

20th IMEKO World Congress 2012

**Busan, Republic of Korea
9-14 September 2012**

Volume 1 of 3

ISBN: 978-1-62748-190-8

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© (2012) by the International Measurement Federation (IMEKO)
All rights reserved.

Printed by Curran Associates, Inc. (2013)

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

IMEKO-International Measurement Federation 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

Volume 1

LOW COST THICK-FILM SENSOR WITH HIGH SENSITIVITY AND LOW CREEP FOR DYNAMIC FORCE MEASUREMENTS	1
<i>D. Crescini, P. Crescini</i>	
IMPROVEMENTS IN CONTACTLESS TURBIDIMETERS WITH FREE-FALLING STREAM TECHNOLOGY	7
<i>V. Fetisov, O. Dmitriyev</i>	
PROFICIENCY TESTING FOR CALIBRATION LABORATORIES	12
<i>Philip Briggs</i>	
THERMAL EXPANSION COEFFICIENT OF WATER FOR VOLUMETRIC CALIBRATION	17
<i>Nieves Medina</i>	
COMPARATIVE STUDY OF VOLTAGE DEPENDENCE AND SELF HEATING IN PRECISION HV DIVIDER	22
<i>K. B. Ravat</i>	
CAPABILITY OF MEASUREMENT PROCESSES BASED ON ISO/FDIS 22514-7 AND VDA 5	24
<i>Edgar Dietrich</i>	
CHEBYSHEV FITTING OF COMPLEX SURFACES FOR PRECISION METROLOGY	29
<i>Xiangchao Zhang, Min Xu, Hao Zhang, Xiaoying He, Xiangqian Jiang</i>	
NOVEL APPROACH TO MEASUREMENT AUTOMATISATION AND RESULTS PROCESSING	34
<i>Vytautas Giniotis, Mindaugas Rybokas, Lauryna Siaudinyte, Deividas Sabaitis, Gintaras Dmitrijev</i>	
PROBLEMS OF DYNAMIC PRESSURE MEASUREMENT	35
<i>Andreas Hebestreit</i>	
BIOPHYSICAL SUBSTANTIATION OF THE INFORMATION FUNCTION OF THE HEART	37
<i>V. Uspenskiy</i>	
SIMULTANEOUS SUB-MULTIPLE CALIBRATION FOR BOTH MASS AND VOLUME OF WEIGHTS USING A MASS COMPARATOR SYSTEM WITH AN AIR-TIGHT CHAMBER	41
<i>M. Ueki, Jianxin Sun, K. Ueda</i>	
ANALYSIS AND DISCUSSION ON R50-1 3CD-2010	47
<i>Songtao Huang, Shuonan Mao, Yuming Ma, Daosheng Chen</i>	
QUANTITATIVE ASSESSMENT OF MUSCLE ACTIVITY IN MAMMOGRAPHY POSITIONING	50
<i>Mieko Uchiyama, Yongbum Lee, Du-Yih Tsai, Kiyoko Kazama, Yasuko Minagawa, Mieko Sadakata, Mitsuko Sayama</i>	
X-RAY COMPUTED TOMOGRAPHY APPLICATIONS AND ISSUES AS A PRECISION DIMENSIONAL METROLOGY TECHNIQUE	54
<i>C. R. Baldo, D. C. B. Silva, D. M. Yamanaka</i>	
TACTILE-OPTICAL MICROPROBES APPLIED TO DIMENSIONAL MEASUREMENT AND EVALUATION OF MICROFEATURES	57
<i>C. R. Baldo, D. M. Yamanaka, D. C. B. Silva</i>	
IMPROVEMENT OF IMAGE QUALITY AND RADIATION DOSE REDUCTION IN DIGITAL RADIOGRAPHY USING AN INTEGRATED WAVELET-TWAVELET-BASED METHOD	60
<i>Haruyuki Watanabe, Du-Yih Tsai, Yongbum Lee, Eri Matsuyama, Katsuyuki Kojima</i>	
PROGRESS ON MULTISCALE REPRESENTATION OF CARDIAC VALVE MORPHOGENESIS	64
<i>R. Summers, T. Abdulla, J-M. Schleich</i>	
IMPROVING IMAGE QUALITY OF DIGITAL MAMMOGRAPHIC IMAGES USING AN UNDECIMATED DISCRETE WAVELET TRANSFORM METHOD: PERFORMANCE ASSESSMENT	68
<i>Eri Matsuyama, Du-Yih Tsai, Yongbum Lee, Haruyuki Watanabe, Masaki Tsurumaki, Katsuyuki Kojima</i>	
DETECTION OF POLLUTANTS DISSOLVED IN WATER BY RAMAN SPECTROMETRY PROBE	72
<i>Marc D. Fontana, K. Ben Mabrouk, T. Kauffmann, M. Marchetti</i>	
DEVELOPMENT OF 1.6 GPA PRESSURE-MEASURING MULTIPLIERS	74
<i>W. Sabuga, R. Haines</i>	
DMP41 – A NEW CHAPTER OF ULTRA-PRECISION INSTRUMENT FOR STRAIN GAUGE TRANSDUCERS	80
<i>A. Schäfer, H. Kitzing</i>	
AN IMPROVEMENT OF HARMONIC CURRENT MEASUREMENT ALGORITHMS IN ACTIVE POWER FILTERING	84
<i>Janusz Mindykowski, Xiaoyan Xu, Tomasz Tarasiuk</i>	
COMPARISON EXPERIMENT FOR PULSE REPETITION INTERVAL BASED LENGTH MEASUREMENT LINKED TO A FEMTOSECOND OPTICAL FREQUENCY COMB	90
<i>Dong Wei, Kiyoshi Takamasu, Hirokazu Matsumoto</i>	
HALL EFFECT GEAR TOOTH SPEED SENSORS AND MEASUREMENT SYSTEM ANALYSIS	94
<i>Zhe Zheng, Ji-Gou Liu, Renjie Zhang, Yu He</i>	
MATHEMATICAL MODEL OF CHECKWEIGHER WITH ELECTROMAGNETIC FORCE COMPENSATION	96
<i>Y. Yamakawa, T. Yamazaki</i>	

A LIQUID FLOW MEASUREMENT SYSTEM FOR STUDY ON MARINE MASS FLOW METER APPLICATIONS	N/A
<i>Jian Wu</i>	
REALISATION OF PRIMARY PRESSURE MEASUREMENT SYSTEM	101
<i>Jian Wu</i>	
DETERMINATION OF THE DISTORTION COEFFICIENT OF A 500 MPA FREE-DEFORMATION PISTON GAUGE USING A CONTROLLED-CLEARANCE ONE UP TO 200 MPA	106
<i>Yuanchao Yang, Jin Yue</i>	
INVESTIGATION OF DYNAMIC CHARACTERISTICS OF CALIBRATION DEVICE FOR FATIGUE TESTING MACHINES	111
<i>Gang Hu, Yu Wang, Feng Meng, Wei Zhang, Hai Lin</i>	
A SIMPLE POLYNOMIAL METHOD FOR OPTIMIZING UPSTREAM PERFORMANCE IN MULTIUSER VDSL2 LINES	117
<i>Hernan X. Cordova, Leo Van Biesen, Rob F. M. Van Den Brink</i>	
EXPERIMENTAL EVALUATION OF CMM TOUCH PROBING SYSTEM	126
<i>Adam Wozniak</i>	
HOW TO PROVE AND ASSESS CONFORMITY OF GUM-SUPPORTING SOFTWARE PRODUCTS	130
<i>N. Greif, H. Schrepf</i>	
EVALUATION OF THE R&R AND THE COMPATIBILITY INDEX FOR NONINDEPENDENT MEASUREMENTS	136
<i>Albert Garcia-Benadí, Erik Molino-Minero-Re, Joaquín Del Río-Fernández, Antoni Manuel-Lázaro</i>	
NUTRITIONAL AND FUNCTIONAL METROLOGY IN FOOD	142
<i>Jun Liu</i>	
CORRECTIONS AND INPUT QUANTITIES IN GUM-COMPLIANT MODELS	144
<i>F. Pavese</i>	
ROUNDING AND NOTATION, NAMELY WHEN USING STIPULATIONS IN THE DEFINITION OF MEASUREMENT UNITS	149
<i>F. Pavese</i>	
CONSIDER AN ORDINAL PROPERTY THAT IS MEASURED USING AN ORDINAL SCALE WITH K ORDERED CATEGORIES	153
<i>N/A</i>	
UNCERTAINTY EVALUATION FOR THE COMPOSITE ERROR OF ENERGY METER AND INSTRUMENT TRANSFORMER	154
<i>H. Kato, H. Imai</i>	
EVALUATION OF MEASUREMENT UNCERTAINTY FOR STANDARD RESISTORS	158
<i>T. Abe, H. Imai</i>	
A NEW MULTIFUNCTION TORQUE STANDARD MACHINE AT NIM	160
<i>Feng Meng, Yue Zhang, Zhimin Zhang, Tao Li</i>	
DEVELOPMENTS FOR THE ANALYSIS OF L-CARNITINE	164
<i>Jun Liu, Muhua Xu</i>	
UNCERTAINTY EVALUATION FOR THE CALIBRATION OF DIRECT ACTING INDICATING ANALOGUE ELECTRICAL MEASURING INSTRUMENTS	165
<i>T. Goto</i>	
FLOW VISUALIZATION STUDIES ON TRAPEZOIDAL BLUFF BODY FOR VORTEX FLOWMETER APPLICATION	169
<i>A. Venugopal, Amit Agrawal, S. V. Prabhu</i>	
RESEARCH ON MICRO-GRAM WEIGHT STANDARDS BELOW 1 MG IN NIM	172
<i>M. H. Hu, J. Wang, Y. Zhang, C. Q. Cai, R. L. Zhong, H. Yao, J. A. Ding</i>	
RESEARCH ON PROTECTION DESIGN FOR PREVENTING FROM FRAUD USING TRUCK SCALES	176
<i>Songtao Huang, Shuonan Mao, Yuming Ma, Daosheng Chen</i>	
A ROUND ROBIN TEST OF ROKCWELL B SCALE HARDNESS	178
<i>Koichiro Hattori, Akihiro Ota</i>	
COMPARISON OF ARTIFACTS FOR INTERIM CHECK OF CMM	182
<i>Tsutomu Itabashi, Miyu Ozaki, Ryosyu Furutani</i>	
SELF-CALIBRATION OF A 3DOF PARALLEL MECHANISM	186
<i>Kazuki Fujiyama, Miyu Ozaki, Ryoshu Furutani</i>	
DETECTING CHANGES IN THE CONDITION OF A PRESSURE TRANSDUCER BY ANALYSING ITS OUTPUT SIGNAL	190
<i>O. Yu. Bushuev, A. S. Semenov, A. O. Chernavskiy, A. L. Shestakov</i>	
NEW DESIGN OF A 10 KN FORCE STANDARD MACHINE	194
<i>A. Savarin</i>	
INFLUENCE OF HUMIDITY ON TORQUE TRANSDUCERS - ESTIMATION METHODS FOR CALIBRATION LABORATORIES	196
<i>A. Brüge</i>	
INTI'S NEW MEASUREMENT UNCERTAINTIES	202
<i>A. Savarin</i>	
FURTHER IMPROVEMENTS ON HIGH-ACCURACY RADially SYMMETRIC BENDING BEAMS	204
<i>T. Kleckers</i>	
THE STUDY ON NON-GRAVIMETRIC METHOD FOR MICRO LIQUID VOLUME MEASUREMENT	207
<i>Jin-Tao Wang, Zi-Yong Liu, Lin Tong, Li-Gong Guo, Xue-Song Bao, Long Zhang</i>	

