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Chair: Kristi Paranjape (National Instruments, USA)

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Industry Day

Room: Founders III

Chair: Kristi Paranjape (National Instruments, USA)

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Bo Feng (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)

Prashanth Baskaran (Instituto de Telecomunicações, Portugal)

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Room: Founders I – II

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Wed-2A: Measurement for Aerospace

Room: Champions I - II

Chairs: Luca De Vito (University of Sannio, Italy)

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Mohammed Afsar (Tufts University, USA)

Jonathan Card (Build an EMdrive, USA)

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Room: Champions III

Chair: Pasquale Daponte (University of Sannio, Italy)

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Huiqing Pan (University of Electronic Science and Technology of China, P.R. China)
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Wed-2C: Measurement for Energy and Power

Room: Champions V

Chair: Carlo Muscas (University of Cagliari, Italy)

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Fast detection of Rapid Voltage Change Events through Dynamic RMS Voltage Tracking 1448

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On Steady-State Model Uncertainty in Phasor Estimation: A Robust Statistical Approach..... 1454

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Chengkai Zhang (University of British Columbia, Canada)
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Wed-2D: SS: Non-Invasive Measurement Methods, Systems and Instrumentation

Room: VI - VII

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

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Sakol Julrat (Agricultural Research Service, USDA, USA)

Samir Trabelsi (Agricultural Research Service, USDA, USA)

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Wed-2E: SS: Recent advances in photonics sensing technology: sensors, instrumentations, measurements and applications

Room: Founders I – II

Chairs: Tuan Guo (Institute of Photonics Technology, Jinan University, P.R. China) and Yong Zhao (Northeastern University, P.R. China)

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Xiaoyong Chen (Shantou University, P.R. China);

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Tuan Guo (Institute of Photonics Technology, Jinan University, P.R. China)

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Jianzhong Zhang (Harbin Engineering University, P.R. China)

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10:20 – 12:00

Thu-1A: SS: Measurements for Modern Networks and Telecommunication Systems

Room: Champions I – II

Chairs: Domenico Capriglione (University of Salerno, Italy), Gianfranco Miele (University of Cassino and Southern Lazio, Italy)

RF Measurements in a 5G World 1515

Michael D. Foegelle (ETS-Lindgren, USA)

The effect of ADC vertical resolution on the performance of an energy detection algorithm in Cognitive Radios 1521

Gianni Cerro (University of Cassino and Southern Lazio, Italy)

Domenico Capriglione (University of Salerno, Italy)

Luigi Ferrigno (University of Cassino, Italy)

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Blockchain Applications for Legal Metrology 1527

Daniel Peters (Physikalisch-Technische Bundesanstalt (PTB) Berlin, Germany)

Jan Wetzlich (Physikalisch-Technische Bundesanstalt (PTB) Berlin, Germany)

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Jean-Pierre Seifert (Technical University, Berlin, Germany)

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José Suárez-Varela (UPC BarcelonaTech, Spain)

Pere Barlet-Ros (UPC BarcelonaTech, Spain)

10:20 – 12:00

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Room: Champions III

Chairs: Daniele Fontanelli (University of Trento, Italy), Dario Petri (University of Trento, Italy)

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Maicon Pereira (Federal University of Santa Catarina, Brazil)

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

Nestor Fernandes (Traceback Technologies, Brazil)

Coaxial Probe for Dielectric Measurements of Aerated Pulverized Materials 1545

Markus Neumayer (Graz University of Technology, Austria)

Matthias Flatscher (Graz University of Technology, Austria)

Thomas Bretterklieber (Graz University of Technology, Austria)

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Tao Wang (KROHNE Ltd, United Kingdom (Great Britain));

Yong Yan (University of Kent, United Kingdom (Great Britain))

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Lijuan Wang (University of Kent, United Kingdom (Great Britain))

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Thu-1C: Measurement Theory and Metrology

Room: Champions V

Chair: Giovanni Battista Rossi (University of Genova, Italy)

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Emanuela Natale (University of L'Aquila, Italy)
Antonella Gaspari (University of L'Aquila, Italy)

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Dimitrij Gester (University of Stuttgart, Germany)
S. Simon (University of Stuttgart, Germany)

How Blockchains can improve Measuring Instruments Regulation and Control 1586
Wilson Melo, Jr. (National Institute of Metrology Quality and Technology, Brazil)
Luiz Carmo (UFRJ, Brazil)
Alysson Bessani (Faculdade de Ciências da Universidade de Lisboa, Portugal)
Nuno Ferreira Neves (University of Lisbon, Portugal)
Altair O. Santin (Pontifical Catholic University of Parana (PUCPR), Brazil)

Evaluation of a Low-Cost, Solar-Powered Weather Station for Small-Scale Wind Farm Site Selection 1592
Diego Aponte-Roa (Universidad del Turabo, Puerto Rico)
Albert Espinoza (Universidad del Turabo, Puerto Rico)
Luis Benitez-Montalvan (Universidad del Turabo, Puerto Rico)
Luis Feliciano Velazquez (Universidad del Turabo, Puerto Rico)
Ricardo Serrano (Universidad del Turabo, Puerto Rico)
Christopher Velazquez (Universidad del Turabo, Puerto Rico)

10:20 – 12:00

Thu-1D: SS: Measurement in Industrial Applications - Intelligent Manufacturing System (IMS) using smart sensors, smart machinery and industrial internet of things

Room: Champions VI – VII

Chairs: Yao-Joe Yang (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan) and Fong-Zhi Chen (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Invited Speech: Application of a Cyber-Physical System and Machine-to-Machine Communication for Metal Machining Processes 1597

Yung-Chou Kao (National Chung Cheng University, Taiwan)

Yung-Ping Liu (National Tsing Hua University, Taiwan)

