

13th IMEKO TC4 Symposium on Measurements for Research and Industrial Applications 2004

Held Together with the 9th Workshop on ADC Modeling and Testing

**Athens, Greece
29 September – 1 October 2004**

ISBN: 978-1-63439-184-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2004) by the International Measurement Confederation (IMEKO)
All rights reserved.

Printed by Curran Associates, Inc. (2014)

For permission requests, please contact the International Measurement Confederation (IMEKO)
at the address below.

IMEKO Secretariat
P.O. Box 457
H-1371 Budapest
Hungary

Phone/Fax: +36 1 353 1562

imeko@t-online.hu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

TRANSIENT STATES OF THE TRANSMITTERS IN THE 4-20 MA MEASUREMENT LINES	1
<i>Boleslaw Dudojc</i>	
A NEW METHOD OF MEASUREMENT OF THE THERMAL RESISTANCE OF THE SILICON P-N DIODES	6
<i>Janusz Zarebski, Krzysztof Górecki</i>	
EFFICIENT EVALUATION OF ELF FIELD	10
<i>M. Bertocco, C. Narduzzi, E. Sieni, A. Sona</i>	
THE SURVEY OF ELECTROMAGNETIC ENVIRONMENT NEAR RF TRANSMITTERS	16
<i>Valeriu David, Alexandru Salceanu, Mihai Cretu, Eduard Lunca</i>	
REAL TIME DIGITAL PULSE PROCESSING APPLIED TO HEAVY ION IRRADIATION	21
<i>Cristian Zet, Cristian Fosalau, Lars Westerberg, Reimar Spohr</i>	
THE LINK BETWEEN THE NEAR-END AND THE FAR-END CROSSTALK COUPLING CONSTANTS	27
<i>Patrick Boets, Leo Van Biesen</i>	
MEASURING SOLAR RADIO BURSTS IN THE 20-650 MHZ RANGE. THE IMPROVED ARTEMIS IV MULTICHANNEL SOLAR RADIO SPECTROGRAPH OF THE UNIVERSITY OF ATHENS	34
<i>A. Kontogeorgos, P. Tsitsipis, C. Caroubalos, X. Moussas, P. Preka-Papadema, A. Hilaris, V. Petoussis, J.-L. Bougeret, C. E. Alissandrakis, G. Dumas, J. Polygiannakis</i>	
ANN BASED DEMODULATOR FOR UMTS SIGNAL MEASUREMENTS	40
<i>Domenico Luca Carni, Domenico Grimaldi</i>	
PHASE NOISE MEASUREMENT IN SINGLE CARRIER DIGITAL MODULATIONS	46
<i>Domenico Luca Carni, Domenico Grimaldi</i>	
SPECTRUM ANALYSER MONITORING OF WIRELESS COMMUNICATIONS NETWORKS	52
<i>Claudio Narduzzi, Paolo Attilio Pegoraro, Luigi Prigol</i>	
RELATIVE CALIBRATION OF INERTIAL SEISMOMETERS	58
<i>Emil Farkas, Iuliu Szekely</i>	
THE GOERTZEL FILTER-BANK USAGE IN THE NON-STATIONARY IMPEDANCE MEASUREMENT	64
<i>Grzegorz Lentka, Marek Niedostatkiewicz</i>	
FACTORS DETERMINING THE PRODUCTION TESTING OF HIGH RELIABILITY INTERFERENCE SUPPRESSOR CAPACITORS	70
<i>Lech Hasse, Krzysztof Rogala, Ludwik Spiralski, Janusz Turczynski</i>	
EVALUATION OF MEASUREMENT UNCERTAINTY USING BAYESIAN INFERENCE	76
<i>Gaetano Iuculano, Gabriella Pellegrini, Andrea Zanobini</i>	
CALCULATION OF EXPANDED UNCERTAINTIES WITHOUT KNOWLEDGE OF COVERAGE FACTOR	82
<i>M. J. Korczynski, A. Hetman</i>	
MEASUREMENT OF ELECTRICAL ENERGY UNDER NON-SINUSOIDAL VOLTAGE AND CURRENT - CONDITIONS AND REQUIREMENTS	88
<i>Zygmunt Kusmirek, M. Jerzy Korczynski</i>	
FREQUENCY PERFORMANCE OF HAMON TRANSFER STANDARDS	92
<i>Jaroslav Boháček</i>	
A COMPARATIVE ANALYSIS OF FUZZY T-NORM APPROACHES TO THE MEASUREMENT UNCERTAINTY EVALUATION	96
<i>Claudio De Capua, Emilia Romeo</i>	
PARTIAL DISCHARGES CALIBRATOR	101
<i>Martin Krž</i>	
CALIBRATION OF 100 MO HAMON RESISTOR USING CURRENT-SENSING WHEATSTONE BRIDGE	105
<i>Ivan Lenicek, Roman Malaric, Alan Šala</i>	
A GUARDED SWITCHING SYSTEM FOR AUTOMATIC SELECTION OF HIGH VALUE RESISTORS UNDER CALIBRATION	110
<i>P. P. Capra, F. Galliana, E. Gasparotto</i>	
MAINTENANCE OF THE REFERENCE RESISTANCE STANDARDS OF THE PRIMARY ELECTROMAGNETIC LABORATORY IN CROATIA	116
<i>Damir Ilic, Mario Krešic</i>	