RADIOFREQUENCY MEASUREMENT OF LIQUEFIED PETROLEUM GAS MASS IN A RESERVOIR	209
<i>Alexander Sovlukov, Victor Tereshin</i>	
CONTINUOUS MONITORING OF TERRESTRIAL OBJECTS BY MEANS OF DUTY GROUP OF MULTICOPTERS	215
<i>V. Fetisov, O. Dmitriyev, L. Neugodnikova, S. Bersenyov, I. Sakayev</i>	
EXPERIMENTAL INVESTIGATION ON DAC GLITCH MEASUREMENT	220
<i>S. Rapuano, E. Balestrieri, P. Daponte, L. De Vito</i>	
MEASUREMENT PLAN FOR THE DIAGNOSE OF AQUATIC ECOSYSTEMS	227
<i>Jean-Claude Krynicki, Alban Benoist, Damien Bouchon</i>	
NEW PRIMARY BALANCE OF BEV FOR HIGH-PRECISION MASS DETERMINATION AND REALIZATION OF THE MASS SCALE IN THE RANGE FROM 10 G UP TO 1 KG	234
<i>Zoltan Zelenka</i>	
IMPROVEMENTS ON DISSEMINATION OF THE UNIT OF MASS IN BEV	238
<i>Zoltan Zelenka</i>	
EVALUATION OF THE INFLUENCE OF THE UNEQUALIZED CURRENTS IN THE INDUCTANCE BRIDGE AT CEM	243
<i>Y. A. Sanmamed, A. Sánchez, K. Schweiger, J. Díaz De Aguilar, M. Neira</i>	
SPECIFIC ISSUES ON THE USE OF MEANS OF MEASURING THE GENERATION “SMART – GREEN” IN ROMANIA IN POWER SYSTEM	246
<i>E. Zaharovits, F. Iacobescu</i>	
VIRTUAL INSTRUMENTATION AND CANTILEVER BEAM TYPE TRANSDUCER WITH STRAIN GAUGES FOR MEASURING THE DISLODGING FORCES OF REMOVABLE DENTURES OR PALATAL PLATES	250
<i>Dan Mihai Stefanescu, Alexandru-Titus Farcasiu, Adrian Toader</i>	
PROGRESS OF THE JOHNSON NOISE THERMOMETRY PROJECT AT NMIJ/AIST	255
<i>K. Yamazawa, J. Tamba, C. Urano, Y. Fukuyama, T. Oe, M. Maruyama, A. Domae, N. Kaneko</i>	
A NEW MEASUREMENT METHOD FOR THE NARROW GROOVS BASED ON LIGHT SECTIONING	260
<i>Fangfang Liu, Peiyang Yu, Yunxia Fu, Yiqing Zhu</i>	
PLANTOGRAF V12 WITH OPTIMAL SIZE DETERMINATION SENSOR ELECTRODES AND ITS USING FOR PRESSURE DISTRIBUTION BETWEEN TIRE AND ROAD	262
<i>J. Volf, A. Trinkl, J. Bílek, P. Prikner, P. Neuberger, M. Novák</i>	
NEW TACTILE SENSOR FOR SCANNING OF FORCE AND SLIP	266
<i>J. Oliva, J. Volf</i>	
STEP GAUGE MEASUREMENT USING HIGH-FREQUENCY REPETITIONS OF A MODE-LOCKED FIBER LASER	269
<i>C. Narin, S. Takahashi, K. Takamasu, H. Matsumoto</i>	
RECALIBRATION OF THE MOMENT ARM LENGTH OF A 10 N M DEAD WEIGHT TORQUE STANDARD MACHINE AND COMPARISON WITH A 1 KN M DEAD WEIGHT TORQUE STANDARD MACHINE	274
<i>Atsuhiko Nishino, Koji Ogushi, Kazunaga Ueda</i>	
DEVELOPMENT OF CERTIFIED REFERENCE MATERIAL FOR LEAD, ARSENIC AND MERCURY IN COSMETIC	280
<i>Jun Wang, Qian Wang, Chao Wei, Hai Lu</i>	
CORRECT HARDNESS TESTING AND INCREASING THE ACCURACY OF STANDARD BLOCKS FOR HARDNESS	281
<i>T. Yamamoto</i>	
PROOF EXAMINATION ON SMALL REBOUND HARDNESS CARRIED OUT WITH HLD/HLE STANDARD BLOCKS	283
<i>M. Yamamoto, T. Yamamoto, K. Miyahara, S. Maki, M. Nakamura</i>	
INTER-LABORATORY COMPARISON OF REFERENCE TORQUE WRENCH CALIBRATION BETWEEN NMIJ AND PTB IN THE RANGE OF FROM 200 N M TO 2 KN M	289
<i>Koji Ogushi, Atsuhiko Nishino, Koji Maeda, Kazunaga Ueda, Andreas Brüge, Dirk Röske</i>	
ABSOLUTE MEASUREMENT OF BASE LINES UP TO 400 M USING TEMPORAL COHERENCE HETERODYNE INTERFEROMETER OF OPTICAL FREQUENCY COMB	295
<i>H. Matsumoto, X. Wang, K. Takamasu</i>	
EFFECTS OF INTEGRATING SPHERE CONDITIONS ON THE SPATIAL RESPONSE DISTRIBUTION FUNCTION IN THE TOTAL LUMINOUS FLUX MEASUREMENT	299
<i>K. Wasapinyokul, R. Leecharoen, S. Chanyawadee, R. Chuenchom, P. Jamparung, K. Chumpol, C. Charoenkij, A. Krachangmol</i>	
OPTICAL PROFILOMETER FOR QUALITY CONTROL OF SOLDERING JOINTS	303
<i>J. Lettner, G. Gerstorfer, B. G. Zagar</i>	
A NEW CALIBRATION PROCEDURE FOR MULTICOMPONENT TRANSDUCERS	308
<i>Daniel Schwind, Helmut Raabe</i>	
A CALIBRATION SYSTEM FOR LASER VIBROMETERS AT NIMT	312
<i>C. Hirunyapruk, P. Rattanangkul, B. Thummawut, V. Plangsangmas</i>	
THE BILATERAL COMPARISON FOR CHARGE SENSITIVITY OF STANDARD ACCELEROMETER BETWEEN OLD SYSTEM AND NEW SYSTEM AT NIMT	317
<i>P. Rattanangkul, C. Hirunyapruk, B. Thummawut, V. Plangsangmas</i>	
AXLE WEIGHING FOR IN-MOTION VEHICLES USING SIMPLE FIR FILTERS	321
<i>K Fukuda, K. Yoshida, T. Kinugasa, S. Fujimoto, K. Kanazawa</i>	
COMPENSATION OF LEVER ARM DISTORTION OF FORCE STANDARD MACHINES	327
<i>Ulrich Kolwinski, Daniel Schwind</i>	

DSP BASED READ OUT SYSTEM FOR CONTACTLESS HIGH FREQUENCY INDUCTIVE POSITION SENSORS	330
<i>B. Aschenbrenner, B. G. Zagar</i>	
DEVELOPMENT OF THE STANDARD ROCKWELL HARDNESS MACHINE BASED ON FORCE LOADING USING MOTOR IN CLOSED LOOP METHOD	336
<i>Feng Zhang, Li He</i>	
RENOVATION OF NMIJ'S 54 KN DEAD-WEIGHT FORCE STANDARD MACHINE INTO 100 KN MACHINE	339
<i>Toshiyuki Hayashi, Yoshihisa Katase, Hiroshi Maejima, Yukio Yamaguchi, Kazunaga Ueda</i>	
REAL-TIME ESTIMATION OF DYNAMIC MULTI-DIMENSIONAL MEASURANDS	344
<i>Giampaolo E. D'Errico, Nadir Murru</i>	
TIME-INTERVAL MEASUREMENT SYSTEM OF HIGH RESOLUTION IMPLEMENTED IN FPGA DEVICE	350
<i>M. Zielinski, D. Chaberski, M. Gurski, M. Kowalski</i>	
OPTIMIZATION OF CALIBRATION INTERVAL AND ADJUSTMENT LIMIT OF MEASUREMENT DEVICE WITH STOCHASTICALLY DIFFUSIVE PROPERTY	356
<i>K. Shirono, H. Tanaka, M. Shiro, K. Ehara</i>	
DETERMINATION OF THE GEOMETRICAL PARAMETERS OF ROCKWELL DIAMOND INDENTERS BY ITERATIVE REGRESSION METHOD	361
<i>Satoshi Takagi</i>	
INFLUENCE OF EXCITATION VOLTAGE OVER METROLOGICAL PERFORMANCE OF FORCE TRANSDUCERS	367
<i>Harish Kumar, Anil Kumar</i>	
CONTROLLING A DIESEL ENGINE WITH ENGINE MANAGEMENT BASED ON STRUCTURE-BORNE SOUND	370
<i>M. Decker, K. Hintz, J. Nobis, C. Gühmann</i>	
INVESTIGATION ON THE IMPEDANCE-FREQUENCY-RESPONSE FOR A DYNAMIC BEHAVIOUR DESCRIPTION OF ELECTROMAGNETIC FORCE COMPENSATED LOAD-CELLS	376
<i>F. Hilbrunner, H. Weis, R. Petzold, T. Fröhlich, G. Jäger</i>	
A STUDY OF THE DISPERSION ON PRIMARY CALIBRATION RESULTS OF SINGLE-ENDED ACCELEROMETERS AT HIGH FREQUENCIES	381
<i>Gustavo P. Ripper, Giancarlo B. Micheli, Ronaldo S. Dias</i>	
AN ACCURACY IMPROVEMENT OF THE CLINICAL EXAMINATION RESULT BY ISO-GUM AND QE	387
<i>Yasuo Iwaki</i>	
FEASIBILITY OF VIBRATION SENSOR ON-LINE CALIBRATION WITH BUILT-IN CALIBRATION COIL	393
<i>Chenguang Cai, Jingsheng Li, Lifeng Yang, Aibin Zuo, Qiao Sun, Hongbo Hu</i>	
SMALL AIRCRAFT EMERGENCY LANDING DECISION SUPPORT SYSTEM – PILOTS' PERFORMANCE ASSESSMENT	397
<i>O. Bruna, J. Holub, P. Paces, T. Levora</i>	
THE ROLE OF METROLOGY-RELATED FUNCTIONS FOR THE FREE MOVEMENT OF GOODS	403
<i>Carl Martin Wehmer, Mauricio Nogueira Frota</i>	
A STUDY OF INHOMOGENEITIES OF THERMOCOUPLES AND ITS CONTRIBUTION TO THE CALIBRATION UNCERTAINTY CALCULUS	408
<i>M. A. P. Castanho, C. R. Baldo</i>	
BRAZILIAN ENERGY INTERLABORATORY PROGRAM APPLICATIVE	412
<i>J. Claudio, M. Costa</i>	
THE NEW WATT BALANCE EXPERIMENT AT METAS	418
<i>H. Baumann, A. Eichenberger, B. Jeckelmann, Ch. Beguin, R. Clavel, F. Cosandier, D. Reber, D. Tommasini</i>	
PRECISION ENGINEERING ACTIVE LEARNING SUPPORTED BY THE ICT	423
<i>J. A. Yagüe-Fabra, J. A. Albajez, M. A. Lope, J. J. Aguilar</i>	
EFFECTIVE CLEANING OF WINDOWS IN FIELD TURBIDIMETERS	428
<i>V. Fetisov, O. Melnichuk, O. Dmitriyev</i>	
MEASUREMENT UNCERTAINTY OF HIGH-SHOCK CALIBRATION SYSTEMS	431
<i>Martin Brucke, Georg Siegmund, Christian Ehrmann, Uwe Bühn, Michael Mende</i>	
DEVELOPMENT OF NIST STANDARD REFERENCE MATERIAL (SRM) ROCKWELL HARDNESS DIAMOND INDENTERS	437
<i>J. Song, S. Low</i>	
AN APPROACH TO DETERMINING THE BRINELL HARDNESS INDENTATION DIAMETER BASED ON CONTACT POSITION	439
<i>L. Ma, S. Low, J. Song</i>	
INTERLABORATORY COMPARISON OF ARTICULATED ARM CMMs USING VIRTUAL SPHERES PLATE GAUGE	445
<i>A. Piratelli-Filho, F. H. T. Fernandes, R. V. Arencibia</i>	
MULTILATERATION IN VOLUMETRIC VERIFICATION OF MACHINE TOOL	449
<i>J. J. Aguilar, S. Aguado, J. Santolaria, D. Samper</i>	
CALIBRATION TECHNIQUE OF ARTICULATED ARM COORDINATE MEASURING MACHINES BASED ON LARGE SCALE MULTILATERATION SYSTEM GAUGES	455
<i>J. Santolaria, A. Brau, D. Samper, J. Mainz, J. J. Aguilar</i>	
DETERMINATION OF MODEL PARAMETERS FOR A DYNAMIC TORQUE CALIBRATION DEVICE	459
<i>Leonard Klaus, Thomas Bruns, Michael Kobusch</i>	

ULTRA-PRECISION SET-UP AND REVERSAL TECHNIQUE FOR THE ERROR MAPPING OF A 2D SENSOR	463
<i>M. Valenzuela, J. A. Yagiie, J. A. Albajez, J. J. Aguilar</i>	
DETERMINATION OF FORCES FROM 10 N UP TO 250 KN USING TWO FULL AUTOMATICAL DEAD WEIGHT MACHINES DEVELOPED BY THE BEV	467
<i>Christian Buchner, Zoltan Zelenka, Thomas Mikats, Friedrich Bleicher</i>	
FAILURE OF THIN ORGANIC FILMS BY A COMBINATION OF SHEAROGRAPHY AND ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY: THE NEW CONCEPT OF RESISTIVITY	472
<i>Khaled Habib</i>	
SYSTEMATIC ERRORS: METHODOLOGY OF DETECTION, ELIMINATION, AND EVALUATION	473
<i>Valery A. Granovskiy, Tatiana N. Siraya</i>	
METROLOGICAL CHARACTERISTICS OF MEASURING INSTRUMENTS: PROBLEMS AND METHODS OF STANDARDIZATION	480
<i>V. A. Granovskiy, T. N. Siraya</i>	
CHARACTERIZATION AND QUALIFICATION OF A FORCE DYNAMIC CALIBRATION DEVICE	485
<i>R. R. Machado, R. S. Oliveira, L. C. C. Freitas, C. A. Koch, A. Knott, R. S. Dias</i>	
A NEW VERIFICATION SYSTEM OF MOBILE SCALES	490
<i>Jinhui Yao, Qingzhong Li, Hang Xu, Haigen Li</i>	
APPARENT POWER ESTIMATION BY INTERPOLATION OF THE PRODUCT OF THE DFT COEFFICIENTS	497
<i>Jalen Štremfelj, Dušan Agrež</i>	
FEM SIMULATION ON AERODYNAMIC CHARACTERISTICS OF INRIM FORCE LABORATORY	503
<i>D. Quagliotti, A. Germak, A. Piccato, P. G. Spazzini</i>	
LEEB HARDNESS STANDARD WITH LASER MEASURING	509
<i>Wei Shi, Wu Zeng, Qingzhong Li</i>	
ROUND ROBIN TESTS OF UNCERTAINTY ESTIMATION FOR COORDINATE METROLOGY BY SOFTWARE ERROR PROPAGATION	513
<i>K. Takamasu, S. Takahashi, R. Furutani, M. Abbe</i>	
THE INFLUENCE OF SOURCE IMPEDANCE ON CHARGE AMPLIFIER	517
<i>H. Volkers, T. Bruns</i>	
PROPOSED DEFINITION FOR THE BRINELL HARDNESS INDENTATION EDGE	521
<i>S. Low, K. Hattori, A. Germak, A. Knott</i>	
UNCERTAINTY OF COMPONENTS OF VOLUMETRIC ERRORS	527
<i>A. R. Valdés, A. Piratelli-Filho, D. P. Vieira Sato</i>	
COST EFFECTIVE FLEXIBLE MODULAR SYSTEM FOR ACQUISITION AND PROCESSING OF BIOLOGICAL SIGNALS BASED ON ADVANCED SIGNAL PROCESSING	535
<i>Linus Michaeli, Ján Šaliga, Ján Gálik</i>	
EXPERIMENTAL DATA AND STATISTICAL MODELS FOR OPTIMIZATION OF AGEING MODEL OF LEAD-FREE ELECTRONIC INTERCONNECTION MATERIAL	540
<i>Rossella Berni, Valeria L. Scarano, Marcantonio Catelani</i>	
CONCEPT DIAGRAMS FOR INTERNATIONAL VOCABULARY OF TERMS IN LEGAL METROLOGY	545
<i>O. Velychko</i>	
AN INVESTIGATION OF SAVITZKY-GOLAY FILTERS FOR THE CALCULATION OF DERIVATIVES FOR PRIMARY SHOCK CALIBRATION	550
<i>H. Nozato, Th. Bruns, H. Volkers, A. Oota</i>	
CONCEPT DIAGRAM AROUND SOFTWARE FOR INTERNATIONAL VOCABULARY IN LEGAL METROLOGY	554
<i>O. Velychko</i>	
MACHINE INTEGRATED TELECENTRIC SURFACE METROLOGY IN LASER STRUCTURING SYSTEMS	559
<i>Robert Schmitt, Tilo Pfeifer, Guilherme Mallmann</i>	
DEVELOPMENT OF THE NEW LNE 5 KN.M DEADWEIGHT TORQUE STANDARD MACHINE	564
<i>Philippe Averlant, Pascal Lacipiere</i>	
MEASUREMENT AND QUANTITATIVE EVALUATION OF INVERTER-INDUCED BEARING CURRENTS	565
<i>Dušan Agrež, Gregor Vidmar, Damijan Miljavec</i>	
FUNCTIONAL SAFETY ASSESSMENT: AN ISSUE FOR TECHNICAL DIAGNOSTICS	570
<i>Marcantonio Catelani, Lorenzo Ciani, Valentina Luongo</i>	
EVALUATION OF MACH NUMBER DISTRIBUTION AT THE TEST SECTION OF THE TTP TRANSONIC WIND TUNNEL	575
<i>M. L. C. C. Reis, J. B. P. Falcão Filho, B. Goffert, L. F. G. Moraes</i>	
SAMPLING STRATEGIES AND LONG TERM VARIATION MODELLING FOR A STATISTICAL FEED-FORWARD CONTROLLER	582
<i>C. Hernández, R. Tutsch</i>	
MODEL-BASED ANALYSIS OF THE DYNAMIC BEHAVIOUR OF A 250 KN SHOCK FORCE CALIBRATION DEVICE	586
<i>Michael Kobusch, Leonard Klaus, Thomas Bruns</i>	
DESIGN AND RELIABILITY ASSESSMENT OF AN AVIONICS TFT-LCD DISPLAY	592
<i>Marcantonio Catelani, Lorenzo Ciani, Giovanni Barile</i>	
DEVELOPMENT AND METROLOGICAL CHARACTERIZATION OF A 1000 NM TORQUE COMPARATOR MACHINE FOR CALIBRATING TORQUE WRENCH TESTERS	597
<i>S. S. K. Titus, S. K. Jain</i>	

