of Rostock, Germany)
Elfed Lewis (University of Limerick, Ireland)

A Spectroscopic Imaging System for Flame Radical Profiling 1387

Jan Krabicka (University of Kent, United Kingdom)
Gang Lu (University of Kent, United Kingdom)
Yong Yan (University of Kent, United Kingdom)

4D3: Calibration

Chair: *Paul D. Hale (National Institute of Standards and Technology, USA)*

An Adaptive Calibration Approach for a 2-Axis Digital Compass in a Low-Cost Pedestrian Navigation System 1392

Wei Chen (University of Science and Technology of China, China)
Ruizhi Chen (Finnish Geodetic Institute, Finland)
Yuwei Chen (Finnish Geodetic Institute, Finland)
Heidi Kuusniemi (Finnish Geodetic Institute, Finland)
Zhongqian Fu (University of Science and Technology of China, China)

Directional Borehole Radar Antenna Calibration 1398

Kibreab Behaimanot (University of Wuppertal, Germany)
Matthias Boeger (University of Wuppertal, Germany)
Albrecht Glasmachers (University of Wuppertal, Germany)

A Time Interval Measurement System Based on FPGA Used for Frequency Calibration 1404

Xianghong Lu (Central South University, China)
Rujun Chen (BGP,CNPC, China)
Zhanxiang He (BGP,CNPC, China)
Qiu Kailin (BGP,CNPC, China)

A calibration setup for AC and DC current sensors 1409

Andrea Mariscotti (Università di Genova, Italy)

4E3: Wireless Sensors II

Chair: *Luigi Ferrigno (University of Cassino, Italy)*

Master-Slave Dual Readers Enhanced ALOHA Anti-Collision Mechanism for Dense Active RFID 1414

Qunying Sun (Zhejiang University, China)
Hongjian Zhang (Zhejiang University, China)
Lingfei Mo (Zhejiang University, China)

On the propagation of wireless signals on board ships 1418

Andrea Mariscotti (University of Genova, Italy)
Massimiliano Sassi (Fincantieri, Italy)
Andrea Qualizza (Fincantieri, Italy)
Matteo Lenardon (Fincantieri, Italy)

Multi-Tone FSK for Ultrasonic Communication 1424

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Joao C. Netto (Federal University of Rio Grande do Sul, Brazil)
Eric Fabris (Federal University of Rio Grande do Sul, Brazil)
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Enrico Cozzani (CNR-IMM Bologna, Italy)
Ivan Elmi (CNR-IMM Bologna, Italy)
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Chair: *Alessandra Flammini (University of Brescia, Italy)*

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