USE OF PRECISE DIGITAL VOLTMETERS FOR IMPEDANCE MEASUREMENTS	123
<i>Damir Ilic, Ivan Lenicek</i>	
ON THE INFORMATION FLOW OF MEASURING SYSTEMS AND THE INFLUENCE OF SELF-CALIBRATION	129
<i>Uwe Frühauf</i>	
MEASURING PROCEDURES FOR SEAKEEPING TESTS OF LARGE-SCALED SHIP MODELS AT SEA.....	135
<i>G. J. Grigoropoulos, G. M. Katsaounis</i>	
METROLOGICAL CONFIRMATION OF THE INDUSTRIAL MEASUREMENT SYSTEMS	140
<i>Roman Tabisz</i>	
TEST LIMITATIONS INDUCED BY FAULT-DRIVEN INSTABILITY OF ANALOG CIRCUITS	146
<i>Wojciech Toczek</i>	
INVESTIGATION OF POLARIZATION PROPERTIES OF FIBER SEGMENT IN THERMAL FIELD.....	152
<i>Jan Maschke, Cestmír Vlcek</i>	
AUTOMATED REVERSING SWITCH AND MONITOR FOR HIGH ACCURACY VOLTAGE STANDARDS.....	158
<i>P. P. Capra, A. Sosso, D. Serazio</i>	
USING FPGAS FOR BUILDING RECONFIGURABLE SYMBOLIC SENSORS.....	163
<i>Radu Varbanescu, Ana Lucia Varbanescu</i>	
FULLY DIGITAL FLUXGATE MAGNETOMETER – FIRST RESULTS.....	169
<i>A. Cerman, A. Kuna, P. Ripka</i>	
VIRTUAL STAND FOR TESTING STEPPING MOTORS USED AS INCREMENTAL ENCODER.....	173
<i>C. Donciu, M. Cretu, I. Prisecaru, M. Temneanu</i>	
APPLICATION OF ISOLATION AMPLIFIER IN MEASUREMENT OF FLOATING AC SIGNAL.....	177
<i>Luka Ferkovic</i>	
A NEW TECHNIQUE FOR GLASS QUALITY CONTROL.....	181
<i>F. Adamo, F. Attivissimo, N. Giaquinto, M. Savino</i>	
DIGITAL ARCHITECTURES FOR ADAPTIVE PROCESSING OF MEASUREMENT DATA.....	188
<i>Andrea Boni, Dario Petri, Ivan Biasi</i>	
LEARNING REMOTE TEMPERATURE MEASUREMENT IN INSTRUMENTATION LABORATORY.....	194
<i>L. Breniuc, C. G. Haba, A. Salceanu</i>	
REMOTE MONITORING AND CONTROL OF PHOTOVOLTAIC PLANTS BY MEANS OF GSM SYSTEM.....	200
<i>M. Gagliarducci, D. A. Lampasi, L. Podestà</i>	
EVENT DIFFERENTIATION IN AVERAGED SIGNALS BY METHOD OF THE CREDITS	206
<i>Jan Chládek, Pavel Jurák, Josef Halánek, Igor Nestrašil, Robert Roman, Ivan Rektor</i>	
TESTING METHOD OF ANALOG PARTS FOR MIXED SIGNAL MICROSYSTEMS BASED ON MICROCONTROLLERS.....	211
<i>Zbigniew Czaja</i>	
SITE-TO-SITE REPRODUCIBILITY IN CONDUCTED IMMUNITY TESTS ON PC-BASED DATA ACQUISITION SYSTEMS	217
<i>G. Betta, D. Capriglione, C. Spataro, G. Tinè</i>	
$\Sigma\Delta$-BASED REMOVAL OF UNWANTED SPECTRAL COMPONENTS FOR SINEWAVE SYNTHESIS.....	223
<i>A. Sabatini, A. Moschitta, P. Carbone</i>	
DOMINANT NOISE SOURCES IDENTIFICATION AS COST-EFFECTIVE WAY IN TOTAL SOUND POWER REDUCTION	227
<i>Slobodan Jankovic, Miodrag Ivkovic</i>	
THE INFLUENCE OF SAMPLING PARAMETERS ON ACCURACY OF CAPACITANCE MEASUREMENT IN THE METHOD BASED ON DSP	233
<i>Grzegorz Lentka, Jerzy Hoja</i>	
NEW DSP-BASED ULTRASONIC DISTANCE/LEVEL METER.....	237
<i>Leopoldo Angrisani, Aldo Baccigalupi, Rosario Schiano Lo Moriello</i>	
BINARY SEQUENCES FOR TEST SIGNAL GENERATION OBTAINED BY EVOLUTIONARY OPTIMIZATION	243
<i>D. A. Lampasi, L. Podestà, P. Carbone</i>	
SNR LIDAR SIGNAL IMPROVEMENT BY ADAPTIVE TECHNIQUES.....	249
<i>Aimè Lay-Ekuakille, Antonio V. Scarano</i>	