SOFTWARE CHECK OF MEASURING INSTRUMENT ACCORDING TO WELMEC AND OIML FILES	601
<i>Binghui Ma, Pin Lu, Xiaohui Mao, Yu Shen</i>	
A NOVEL ALGORITHM FOR THE AUTHENTICATION OF INDIVIDUALS THROUGH RETINAL VASCULAR PATTERN RECOGNITION	604
<i>L. Fabbiano, G. Vacca</i>	
MEASUREMENT UNCERTAINTY AND SUMMARISING MONTE CARLO SAMPLES	609
<i>A. B. Forbes</i>	
GENERATION OF NUMERICAL ARTEFACTS FOR GEOMETRIC FORM AND TOLERANCE ASSESSMENT	615
<i>A. B. Forbes, H. D. Minh</i>	
RESEARCH ON INFLUENCE OF PRESSURE FOR MASS MEASUREMENT	621
<i>Jian Wang, Ruilin Zhong, Changqing Cai, Yue Zhang, Hong Yao, Jing'An Ding</i>	
A COMPARATIVE STUDY OF FORTY ALGORITHMS FOR SPECTROPHOTOMETRIC ANALYSIS OF EDIBLE OIL MIXTURES	622
<i>Roman Z. Morawski, Andrzej Miekina</i>	
TRACEABLE DYNAMIC MEASUREMENT OF MECHANICAL QUANTITIES: OBJECTIVES AND FIRST RESULTS OF THIS EUROPEAN PROJECT	628
<i>Claire Bartoli, M. Florian Beug, Thomas Bruns, Clemens Elster, Trevor Esward, Leonard Klaus, Andy Knott, Michael Kobusch, Sari Saxholm, Christian Schlegel</i>	
STROOP TEST - A REFERENCE STIMULUS FOR PSYCHOPHYSIOLOGICAL MEASUREMENTS?	637
<i>G. Geršak, J. Ogorevc, J. Drnovšek</i>	
EXPERIMENTAL COMPARISON OF MAXIMUM LIKELIHOOD AND LS FITTING FOR ADC TESTING	641
<i>Ján Šaliga, Linus Michaeli, Ján Buša, Jozef Lipták, István Kollár, Tamás Virosztek</i>	
A COMBINED METHOD OF NONCONTACT TEMPERATURE MEASUREMENT FOR SILICON WAFERS	647
<i>Y. Toyoda, T. Seo, T. Iuchi</i>	
APPLICATION OF A SCANNING VIBROMETER FOR THE PERIODIC CALIBRATION OF FORCE TRANSDUCERS	651
<i>Christian Schlegel, G. Kieckenap, R. Kumme</i>	
METROLOGICAL ASPECTS OF THE INDUCTIVE DYNAMIC DRIVE RESEARCH	657
<i>Jankowski Piotr, Mindykowski Janusz</i>	
NOVEL TECHNIQUES FOR TRACEABLE TEMPERATURE DISSEMINATION AN EUROPEAN JOINT RESEARCH PROJECT	661
<i>D. Del Campo, J. Bojkovski, M. Dobre, E. Filipe, M. Kalemcı, A. Merlone, J. Pearce, A. Peruzzi, F. Sparasci, R. Strnad, D. Taubert, E. Turzó-András</i>	
THE USE OF PROFICIENCY TESTING SCHEMES FOR AUTOMOTIVE EXHAUST EMISSIONS LABORATORY	666
<i>V. S. Cunha, J. C. Andrade, R. V. Leal</i>	
TEACHING MEASUREMENT DATA ANALYSIS	670
<i>P. Kumpulainen, R. Ritala</i>	
THE PROPOSED NEW SI: CONSEQUENCES FOR MASS METROLOGY	676
<i>Roman Schwartz, Michael Borys</i>	
MATRIX INTERPRETATION OF THE UNCERTAINTY PROPAGATION FOR THE ITS-90 REALISATION	681
<i>R. Palencár, S. Duriš</i>	
PHOTOVOLTAIC INVERTER: THERMAL CHARACTERIZATION TO IDENTIFY CRITICAL COMPONENTS	685
<i>Marcantonio Catelani, Lorenzo Ciani, Enrico Simoni</i>	
EVALUATION OF MEASUREMENT UNCERTAINTY IN TESTS REQUIRING NON-LINEAR REGRESSION	690
<i>J. A. Sousa, I. M. Smith, A. B. Forbes, A. S. Ribeiro, D. F. Sousa</i>	
BRACKETINS VERSUS MULTIPOINT CALIBRATION IN DETERMINATION OF ISOCYANATES IN AGGLOMERATED CORK STOPPERS	696
<i>I. Delgado, C. André, A. Ramos, A. S. Matos, K. Stockham, S. Kumaran, I. Castanheira</i>	
PROCESS CONTROL ORIENTED GEOMETRIC PRODUCT SPECIFICATION AND DATA ANALYSIS	700
<i>R. Schmitt, H. Zheng, S. Nisch</i>	
GUM SUPPLEMENT 1 AND PRIOR KNOWLEDGE	705
<i>R. Kessel, G. Wübbeler</i>	
UNCERTAINTY EVALUATION FOR THE STATE RECONSTRUCTION OF NATURAL GAS GRIDS	706
<i>R. Kessel, S. Eichstädt, K.-D. Sommer</i>	
UNCERTAINTY EVALUATION FOR NON-STATIONARY MEASUREMENTS	707
<i>Nien Fan Zhang</i>	
ON THE UNCERTAINTY OF THE BANDPASS FILTER METHOD FOR THE EVALUATION OF INTERFERENCE ON TRACK CIRCUITS	708
<i>A. Mariscotti</i>	
VARIATION IN MASS VALUES OF INDIAN PROTOTYPE KILOGRAM	713
<i>Goutam Mandal, Anil Kumar, Dinesh Chandra Sharma, Harish Kumar</i>	
CALIBRATION OF ANALITICAL BALANCES-INTEGRATION OF THE OIML AND USP DOCUMENTS	717
<i>Alex Lozdernik, Boris Pevzner, Boris Katz, Peter Kornhauser</i>	
CALIBRATION OF FORCE TRANSDUCERS IN P.K. CALIBRATION AND CONSULTING LABS LTD: PROCEDURE AND CALIBRATION CERTIFICATE	718
<i>Peter Kornhauser, Boris Katz</i>	

CALIBRATION OF HYDRAULIC FORCE MACHINES – COMPUTING OF THE MEASUREMENT UNCERTAINTY, BUILDING OF THE INTERPOLATION CURVE AND CALIBRATION CERTIFICATE	719
<i>Peter Kornhauser, Boris Katz</i>	
GREEN MEASUREMENT EDUCATION AND TRAINING WITH MOBILE SMART COMPUTERS	720
<i>D. Hofmann, P.-G. Dittrich, E. Düntsch</i>	
A FIBER OPTIC SENSING TECHNIQUE IS IMPLEMENTED BY FIBER OPTIC INTERFEROMETRIC SENSOR	726
<i>N/A</i>	
DEVELOPMENT OF DIGITAL DEMODULATOR FOR LASER VIBROMETER STANDARD	727
<i>A. Ota, Y. Kobayashi, O. Takano, N. Kasai</i>	
AIR PRESSURE CONTROLLED MASS MEASUREMENT SYSTEM	732
<i>Ruilin Zhong, Jian Wang, Changqin Cai, Hong Yao, Yue Zhang, Jin'An Ding</i>	
DYNAMIC FLOW MEASUREMENT TO MONITOR THE BEHAVIOR OF RIVER SURFACE	733
<i>Taiki Tomoo, Shigeru Takayama</i>	
AN AIR DENSITY MEASUREMENT SYSTEM FOR MEASURING WEIGHTS	739
<i>Xiao-Lei Wang, Yue Zhang, Chang-Qing Cai, Jian Wang, Rui-Lin Zhong, Hong Yao, Jing-An Ding</i>	
DYNAMIC MEASUREMENT OF PHYSICAL STRENGTH IN EXERCISE	742
<i>Kosuke Sentoku, Yuki Matsuda, Shigeru Takayama</i>	

Volume 2

DYNAMIC MEASUREMENT OF BODY SWING IN JOG TRAINING	748
<i>Ryo Watabe, Yuki Matsuda, Shigeru Takayama, Yuichi Nakanishi</i>	
DYNAMIC MEASUREMENT OF WALKING POSTURE WITH BODY INCLINATION AND LANDING IMPACT	754
<i>Kazushi Toriyama, Shigeru Takayama</i>	
THE BRAZILIAN EXPERIENCE IN THE DEVELOPMENT OF HUMAN RESOURCES IN METROLOGY	760
<i>G. M. Rocha, R. P. Landim</i>	
METROLOGY IN FOOD COMPOSITION DATABANKS: THE EUROPEAN STRATEGY	765
<i>I. Castanheira, M. Roe, S. Bell, P. Colombari, M. A. Calhau, P. Finglas</i>	
RAREFIED GAS FLOW IN PRESSURE AND VACUUM MEASUREMENTS	768
<i>A. Jeerasak Pitakarmop</i>	
A NEW METHOD FOR CALIBRATING SHOCK ACCELERATION METER	773
<i>Limin Zeng, Han Zeng, Binghui Ma</i>	
LDA CALIBRATION AT INRIM: A PORTABLE DEVICE	778
<i>A. Piccato, R. Malvano</i>	
ESTABLISHING METROLOGY INFRASTRUCTURE AND TRACEABILITY OF ELECTRICAL POWER AND ENERGY IN R. MACEDONIA	783
<i>L. Arsov, M. Cundeve-Blajer</i>	
PSYCHOPHYSIOLOGICAL MASUREMENTS IN EDUCATION	788
<i>V. Geršak, G. Geršak, J. Drnovšek</i>	
ALTERNATIVE METHOD TO MEASURE PRESSURE USING OPTICAL FIBER	792
<i>Luiz Henrique Paraguassú De Oliveira, Jackson S. Oliveira, Paulo Roberto Guimarães Couto, Arthur M. Braga</i>	
LOW FREQUENCY MAGNETIC FLUX DENSITY METER CALIBRATION	796
<i>Ademir Martins De França, Danielli Guimarães Costa, Luiz Napoleão Pereira, Marco Aurélio Soares, Patrícia Cals De O. Vitorio, Paulo Roberto Mesquita Nascimento</i>	
ENHANCING GPS POSITIONING ACCURACY FROM THE GENERATION OF GROUND-TRUTH REFERENCE POINTS FOR ON-ROAD URBAN NAVIGATION	799
<i>Mussa Bshara, Umut Orguner, Fredrik Gustafsson, Leo Van Biesen</i>	
THE KEY COMPARISON FEASIBILITY EVALUATION BETWEEN LOW SHOCK AND HIGH SHOCK ACCELERATION CALIBRATION SYSTEM	805
<i>Jiun-Kai Chen, Yu-Chung Huang, Hong-Bo Hu</i>	
DYNAMIC EVALUATION OF PEDESTRIANS FLOW BY TIME TRANSITION OF TRAFFIC LINE DISTRIBUTION	810
<i>Masahiro Nishiguchi, Wataru Watanabe, Taiki Tomoo, Shigeru Takayama</i>	
METHODS FOR ENHANCING REPRODUCIBILITY OF CALIBRATION RESULTS FOR HYDRAULIC PRESSURE TRANSDUCERS	816
<i>H. Kajikawa, T. Kobata</i>	
NEW SETUP FOR THE ABSOLUTE SPECTRAL RESPONSIVITY OF RADIATION THERMOMETERS WITH A SUPERCONTINUUM SOURCE	821
<i>Yu Yamaguchi, Yoshiro Yamada, Juntaro Ishii</i>	
A COMPARISON OF TWO WEATHER DATA ACQUISITION METHODS FOR THE CALIBRATION OF THE PTB GEODETIC BASELINE	824
<i>J. Jokela, F. Pollinger, N. R. Doloca, K. Meiners-Hagen</i>	
IMPLEMENTATION OF INTERNATIONAL REQUIREMENTS WHEN PRESENTING RESEARCH RESULTS	830
<i>G. Beges, J. Drnovsek</i>	
NEW METHOD FOR FREE-FORM SURFACE FITTING IN PRECISION METROLOGY	834
<i>Hoang D. Minh, Alistair B. Forbes</i>	