Chen-Lung Wei (Precision Machinery R&D Center, Taiwan)

Shang-Heng Hsieh (CIMFORCE International Limited, Taiwan)

Chi-Yuang Yu (National Tsing Hua University, Taiwan)

Digital 3D vibration sensing module 1603

Tai-Shan Liao (Instrument Technology Research Center, Taiwan)

Yung-Bin Lin (National Center For Research on Earthquake Engineering, Taiwan)

Xiaoqin Liu (National Center For Research on Earthquake Engineering, Taiwan)

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

Photovoltaic Energy Harvesting in Indoor Environments 1609

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

Chun-Ping Pan (Minghsin University of Science and Technology, Taiwan)

Ching-Lung Lin (Minghsin University of Science and Technology, Taiwan)

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

Hsin Chen (The Institute of Electronics Engineering, National Tsing Hua University, Taiwan)

Surface profiling measurement using varifocal lens based on focus stacking 1614

Chen-Liang Fan (National Chiao Tung University, Taiwan);

Chun-Jen Weng (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Yu-Hsin Lin (Instrument Technology Research Center, National Applied Research Laboratories, Taiwan)

Pi-Ying Cheng (National Chiao Tung University, Taiwan)

Application of Bluetooth low energy indoor positioning to optical lenses manufacturing factory 1619

Shih-Jie Chou (Instrument Technology Research Center, Taiwan)

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

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

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

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

Vipin Ting (Instrument Technology Research Center, Taiwan)

10:20 – 12:00

Thu-1E: Advances in modern instrumentation

Room: Founders III

Chairs: Consolatina Liguori (University of Salerno, Italy) and Zheng Liu (University of British Columbia Okanagan, Canada)

Online Dilution for Elemental Measurements Using an Online Reaction Monitoring System and Inductively-Coupled Plasma Mass Spectrometry..... 1625

Vinh Quang Do (Center for Life Science Automation - CELISCA, Germany)

Heidi Fleischer (University of Rostock, Germany)

Kerstin Thurow (Center for Life Science Automation - CELISCA, Germany)

Resonant Noise-Canceling Current Front-End for High-Resolution Impedance Sensing 1631

Giovanni Azzellino (Massachusetts Institute of Technology, USA)

Andrea Ragni (Politecnico di Milano, Italy)

Marco Carminati (Politecnico di Milano, Italy)

Giorgio Ferrari (Politecnico di Milano, Italy)

Calibrating a magnetic positioning system using a robotic arm 1637

Francesco Santoni (University of Perugia, Italy)

Alessio De Angelis (University of Perugia, Italy)

Antonio Moschitta (University of Perugia, Italy)

Paolo Carbone (University of Perugia, Italy)

Digital-to-Time Converter with Pulse Train Generation Capability..... 1643

Pawel Kwiatkowski (Military University of Technology, Poland)

Ryszard Szplet (Military University of Technology, Poland)

A microbial fuel cell measuring system for corrosion assessment 1649

Leonardo Iannucci (Politecnico di Torino, Italy)

Sabrina Grassini (Politecnico di Torino, Italy)

Emma Paola Angelini (Politecnico di Torino, Italy)

Pierangela Cristiani (Ricerca sul Sistema Energetico - RSE SpA, Italy)

Roberto Ferrero (University of Liverpool, United Kingdom (Great Britain))

Marco Parvis (Politecnico di Torino, Italy)

15:00 – 16:40

Thu-2A: SS: Optical fiber sensors in measurement systems and their application

Room: Champions I – II

Chairs: Nunzio Cennamo (University of Campania Luigi Vanvitelli, Italy)

Extending Battery Life Time in the Wireless Sensor Applications with Fluorescent Optical Fiber Concentrator..... 1654

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Daniel Moga (Technical University of Cluj-Napoca, Romania)

Tiberiu Marita (Technical University of Cluj-Napoca, Romania);

Nicoleta Stroia (Technical University of Cluj-Napoca, Romania)

Dorin Petreus (Technical University of Cluj-Napoca, Romania)

A novel chemical optical sensor based on molecularly imprinted polymer, optical fibers and InkJet printing technology..... 1660

Nunzio Cennamo (University of Campania Luigi Vanvitelli, Italy)
Luigi Zeni (University of Campania Luigi Vanvitelli, Italy)
Maria Pesavento (University of Pavia, Italy)
Simone Marchetti (University of Pavia, Italy)
Salvatore Baglio (University of Catania, Italy)
Vincenzo Marletta (University of Catania, Italy)
Antonio Pistorio (University of Catania, Italy)
Salvatore Graziani (University of Catania, Italy)
Bruno Andò (University of Catania, Italy)

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Riccardo Gassino (Politecnico di Torino, Italy)
Alberto Vallan (Politecnico di Torino, Italy)
Guido Perrone (Politecnico di Torino, Italy)

On the use of OFDR for high-spatial resolution strain measurements in mechanical and geotechnical engineering..... 1670

Luca Schenato (National Research Council, Italy)
Alessandro Pasuto (National Research Council, Italy)
Andrea Galtarossa (University of Padova, Italy)
Luca Palmieri (University of Padova, Italy)

15:00 – 16:40

Thu-2B: Micro and Nanotechnology in Instrumentation and Measurement

Room: Champions III

Chair: Salvatore Graziani (University of Catania, Italy)

Known Void Size Micro-bump, A Novel Standard of 3D X-ray Computed Tomography In-line Metrology for Accuracy Assessment and Monitoring 1676

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Osborne Martin (Intel Corporation, USA)

Micromachined Probes with Integrated GaAs Schottky Diodes for On-Wafer Temperature Sensing 1681