DESIGN, IMPLEMENTATION AND PERFORMANCE EVALUATION OF A FULLY PROGRAMMABLE TWIN-CHANNEL TIME INTERVAL GENERATOR.....	255
<i>Gaetano Pasini, Pier Andrea Traverso, Domenico Mirri, Paolo Rossin</i>	
THE PRINCIPLE OF NEW SIGMA DELTA MODULATION TECHNIQUE BASED UPON THE USE OF A FLIP-FLOP.....	260
<i>Martin Kollár, Ján Šaliga</i>	
MEASUREMENT OF RMS VALUES OF NON-COHERENTLY SAMPLED SIGNALS.....	266
<i>Martin Novotny, Milos Sedlacek</i>	
SIGNAL DE-NOISING USING WAVELET TRANSFORM AND OTHER METHODS.....	272
<i>Marcel Kreidl, Milos Sedlacek</i>	
PHASE DIFFERENCES DETERMINATION BETWEEN THE FUNDAMENTAL AND HIGHER HARMONIC COMPONENTS AT NON-COHERENT SAMPLING.....	278
<i>David Slepicka</i>	
CAPACITANCE MEASURING SYSTEM BASED ON MODIFIED SIGMA-DELTA CONVERTER.....	284
<i>Milan Stork</i>	
VOLTAGE TO FREQUENCY CONVERTER AND FRACTIONAL FREQUENCY DIVIDER BASED ON MODIFIED SIGMA-DELTA CONVERTER.....	290
<i>Milan Stork</i>	
IMPROVEMENT OF MICROCALORIMETER MEASUREMENTS THROUGH DATA CORRECTION.....	296
<i>Emil Vremera, Luciano Brunetti</i>	
A PROPOSED METHOD FOR DECREASING THE LOSSES OF THE SAMPLE NUMBER DURING A WEIGHT FILTRATION.....	302
<i>Artur Wollek</i>	
DECODING OF THE FSK SIGNAL WITH NOISE AND DISTORTION WITH THE USE OF COEFFICIENTS OF THE TIME-FREQUENCY TRANSFORM.....	308
<i>Dorota Rabczuk, Beata Palczynska, Ludwik Spiralski</i>	
ADAPTING MEDIAN FILTERING TO MEASUREMENT SIGNALS.....	311
<i>Janusz Sawicki</i>	
CASCADED RECTANGULAR WINDOWS FOR LEAKAGE REDUCTION IN SPECTRAL ANALYSIS.....	316
<i>Pier Andrea Traverso, Domenico Mirri, Gaetano Pasini, Gaetano Iuculano</i>	
TOWARD A STANDARDIZED MULTI-SINEWAVE FIT ALGORITHM.....	322
<i>Tomas Andersson, Peter Händel</i>	
OPTIMAL SAMPLING STRATEGIES FOR BAND-PASS MEASUREMENT SIGNALS.....	328
<i>Leopoldo Angrisani, Mauro D'Arco, Rosario Schiano Lo Moriello, Michele Vadursi</i>	
SOME RESULTS ON THE VALIDATION OF WIDROW'S MODEL FOR SINUSOIDAL SIGNALS.....	334
<i>J. F. M. L. Mariano, Helena Ramos</i>	
SCHEDULING SEQUENTIAL PROCESSES IN TREE NETWORKS.....	338
<i>Calin Ciufudean, Constantin Filote, Adrian Graur, George Mahalu</i>	
WORKLOAD MEASUREMENTS AND SYNCHRONISATION INTO A DISTRIBUTED MEASUREMENT LABORATORY.....	343
<i>Andrea Condarcuri, Domenico Grimaldi, Antonino Panella</i>	
VALUE ASSESSMENT OF MEASUREMENTS IN LARGE MEASUREMENT INFORMATION SYSTEMS.....	350
<i>Heikki Jokinen, Risto Ritala</i>	
A METHODOLOGY FOR IMPROVING THE PERFORMANCE OF AGENT-BASED APPLICATIONS THROUGH THE IDENTIFICATION OF THE OPTIMAL NUMBER OF MOBILE AGENTS.....	356
<i>S. Kalogeropoulos, G. Karetsos, A. Anagnostopoulos</i>	
PERFORMANCE EVALUATION OF MOBILE AGENT TECHNOLOGY FOR THE CONFIGURATION AND AUDITING OF SLSS IN DIFFSERV ENABLED IP NETWORKS.....	363
<i>Theodore Kotsilieris, Stelios Kalogeropoulos, George Karetsos, Vassilis Loumos, Eleftherios Kayafas</i>	
A SOFTWARE FOR THE EVALUATION OF THE STABILITY OF MEASURING STANDARDS USING BAYESIAN STATISTICS.....	369
<i>G. M. Rocha, G. A. Kyriazis</i>	
ESTIMATION OF AMBIENT ILLUMINATION VARIATION BETWEEN COLOUR IMAGES IN THE PRESENCE OF CONTENT CHANGES FOR REAL-TIME ILLUMINATION-INVARIANT CHANGE DETECTION.....	375
<i>Theodoros Alexandropoulos, Vassili Loumos, Eleftherios Kayafas</i>	