SET-UP FOR PRECISION ROBOTIC EVALUATION OF AC CURRENT CLAMP	838
<i>G. Begeš, V. Batagelj, J. Rejc, D. Agrež, G. Geršak, D. Hudoklin, A. Miklavec, T. Bajd, M. Munih, J. Drnovšek</i>	
INTERLABORATORY COMPARISONS. PRACTICAL APPROACH FOR DATA EVALUATION	841
<i>A. Chunovkina, N. Zviagin, N. Burmistrova</i>	
PRIMARY IMAGING INTERFERENCE MICROSCOPE FOR NANOMETROLOGY	846
<i>I. Malinovsky, R. S. Franca, I. B. Couceiro, M. S. Lima, C. L. S. Azeredo, C. M. S. Almeida, J. P. Weid</i>	
USE OF THE IMPULSE OF FORCE IN SELF-DEFENCE	851
<i>Dora Lapkova, Zdenek Malanik, Milan Adamek</i>	
RESEARCH ON STANDARD TORQUE SENSOR COMPENSATION METHOD TO MOMENT DISTURBANCE	852
<i>Shouzhong Ni, Binhui Ma, Xiaobo Jiang, Limin Zeng</i>	
DATA ACQUISITION SYSTEM DEVELOPMENT OF VOLUMETRIC METHOD FOR LIQUID FLOW MEASUREMENT AT NIMT	856
<i>T. Chinarak, K. Leetang, T. Changpan</i>	
ISO 6789:2003 CALIBRATION RESULTS OF HAND TORQUE TOOLS WITH MEASUREMENT UNCERTAINTY – SOME PROPOSALS	860
<i>D. Röske</i>	
ACCURATE MEASUREMENT OF RESISTANCE AND INDUCTANCE OF TRANSFORMER WINDINGS	865
<i>V. Didenko, D. Sirotn</i>	
TRACEABLE DETERMINATION OF MECHANICAL PARAMETERS OF BINOCULAR SHAPED FORCE TRANSDUCERS ACCORDING TO EN ISO 376	869
<i>M. Kühnel, F. Hilbrunner, H. Büchner, G. Jäger, E. Manske, T. Fröhlich</i>	
STUDY OF UNCERTAINTY CALCULATIONS FOR INDUSTRIAL PRESSURE MEASUREMENTS AT DIFFERENT TRACEABILITY LEVELS	875
<i>Alaaeldin A. Eltawil</i>	
A MODIFIED VISIBILITY ENHANCED INTERFEROMETER FOR MEASURING ROUGH SURFACES BASED ON AN INJECTION LOCKING TECHNIQUE	876
<i>Jonghan Jin, Yong-Bong Lee, Jae Wan Kim, Jong-Ahn Kim, Chu-Shik Kang</i>	
DESIGN AND FABRICATION OF A STEP HEIGHT CERTIFICATED REFERENCE MATERIAL IN KRISS	881
<i>Saerom Maeng, Jieun Kim, Jonghan Jin, Jae Wan Kim, Jong-Ahn Kim</i>	
UNCERTAINTY IMPROVEMENT OF GEOMETRICAL THICKNESS MEASUREMENT OF A SILICON WAFER USING A FEMTOSECOND PULSE LASER	886
<i>Jungjae Park, Saerom Maeng, Jae Wan Kim, Jong-Ahn Kim, Jonghan Jin</i>	
RECONFIGURATION OF A DYNAMICALLY DECOUPLED SYSTEM AFTER ACTUATOR FAULT	891
<i>Pawel Dworak, Krzysztof Jaroszewski</i>	
THE PARAMETERS OF MOTION MECHANICAL EQUATIONS AS A SOURCE OF UNCERTAINTY FOR TRACTION SYSTEMS SIMULATION	897
<i>G. Boschetti, A. Mariscotti</i>	
DESIGNING BACKWARD RANGE SIMULATOR FOR SYSTEM DIAGNOSES	903
<i>Yukio Hiranaka, Toshihiro Taketa</i>	
DEFECT DETECTION IN WIND TUBINE BLADE COMPOSITE BY USING INFRARED THERMOGRAPHY	907
<i>Man Yong Choi, Hee Sang Park, Jeong Hak Park, Yong Hak Huh</i>	
A WEB INFORMATION SYSTEM FOR BASIC INDUSTRIAL TECHNOLOGY (METROLOGY)	909
<i>Weverton Oliveira Dias, Tálilo Fernandes De Oliveira, Adriano César Machado Pereira, Laura Rosa Gomes França</i>	
MEASUREMENT OF NORMALIZED SPECTRAL RESPONSE OF DIGITAL IMAGING SENSORS USING A LED-BASED TUNABLE UNIFORM SOURCE	916
<i>Khaled Mahmoud, Seongchong Park, Seung-Nam Park, Dong-Hoon Lee</i>	
A METHOD FOR ESTIMATION OF FORM DEVIATIONS OF FREE-FORM SURFACES	919
<i>Malgorzata Pontatowska</i>	
MEASUREMENT OF ENERGY EFFICIENCY OF BUILDINGS WITH THERMAL IMAGING	923
<i>I. Pušnik</i>	
COMPARISON OF MAXIMAL VOLUNTARY CONTRACTION IN THE ELDERLY AND YOUNG	927
<i>Murali Subramaniam, Se Jin Park, Seung Bin Oh</i>	
HUMAN IMPACT ASSESSMENT OF WATCHING 3D TELEVISION BY ELECTROCARDIOGRAM AND SUBJECTIVE EVALUATION	932
<i>Se Jin Park, Seung Bin Oh, Murali Subramaniam, Hyun Kyoan Lim</i>	
MEASUREMENT OF THE PERCEIVED SIMILARITY IN FACE RECOGNITION	936
<i>F. Crenna, G. B. Rossi, L. Bovio</i>	
TIME AS UNIQUE BASE QUANTITY	942
<i>G. Dragan</i>	
A LARGE RANGE METROLOGICAL ATOMIC FORCE MICROSCOPE WITH NANOMETER UNCERTAINTY	943
<i>S. Gao, M. Lu, W. Li, Y. Shi, X. Tao</i>	
FABRICATION OF A MASS MEASUREMENT DEVICE WITH A DAMPED VIBRATION ABSORBER	947
<i>T. Mizuno, S. Yamamoto, Y. Ishino, M. Takasaki</i>	
USAGE OF TWO-CENTER BASIS FUNCTION NEURAL CLASSIFIERS IN COMPACT SMART RESISTIVE SENSORS	951
<i>M. Kowalewski, Z. Czaja</i>	

CONSTRUCTION OF WIRELESS SENSING NETWORK SYSTEM FOR LANDSLIDE DISASTER MONITORING	955
<i>Shintaro Taenaka, Yusuke Watanabe, Shigeru Takayama</i>	
MEASUREMENT OF DYNAMIC STATE OF LANDSLIDE DISASTER	961
<i>Kosuke Tande, Shotaro Niimi, Shigeru Takayama</i>	
LOW-COST CAPACITIVE ACCELEROMETERS IN CROSS-EFFECTS	967
<i>Antônio Fernando Moura Santos, Elias Bitencourt Teodoro, Marcos Morais De Sousa, Rosenda Valdés Arencibia, Marcus Antônio Viana Duarte</i>	
RING METHOD FOR HYDROMETER CALIBRATION	971
<i>Fazrul Mohd Nor, Abd Khamim Ismail, Hafidzah Othman</i>	
EVALUATION OF THE MEASURING SYSTEM FOR RECORDING DRIVER REACTION TIME IN VIRTUAL ENVIRONMENT	974
<i>J. Ogorevc, A. Cop, G. Geršak, J. Drnovšek</i>	
STATISTICAL THINKING AND METROLOGY: PROBLEMS AND DECISIONS	979
<i>Yu. Adler, V. Shper</i>	
CONSIDERATIONS ON THE INFLUENCE OF TRAVELLING STANDARDS INSTABILITY IN AN INTERLABORATORY COMPARISON PROGRAM	984
<i>J. J. L. Sousa, L. T. S. Leitão, M. M. Costa, M. C. Faria</i>	
COMPARING MANUALLY MEASURED ANTHROPOMETRICAL POINTS OF HUMAN FACES WITH FULLY COMPUTERIZED ONES	988
<i>Martin Pospíšilík, Milan Adámek, Katerina Sulovská</i>	
NANOPARTICLE SIZE MEASUREMENT BY NANOPARTICLE TRACKING ANALYSIS (NTA) METHOD	993
<i>Junjie Liu, Wenge Zhang</i>	
A NEW CALIBRATION SYSTEM FOR HIGH INTENSITY FOCUSED ULTRASOUND AT NIMT	997
<i>P. Petchpong, V. Plangsangmas</i>	
REAL-TIME SMART METERS NETWORK FOR ENERGY MANAGEMENT	998
<i>C. Landi, G. Del Prete, D. Gallo</i>	
AN ECONOMIC WAY TO HAVE SMALL TEMPERATURE VARIATION CONTROLLED IN MASS MEASUREMENT	1004
<i>Feng-Yu Yang, Sheau-Shi Pan, Sheng-Jui Chen</i>	
CAPACITIVE FACIAL ACTIVITY MEASUREMENT	1008
<i>Ville Rantanen, Pekka Kumpulainen, Hanna Venesvirtay, Jarmo Verho, Oleg Špakovy, Jani Lylykangasy, Akos Vetekz, Veikko Surakkay, Jukka Leikkala</i>	
METROLOGICAL PERFORMANCES OF MASS FLOW CONTROLLERS FOR DYNAMIC GAS DILUTION	1014
<i>Alessia Demichelis, Guido Sassi, Maria Paola Sassi</i>	
RAYLEIGH SCATTERING THERMOMETRY AT LOW TEMPERATURE USING NITROGEN AND CARBON DIOXIDE WITH HIGH RAYLEIGH SCATTERING CROSS SECTION AREA	1018
<i>M. Seo, S. Jeong, J. Park, H. Shin</i>	
PT-IR PROTOTYPE KILOGRAM AS A BUOYANCY ARTEFACT FOR IN SITU DIRECT DETERMINATION OF AIR DENSITY	1023
<i>W. G. Lee, Y. J. Lee, J. W. Chung</i>	
LOAD RANGE EXPANSION OF NATIONAL PRIMARY HARDNESS STANDARD MACHINE ON VICKERS SCALES	1026
<i>Edward Aslanyan, Viktor Pivovarov, Andrey Aslanyan, Vasily Shlegel</i>	
THE UTILISATION OF AN IMPULSE OF FORCE IN SELF-DEFENCE	1032
<i>Martin Pospíšilík, Dora Lapková, Milan Adámek, Zdenek Malánik</i>	
DIAGNOSTICS OF WIND TURBINES BASED ON INCOMPLETE SENSOR DATA	1037
<i>Zs. J. Viharos, K. B. Kis</i>	
INTERLABORATORY COMPARISONS PERFORMED IN TURKEY: FORCE CALIBRATION OF STATIC MATERIAL TESTING MACHINES	1043
<i>Bulent Aydemir, Sinan Fank, Cemal Vatan</i>	
A NOVEL PSEUDO-STATIONARY MODELING OF POLLUTANT MEASUREMENT PREDICTION FROM INDUSTRIAL EMISSIONS	1047
<i>L. Piper, A. Lay Ekuakille, P. Vergallo, V. Pelillo</i>	
REMOTE MONITORING SYSTEM FOR IMPEDANCE SPECTROSCOPY USING WIRELESS SENSOR NETWORK	1052
<i>M. Kowalewski, G. Lentka</i>	
NANOPOSITIONING SYSTEM WITH COMBINED FORCE MEASUREMENT BASED ON ELECTROMAGNETIC FORCE COMPENSATED BALANCES	1056
<i>Christian Diethold, Falko Hilbrunner, Thomas Fröhlich, Eberhard Manske</i>	
PLL AND NUMBER OF SAMPLE SYNCHRONISATION TECHNIQUES FOR ELECTRICAL POWER QUALITY MEASUREMENTS	1061
<i>Richárd Bátorfi</i>	
DETERMINATION OF ADSORPTION LAYERS ON SILICON SORPTION ARTIFACTS USING MASS COMPARISON	1067
<i>Unurbileg Darmaa, Jin Wan Chung, Sungjun Lee, Seung Nam Park</i>	
DIAGNOSTICS OF ELECTRICAL POWER NETWORK AND ITS UTILIZATION EFFICIENCY	1072
<i>Angéla Váradiné Szarka</i>	
A METHOD OF MEASUREMENT FOR THE FLAMMABLE LIMITS OF HYDROGEN	1077
<i>Young-Do Jo, Jin-Jun Kim</i>	

THAILAND TORQUE WITH CROSS FORCE COMPARISON	1081
<i>S. Nattapon, S. Tassanai</i>	
CALIBRATION OF CAPACITANCE DIAPHRAGM GAUGE WITH 1333 PA FULL SCALE BY DIRECT COMPARISON TO RESONANT SILICON GAUGE AND STATIC EXPANSION SYSTEM.....	1088
<i>H. Yoshida, E. Komatsu, K. Arai, M. Kojima, H. Akimichi, T. Kobata</i>	
MULTI-OPENING ORIFICE - A TOOL FOR PRIMARY METROLOGY OF VACUUM AND SMALL GAS THROUGHPUTS.....	1093
<i>M. Jeráb, T. Gronych, L. Peksa, F. Stanek, Z. Krajíček, D. Pražák, M. Vicar, J. Tesar</i>	
TAKING RIGHT FINAL CONCLUSIONS AND DECISIONS WITH THE USE OF THE MOST APPROPRIATE KEY COMPARISON REFERENCE VALUE (KCRV).....	1097
<i>José Carlos Valente De Oliveira</i>	
EXPERIMENTAL VALIDATION OF SOLENOID MAGNETIC CENTRE MEASUREMENT BY VIBRATING WIRE SYSTEM.....	1100
<i>P. Arpaia, C. Petrone, L. Walckiers</i>	
CALIBRATION OF ROTATING COIL ARRAYS FOR PARTICLE ACCELERATOR MAGNET TESTING.....	1104
<i>P. Arpaia, L. Fiscarelli, L. Walckiers</i>	
SOFTWARE FOR ORIENTATION SENSOR CHR6-DM	1108
<i>Martin Pospíšilík, Pavel Necká, Michal Brázda, Milan Adámek</i>	
ANALYSIS OF PHASE-MODULATED LOW VOLTAGE REGULATION WITH VARIABLE IMPEDANCE/CAPACITANCE.....	1111
<i>Lutfi Torla, Sheroz Khan, Asan G. Muthalif</i>	
THE FUTURE OF CENTRALIZED RIPPLE CONTROL SYSTEM IN HUNGARY – STATE-OF-THE-ART TRENDS	1115
<i>Attila Unhauzer</i>	
CHARACTERISATION OF 10 PA VACUUM GAUGE USING PRESSURE BALANCE	1121
<i>Samyong Woo, In-Mook Choi, Tae Heon Yang, Hanwook Song</i>	
MODELLING AND ANALYSIS OF NOVEL COIL DESIGN FOR BIOMEDICAL IMPLANTED DEVICES.....	1124
<i>Imran M. Khan, Mokhaled M. Mohammed, Sheroz Khan, Othman O. Khalifa</i>	
NIS PRIMARY DEW/FROST-POINT GENERATOR OPERATING FROM-50 °C TO 0 °C IN DEW POINT TEMPERATURE	1129
<i>Doaa Abd El-Gelil, M. G. Ahmed, Essam El-Din Mahmoud, Said Mazen</i>	
VOLUME CHANGE MEASUREMENT OF DIAPHRAGM DEFORMATION IN DIFFERENTIAL TYPE CAPACITANCE DIAPHRAGM GAUGE.....	1133
<i>Kenta Arai, Hajime Yoshida, Hitoshi Akimichi, Tokihiko Kobata</i>	
COMPARISON OF THE CALIBRATION RESULTS OF INDUSTRIAL FORCE TRANSDUCERS OBTAINED BASED ON THE NEW VS. THE OLD VERSION OF ISO 376.....	1138
<i>Lioba Stenner</i>	
INVESTIGATION OF FLOW FIELDS IN SONIC NOZZLES FOR METERING SMALL FLOW RATES	1142
<i>E. Von Lavante, J. Allofs, H. Kaya</i>	
ANALYSIS OF NEWLY DEVELOPED METHODS OF ANGLE MEASUREMENT	1148
<i>L. Siaudinyte, M. Rybokas, D. Sabaitis, V. Giniotis</i>	
CALCULATION OF MEASUREMENT UNCERTAINTY FOR PLASTIC (ABS) MATERIAL IN FLEXURAL TESTING	1151
<i>A. Gunay, S. Fank, T. Gulmez, N. Durakbasa</i>	
IMPROVED FEATURES OF ANGULAR VIBRATION EXCITERS	1155
<i>Wan-Sup Cheung</i>	
METHOD OF CALIBRATING CHARGE AMPLIFIERS USING A DYNAMIC SPECTRUM ANALYZER	1159
<i>Seung-Hwan Nam, Yong-Bong Lee, Wan-Sup Cheung</i>	
A SIMPLE METHOD OF 2D AND 3D PROFILE FILTERING USING B-SPLINE APPROXIMATION.....	1164
<i>D. Janecki</i>	
TWO CALIBRATION MODELS	1168
<i>G. Wimmer, V. Witkovský</i>	
DYNAMIC BEHAVIOR OF MICROMECHANICAL ANGULAR RATE TWO-COMPONENT SENSOR	1172
<i>T. Nesterenko, M. Peresvetov, Y. Chursin</i>	
EXPERIMENTAL INVESTIGATION ON RADIATED EMISSIONS GENERATED BY PANTOGRAPH ARCING AND THEIR EFFECTS ON TELECOMMUNICATION BANDS	1175
<i>A. Mariscotti, A. Marrese, N. Pasquino</i>	
DETERMINING FRICTIONAL BEHAVIOR OF VITAMIN E BLENDED UHMWPE	1179
<i>B. Sagbas, M. N. Durakbasa</i>	
EXPERIMENTAL INVESTIGATION OF AN UNSTEADY FLOW FIELD AROUND AN AIRFOIL	1185
<i>A. Hribernik, M. Fike, G. Bombek, M. Hribersek</i>	
UNCERTAINTY ANALYSIS OF CELL COUNTING BY METABOLIC ASSAYS.....	1190
<i>C. Divieto, G. Sassi, M. P. Sassi</i>	
IMAGE PROCESSING OF DATA OBTAINED IN EDDYCURRENT NON-DESTRUCTIVE EVALUATION OF METALLIC PLATES.....	1194
<i>A. Lopes Ribeiro, H. Geirinhas Ramos, D. Pasadas, T. Rocha</i>	
ROAD PAVEMENT TESTING BY VIBRATION MEANS	1198
<i>J. Janulevicius, L. Siaudinyte, V. Giniotis</i>	