Linli Xie (University of Virginia, USA)
Christopher Moore (University of Virginia, USA)
Michael Cyberey (University of Virginia, USA)
Souheil Nadri (University of Virginia, USA)
Noah Sauber (University of Virginia, USA)
Matthew Bauwens (Dominion MicroProbes, Inc., USA)
Arthur Lichtenberger (University of Virginia, USA)
Nicolas Barker (University of Virginia, USA)
Robert Weikle (University of Virginia, USA)

Plasmonic enhanced CMOS non-dispersive infrared gas sensor for acetone and ammonia detection 1687

Yuxin Xing (Warwick University, United Kingdom (Great Britain))
Barbara Urasinska-Wojcik (Warwick University, United Kingdom (Great Britain))
Julian Gardner (University of Warwick, United Kingdom (Great Britain))

Ultra High-Q 60GHz Open Resonator System for Precision Dielectric Permittivity and Loss Tangent Measurements 1692
Wei Quan (Tufts University, USA)
Mohammed Afsar (Tufts University, USA)

Workload-aware Failure Prediction Method for VLSI Devices Using an LUT based Approach..... 1697
Zhiming Yang (Harbin Institute of Technology, P.R. China)
Peng Sun (Harbin Institute of Technology, P.R. China)
Yang Yu (Harbin Institute of Technology, P.R. China)
Hui Zhang (Harbin Institute of Technology, P.R. China)
Guoyu Gao (Harbin Institute of Technology, P.R. China)
Xiyuan Peng (Harbin Institute of Technology, P.R. China)

15:00 – 16:40

Thu-2C: Non-invasive Measurement Methods and Systems

Room: Champions V

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

Monitoring of the Unsteady Water Vapor Condensation in High Speed Flow Using Tunable Diode Laser Absorption Spectroscopy 1703
Dong Peng (University of Science and Technology of China, P.R. China)
Yi Jin (University of Science and Technology of China, P.R. China)
Xindong Fan (University of Science and Technology of China, P.R. China)
Chao Zhai (University of Science and Technology of China, P.R. China)
Jiming Yang (University of Science and Technology of China, P.R. China)

Wideband Chirp Excitation Source for Bioelectrical Impedance Spectrum Tomography 1709
Shiwei Liu (Tianjin University, P.R. China)
Chao Tan (Tianjin University, P.R. China)
Hao Wu (Tianjin University, P.R. China)
Jiabin Jia (University of Edinburgh, United Kingdom (Great Britain))
Feng Dong (Tianjin University, P.R. China)

Localization of Defects in Woven-Fabric Type CFRP Plate by Time of Flight of Scattering Guided Wave 1715
Bo Feng (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)
Dario Pasadas (Instituto Telecomunicações, Instituto Superior Técnico, Portugal)
Artur L. Ribeiro (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)
Helena G. Ramos (Instituto de Telecomunicações, Instituto Superior Técnico, Portugal)

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Volkan Turgul (University of Westminster, United Kingdom (Great Britain))
Izzet Kale (University of Westminster, United Kingdom (Great Britain))

Monitoring the magnetic axis misalignment in axially-symmetric magnets 1726
Pasquale Arpaia (University of Naples Federico II & INFN - National Institute for Nuclear Physics)
Luca De Vito (University of Sannio & INFN - National Institute for Nuclear Physics)
Antonio Esposito (Instrumentation and Measurement for Particle Accelerators Lab (IMPALab) & CRdC Technologie Scarl, Italy)
Nicola Moccaldi (Instrumentation and Measurement for Particle Accelerators Lab (IMPALab), University of Naples Federico II)
Alessandro Parrella (University of Naples Federico II, Italy)
Biase Celano (INFN - National Institute for Nuclear Physics, Italy)

15:00 – 16:40

Thu-2D: Optical Measurement Systems, Fiber Optic Measurements

Room: Champions VI – VII

Chairs: Tuan Guo (Institute of Photonics Technology, Jinan University, P.R. China), Alberto Vallan (Politecnico di Torino, Italy)

On Research of Incipient Gear Pitting Fault Detection Using Optic Fiber Sensors..... 1732

Yongzhi Qu (Wuhan University of Technology, P.R. China)
Haoliang Zhang (Wuhan University of Technology, P.R. China)
Liu Hong (Wuhan University of Technology, P.R. China)
Chongfeng Zhao (Wuhan University of Technology, P.R. China)
Yuegang Tan (Wuhan University of Technology, P.R. China)
Zude Zhou (Wuhan University of Technology, P.R. China)

Theoretical Analysis of Graphene Usage in Optical Fiber Surface Plasmon Resonance Sensor Probes 1738

Arthur Aprígio de Melo (Instituto Federal da Paraíba, Brazil)
Talita Silva (Instituto Federal da Paraíba, Brazil)
Márcia Santiago (Instituto Federal de Educação, Ciência e Tecnologia da Paraíba, Brazil)
Cleumar da Silva Moreira (Instituto Federal da Paraíba, Brazil)
Rossana Moreno Santa Cruz (Instituto Federal da Paraíba, Brazil)
Ravilla Leite (Instituto Federal da Paraíba, Brazil)

Detection of Specific Contamination Events in Water Distribution System Using Ultraviolet Spectra 1744

Hang Yin (Zhejiang University, P.R. China)
Qiaojun Yu (Zhejiang University, P.R. China)
Hui Dong (Zhejiang University, P.R. China)
Di-Bo Hou (Zhejiang University, P.R. China)
Huang Ping-Jie (Zhejiang University, P.R. China)
Guang-Xin Zhang (Zhejiang University, P.R. China)

Attenuation Loss by Displacement of Cladding Layer due to Temperature and Stress in OPLC..... N/A