A LOW-POWER AUTOMATED MEASUREMENT SYSTEM FOR PULSED EDDY CURRENT BASED INSPECTION OF OIL-WELL CASING	382
<i>Davorin Ambruš, Vedran Bilas, Darko Vasic</i>	
REAL-TIME THERMO GRAPHIC ANALYSIS OF VOLCANIC ERUPTIONS	386
<i>Bruno Andò, Emilio Pecora, Nicola Pitrone</i>	
A QUALITY MEASUREMENT METHODOLOGY IN PUBLIC UTILITIES: A WATER SUPPLY COMPANY CASE	391
<i>Claudio De Capua, Stefano De Falco, Rosario Morello, Nello Polese</i>	
CONDUCTIVITY MEASUREMENTS AND INTERPRETATIONS REGARDING ANTISTATIC MATERIALS	396
<i>Peris G. Halaris, Constantinos G. Karagiannopoulos, Perikles D. Bourkas</i>	
MODELLING OF EFFECTS OF EXTREME HYDROLOGICAL EVENTS ON THE PROTECTIVE DIKE CONSTRUCTION	402
<i>Jana Parilková, Ivan Krejčí</i>	
SMART OIL AND CONDUCTIVITY SENSOR FOR WATER QUALITY MONITORING	408
<i>M. Dias Pereira, O. Postolache, P. Girão, Helena Ramos</i>	
MODELLING STUDY FOR CHARACTERIZING AND PREDICTING URBAN AIR POLLUTION	414
<i>Gregorio Andria, Giuseppe Cavone, Anna M. L. Lanzolla, Alessandro Rubino</i>	
A COMPLEX SYSTEM FOR ENVIRONMENTAL MONITORING WITH A PROTOTYPE DATA ACQUISITION BOARD	419
<i>M. C. Brinzila, C. Fosalau, E. Lunca, M. Cretu</i>	
QT INTERVAL DETECTION AND VERIFICATION METHODS	422
<i>P. Jurák, J. Haláček, V. K. Somers, M. Eisenberger, P. Frána, J. Nykodým, P. Leinveber, T. Kára</i>	
ELM IMAGE PROCESSING FOR MELANOCYTIC SKIN LESION DIAGNOSIS BASED ON 7-POINT CHECKLIST: A PRELIMINARY DISCUSSION	427
<i>G. Di Leo, G. Fabbrocini, C. Liguori, A. Pietrosanto, M. Scavlenzi</i>	
TIME SERIES PREDICTION FOR BIOMEDICAL MEASUREMENTS USING FUZZY LOGIC	433
<i>Claudio De Capua, Emilia Romeo</i>	
SOME NEW RESULTS ON MOBILE PHONE RADIATION EFFECT ON LEMNA MINOR	438