UNCERTAINTY IN MEASUREMENT: A KEY CRITERION FOR DEFINING THE COVERAGE FACTOR ASSOCIATED WITH THE MANUFACTURING PROCESS OF WOVEN FABRICS	1202
<i>Cristian S. Castillo, Maurício N. Frota, Ignacio Lira</i>	
TESTING AND CALIBRATION OF PHASOR MEASUREMENT UNITS.....	1208
<i>Richard Pirret, Jeff Gus</i>	
DESIGN OF A FACILITY FOR THE PRECISE SIMULTANEOUS GENERATION AND MEASUREMENT OF FORCE AND TORQUE.....	1214
<i>S. Baumgarten, D. Röske, H. Kahmann, D. Mauersberger, R. Kümme</i>	
STUDY ON THERMAL DRIFT OF NOBLE METAL THERMOCOUPLES	1219
<i>Sung-Sin So, Hyun-Min Park, Yeun-Joon Jung</i>	
EFFECT OF HYDROGEN CONTENT ON HYDROGEN EMBRITTLEMENT OF API X70 STEEL	1223
<i>Dong-Su Bae, Chi-Eun Sung, Hyeon-Jee Jeon, Sang-Pill Lee, Jin-Kyung Lee, Un-Bong Baek, Seung-Hoon Nahm</i>	
LOW UNCERTAINTY IN FORCE VALUES ACHIEVED IN A LEVER MULTIPLICATION DEADWEIGHT FORCE STANDARD MACHINE OF 1 MN	1227
<i>S. K. Jain, S. S. K. Titus, Falk Tegtmeier, Norbert Tetzlaff, Daniel Schwind</i>	
VIM AND CURRENT TENDENCIES IN MEASUREMENT SCIENCE	1232
<i>A. Chunovkina, K. Sapozhnikova, R. Taymanov</i>	
DENSITY MEASUREMENTS OF LIQUID FUELS TO DETERMINE TEMPERATURE CONVERSION FACTORS FOR LEGAL METROLOGY	1238
<i>H. Wolf, S. Heinsch</i>	
FAST ESTIMATION AND UNCERTAINTY QUANTIFICATION IN ELECTRICAL CAPACITANCE TOMOGRAPHY USING SURROGATE TECHNIQUES.....	1243
<i>M. Neumayer, D. Watzel, G. Steiner</i>	
LOCK-IN AMPLIFIER FOR CALIBRATING INDUCTIVE VOLTAGE DIVIDER	1249
<i>V. N. Borikov, P. F. Baranov, E. I. Zimbalist</i>	
NEW GENERATION OF MAGNETIC FLOWMETERS FOR LIQUID METAL	1252
<i>I. Velt, Yu. Mikhailova</i>	
INFLUENCE OF MEASURING PROCESS AUTOMATION ON UNCERTAINTY OF MASS STANDARD AND WEIGHTS CALIBRATION.....	1255
<i>Andrzej Hantz</i>	
MICROSTRUCTURAL METROLOGY OF HIC(HYDROGEN INDUCED CRACK) FOR THE SAFE OPERATION OF GREEN ENERGY PLANTS.....	1281
<i>B. H. Choe, W. S. Kim, S. C. Choi, W. B. Beak, S. H. Nam, Y. J. Lee, J. H. Shim</i>	
AN ARDUINO SHIELD FOR POWER NETWORK VOLTAGE AND CURRENT MEASUREMENT	1282
<i>Daniele Gallo, Carmine Landi, Mario Luiso</i>	
REALIZATION AND UNCERTAINTY EVALUATION OF THE ITS-90 FIXED-POINTS FOR THE ESTABLISHMENT OF TEMPERATURE STANDARDS AT KRISS	1288
<i>K. S. Gam, I. Yang, U. C. Jeong, Y. G. Kim</i>	
BLACKBODY AND PROCEDURE FOR CALIBRATION OF THERMAL IMAGERS.....	1293
<i>A. Miklavc, I. Pušnik, V. Batagelj, J. Drnovšek</i>	
DRY ELECTRODES FOR ELECTROENCEPHALOGRAPHY: NOVEL TITANIUM BASED ELECTRODES.....	1297
<i>J. Hauwisen, P. Fiedler, S. Griebel, L. Zentner, C. Fonseca, F. Vaz, F. Zanow</i>	
DC MAGNETIC FLUX DENSITY STANDARDS IN THE RANGE OF EARTH MAGNETIC FIELD.....	1300
<i>Po Gyu Park, Young Gyun Kim, Wan-Seop Kim, Mun-Seog Kim, V. Ya. Shifrin</i>	
THE MEASURING STANDS FOR MEASURE OF AD CONVERTERS	1303
<i>Linus Michaeli, Marek Godla, Jan Šaliga, Jozef Liptak</i>	
A PRACTICAL APPROACH CONCERNING THE CAPACITIVE ACQUISITION OF THE ELECTROCARDIOGRAM IN A MOVING WHEELCHAIR.....	1308
<i>E. Pinheiro, O. Postolache, P. Girão</i>	
MEASUREMENT SCIENCE DEVELOPMENT FOR OPEN SYSTEMS.....	1312
<i>Yu. P. Machekhin</i>	
MECHANICAL PROPERTIES OF ALUMINUM ALLOYS BY INSTRUMENTED INDENTATION: CASE STUDY ON ALMIGO HARD	1316
<i>Jiri Nohava, Petr Haušild, David Gichangi Axelson, Gwenaél Bolloré</i>	
COMBINATORIAL TESTING FOR SOFTWARE USED IN METROLOGY	1322
<i>Raghu Kacker, D. Richard Kuhn, Yu Lei, James Lawrence</i>	
STATISTICAL TESTING OF THE MEASUREMENT ACCURACY OF MOBILE ROUGHNESS MEASURING INSTRUMENTS.....	1326
<i>K. Stepień</i>	
THE EVALUATION OF INTERLABORATORY COMPARISON IN HYDRAULIC PRESSURE REGION	1330
<i>Yasin Durgut</i>	
CALCULATION OF REFERENCE FEATURES IN SPHERICITY MEASUREMENTS BY THE RADIAL METHOD WITH RESPECT TO THE DENSITY OF SAMPLING POINTS	1334
<i>S. Adamczak, D. Janecki, K. Stepień</i>	
GEODETTIC CLASS GPS RECEIVER AS A STANDARD FOR TIME-CRITICAL APPLICATIONS	1338
<i>Vukan Ogrizović, Jadranka Marendić, Snežana Renovića, Siniša Delcević, Jelena Gucević</i>	
MEASUREMENT OF WALKING GAIT FOR 3D PASSIVE DYNAMIC BIPED WALKER	1343
<i>T. Ito, T. Kinugasa, T. Akagi, S. Fujimoto, K. Yoshida, M. Iribe</i>	

INTERLABORATORY COMPARISON FOR THE MEASUREMENT OF BROMINE CONTENTS IN PLASTIC SAMPLES USING COMBUSTION ION CHROMATOGRAPHY	1349
<i>I. J. Kim, J. K. Suh, K. H. Cho, J. Jung, Y. C. Myoung, E. Hwang</i>	
UNCERTAINTY ASSESSMENT OF RESISTANCE THERMOMETRY BRIDGES	1352
<i>Wukchul Joung, Kee Sool Gam, Inseok Yang, Yong-Gyoo Kim</i>	
DEW/FROST-POINT UNCERTAINTY ANALYSIS OF THE SWSY-S HUMIDITY GENERATOR	1356
<i>Juan Gong, Guo-Yi Lv, Yong-Jun Yang</i>	
UNCERTAINTY ESTIMATION OF A LIQUID FLOW STANDARD SYSTEM WITH SMALL FLOW RATES IN KRISS	1357
<i>Sejong Chun, Byung-Ro Yoon, Hae-Man Choi</i>	
EDDY CURRENT NONDESTRUCTIVE TESTING USING FARADAY INDUCTION TO PRODUCE THE EXCITATION	1361
<i>Helena Geirinhas Ramos, Tiago Rocha, Dário Pasadas, A. Lopes Ribeiro</i>	
POSSIBILITIES OF IMPROVEMENT OF METROLOGICAL AND USABLE PROPERTIES OF AN ELECTROMAGNETIC NAVIGATION SYSTEM WITH AC EXCITED FIELD	1365
<i>M. Baszynski, Z. Moron, N. Tewel</i>	
LINEWIDTH NARROWING OF A DFB DIODE LASER USING A FIBER MACH-ZEHNDER INTERFEROMETER	1371
<i>Won-Kyu Lee, Chang Yong Park, Jongchul Mun, Dai-Hyuk Yu, Sang Eon Park, Sang-Bum Lee, Taeg Yong Kwon</i>	
ASSESSMENT OF AIRWAY LENGTH OF KOREAN ADULTS AND CHILDREN FOR OTOLARYNGOLOGY AND OPHTHALMIC SURGERY USING A FIBEROPTIC BRONCHOSCOPE	1374
<i>Hae Jin Park, Won Hyung Lee, Hyun Kyoon Lim, Se Jin Park</i>	
DEVELOPMENT OF ON-SITE CALIBRATION METHOD FOR CURRENT TRANSFORMER TESTING SYSTEM	1378
<i>Jae Kap Jung, Sang Hwa Lee, Jeon Hong Kang</i>	
AUTOMATED CLOUD BASE HEIGHT AND WIND SPEED MEASUREMENT USING CONSUMER DIGITAL CAMERAS	1382
<i>Fernando M. Janeiro, Filipe Carretas, Konrad Kandler, Pedro M. Ramos, Frank Wagner</i>	
OUT-OF-PLANE ESPI TECHNIQUE FOR MEASURING BULGE DEFORMATION	1387
<i>Y.-H. Huh, D. I. Kim, S. G. Hong</i>	
MEASUREMENT UNCERTAINTY COMBINED WITH THE MODEL OF PRODUCT AND MEASUREMENT REALIZATION IN 3D METROLOGY	1391
<i>C. R. Baldo, G. D. Donatelli</i>	
MEASURING INSTRUMENTS CALIBRATION NEAR ZERO VALUE	1396
<i>Edi Kulderknap, Argo Pandis</i>	
REFERENCE TEMPERATURE EXPERIMENTAL STUDY OF A RAMAN-SCATTERING BASED DTS SYSTEM	1400
<i>Min Xie, Yuanqin Shao, Hanli Xu, Zhen Zhou, Le Chen</i>	
AUTOMATION OF THE AC-DC TRANSFER MEASUREMENTS IN UME	1403
<i>Mehedin Arifović, Naylan Kanatoglu</i>	
RAMAN ANALYSIS ON NANOCRYSTALLINE SILICON FILM	1406
<i>Min Gyu Park, Se-Bum Choi, Nam Woon Kim, Hyunung Yu</i>	
DEVELOPMENT OF CAPACITIVE TYPE MEMS MICROPHONE WITH SIMULATION AND ELECTRO-MECHANICAL CHARACTERIZATION	1408
<i>Youngdo Jung, Young Hwa Lee, Junhyuk Kwak, Shin Hur</i>	
NONCOVALENT FUNCTIONALIZATION OF GRAPHENE BY WATER SOLUBLE POLY (ETHER ETHER KETONE)	1412
<i>Tapas Kuila, Nam Hoon Kim, Partha Khanra, Joong Hee Lee</i>	
ANALYSIS OF THE ACCURACY OF THE OPTICAL COORDINATE SCANNER	1416
<i>Mirosław Grzelka, Andrzej Kolodziej, Lidia Marciniak, Bartosz Gapinski, Grzegorz Budzik</i>	
DEVELOPMENT OF A CERTIFIED REFERENCE MATERIAL FOR THE ANALYSIS OF VITAMINS IN INFANT FORMULA	1420
<i>Byungjoo Kim, Joonhee Lee</i>	
FABRICATION AND EVALUATION OF A PRESSURE SENSOR FOR THE MEASUREMENT OF A DYNAMIC PRESSURE	1423
<i>Han Wook Song, Soo Young Kim, In Mook Choi, Chang Bog Kim, Kyung Don Yang</i>	
SIMULATION SYSTEM WITH CALORIFIC VALUE TRACKING FOR GAS DISTRIBUTION GRIDS WITH AN INCOMPLETE MEASUREMENT INFRASTRUCTURE	1425
<i>T. Hager, A. Bentaleb, E.-A. Wehrmann</i>	
LIFETIME OF CAVITATION BUBBLES IN HIGH INTENSITY ULTRASONIC BIOPROCESSOR	1431
<i>Franco Marinozzi, Fabiano Bini, Simone Novelli</i>	
REMARKS ON DIGITAL MULTIMETER CALIBRATION METHODOLOGIES	1436
<i>João Claudio D. Carvalho, Marcelo M. Costa, Rafael T. Barros, Thiago B. P. Souza</i>	
EXPERIMENTAL ANALYSIS OF INDUSTRIAL COORDINATE MEASURING SYSTEMS USING A CALIBRATED PRODUCTION WORKPIECE	1440
<i>C. R. Baldo, G. D. Donatelli</i>	
METROLOGICAL SELF-ASSURANCE OF DATA PROCESSING SOFTWARE	1444
<i>V. Ya. Kreinovich, L. K. Reznik, K. K. Semenov, G. N. Solopchenko</i>	