Ahsan Ashfaq (Xi'an Jiaotong University, P.R. China)
Yu Chen (Xi'an Jiaotong University, P.R. China)
Kai Yao (Xi'an Jiaotong University, P.R. China)
Guanshu Sun (Xi'an Jiaotong University, P.R. China)
Lina Fu (Shanghai Electric Cable Research Institute, Shanghai, P.R. China)
Jing Yu (Shanghai Electric Cable Research Institute, Shanghai, P.R. China)
Yi Guo (Shanghai Electric Cable Research Institute, Shanghai, P.R. China)

Optimization of Laser Trackers Locations for Position Measurement..... 1755

Han Wang (Harbin Institute of Technology, P.R. China & Oregon State University, USA)
Zhongxi Shao (Harbin Institute of Technology, P.R. China)
Zhaoyan Fan (Oregon State University, USA)
Zhenyu Han (Harbin Institute of Technology, P.R. China)

15:00 – 16:40

Thu-2E: SS: Healthcare in Smart Cities

Room: Founders III

Chairs: Octavian Adrian Postolache (Instituto de Telecomunicações, Lisboa/IT & Instituto Universitario de Lisboa, ISCTE-IUL, Portugal)

Invited Speech: A Wearable Multimode System with Soft Sensors for Lower Limb Activity Evaluation and Rehabilitation..... 1761

Shenjie Bao (Fudan University, P.R. China)
Shubao Yin (Fudan University, P.R. China)
Hongyu Chen (Eindhoven University of Technology, P.R. China)
Wei Chen (Fudan University, P.R. China)

Tailored Virtual Reality and Mobile Application for Motor Rehabilitation..... 1767

Filipe Lourenço (ISCTE-IUL, Portugal);
Octavian Adrian Postolache (Instituto de Telecomunicações, Lisboa/IT & Instituto Universitario de Lisboa, ISCTE-IUL, Portugal)
Gabriela Postolache (Instituto de Medicina Molecular & Instituto de Telecomunicacoes, Portugal)

Smart Home Based Ambient Assisted Living 1773

Hemant Ghayvat (Fudan University, P.R. China)
Wei Chen (Fudan University, P.R. China)
Subhas Mukhopadhyay (Macquarie University, Australia)
Arpita Chouhan (Fudan University, P.R. China)
Shenjie Bao (Fudan University, P.R. China)

Spy Walker - A Convenient Way to Assess Gait in Walker Assistive Devices 1778

Vítor Viegas (Polytechnic Institute of Setubal & Setubal School of Technology, Portugal)
Jose Costa Pereira (ESTSetúbal, Portugal)
Octavian Adrian Postolache (Instituto de Telecomunicações, Lisboa/IT & Instituto Universitario de Lisboa, ISCTE-IUL, Portugal)
Pedro M. B. Silva Girão (Instituto Superior Técnico, Portugal)

16:40 – 18:20

Poster Session

Room: Legends Ballroom

Chairs: Kurt Barbé (Vrije Universiteit Brussel & Faculty of Sciences / Faculty Medicine (GEWE), Belgium) and Melanie Ooi (Unitec Institute of Technology, New Zealand)

Track: Measurement for Food Safety

Advanced TD-NMR based estimation of the inshell hazelnuts quality parameters 1784

Domenico Di Caro (University of Salerno, Italy)
Consolatina Liguori (University of Salerno, Italy)
Antonio Pietrosanto (University of Salerno, Italy)
Paolo Sommella (University of Salerno, Italy)

Improvement the permittivity determination in glyphosate-water mixture using CSRR as sensor 1790

Germán Álvarez-Botero (Universidad Nacional de Colombia & Universidad Católica de Colombia, Colombia)
Yicely K. Hernández-Gómez (Grupo Cideinnova, Colombia)
José L. Zamora-Fernández (Universidad Católica de Colombia, Colombia)
Duver Vargas (Universidad Católica de Colombia, Colombia)

Track: Measurement systems for Oil and Drill industry

The Noise Characteristics of Gas-liquid Two Phase Slug Flow in Vertical Pipe..... 1795

Lide Fang (Hebei University, P.R. China)
Yingkun Yang (Hebei University, P.R. China)
Luxin Fu (Hebei University, P.R. China)
Wei Zihui (Hebei University, P.R. China)
Ning Zhao (Tianjin University, P.R. China)
Xiaoting Li (Hebei University, P.R. China)

Non Intrusive Microwave System for Multiphase Flow Metering..... 1801

Aparna C Sheila-Vadde (GE Global Research, India)
Vikram Melapudi (GE Global Research, India)
John Ward (BHGE, United Kingdom (Great Britain))
Suma MN (GE Global Research, India)
Manoj Kumar KM (GE Global Research, India)

Droplet Behavior of Non-equilibrium Condensation in the Supersonic Separator..... 1807

Chao Wang (Tianjin University, P.R. China)
Xiaotong Wang (Tianjin University, P.R. China)
Hongbing Ding (Tianjin University, P.R. China)
Peijuan Cao (Tianjin University & National Institute of Metrology, P.R. China)
Chuang Wen (Technical University of Denmark, Denmark)

Track: Measurement Theory and Metrology

Measurement property of vortex flowmeter in wet gas flow using mist flow apparatus 1813

Chao Wang (Tianjin University, P.R. China)
Zhexiao Zhang (Tianjin University, P.R. China)
Hongbing Ding (Tianjin University, P.R. China)
Jinxia Li (Tianjin University, P.R. China)

Characteristics of Vortex flowmeter in Vapor-liquid Mist Flow..... 1819

Jinxia Li (Tianjin University, P.R. China)
Chao Wang (Tianjin University, P.R. China)
Hongbing Ding (Tianjin University, P.R. China)

Electrical equivalent model of a PMMA-urease based aqueous urea sensor 1825

Asmita Bose (IIT Kharagpur, India)
Karabi Biswas (IIT Kharagpur, India)