<i>Kresimir Malaric, Mirta Tkalec, Roman Malaric</i>	
HRV AND BPV NEURAL NETWORK MODEL WITH WAVELET BASED ALGORITHM CALIBRATION	441
<i>G. Postolache, L. Silva Carvalho, O. Postolache, P. Girão, I. Rocha</i>	
INTEGRATED BLOOD FLOWMETER USING MICROMACHINING TECHNOLOGY	447
<i>Yukie Omori, Renshi Sawada, Susumu Sakano</i>	
INTELLIGENT ANALYSIS OF GENOMIC MEASUREMENTS	453
<i>I. N. Flaounas, D. K. Iakovidis, D. E. Maroulis, S. A. Karkanis</i>	
A LOW-COST MEASUREMENT SYSTEM FOR THE 3-D EVALUATION OF CAROTID PLAQUES BASED ON ULTRASOUND IMAGES	458
<i>L. Ferrigno, V. Paciello, A. Paolillo</i>	
EXPERIMENTAL VERIFICATION OF THE CAD ANALYSIS AND DESIGN RESULTS OF COMBINED CURRENT-VOLTAGE INSTRUMENT TRANSFORMER	464
<i>Marija Cundeva, Ljupco Arsov</i>	
DIGITAL POWER AND ENERGY MEASUREMENT	470
<i>Peter Fuchs, Ján Hribík, Miloslav Hruškovic, Branislav Lojko, Rastislav Michálek</i>	
INSTANTANEOUS AVERAGE ACTIVE POWER MEASUREMENT FOR BUILDING ENERGY MANAGEMENT SYSTEM	475
<i>R. Micheletti, R. Pieri</i>	
A FEW REMARKS ABOUT NOTCHING ANALYSIS - CASE STUDY	481
<i>Tomasz Tarasiuk, Mariusz Szweda</i>	
POWER MEASUREMENT IN THE NON-COHERENT SAMPLING	487
<i>Dušan Agrež</i>	
DETERMINING ESD THREATS FOR A HUMAN-FURNITURE MODEL IN MOTOR VEHICLES	493
<i>Alexandru Salceanu, Mihai Cretu, Valeriu David, Eduard Lunca</i>	
NEW DIGITAL SIGNAL-PROCESSING APPROACHES FOR MEASURING POWER CCDF CURVES	496
<i>Leopoldo Angrisani, Antonio Langella, Michele Vadursi</i>	
MEASURING AND INTERPRETING THE CMOS IC VARIABLE INPUT IMPEDANCE VERSUS ESD STRESS	502
<i>Alexandru Salceanu, Valeriu David, Mihai Cretu</i>	
SOME REMARKS ON MEASUREMENT OF TIME	505
<i>Andrzej Dobrogowski</i>	