DEVELOPMENT OF ABSOLUTE QUANTIFICATION OF HUMAN SERUM TRIGLYCERIDES (TGS) USING A ISOTOPE DILUTION-LIQUID CHROMATOGRAPHY-MASS SPECTROMETRY (ID-LC-MS)	1448
<i>Dukjin Kang, Hong Taek Kim, Hwa Shim Lee, Sang Ryoul Park</i>	
REAL TIME EVALUATION OF VACUUM PROCESS FOR THIN FILM ALUMINUM DEPOSITION	1449
<i>Sang-Woo Kang, Ju-Young Yun, Jin-Tae Kim, Yong-Hyun Shin, Jong-Yeon Lim</i>	
PURIFICATION OF A LARGE CHECKPOINT PROTEIN COMPLEX FROM HUMAN HELA CELLS	1453
<i>Jun-Hyuk Choi</i>	
OPTIMIZATION OF THE ANALYTICAL CONDITIONS FOR AMINO ACID PROFILING USING A SHEATHLESS CE/ESI-MS	1454
<i>Ji-Seon Jeong, Sook-Kyung Kim, Sang-Ryoul Park</i>	
A BALANCE BOARD DEVICE FOR HOME CARE TELEREHABILITATION EXERGAMING	1459
<i>P. Arpaia, P. Cimmino, E. De Matteis, G. D'Addio</i>	
RECEDING HORIZON CONTROL FOR SELECTION OF FOCUS OF ATTENTION	1463
<i>M. Lauri, R. Ritala</i>	
CALIBRATION AND CHARACTERIZATION OF PRESSURE GAUGES UP TO 1 GPA	1469
<i>T. Kobata, H. Kajikawa, K. Ide</i>	
ELECTROLYTIC CONDUCTIVITY AS A QUALITY INDICATOR FOR BIOETHANOL	1473
<i>S. Seitz, P. Spitzer, F. Durbiano, H. Jensen</i>	
ESTABLISHMENT OF ROCKWELL HARDNESS SCALES AT UME	1478
<i>C. Kuzu, C. Oysu, S. Fank, E. Pelit</i>	
INTERLABORATORY COMPARISON IN CALIBRATION OF HARDNESS TESTING MACHINES IN TURKEY	1483
<i>C. Kuzu, E. Pelit</i>	
AN IMPROVEMENT OF DC VOLTAGE RATIO MEASUREMENTS BY CHARACTERIZATION OF THE DC VOLTAGE DIVIDER AT UME	1488
<i>Tezgül Coskun Öztürk, Salıha Turhan, Okan Yilmaz</i>	
INFLUENCE OF MEASUREMENT ACCURACY ON THE RELIABILITY OF REGRESSION MODEL ESTIMATION FOR D-OPTIMAL PLANS EVALUATION	1492
<i>Martin Motycka, Olga Tunová</i>	
COMPARISON STUDY OF CALIBRATOR TYPE-DEPENDENT GM QUANTIFICATION RESULTS	1496
<i>Hyong-Ha Kim, Woo Jeong Kim, Jung-Keun Suh</i>	
REFERENCE MATERIAL (RM) DEVELOPMENT FOR QUANTIFICATION ANALYSIS OF GENETICALLY MODIFIED SOYBEANS	1497
<i>Hyong-Ha Kim, Ah-Reum Lee, Yeon-Sil Hwang, Woo Jeong Kim, Jung-Keun Suh</i>	
RECENT DEVELOPMENTS IN PRECISION EVALUATION IN NON-QUANTITATIVE MEASUREMENTS	1498
<i>Tomomichi Suzuki, Yusuke Tsutsumi, Ryosuke Hamaguchi, Hironobu Kawamura</i>	

Volume 3

CALIBRATION OF FIBER OPTIC ACCELEROMETERS BY SHAKER BASED VIBRATION TEST SYSTEM	1503
<i>Torben R. Licht, Soren Andresen</i>	
PERFORMANCE EVALUATION OF GENE EXPRESSION PROGRAMMING IN IMPEDANCE SPECTROSCOPY FOR SENSOR MODELLING	1507
<i>Pedro M. Ramos, Fernando M. Janeiro</i>	
A NOTE ON APPLICATION OF MEASUREMENT PRECISION FOR BINARY DATA	1512
<i>R. Hamaguchi, Y. Tsutsumi, H. Kawamura, T. Suzuki</i>	
A REFERENCE SURFACE UNIFORMITY EVALUATION FOR SENSORS ABSOLUTE CALIBRATION	1516
<i>Cibele Teixeira Pinto, Flávio Jorge Ponzoni, Ruy Morgado De Castro</i>	
VOLUME DETERMINATION FOR 2 KG~20 KG IN NIM	1520
<i>Hong Yao, Jian Wang, Jing'An Ding, Lixiong Guo, Ruilin Zhong</i>	
STEP UP METHODS FOR ENSURING STANDARD TRACEABILITY OF EXTENDED RANGE IN ELECTRICAL MEASUREMENTS	1525
<i>Kyu-Tae Kim, Sung-Won Kwon, Jae Kap Jung, Sang-Hwa Lee, Hwa Gean Lee</i>	
DESIGN ON CAPACITOR BURN-IN SYSTEM CALIBRATION BOARD	1528
<i>Xuanmian Li, Minghu Zhang</i>	
ON THE RELATIONS BETWEEN ERROR AND UNCERTAINTY IN MEASUREMENT	1529
<i>L. Mari</i>	
ASPECTS OF MEASUREMENT POLICY WITH UNCERTAIN MEASUREMENTS	1532
<i>K. Konkarikoski</i>	
DIAGNOSTIC OF MAXILLOFACIAL PATHOLOGY	1535
<i>Jovan Bojkovski, Dejan Durdevic</i>	
UNCERTAINTIES IN CALIBRATION OF AIR TEMPERATURE SENSORS	1538
<i>Jovan Bojkovski</i>	
ON-LINE ESTIMATION OF THE COORDINATE MEASUREMENTS ACCURACY IN LABORATORY AND INDUSTRIAL CONDITIONS	1541
<i>J. Sladek, A. Gaska, M. Krawczyk</i>	
ON THE USE OF SMART METERS FOR CONTINUOUS MONITORING OF SYSTEM IMPEDANCE	1546
<i>D. Gallo, C. Landi, M. Luiso</i>	

STATE-SPACE BASED ADAPTATION OF THE ISO GUM TO TIME-DEPENDENT UNCERTAINTIES OF DYNAMICALLY MEASURED QUANTITIES	1551
<i>Marco Wegener, Ekehard Schmieder</i>	
CAN WE MEASURE PEOPLE'S TIME DISCOUNTING BEHAVIOUR?	1555
<i>Alessandra Basso</i>	
PRIMARY VACUUM STANDARD CMI FOR UHV PRESSURE RANGE 1×10^{-6} TO 1×10^{-10} PA	1561
<i>T. Gronych, L. Peksa, M. Jeráb, Z. Krajčec, D. Pražák, F. Stanek, M. Vicar, J. Tesar</i>	
A TECHNIQUE TO MEASURE INSTANTANEOUS MASS FLOW RATE FOR TIME-PERIODIC LAMINAR PIPE FLOWS AND ITS VERIFICATION WITH A UNIQUE MASS FLOW RATE CONTROL DEVICE	1564
<i>Bülent Ünsal, Subhashis Ray</i>	
RESULTS OF THE LONG TERM MEASUREMENT THAT WAS CARRIED OUT FOR COMPARATIVE STUDY OF THE WINDOWS FILMS	1571
<i>N/A</i>	
THERMAL ERROR ANALYSIS OF PRECISION INTERFEROMETRIC LENGTH MEASUREMENT SYSTEMS	1572
<i>A. Jakstas, S. Kausinis, A. Kasparaitis, R. Barauskas, A. Barakauskas</i>	
QUALITY ASSURANCE OF BREATH ALCOHOL MEASUREMENTS	1576
<i>Mirela Adelaida Anghel, Fanel Iacobescu</i>	
GLUCOSE UPTAKE RATE UNCERTAINTY IN A FED BATCH BIOREACTOR	1582
<i>G. Sassi, M. Bernocco</i>	
GREENHOUSES MICROCLIMATE REAL-TIME MONITORING BASED ON A WIRELESS SENSOR NETWORK AND GIS	1586
<i>O. Postolache, P. Girão, M. Pereira, C. Grueau, H. Teixeira, M. Leal</i>	
MEASUREMENT SCALE FOR COLOUR PERCEPTION	1591
<i>Eric Benoit</i>	
DESIGN OF THE 1 MN DEADWEIGHT FORCE STANDARD MACHINE IN KRISS	1596
<i>Y.-K. Park, H.-K. Song, M.-S. Kim, B. J.-H. Kim, J.-H. Choi, J.-T. Lee, H.-Y. Lee</i>	
MODELLING THE CALIBRATION OF THE IPRT ACCORDING TO THE ISO UNCERTAINTY GUIDE	1600
<i>I. Yang, K. S. Gam, W. Joung, Y.-G. Kim</i>	
A NEWLY DEVELOPED KRISS OZONE STANDARD REFERENCE PHOTOMETER	1604
<i>S. Lee, J. Y. Lee, J. C. Woo</i>	
HIGH DYNAMIC PRESSURE STANDARD USING A STEP PRESSURE GENERATOR	1606
<i>In-Mook Choi, Tae-Heon Yang, Han-Wook Song, Seung-Soo Hong, Sam-Yong Woo</i>	
SYSTEM FOR AUTOMATIC CHARACTERIZATION OF GIANT MAGNETO-IMPEDANCE SAMPLES	1609
<i>J. H. C. C. Carneiro, E. Costa Silva, L. A. P. Gusmão, C. R. H. Barbosa, E. Costa Monteiro</i>	
AN ELLIPSOMETRIC SURFACE PLASMON RESONANCE SENSOR FOR THE DIRECT MONITORING OF SMALL-MOLECULAR-WEIGHT ANALYTES	1614
<i>Hyun Mo Cho, Won Chegal, Yong Jai Cho, Jong Myoung Won, Moonseob Jin, Daesuk Kim</i>	
2 TERMINAL DUAL SOURCE IMPEDANCE BRIDGE	1620
<i>Dan Bee Kim, Kyu-Tae Kim, Mun-Seog Kim, Kwang Min Yu, Wan-Seop Kim, Young Gyun Kim</i>	
MAGNITUDE OF CHANGE IN VOLUME OF HIGHLY PRESSURIZED GAS CYLINDER DURING VENTING	1623
<i>Sang Hyub Oh, Byung Moon Kim, Namgoo Kang</i>	
AN ATHERMALIZATION LENS BARREL STRUCTURE FOR IR OPTICAL SYSTEM	1626
<i>Ho-Soon Yang, Hagyoung Kihm, Il Kweon Moon, Gil-Jae Jung, Se-Chol Choi, Kyung-Joo Lee, Hong-Yeon Hwang, Sug-Whan Kim, Yun-Woo Lee</i>	
LOW FREQUENCY ACCELEROMETER CALIBRATION CHALLENGES, ANALYSIS AND NEW DEVELOPMENTS	1630
<i>Mark I. Schiefer, Naveen Garg</i>	
MEASUREMENT OF COSMIC-RAY-INDUCED NEUTRONS USING MULTI-SHELL BONNER SPHERES	1634
<i>Jungho Kim, Hyeonseo Park, Kil-Oung Choi</i>	
THIS STUDY INVESTIGATES THE MECHANISM OF MICROWAVE FREQUENCY TRANSMITTED SPECTRUM OF CUT-OFF PROBE	1636
<i>N/A</i>	
PRELIMINARY STUDY FOR LOW VACUUM AND PRESSURE MEASUREMENT USING ULTRASONIC ACOUSTIC TRANSDUCERS	1637
<i>S. S. Hong, B. Y. Ahn, S. H. Cho, H. W. Song, I. M. Choi</i>	
DEVELOPMENT OF HYDROGEN LEAKAGE MEASUREMENT DEVICES BASED ON WIRELESS SENSOR NETWORKS	1639
<i>Seok Cheol Lee, Hoon Sik Jang, Ho Jong Kim, Un Bong Baek, Chang Soo Kim, Seung Hoon Nahm</i>	
THE USE OF CALIBRATED IONIZATION CHAMBER FOR THE CERTIFICATION OF ^{226}Ra RADIOACTIVITY	1643
<i>J. M. Lee, K. B. Lee, S. H. Lee, T. S. Park</i>	
EXPERIMENTAL STUDY OF THE FACTORS EFFECT ON THE S TYPE PITOT TUBE COEFFICIENT	1645
<i>Nguyen Doan Trang, Woong Kang, Jae Sig Shim, Hee Soo Jang, Seung Nam Park, Yong Moon Choi</i>	
ICP® BASED REFERENCE ACCELEROMETERS	1650
<i>Mark I. Schiefer, Jeffrey Dosch</i>	
ESTIMATION OF IMAGE MOTION FOR WIDE FIELD TELESCOPE UNDER WIND LOADS	1654
<i>Il Kweon Moon, Sangon Lee, Juhee Lim, Joung Ung Lee, Ho-Soon Yang, Yun Woo Lee</i>	