Secure Cloud Computing: Continuous Anomaly Detection Approach in Legal Metrology 1831

Alexander Oppermann (Technische Universität Berlin & Physikalisch-Technische Bundesanstalt (PTB), Germany)
Federico Grasso Toro (Physikalisch-Technische Bundesanstalt (PTB), Germany)
Florian Thiel (Physikalisch-Technische Bundesanstalt (PTB) Berlin, Germany)
Jean-Pierre Seifert (Technical University, Berlin, Germany)

Determination of Frequency-Independent Component of AC-DC Transfer Difference of SUT's Calculable AC Voltage Standards 1837

Michal Grzenik (Silesian University of Technology, Poland)
Marian Kampik (Silesian University of Technology, Poland)

The Nature of Measurement, and the True Value of a Measured Quantity	1842
Harold Kirkham (Pacific Northwest National Laboratory, USA)	
Artis Riepnieks (Riga Technical University, Latvia)	
Mihaela Albu (Polytechnica University, Romania)	
David Lavery (Queen's University Belfast, United Kingdom (Great Britain))	
A monocular-vision-based contouring error detection method for CNC machine tools	1848
Xiao Li (Dalian University of Technology, P.R. China)	
Wei Liu (Dalian University of Technology, P.R. China)	
Yi Pan (Dalian University of Technology, P.R. China)	
Hui Li (Dalian University of Technology, P.R. China)	
Xin Ma (Dalian University of Technology, P.R. China)	
Zhenyuan Jia (Dalian University of Technology, P.R. China)	
A Dynamic Calibration System of Thermocouple Sensor Based on High Temperature Furnace	1854
Zhijie Zhang (North University of China, P.R. China)	
Yanfeng Li (North University of China, P.R. China)	
Accurate measurement of dry Friction Coefficient using reciprocating tribometer	1859
Consolatina Liguori (University of Salerno, Italy)	
Alessandro Ruggiero (University of Salerno, Italy)	
Domenico Russo (University of Salerno, Italy)	
Paolo Sommella (University of Salerno, Italy)	
WSN Integrated to a Virtual Instrument for Partial Discharges Detection and Localization.....	1865
Rômulo Omena (Federal University of Campina Grande, Brazil)	
Jaidilson Jo Silva (Federal University of Campina Grande, Brazil)	
J. S. Rocha Neto (Federal University of Campina Grande, Brazil)	
Design and Analysis of Analog Filters by Statistical Methods	1871
Fabiano Sanches Rocha (Universidade Federal de Minas Gerais, Brazil)	
Vitor Biajo (Universidade Federal de Minas Gerais, Brazil)	
Hilton Oliveira-Mota (Universidade Federal de Minas Gerais, Brazil)	
Carlos Andrey Maia (Universidade Federal de Minas Gerais, Brazil)	
Flavio Henrique Vasconcelos (Universidade Federal de Minas Gerais, Brazil)	
Research on Coupling Method of Flow Field and Acoustic Field Based on COMSOL for Ultrasonic Flowmeter	1877
Dandan Zheng (Tianjin University, P.R. China)	
Sheng-Hong Lv (Tianjin University, P.R. China)	
Huaxiang Wang (Tianjin University, P.R. China)	
Yang Mao (Tianjin University, P.R. China)	
Gas Leak Location Method Based on Annular Ultrasonic Sensor Array	1883
Tao Wang (Beijing Institute of Technology, P.R. China)	
Xiaoran Wang (Beijing Institute of Technology, P.R. China)	
Robust tightly-coupled INS/UWB-integrated human localization using UFIR filtering.....	1889
Lili Bu (University of Jinan, P.R. China)	
Yong Zhang (University of Jinan, P.R. China)	
Yuan Xu (University of Jinan, P.R. China)	
Xiyuan Chen (Southeast University, P.R. China)	

Study on Measurement Technology of Thermal Gas Flow Based on Effective Velocity 1894
Ying Xu (Tianjin University, P.R. China)
Chunjian Duan (Tianjin University, P.R. China)
Tao Zhang (Tianjin University, P.R. China)
Tianyu Wang (North China Electric Power University, P.R. China)

Track: Image Processing Techniques in Measurement

Rotational Speed Measurement Using a Low-Cost Imaging Device and Image Processing Algorithms 1900
Tianyu Wang (North China Electric Power University, P.R. China)
Lijuan Wang (North China Electric Power University, P.R. China)
Yong Yan (University of Kent, United Kingdom (Great Britain))
Shuai Zhang (North China Electric Power University, P.R. China)

i-Riter: Machine Learning Based Novel Eye Tracking and Calibration 1906
Muhammad Bilal Ahmad (Institute of Space Technology, Islamabad, Pakistan)
Saifullah Amin (Institute of Space Technology, Islamabad, Pakistan)
Mujtaba Ahmed Raja (Institute of Space Technology, Islamabad, Pakistan)
Muhammad Waqas Asif (University of South Florida, USA)
Khurram Khurshid (Institute of Space Technology, Islamabad, Pakistan)

A Design of Detection Algorithm Based on Thermal Regions Separation for Pressure Vessels 1911
Wendong Gan (University of Electronic Science and Technology of China, P.R. China);
Chun Yin (University of Electronic Science and Technology of China, P.R. China)
Yuhua Cheng (University of Electronic Science and Technology of China, P.R. China)
Xuegang Huang (China Aerodynamics Research & Development Center, P.R. China)
Xiaohui Chen (China Aerodynamics Research & Development Center, P.R. China)
Dexing Gong (China Aerodynamics Research & Development Center, P.R. China)
Jianhong Xue (University of Electronic Science and Technology of China, P.R. China)
Bo Zhang (University of Electronic Science and Technology of China, P.R. China)