QUANTITIES TRANSFORMATION: GENERAL TECHNIQUES AND ACCURACY IMPROVEMENT	509
<i>Vladimir Kneller</i>	
THE METROLOGICAL CHARACTERIZATION AND OPTIMIZATION OF A LOW COST MEASUREMENT SYSTEM FOR INDUCTANCE TOMOGRAPHY ON CONDUCTIVE MATERIALS.....	515
<i>Andrea Bernieri, Luigi Ferrigno, Marco Laracca, Salvatore Ventre</i>	
VALIDATION OF THE NEW AUTOMATIC SYSTEM FOR AC VOLTAGE COMPARISONS	522
<i>Umberto Pogliano, Gian Carlo Bosco, Marco Lanzillotti</i>	
A CENTRONICS BASED TRANSDUCER INDEPENDENT INTERFACE (TII) FULLY COMPLIANT WITH 1451.2 STD.....	527
<i>Helena Ramos, M. Pereira, V. Viegas, O. Postolache, P. Girão</i>	
SENSORS FOR CONTACTLESS ESTIMATION OF ICE CONCENTRATION IN “ICE SLURRY” FLUIDS	533
<i>Salvatore Baglio, Vito Caruso, Nicola Pitrone, Nicolò Savalli</i>	
ON LVDT RESPONSE USING GLASS COVERED WIRES.....	538
<i>V. Karagiannis, D. Bargiotas, S. Voliotis, C. Manassis</i>	
FLUID VELOCITY PROFILE METERS USING FESIB GLASS COVERED WIRES.....	542
<i>C. Manassis, V. Karagiannis, D. Bargiotas, S. Voliotis, T. Maris</i>	
RESONANCE TECHNIQUES FOR INDUCTIVE SENSOR APPLICATIONS	546
<i>N. Kontos, L. Theodorakis, E. Hristoforou</i>	
FREQUENCY AND TEMPERATURE DEPENDENCE OF THE DIELECTRIC CONSTANT IN BAI-XSRXTIO3 PELLETS	552
<i>S. Vaitsi, E. Hristoforou</i>	
THE TRIANGULATION METHOD OF CONTACT-LESS DIMENSION MEASUREMENT USING AN AREA CMOS IMAGING SENSOR.....	557
<i>Jan Fischer, Tomáš Radil, Jan Šedivý</i>	
LOW POWER NDIR-CO₂-SENSOR FOR BUILDING AUTOMATION	563
<i>Michael Gürtner, Norbert Neumann, Friedrich Schneider</i>	
OPTIMISATION OF LOW FREQUENCY EDDY CURRENT SENSORS USING IMPROVED INDUCTIVE COILS AND HIGHLY SENSITIVE AMR AND GMR SENSOR MODULES.....	569
<i>S. Cherepov, O. Hesse, G. Mook, S. Pankratyev, V. Uchanin</i>	
ELECTRONICS FOR MI CURRENT SENSOR	578
<i>Michal Malátek, Pavel Ripka, Petr Kašpar, Antonín Platil, Ludek Kraus</i>	
AMBULATORY MEASUREMENTS OF DIMENSIONAL QUANTITIES BY LASER TRIANGULATION UNDER STRUCTURED LIGHTING	582
<i>Christian Eugène, Michaël Demeyere</i>	
ON THE LOOP SENSORS FOR THE ELECTROMAGNETIC FIELD MEASUREMENT	588
<i>Valeriu David, Mihai Cretu, Alexandru Salceanu</i>	
A NOVEL CURRENT SENSOR USING MAGNETOSTRICTIVE AMORPHOUS WIRES	593
<i>Cristian Fosalau, Cristian Zet, Marinel Temneanu, Mihai Antoniu</i>	
A GRAPHICAL APPROACH TO ESTIMATION OF GAS CONCENTRATION WITH SNO₂ SENSORS.....	597
<i>W. Domanski, P. Chaitas, J. Zakrzewski, Th. Laopoulos</i>	
LOAD SENSORS BASED ON THE MAGNETOSTRICTIVE DELAY LINE TECHNIQUE	603
<i>D. Bargiotas, S. Voliotis, V. Karagiannis, C. Manassis</i>	
THE ESTIMATION OF UNCERTAINTY BY THE UTILIZATION OF VALIDATION AND QUALITY CONTROL DATA, LEAD IN GASOLINE BY AAS.....	607
<i>Stefica Celap</i>	
UNCERTAINTY AS THE COMPONENT OF THE MEASUREMENT RESULT IN MICROPROCESSOR INSTRUMENTS.....	612
<i>Romuald Masnicki, Janusz Mindykowski</i>	
UNCERTAINTY IN MEASURING THE NOISE FACTOR OF CASCADE-CONNECTED LINEAR TWO-PORTS.....	618
<i>Karol Korcz, Beata Palczynska, Ludwik Spiralski</i>	
NOISE FIGURE MEASUREMENT IN HIGHLY MISMATCHED SYSTEMS.....	624
<i>Vaclav Papez, Stanislava Papezova</i>	
VIRTUAL MEASUREMENT INSTRUMENTS: TRACEABILITY FUNDAMENTALS AND METHODS.....	630
<i>Valery A. Granovsky</i>	