A STUDY ON CHARACTERISTICS OF 1 GPA CONTROLLED CLEARANCE PISTON GAUGE USING FINITE ELEMENT METHOD	1658
<i>R. Rudi Anggoro Samodro, In-Mook Choi, Sam-Yong Woo</i>	
DEVELOPMENT OF A REFERENCE MATERIAL FOR HYDROGEN CONTENTS MEASUREMENT	1662
<i>Yun-Hee Lee, Yongil Kim, Jongseo Park, Unbong Baek, Kwon Sang Ryu</i>	
LASER THOMSON SCATTERING MEASUREMENT TO DIAGNOSE THE LOW TEMPERATURE PLASMAS	1666
<i>Jung-Hyung Kim, Byung Hun Seo, Shinjae You, Daejin Seong, Yong Hyeon Shin</i>	
ADJUSTABLE BIPOD FLEXURES FOR MOUNTING MIRRORS IN A SATELLITE TELESCOPE	1670
<i>Hagyong Kihm, Ho-Soon Yang, Il-Kweon Moon, Yun-Woo Lee</i>	
NUMERICAL STUDY ON THE EFFECT OF LOW REYNOLDS NUMBER FLOWS IN STRAIGHT TUBE CORIOLIS FLOWMETERS	1674
<i>Rongmo Luo, Jian Wu, Steven Wan</i>	
DEVELOPMENT OF METHOD FOR DETERMINATION OF PRESSURE BALANCE PISTON FALL RATE	1678
<i>L. G. Bermanec, M. Martinaga, D. Zvizdic, V. Šimunovic</i>	
COMPARISON OF MILIGRAM SCALE DEADWEIGHT FORCES TO ELECTROSTATIC FORCES	1682
<i>Sheng-Jui Chen, Sheau-Shi Pan, Yi-Ching Lin</i>	
GIANT MAGNETORESISTIVE EFFECT IN NON-MAGNETIC SILICON	1686
<i>Tae Ho Lee, Hong-Seok Kim, Woo Lee, Yong-Joo Doh</i>	
GEOMETRIC MEASUREMENT OF ROCKWELL DIAMOND INDENTER USING TRACED MICRO-CMM IN CMS	1688
<i>I-Chih Ni, Sheau-Shi Pan, Jian-Lin Huang, Sheng-Jui Chen</i>	
ENERGY MEASUREMENT AND STANDARDS – AN OVERVIEW	1692
<i>Klaus-Dieter Sommer, Stefan Sarge, Petra Spitzer, Ruediger Kessel</i>	
VALUABLE ADVICES ON COMPARISON RULES FOR UNAMBIGUOUS EVALUATION OF MEASUREMENT RESULTS	1696
<i>F. Härtig, K. Kniel</i>	
A VERSATILE WEIGHING SYSTEM FOR STANDARD WEIGHTS MEASUREMENT USING MANUAL PLATFORM BALANCES	1702
<i>Lee Shih Mean, Hoh Wing Yew, Lim Lee Kwee</i>	
DYNAMIC FORCE SENSING – DYNAMIC AXIS SCALE WITH HIGH SPEED AND HEAVY RUNNING VEHICLE	1707
<i>Koji Tada, Shinichi Hayashida, Toshio Uchamaru, Eiichi Tada</i>	
ESTABLISHMENT OF 5 TON MASS STANDARDS	1710
<i>Sungjun Lee, Kwang Pyo Kim, Jin Wan Chung</i>	
PICO-SECOND UWB PULSE GENERATION USING AVALANCHE TRANSISTOR	1713
<i>Zeeshan Shahid, Sheroz Khan</i>	
CONTINUOUS MEASUREMENTS OF ATMOSPHERIC HALOGENATED COMPOUNDS AT JEJU ISLAND, KOREA FOR ESTIMATION OF EMISSION FROM EAST ASIA	1714
<i>Shanlan Li, Jooil Kim, Jens Muhle, Sunyoung Park, Mi-Kyung Park, Ray Weiss, Kyung-Ryul Kim</i>	
CHEMICAL MIGRATION – AN INVESTIGATION OF PHTHALATES IN FOOD PACKAGING AND THEIR MIGRATION INTO FOOD	1718
<i>K. Stockham, B. Chai, R. Paimin, S. Bigger, S. Buddhadasa, S. Duong, K. Kuorwel</i>	
DC HIGH-VOLTAGE DIVIDER EVALUATION USING THE BINARY STEP-UP METHOD	1722
<i>Sang Hwa Lee, Kwang Min Yu, Jeon Hong Kang, Seok Myeong Jang</i>	
ELEMENTARY CHARGE'S STATUS: A CENTURY AFTER MILLIKAN'S OIL DROP EXPERIMENT	1724
<i>Giampaolo E. D'Errico</i>	
A PRECISION DC LOW-CURRENT SOURCE FOR CALIBRATION OF ELECTROMETERS IN THE RANGE OF 100 PA TO 1 FA	1725
<i>Wan-Seop Kim, Mun-Seog Kim, Dan Bee Kim, Young Gyun Kim, Po Gyu Park</i>	
HYDROSTATIC WEIGHING APPARATUS FOR THE DENSITY DETERMINATION OF LARGE WEIGHTS	1727
<i>Y. J. Lee, W. G. Lee, K. H. Chang, M. A. Mohammed</i>	
OFFICIAL DEVELOPMENT ASSISTANCE IN METROLOGY IN SUPPORT OF SUSTAINABLE GROWTH OF DEVELOPING ECONOMIES	1729
<i>Sangwook Seo, Doyoung Lee, Kangyoung Sung, Ouseph Padickakudi</i>	
INFLUENCES OF HYDROGEN ON THE MECHANICAL BEHAVIOR OF WELD HEAT-AFFECTED ZONE IN API STEEL PIPELINE	1731
<i>Moo-Young Seok, Dong-Hyun Lee, Jung-A Lee, Yong-Jae Kim, Yun-Hee Lee, Un Bong Baek, Seung Hoon Nahm, Jae-Il Jang</i>	
NOISE ENCRYPTED UWB KEY GENERATION	1733
<i>Siti Hazwani Yaacob, Sheroz Khan, Sigit P. W. Jarot</i>	
ULTRA LOW PHASE NOISE OPTICAL PHASE LOCKING OF TWO EXTENDED-CAVITY DIODE LASERS FOR AN ATOM INTERFEROMETRY	1736
<i>Sin Hyuk Yim, Sang Eon Park, Sang Bum Lee, D. Cho, Taeg Yong Kwon</i>	
A METHOD OF IMPROVEMENT OF THE LOW-COST RECTIFIERS PERFORMANCE IN WIDEBAND AC VOLTMETERS AND AMPEREMETERS	1738
<i>Martin Pospisilik, Milan Adamek</i>	
STATISTICAL ANALYSIS OF DIFFERENT ABSORBING TARGETS FOR ULTRASONIC RADIATION FORCE MEASUREMENT	1742
<i>Rodrigo P. B. Costa-Félix, André V. Alvarenga</i>	

DEVELOPMENT OF ATOMIC MAGNETOMETER SYSTEM APPROACHING TO THE SPIN EXCHANGE RELAXATION FREE REGIME	1744
<i>Hyun Joon Lee, Kiwoong Kim, Seong-Joo Lee, Chan-Seok Kang, Kwon Kyu Yu, Yong-Ho Lee, Han Seb Moon</i>	
THE I-V CHARACTERISTIC COMPARISON METHOD IN ELECTRONIC COMPONENT DIAGNOSTICS	1747
<i>P. Neumann, M. Pospisilik, P. Skocik, M. Adamek</i>	
FLUCTUATION ENHANCED GAS SENSING AT MODULATED TEMPERATURE OF GAS SENSOR	1751
<i>Mateusz Kotarski, Janusz Smulko</i>	
SPEED LIMITATION IN SPATIAL UNIFORMITY MEASUREMENTS OF SOLAR CELLS USING A BEAM PROJECTOR	1755
<i>Jae-Keun Yoo, Seung Kwan Kim, Seung-Nam Park</i>	
TEMPERATURE PROFILES PRODUCED BY A SPHERICAL HEAT SOURCE IMMERSSED IN AN INFINITE LIQUID MEDIUM	1758
<i>J. D. Brionizio, G. H. Bonnier, A. F. Orlando</i>	
A SUITABLE PROCEDURE TO DETERMINE THE TRACEABILITY OF FORCE-GENERATION SYSTEMS FOR TESTING LOAD CELLS	1762
<i>Sascha Mäuselein, Oliver Mack, Jürgen Stolte, Klaus Vayhinger</i>	
INTERLABORATORY COMPARISON IN HUMIDITY AND TEMPERATURE	1763
<i>J. D. Brionizio, P. R. F. Santos, J. C. Andrade</i>	
STRAIGHT LINE DETECTION FOR AUTOMATED MEASUREMENT IN IMAGE SCENES	1767
<i>E. Reetz, A. Schlegel, P. Werner, G. Linß</i>	
NANOMETRIC MEASUREMENT OF THE PRE NANO SCALE TIO₂ POWDERS VIA FLAME SPRAY PYROLYSIS: SYNTHESIS, PROPERTIES AND PHOTOCATALYTICAL DECOMPOSITION OF METHYLEN BLUE	1771
<i>Mustafa Erol, Metin Yurddaskal, Serdar Yildirim, Ömer Mermer, Gökçen Bas, Mehmet Çakmakçi, M. Numan Durakbasa, Erdal Çelik</i>	
UWB PULSE GENERATION AND MODULATION FOR SIGNAL EXTRACTION FROM IMPLANTABLE DEVICES	1777
<i>Mokhaled M. Mohammed, Imran M. Khan, Sheraz Khan, Jalel Chebil, Khalid A. S. Al-Khateeb</i>	
IMPEDANCE SENSING MECHANISM FOR A NEW MINIATURE HAPTIC ACTUATOR BASED ON MR FLUIDS	1783
<i>Tae-Heon Yang, Semin Ryu, Sang-Youn Kim, Jeong-Hoi Koo, Dong-Soo Kwon</i>	
CONTACTLESS ECG SCANNING DEVICE HARDWARE DESIGN PROPOSAL	1786
<i>Martin Pospisilik, Lukas Kouril, Milan Adamek</i>	
PRIMARY DEW-POINT GENERATION BETWEEN 1 °C AND 60 °C AT LPM	1790
<i>Davor Zvizdic, Martti Heinonen, Danijel Sestan</i>	
THE STRUCTURE OF FLOW FIELD IN SMALL SIZE VORTEX FLOW METERS	1795
<i>G. Lorient, L. Nang Wei, E. Von Lavante, A. Gedikli, H. Krisch, S. Tournillon</i>	
DETERMINATION OF PH VALUES FOR REFERENCE POTASSIUM HYDROGEN PHTHALATE BUFFER IN WATER-ETHANOL MIXTURE (MASS FRACTION 50 %)	1801
<i>D. Stoica, P. Spitzer, F. B. Gonzaga, I. Maksimov, P. Fisticaro, B. Adel, I. C. Fraga, T. Asakai, P. P. Borges, A. Hioki</i>	
DETERMINATION OF ATMOSPHERIC HYDROGEN CHLORIDE GAS BY DIFFUSION SCRUBBER COUPLED ION CHROMATOGRAPHY	1805
<i>Dong Soo Lee, Ji Won Eom</i>	
SIMULATION OF VARIOUS ARRANGEMENTS FOR THE MULTI LASER TRACKER SYSTEM	1807
<i>Tran Trung Nguyen, Christian Tolks, Arvid Amthor, Christoph Ament</i>	
ACCURATE CALIBRATION OF RESISTANCE RATIOS BETWEEN 1 MO AND 1 GO USING SERIES RESISTORS	1812
<i>K. M. Yu, W. S. Kim, K. S. Han, J. H. Kang, S. H. Lee, G. Ihm</i>	
IMPACT OF THE CORE FACTORS OF QUALITY MANAGEMENT ON THE PERFORMANCE OF CONFORMITY ASSESSMENT BODIES - FOCUSING ON ACCREDITED TESTING AND CALIBRATION LABORATORIES IN KOREA	1815
<i>J. Park, J. Choi, S. Oh</i>	
STEP RESPONSE OF VACUUM SENSORS – A PRELIMINARY STUDY	1816
<i>Fredrik Arrhén</i>	
METHODS FOR MEASUREMENT OF FLEXRAY NODE BASIC TIMING PARAMETERS	1819
<i>Jan Sobotka, Jiri Novák</i>	
NANOMETER PROFILE MEASUREMENT OF LARGE ASPHERIC OPTICAL SURFACE WITH IMPROVED DEFLECTOMETRY METHOD - PRINCIPLE INTRODUCTION AND EXPERIMENTAL VERIFICATION	1824
<i>Muzheng Xiao, Tomohiko Takamura, Satoru Takahashi, Kiyoshi Takamasu</i>	
REALIZATION AND RESULTS OF A DKD INTERLABORATORY COMPARISON REGARDING THE MEASURAND ACCELERATION	1828
<i>Thomas Bruns, Philipp Begoff, Michael Mende</i>	
CONTACTLESS CURRENT MEASUREMENTS BY MEANS OF A GMR SENSOR	1832
<i>F. Attivissimo, A. Guagnano, M. Spadavecchia, I. H. L. Chan, M. K. Goh</i>	
ROBOT FINGERTIP MODULE FOR MEASURING CONTACT FORCE AND LOCATION	1836
<i>Dong-Ki Kim, Jong-Ho Kim, Yon-Kyu Park, Young-Ha Kwon</i>	
ENERGY MEASUREMENT FOR CONSUMER LOADS IN BUILDINGS USING FIELD BUS SYSTEM FOR HOME AUTOMATION	1840
<i>T. Kurczveil, P. Diekhake, J. Liu, E. Schnieder</i>	