Image Processing Pipeline for Automated Larva Counting 1917
Hayden Clarke (Manhattan College & Australian Institute of Marine Science, Australia)
Brent Horine (Manhattan College, USA)
Peter Thomas-Hall (Australian Institute of Marine Science, Australia)

Automation of a Wheelchair Mounted Robotic Arm using Computer Vision Interface 1922
Priyanka Karuppiah (California State University, Fullerton, USA)
Hem Metalia (California State University, Fullerton, USA)
Kiran George (California State University, Fullerton, USA)

Incremental Multi-Model Dictionary Learning for Face Tracking 1927
Aasim Kurshid (UFRGS, Brazil)
Jacob Scharcanski (UFRGS, Brazil)

Online Dictionary Self-taught Learning for Hyperspectral Image Classification 1933
Fengshuang Liu (Harbin Institute of Technology, P.R. China)
Jiachen Ma (Harbin Institute of Technology, P.R. China)
Zhao Rongqiang (Harbin Institute of Technology, P.R. China)
Qiang Wang (Harbin Institute of Technology, P.R. China)

A Fast Parallel Primal-Dual based Compressed Sensing Method for 2-D Near-Field SAR Image Reconstruction	1938
Jue Lyu (University of Electronic Science and Technology of China, P.R. China)	
Dongjie Bi (University of Electronic Science and Technology of China, P.R. China)	
Xifeng Li (University of Electronic Science and Technology of China, P.R. China)	
Yongle Xie (University of Electronic Science and Technology of China, P.R. China)	
Xuan Xie (University of Electronic Science and Technology of China, P.R. China)	
Hyperspectral Image Anomaly Targets Detection with Online Deep Learning	1944
Ning Ma (Harbin Institute of Technology, P.R. China);	
Yu Peng (Harbin Institute of Technology, P.R. China)	
Shaojun Wang (Harbin Institute of Technology, P.R. China)	
Datong Liu (Harbin Institute of Technology, P.R. China)	
Automatic Measurement of Fish Size Using Stereo Vision	1950
Daniel García (University of Oviedo, Spain)	
Francisco Ferrero Martín (University of Oviedo, Spain)	
Ignacio García (University of Oviedo, Spain)	
Marta Valledor (University of Oviedo, Spain)	
Juan C Campo Rodriguez (University of Oviedo, Spain)	
Defect Detection in Plain Weave Fabrics by Yarn Tracking and Fully Convolutional Networks	1956
Leon Weninger (RWTH Aachen University, Germany)	
Marcin Kopaczka (RWTH Aachen University, Germany)	
Dorit Merhof (RWTH Aachen University, Germany)	
A Fully Annotated Thermal Face Database and its Application for Thermal Facial Expression Recognition	1962
Marcin Kopaczka (RWTH Aachen University, Germany)	
Raphael Kolk (RWTH Aachen University, Germany)	
Dorit Merhof (RWTH Aachen University, Germany)	
Texture analysis and classification of diffuse thyroid diseases based on ultrasound images	1968
Dandan Li (Harbin Institute of Technology, P.R. China)	
Yakui Zhang (Harbin Institute of Technology, P.R. China)	
Linyao Du (The 2nd Affiliated Hospital of Harbin Medical University, P.R. China)	
Xianli Zhou (The 2nd Affiliated Hospital of Harbin Medical University, P.R. China)	
Shen Yi (Harbin Institute of Technology, P.R. China)	
Hand gesture recognition based on HOG-LBP feature	1974
Fan Zhang (Beijing Institute of Technology, P.R. China)	
Yue Liu (Beijing Institute of Technology, P.R. China)	
Location and Fault Detection of Catenary Support Components Based on Deep Learning	1980
Zhigang Liu (Southwest Jiaotong University, P.R. China)	
Junping Zhong (Southwest Jiaotong University, P.R. China)	
Lyu Yang (Southwest Jiaotong University, P.R. China)	
Kai Liu (Southwest Jiaotong University, P.R. China)	
Han Ye (Southwest Jiaotong University, P.R. China)	
Wang Liyou (Southwest Jiaotong University, P.R. China)	
Liu Wenqiang (Southwest Jiaotong University, P.R. China)	

Track: Measurement Problems in Robotics

Optimal Landmark Placement for Indoor Positioning using Context Information and Multi-sensor Data..... 1986

Valerio Magnago (University of Trento, Italy)
Paolo Bevilacqua (University of Trento, Italy);
Luigi Palopoli (University of Trento, Italy)
Roberto Passerone (University of Trento, Italy)
Daniele Fontanelli (University of Trento, Italy)
David Macii (University of Trento, Italy)

Motion Parameters Measurement of Rigid Body Based on Laser Beams 1992

Yunhui Li (Harbin Institute of Technology, P.R. China)
Ju Huo (Harbin Institute of Technology, P.R. China)
Ming Yang (Harbin Institute of Technology, P.R. China)

Autonomous Wheelchair Navigation in Unmapped Indoor Environments 1998

Harkishan S Grewal (California State University, Fullerton, USA)
Neha Jayaprakash (California State University, Fullerton, USA)
Aaron P Matthews (California State University, Fullerton, USA)
Chinmay Shrivastav (California State University, Fullerton, USA)
Kiran George (California State University, Fullerton, USA)

Track: Optical Measurement Systems, Fiber Optic Measurements

Optical chemical fiber sensor for the detection of perfluorinated compounds in water 2004

Nunzio Cennamo (University of Campania Luigi Vanvitelli, Italy);
Girolamo D'Agostino (Copernico srl, Italy)
Gianni Porto (Copernico srl, Italy)
Adriano Biasiolo (Copernico srl, Italy)
Luigi Zeni (University of Campania Luigi Vanvitelli, Italy)

