

IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT

A PUBLICATION OF THE IEEE INSTRUMENTATION AND MEASUREMENT SOCIETY



AUGUST 2018

VOLUME 67

NUMBER 8

IEIMAO

(ISSN 0018-9456)

REGULAR PAPERS

Algorithms, Artificial Intelligence, Soft Computing and Informatics

Robust Student's t -Based Cooperative Navigation for Autonomous Underwater Vehicles *Q. Li, Y. Ben, S. M. Naqvi, J. A. Neasham, and J. A. Chambers* 1762

Acoustics and Ultrasonics Instrumentation and Measurements

Ultrasound Transmission Spectral Compensation Using Arbitrary Position and Width Pulse Sets *L. Svilainis, A. Rodriguez-Martinez, A. Chaziachmetovas, and A. Aleksandrovas* 1778

A/D and D/A Conversion, Analog and Digital Instrumentation

A Cyclostationarity-Based Method for Jitter Measurement in Waveform Recorders *P. Daponte, L. D. Vito, F. Picariello, and S. Rapuano* 1786

Analysis of a Linearizing Direct Digitizer With Phase-Error Compensation for TMR Angular Position Sensor *N. K. Bhaskarrao, A. C. Sreekantan, and P. K. Dutta* 1795

Analog and Digital Data, Image and Signal Processing

Synchro-Measurement Application Development Framework: An IEEE Standard C37.118.2-2011 Supported MATLAB Library *M. Naglic, M. Popov, M. A. M. M. van der Meijden, and V. Terzija* 1804

Controls and Control Systems Instrumentation and Measurement

Analysis and Experiment of Self-Differential Eddy Current Displacement Sensor for AMBs Used in Molecular Pump *K. Wang, L. Zhang, B. Han, and S. Chen* 1815

Instrumentation for Measurement of Electric Power Systems, Energy Metering, Electric Power Quality

Fast-TFM—Multifrequency Phasor Measurement for Distribution Networks *C. Narduzzi, M. Bertocco, G. Frigo, and G. Giorgi* 1825

Uncertainty Analysis, Accuracy, Precision and Parameter Estimation

Online Estimation of the Electrochemical Impedance Spectrum and Remaining Useful Life of Lithium-Ion Batteries *A. Guha and A. Patra* 1836

Built-in Self-Test, Design-for-Testing, Fault Diagnosis and Fault-Tolerance

An On-Line Condition Monitoring System for Incipient Fault Detection in Double-Cage Induction Motor *M. A. Hmida and A. Braham* 1850

Parallel-Series Multiobjective Genetic Algorithm for Optimal Tests Selection With Multiple Constraints *C. Yang* 1859

(Contents Continued on Page 1761)



Measurement of Materials and Applications

All 3-D Printed Free-Space Setup for Microwave Dielectric Characterization of Materials *E. Hajisaeid, A. F. Dericioglu, and A. Akyurtlu* 1877

Mechatronics, Industrial Applications and Robotics

Vibration-Based Intelligent Fault Diagnosis for Roller Bearings in Low-Speed Rotating Machinery *L. Song, H. Wang, and P. Chen* 1887

Medical and Biomedical Instrumentation and Applications

Effect of Pressure on Skin-Electrode Impedance in Wearable Biomedical Measurement Devices *B. Taji, A. D. C. Chan, and S. Shirmohammadi* 1900

Measurement System for Attitude of Anterior Pelvic Plane and Implantation of Prosthesis in THR Surgery *H. Chen, Z. Cao, S. Su, J. Liu, and Z. Wang* 1913

Measurement Techniques

Research on Lightning Current Sensor Coil Based on Lightning Space Magnetic Field *H. Mei, S. Yan, C. Zhao, and L. Wang* 1922

3-D Temperature Reconstruction of the Flame Field in a Tangentially Fired Furnace *Z. Wei, H. Ge, L. Wang, and Z. Li* 1929

Realization of Accurate On-Wafer Measurement Using Precision Probing Technique at Millimeter-Wave Frequency *R. Sakamaki and M. Horibe* 1940

Noncontact AC Voltage Measurements: Error and Noise Analysis *M. A. Haberman and E. M. Spinelli* 1946

Optical Instrumentation, Measurement and Systems

Design and Development of a Modular, Multichannel Photoplethysmography System *K. Budidha, V. Rybynok, and P. A. Kyriacou* 1954

Sensors, Sensor Fusion and Transducers

Enhancing Localization Accuracy of MEMS-INS/GPS/In-Vehicle Sensors Integration During GPS Outages *Q. Xu, X. Li, and C.-Y. Chan* 1966

In-Motion Filter-QUEST Alignment for Strapdown Inertial Navigation Systems *X. Xu, X. Xu, T. Zhang, and Z. Wang* 1979

An Optical Fiber Fabry-Perot Microphone Based on Corrugated Silver Diaphragm *B. Liu, H. Zhou, L. Liu, X. Wang, M. Shan, P. Jin, and Z. Zhong* 1994

Virtual Measurements and Systems and Synthetic Instrumentation

Temperature Prediction Model for Roller Kiln by ALD-Based Double Locally Weighted Kernel Principal Component Regression *N. Chen, J. Dai, X. Yuan, W. Gui, W. Ren, and H. N. Koivo* 2001