CONDUCTING CALIBRATION MEASUREMENTS BASED ON THE VIRTUAL STANDARDS® TECHNOLOGY	634
<i>S. M. Yermishin, A. V. Lopatin</i>	
A VIRTUAL INSTRUMENT FOR REMOTE MONITORING OF ELECTROMAGNETIC FIELD	639
<i>E. Lunca, M. Cretu, V. David, C. Donciu</i>	
COMPUTERIZED SYSTEM FOR TESTING AND FORMATION THE SPEED OF BACKWARD PUSH OF SPORTSMEN	643
<i>Dan Milici</i>	
THE ADVANTAGES OF IMPLEMENTATION AT MULTIMEDIA TECHNIQUES IN INSTRUMENTATION AREA	648
<i>Mariana Milici</i>	
VIRTUAL INSTRUMENT AIMING TO EXTEND THE CAPABILITIES OF THE SPECTRUM ANALYZERS	653
<i>E. Lunca, A. Salceanu, S. Hanganu, C. Donciu</i>	
A TECHNIQUE FOR REMOTE MANAGEMENT OF INSTRUMENTATION BASED ON WEB SERVICE	657
<i>Pasquale Daponte, Claudio De Capua, Annalisa Liccardo</i>	
FROM ERRORS TO UNCERTAINTIES IN BASIC COURSE IN ELECTRICAL MEASUREMENTS	663
<i>Vladimir Haasz, Milos Sedlacek</i>	
TEACHING COMMUNICATION PROTOCOLS USED IN INSTRUMENTATION LABORATORY	669
<i>C. G. Haba, L. Breniuc</i>	
AN EDUCATIONAL LABORATORY FOR REMOTE INSTRUMENTATION PROGRAMMING BASED ON LABWINDOWS/CVITM ENVIRONMENT	674
<i>A. Baccigalupi, F. Cennamo, A. Masi</i>	
MEASUREMENTS QUALITY ASSURANCE IN TECHNICAL UNIVERSITIES	680
<i>Edi Kulderknup</i>	
A DISTRIBUTED MONITORING SYSTEM FOR POWER QUALITY	686
<i>C. Donciu, C. Schreiner, M. Cretu, E. Lunca</i>	
LOW COST DEVICE FOR LIGHT FLICKER MEASUREMENT	690
<i>Daniele Gallo, Carmine Landi, Nicola Pasquino</i>	
NEW SYNTHETIC POWER QUALITY INDEXES AND ASSOCIATED MEASUREMENT PROCEDURES	696
<i>Claudio De Capua, Annalisa Liccardo, Emilia Romeo</i>	
NARROW SPIKES DETECTION FROM DISTORTED SIGNALS	701
<i>C. Donciu, M. Cretu, S. Hanganu, E. Lunca</i>	
RANDOM COMPONENTS INFLUENCE ON THE VALUES CHARACTERISING PERIODIC DISTURBANCES IN LOW VOLTAGE SUPPLY LINES	705
<i>Stanislaw Galla, Beata Palczynska, Ludwik Spiralski</i>	
HIGH ACCURACY SELECTIVE ELEMENT FOR ELECTRIC POWER QUALITY INDEXES MEASUREMENT	710
<i>S. Taranov, Y. Tesik, A. Olencki</i>	
MONITORING OF SYSTEM PERFORMANCES OF A FULL THERMAL ENERGY PLANT – UNCERTAINTY EVALUATIONS	716
<i>G. Andria, L. Filotico, A. M. L. Lanzolla, F. Piccininni, T. Scialpi</i>	
WIRELESS SENSOR NETWORK FOR POWER QUALITY MONITORING ACCORDING TO IEC 61000-4-30	722
<i>A. Bernieri, L. Ferrigno, M. Laracca, P. Verde</i>	
AN ADVANCED LABORATORY ARCHITECTURE FOR METROLOGICAL CONFIRMATION OF MEASUREMENT DEVICE FOR POWER QUALITY EVALUATION	729
<i>Daniele Gallo, Carmine Landi, Nicola Pasquino, Nello Polese</i>	
A VIRTUAL ENERGY ANALYSER FOR HARMONIC MEASUREMENTS ON DISCHARGE LAMPS	736
<i>Charis N. Orfanos, Frangiskos V. Topalis</i>	
Author Index	