Disturbance wave frequency measurement using NIR technique in horizontal annular flow 2009

Hongjun Sun (Tianjin University, P.R. China);
Mingyang Gui (Tianjin University, P.R. China);
Ning Zhao (Tianjin University, P.R. China)
Tianyu Wang (North China Electric Power University, P.R. China)

Recognition and Calibration Method for Delay-disorder FBG interrogation System based on FDML wavelength-swept Laser..... 2015

Yiming Wang (Wuhan University of Technology, P.R. China)

Measurement of the Void Fraction of Gas-Liquid Two-Phase CO₂ Flow Using Laser Attenuation Techniques 2020

Quansheng Duan (North China Electric Power University, P.R. China)
Ju Peng (North China Electric Power University, P.R. China)
Lijuan Wang (North China Electric Power University, P.R. China)
Yong Yan (University of Kent, United Kingdom (Great Britain))

Proximity Sensor using Self-mixing Effect 2025

Alessandro Pesatori (Politecnico di Milano, Italy)
Michele Norgia (Politecnico di Milano, Italy)
Federico Cavedo (Politecnico di Milano, Italy)

Track: Sensors and Transducers

Differential pressure based liquid level measurement in sloshing condition 2030

Parisa Esmaili (Politecnico di Milano, Italy)
Federico Cavedo (Politecnico di Milano, Italy)
Michele Norgia (Politecnico di Milano, Italy)

Evaluation of a CO₂ sensitive thermopile with an integrated multilayered infrared absorber by using a long path length NDIR platform 2036

Shakeel Ashraf (Mid Sweden University, Sweden)
Bakhram Gaynullin (Senseair AB, Sweden)
Claes Mattsson (Mid Sweden University, Sweden)
Henrik Rodjegard (SenseAir AB, Sweden)
Goran Thungstrom (Mid Sweden University, Sweden)

Fast and Low Power Optical CO₂-Sensors for Medical Application 2042

Martin Degner (University of Rostock, Germany)
Henning Jürß (University of Rostock, Germany)
Hartmut Ewald (University of Rostock, Germany)

U-Shaped Plastic Optical Fiber Functionalized with Metal Oxides Thin Film for H₂S Gas Sensor Applications 2047

Meysam Keley (Federal University of Rio de Janeiro, Brazil)
Fabricio Frizera Borghi (Brazilian Center of Research in Physics, Brazil)
Alex Dante (Federal University of Rio de Janeiro, Brazil)
Roberto Mok (Federal University of Rio de Janeiro, Brazil)
Pedro Silveira (Federal University of Rio de Janeiro, Brazil)
Leandro Alves Garção (Federal University of Rio de Janeiro, Brazil)
Cesar Carvalho (LIF/COPPE/UFRJ, Brazil)
Regina Allil (Brazilian Army, Brazil)
Fábio Dutra (Petrobras S.A., Brazil)
Alexandre Mello (Brazilian Center of Research in Physics, Brazil)
Marcelo Werneck (COPPE/URFJ, Brazil)

A CMOS Chip Set for Accurate Pulsed Time-of-Flight Laser Range Finding 2052

Sami Kurtti (University of Oulu, Finland)
Jan Nissinen (University of Oulu, Finland)
Jussi-Pekka Jansson (University of Oulu, Finland)
Juha Kostamovaara (University of Oulu, Finland)

Long-Time Non-Contact Water Level Measurement with a 5.8-GHz DC-Coupled Interferometry Radar 2057

Zhengyu Peng (Texas Tech University, USA)
Ashish Mishra (Texas Tech University, USA)
Justin R Davis (University of Florida, USA)
Jennifer Bridge (University of Florida, USA)
Changzhi Li (Texas Tech University, USA)

Effect of Illumination Pattern on FSS-Based Sensor Resolution 2062

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

Frequency-Dependent Streaming potential Experiments of Porous Transducer in Liquid Circular Angular Accelerometer..... 2067

Ke Ning (Beijing Institute of Technology, P.R. China)
Meiling Wang (Beijing Institute of Technology, P.R. China)
Siyuan Cheng (Beijing Institute of Technology, P.R. China)
Li Ming (Beijing Institute of Technology, P.R. China)

Online Continuous Detection of an Unbalanced Metallic Shaft Using Electrostatic Sensors 2073

Kamel Reda (University of Kent, United Kingdom (Great Britain))
Yong Yan (University of Kent, United Kingdom (Great Britain))

Eddy Current Probe for Inspection of Steel Tubes Based on Rotating Field Principle..... 2079

Ivana Čuljak (University of Zagreb, Croatia)
Davorin Ambruš (University of Zagreb, Croatia)
Marko Marušić (University of Zagreb, Croatia)
Dorijan Špikić (University of Zagreb, Croatia)
Darko Vasić (University of Zagreb, Croatia)
Vedran Bilas (University of Zagreb, Croatia)

Anti-vibration design and research of four-wire type vortex flow meter 2085

Hongjun Sun (Tianjin University, P.R. China)
Pan Yang (Tianjin University, P.R. China)
Chao Wang (Tianjin University, P.R. China)
Wuliang Yin (The University of Manchester, United Kingdom (Great Britain))

Special Session: Measurement in Industrial Applications – Intelligent Manufacturing System (IMS) using smart sensors, smart machinery and industrial internet of things

Development of active displacement detector for slight vibration measurement 2091

Po-Jui Chen (Instrument Technology Research Center, Taiwan)
Zong-Ru Yu (Instrument Technology Research Center, Taiwan)
Jung-Hsing Wang (Instrument Technology Research Center, Taiwan)
Yi-Hao Lin (Instrument Technology Research Center, Taiwan)
Wei-Jei Peng (Instrument Technology Research Center, Taiwan)
Hua-Lin Chen (Instrument Technology Research Center, Taiwan)
Wei-Yao Hsu (Instrument Technology Research Center, Taiwan)
Chia-Yen Chan (Instrument Technology Research Center, Taiwan)
Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)

Special Session: Measurements for Modern Networks and Telecommunication Systems

Characterization of Electrical Rotary Distributors for Real-Time Data Communication 2097

Federico Tramarin (National Research Council of Italy & University of Padova, Italy)
Stefano Vitturi (CNR, Italy)
Guglielmo Frigo (École Polytechnique Fédérale de Lausanne (EPFL), Switzerland)
Claudio Zunino (National Research Council of Italy, Italy)

Non-fifty Ohm X-parameter Model Measurement System for Nonlinear Amplifier Application..... 2103

HsuFeng Hsiao (National Chip Implementation Center, Taiwan)
Chih-Ho Tu (National Chip Implementation Center, Taiwan)
Da-Chiang Chang (National Chip Implementation Center, Taiwan)

Special Session: Advanced Measurement and Data Processing for Complex Engineering System Health Monitoring

Electric Vehicle Battery Temperature Measuring Method Based on Magnetic Nanoparticles 2108

Xiaonan Liu (South China University of Technology & Dongfeng Nissan Passenger Vehicle Company R&D, P.R. China)

Wenjin Chen (Dongfeng Nissan Passenger Vehicle Company R&D, P.R. China)

Jie Liu (Dongfeng Nissan Passenger Vehicle Company R&D, P.R. China)

Weihua Li (South China University of Technology, P.R. China)

Ruqiang Yan (Southeast University, P.R. China)

A deep neural network based on kernel function and auto-encoder for bearing fault diagnosis 2113

Fengtao Wang (Dalian University of Technology, P.R. China)

Bosen Dun (Dalian University of Technology, P.R. China)

Gang Deng (Dalian University of Technology, P.R. China)

Hongkun Li (Dalian University of Technology, P.R. China)

Qingkai Han (Dalian University of Technology, P.R. China)

Special Session: Progresses on methodologies and devices for Energy Harvesting in autonomous or quasi-autonomous Sensors and Transducers

RF Energy Scavenger for Battery-free Wireless Sensor Nodes 2119

Roberto La Rosa (STMicroelectronics, Italy)

Carlo Trigona (University of Catania, Italy)

Giulio Zoppi (STMicroelectronics, Italy)

Calogero Di Carlo (University of Catania, Italy)

Loreto Di Donato (University of Catania, Italy)

Gino Sorbello (University of Catania, Italy)

Track: "Hot off the Labs" – Recent Results @ I2MTC 2018

Evaluation of De-Embedding Methods for Impedance Characterization of Magnetic Nanoparticles N/A

Rafael de Medeiros (University of Campinas, UNICAMP, Brazil)

Leandro Manera (University of Campinas, UNICAMP, Brazil)

Marcos Puydinger dos Santos (University of Campinas, UNICAMP, Brazil)

Murilo Velo (University of Campinas, UNICAMP, Brazil)

Differential Evolution with Dynamic Speciation-Based Mutation for Optimizing the Deployment of Wireless Sensors Networks N/A

Libao Deng (Harbin Institute of Technology, P.R. China)

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

Liyang Qiao (Harbin Institute of Technology, P.R. China)

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

Zhongxin Sun (Weihai Dynamic Test Technology, P.R. China)

Apply Reliable Robot Fall Prediction Algorithm to Human Fall N/A

Wei Ding (Florida Polytechnic University, USA)

William Engel (Florida Polytechnic University, USA)

Navy Total Copper Analyzer Instrument for Real Time Measurement of Copper Concentrations in Situ..... N/A

Iryna Dzieciuch (SPAWAR, USA)
Michael Putnam (SPAWAR, USA)

Preliminary characterization of an optical current sensor for HVDC networksN/A

Grzegorz Fusiek (University of Strathclyde, United Kingdom (Great Britain))
Pawel Niewczas (University of Strathclyde, United Kingdom (Great Britain))

Stability Analysis of Bootstrapped Buffers With Application to Two-Wired Biopotential ElectrodeN/A

Federico N Guerrero (Universidad Nacional de La Plata, Argentina)
Marcelo Haberman (Universidad Nacional de La Plata, Argentina)
Enrique Spinelli (Universidad Nacional de La Plata, Argentina)

A Non-Contact Voltage Measurement System.....N/A

Marcelo Haberman (Universidad Nacional de La Plata, Argentina)
Enrique Spinelli (Universidad Nacional de La Plata, Argentina)

A Failure Predication Method of Power System by Using MACD and TRIX N/A

Der-Chen Huang (National Chung Hsing University, Taiwan)
Ying-Yi Chu (National Chung Hsing University, Taiwan)
Yu-Yi Chen (National Chung Hsing University, Taiwan)
Chun-Fang Hsiao (National Chung Hsing University, Taiwan)
Chi-Hung Hwang (Instrument Technology Research Center, Taiwan)

Accelerated Nearfield Microwave Imaging using Sparse Spatial Sampling N/A

Deepak Kumar (Michigan State University, USA)
Paul Probst (Michigan State University, USA)

Implementation of a Long-Lifespan Sensor Network for Infrastructure Monitoring in Remote RegionsN/A

John Lund (Western Washington University, USA)
Todd Petersen (University of Alaska Anchorage, USA)

High-speed and Large-capacity NAND Flash Array Storage System Design..... N/A

Liyang Qiao (Harbin Institute of Technology, P.R. China)
Qianhong Lu (Harbin Institute of Technology, P.R. China)
Jingchao Zhang (Harbin Institute of Technology, P.R. China)
Min He (Beijing Institute of Remote Sensing Equipment, P.R. China)

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