NEW CHALLENGES IN ENVIRONMENTAL METROLOGY	1845
<i>Klaus-Dieter Sommer, Petra Spitzer, Volker Ebert</i>	
MICRO –MASS STANDARDS AND SHORT TIME INSTABILITIES	1850
<i>Sevda. Kaçmaz, Ümit Yüksel Akçadağ, Bülent Aydemör</i>	
USER REQUIREMENTS IN OPTICAL AREAL SURFACE MEASUREMENTS ON THE DEVELOPMENT OF AN ASSISTANCE SYSTEM	1852
<i>T. Werner, H. Schmidt, T. Hausotte</i>	
MEASUREMENT OF THE DIAMETER VARIATION AND REFRACTIVE INDEX INHOMOGENEITY OF A FUSED SILICA SPHERE USING FOUR-SURFACE PHASE-SHIFTING INTERFEROMETRY	1856
<i>C.-S. Kang, U. Griesmann, J. A. Soons</i>	
SIMULATION OF THE ELECTROMAGNETIC FLOWMETERS	1858
<i>Yu. Mikhailova, I. D. Welt</i>	
LASER SPECKLE SIMULATION ON A ROUGH WETTING PROBLEM	1865
<i>D. Hofer, B. G. Zagar</i>	
COMPARISON OF HIGH VALUE RESISTANCE STANDARDS USING THE MODIFIED WHEATSTONE BRIDGE AND PICOAMMETER	1871
<i>Ivan Lenicek, Damir Ilic, Luka Ferkovic</i>	
MEASUREMENT SYSTEM FOR RESEARCH ON PHOTOVOLTAIC THERMAL (PV/T) LIQUID BASED SOLAR COLLECTOR	1875
<i>Viktor Šunde, Mario Vražić, Damir Ilic</i>	
DESIGN OF THE MEASUREMENT SYSTEM FOR RESEARCH ON THE ELECTRIC VEHICLE	1879
<i>Marinko Kovacic, Mario Vražić, Damir Ilic</i>	
SOLAR METROLOGY: PHOTOVOLTAIC MODULE PERFORMANCE MEASUREMENTS	1883
<i>J. Dubard, J.-R. Filtz, V. Cassagne, P. Legrain</i>	
POWER SUPPLY SENSITIVITY OF MEMS GYROSCOPES	1889
<i>M. Vágner, P. Beneš</i>	
THE SUBDIVISION METHOD APPLIED TO DETERMINE VOLUME OF MASS STANDARDS	1893
<i>Victor M. Loayza, Fábio L. Cacaís, Arlindo Rebelo</i>	
BAYES FILTER FOR IMPROVING AND FUSING DYNAMIC COORDINATE MEASUREMENTS	1898
<i>E. Garcia, T. Hausotte, A. Amthor</i>	
A NANOMETROLOGICAL MANAGEMENT APPROACH TO ASSESS THE PROFILE AND THE SURFACE CHARACTERISTICS OF THE END MILLING TOOLS BY MULTI-MEASUREMENT ANALYSIS	1905
<i>G. Bas, P. Demircioglu, N. M. Durakbasa, P. H. Osanna</i>	
ENHANCED MEASUREMENT OF HIGH ASPECT RATIO SURFACES BY APPLIED SENSOR TILTING	1911
<i>A. Schuler, A. Weckenmann, T. Hausotte</i>	
HIGH SPEED TEMPERATURE SENSORS IN EMISSION SYSTEMS OF COMBUSTION ENGINES	1917
<i>S. Augustin, F. Fröhlich, C. Ament, T. Güther</i>	
NON-INVASIVE BLADDER VOLUME MONITORIZATION THROUGH NON-GALVANIC ELECTRODES	1922
<i>Bruno Gil, Raul Martins, Isabel Rocha</i>	
OPTIMAL DESIGN FOR LINEAR CALIBRATION PROBLEMS	1925
<i>Alistair B. Forbes, Hoang D. Minh</i>	
THE KEY CHARACTERISTICS AND THE PHYSICAL LIMITS OF THE PRIMARY STANDARD OF HIGH VACUUM AND LOW MASS FLOW RATES	1927
<i>M. Vicar, L. Peksa, T. Gronych, Z. Krajíček, D. Prazak, M. Jerab, F. Stanek</i>	
SPEED-UP NDT BASED ON GMR ARRAY UNIFORM EDDY CURRENT PROBE	1928
<i>O. Postolache, A. Lopes Ribeiro, H. Geirinhas Ramos</i>	
RAMAN DIAGNOSTICS OF CVD DIAMOND GROWTH	1933
<i>Marcin Gnyba</i>	
IDENTIFICATION OF INDUCTION MACHINE PARAMETERS USING SUPPORT VECTOR MACHINES	1937
<i>Piotr Błski</i>	
TESTING MACHINE CALIBRATION IN COMPRESION SIM COMPARISON UP TO 100 KN	1943
<i>Juan Christian Villarroel Poblete, Hernán Oliva, Luis Rubén Soto Pinto, Guenther Haucke</i>	
DESIGN AND REALIZATION OF A NEXT GENERATION HIGH ACCURACY PRIMARY CALIBRATION FACILITY FOR SOLAR CELLS AT PTB	1949
<i>S. Winter, T. Fey, I. Kröger, D. Friedrich, K. Ladner, B. Ortel, S. Pendsa, D. Schlüssel</i>	
NATIONAL INTERCOMPARISON IN FORCE - “UNIAXIAL TESTING MACHINE CALIBRATION”	1953
<i>N/A</i>	
EDDY CURRENT NONDESTRUCTIVE TESTING USING FARADAY INDUCTION TO PRODUCE THE EXCITATION	1959
<i>Helena Geirinhas Ramos, Tiago Rocha, Dário Pasadas, A. Lopes Ribeiro</i>	
INFLUENCE OF MEASUREMENT STRATEGY ON THE VALUE OF CYLINDRICITY	1963
<i>B. Gapinski, A. Kolodziej, M. Pawlowski, L. Marciniak, M. Grzelka, M. Lukaszzyk</i>	
STATE-SPACE FORMULATION FOR THE NODAL LOAD OBSERVER FOR SMART ELECTRICAL GRIDS WITH IMPERFECT MEASUREMENT INFRASTRUCTURE	1967
<i>W. Heins, G. Gewiss, C. Bohn, H.-P. Beck</i>	
DESIGN VALUE USE TYPE SUPER-RESOLUTION OPTICAL INSPECTION FOR MICROFABRICATED STRUCTURE DEFECTS BY USING STANDING WAVE ILLUMINATION SHIFT	1973
<i>R. Kudo, S. Takahashi, K. Takamasu</i>	

USE OF POOLED STANDARD DEVIATION TAKEN FROM HISTORICAL DATA IN CALCULATING THE MEASUREMENT UNCERTAINTY IN TENSILE TESTS	1977
<i>Sueli Fischer Beckert, Gustavo Domeneghetti, Danielle Bond</i>	
CHARACTERIZATION OF ROCKWELL BALL INDENTER HOLDER SHAPE AND PROPERTIES, AND ITS EFFECT ON HARDNESS	1983
<i>Nae-Hyung Tak, Seong-Gu Hong, Gun Woong Bahng, Sang-Bo Bae</i>	
POSITION-BASED QUANTUM CRYPTOGRAPHY IN THE DISTRIBUTED MEASUREMENT SYSTEM	1986
<i>Piotr Bilski, Wieslaw Winięcki</i>	
DIFFERENCE OF PROFILE PARAMETERS DUE TO ERRORS OF POINTS COLLECTIONS – SIMULATION ANALYSIS	1992
<i>R. Majchrowski, Lidia Marciniak</i>	
CHARACTERIZATION OF MAGNETIC PROBES USING SCANNING ELECTRON MICROSCOPY WITH POLARIZATION ANALYSIS	1996
<i>Wondong Kim, Sangsun Lee, Chanyong Hwang</i>	
METROLOGY INNOVATION MODEL APPLIED TO THE VALUE CHAIN OF GREEN FOOD PRODUCTION	1998
<i>J. S. Echeverría-Villagomez, D. García-Luna, S. Monroy-Tello</i>	
THE REALIZATION OF THE DEFINITION OF THE METRE AT INRIM	2002
<i>M. Zucco, M. Bisi, P. Cordiale</i>	
CARDIAC ELECTRICAL ACTIVITY MEASUREMENT OF SMALL LABORATORY ANIMAL BY USING HTS-SQUID MAGNETOMETER	2007
<i>In-Seon Kim, San Ahn</i>	
THERMAL CONDUCTIVITY OF ALUMINUM FABRICATED BY EQUAL CHANNEL ANGULAR PRESSING	2008
<i>S. Lee, S. Kwon</i>	
UNCERTAINTY EVALUATION OF LOW PRESSURE BY MEANS OF CROSS-FLOAT	2012
<i>Jin-Seok Chang, Sang-Gu Lee</i>	
DEVELOPMENT OF REFERENCE VICKERS HARDNESS BLOCKS BY THE POWDER METALLURGY PROCESS	2014
<i>T. Aleksandrov Fabijanic, Ž. Alar, M. Franz</i>	
COULOMETRIC DETERMINATION OF AMOUNT CONTENT OF POTASSIUM DICHROMATE FOR COMPARABILITY ASSESSMENT THROUGH A BILATERAL COMPARISON	2019
<i>P. P. Borges, W. B. Silva Junior, F. B. Gonzaga, A. Sobina, A. Shimolin, G. Terentiev</i>	
CALIBRATION OF A REFERENCE VIBRATING TUBE DENSIMETER	2022
<i>S. Loreface, M. Sardi</i>	
AUTOMATIC PETROGRAPHIC INSPECTION BY USING IMAGE PROCESSING AND MACHINE LEARNING	2027
<i>Katharina Anding, Daniel Garten, André Göpfert, Matthias Rückwardt, Edgar Reetz, Gerhard Linß</i>	
TWO-VIEWING-PLANES-PROJECTION: THE NEW WAY OF MEASURING SPECTACLE FRAMES	2034
<i>M. Rückwardt, A. Göpfert, K. Anding, M. Schellhorn, E. Reetz, G. Linß</i>	
OFFSET CORRECTION IN A DIGITAL INTEGRATOR FOR ROTATING COIL MEASUREMENTS	2037
<i>P. Arpaia, P. Cimmino, L. De Vito, L. Fiscarelli</i>	
LONG AND WIDE CANTILEVER AS A MICROFORCE TRANSFER ARTEFACT	2042
<i>Min-Seok Kim, Jong-Ho Kim, Yon-Kyu Park</i>	
DEVELOPMENT OF NEW BLACKBODIES FOR TEMPERATURE AND RADIOMETRIC CALIBRATIONS	2046
<i>S. A. Ogarev, B. B. Khlevnoy, M. L. Samoylov</i>	
PREPARATION PROCEDURE FOR LOADING FLUX QUANTUM WEIGHTS ON PICONEWTON FORCE REALIZATION SYSTEM	2050
<i>J.-H. Choi, H. H. Choi</i>	
METROLOGICAL ATOMIC FORCE MICROSCOPE AND TRACEABLE MEASUREMENT OF NANO DIMENSION	2052
<i>S. Gao, W. Li, M. Lu, Y. Shi, X. Tao, H. Du</i>	
DOMAIN STRUCTURES OF FERROELECTRIC LEAD TITANATE NANOTUBES FABRICATED AT VARIOUS TEMPERATURES	2056
<i>Hyunwoo Choi, Yunseok Kim, Seungbum Hong, Kwangsoo No</i>	
FABRICATION AND CHARACTERIZATION OF FERROELECTRIC POLY (VINYLIDENE FLUORIDE - CO-TRIFLUOROETHYLENE) NANODOTS	2059
<i>Yoon-Young Choi, Moonkyu Park, Jongin Hong, Kwangsoo No</i>	
NONDESTRUCTIVE EVALUATION OF MECHANICAL PROPERTIES USING INSTRUMENTED INDENTATION TECHNIQUE	2063
<i>Seung-Won Jeon, Won-Seok Song, Dongil Kwon</i>	
DESIGN OF A LOW-TEMPERATURE BLACKBODY RADIATION RESOURCE WITH A FROST PREVENTION UNIT	2067
<i>H. Lan, S. H. Xue, X. Q. Fang, S. F. Yu, C. Cui, C. Z. Shen</i>	
CHAOTIC RESULTS OF MULTIDIMENSIONAL ORDINAL MEASUREMENTS	2071
<i>S. Muravyov</i>	
POLYMETHACRYLATE OPTICAL SENSORS FOR CHEMICAL ANALYSIS	2075
<i>N. Gavrilenko, A. Spiridonova, S. Muravyov</i>	
A FAST METHOD TO ESTIMATE BODY CAPACITANCE TO GROUND	2079
<i>C. Aliau-Bonet, R. Pallas-Areny</i>	

COMPARATIVE STUDY ON KINEMATIC CHARACTERISTICS OF THREE MICRO-SURGICAL MECHANISMS FOR NEUROSURGICAL OPERATIONS	2083
<i>S. M. Kim, J. Cheong, B. J. Yi, W. K. Kim</i>	
THE DESIGN OF REFERENCE MATERIALS FOR AUTOMATED TEST EQUIPMENT(ATE) CALBRATION	2089
<i>Yong Hu, Jian Shi, Qian Liu</i>	
DEVELOPMENT OF PROFICIENCY TESTING SCHEME FOR MEASUREMENTS OF TOXIC AND ESSENTIAL ELEMENTS IN RICE AS AN AGRICULTURAL PRODUCT	2092
<i>Kyung-Seok Lee, Yong-Hyeon Yim, Sook Heun Kim, Youngran Lim, Myung Chul Lim, Euijin Hwang, Byungjoo Kim, Gi Jun Park, Young Jin Song, Byung Chul Sohn, Young Bae Son</i>	
EFFICIENT FACE RECOGNITION BASED ON MCT AND I(2D)²PCA	2096
<i>Biho Kim, Hyung-Min Park</i>	
MEASUREMENT OF ULTRA-LOW MOISTURE PERMEATION THROUGH EPOXY SEALING IN OLED ENCAPSULATION	2097
<i>Byung Il Choi, Sang Bong Woo, Jong Chul Kim</i>	
COMPACT SELF-CALIBRATABLE ROTARY ENCODER	2100
<i>Tsukasa Watanabe</i>	
DESIGN, CONSTRUCTION AND START UP OF A 200 N M AND 2 KN M TORQUE TRANSFER CALIBRATION SYSTEM	2103
<i>Jorge C. Torres Guzmán, Eric E. Torres De León, Fernando Martínez Juárez</i>	
HYBRID METHOD FOR DETECTING INFLUENTIAL FACTORS FOR TRACKING CAMERAS IN A CAVE	2106
<i>F. Ezedine, J. M. Linares, J. M. Sprauel, W. M. Wan Muhamad</i>	
PROBABILISTIC INTENTION CLASSIFICATION FOR HUMAN AUGMENTED COGNITION SYSTEM	2112
<i>Byunghun Hwang, Young-Min Jang, Minho Lee</i>	
CONTROL AND CHARACTERIZATION OF A 200 N M AND 2 KN M TORQUE TRANSFER CALIBRATION SYSTEM	2115
<i>Jesús Galvan-Mancilla, Jorge C. Torres-Guzman</i>	
ESTABLISHMENT OF THE ENGINEERING RELIABILITY EVALUATION SYSTEM FOR THE DEVELOPMENT OF UHV PUMPS	2118
<i>J. Y. Lim, S. Y. In, S. K. Lim, W. Cheung, W. J. Kim, S. J. Park, Y. T. Park, J. K. Ryu, D. Y. Koh</i>	
HIGH-RESOLUTION AUTOCOLLIMATOR CALIBRATION SYSYTEM	2122
<i>H. Fujimoto, T. Watanabe</i>	
CONTACT-FREE FLOW RATE MEASUREMENT IN WEAKLY CONDUCTING ELECTROLYTES USING LORENTZ FORCE VELOCIMETRY	2124
<i>A. Wegfrass, C. Diethold, M. Werner, C. Resagk, F. Hilbrunner, B. Halbedel, A. Thess</i>	
EXPERIMENTAL SET-UP FOR THE MEASUREMENT OF THE PERCEIVED INTENSITY OF VIBRATIONS	2126
<i>F. Crenna, V. Belotti, G. B. Rossi</i>	
OPTICAL MEASUREMENT SYSTEM FOR QUALITY CONTROL OF PLASTICS	2132
<i>G. Gerstorfer, B. G. Zagar</i>	
DEVELOPMENT OF NANO PARTICLE SIZING SYSTEM USING FLUORESCENCE POLARIZATION	2137
<i>Terutake Hayashi, Masaki Michihata, Yasuhiro Takaya, Kok Foong Lee</i>	
DEVELOPMENT OF A CERTIFIED REFERENCE MATERIAL FOR THE ANALYSIS OF NICOTINAMIDE IN MULTIVITAMIN	2142
<i>Joonhee Lee, Byungjoo Kim</i>	
THERMOPOWER MEASUREMENT OF SINGLE NANOWIRE USING A MEMS DEVICE	2144
<i>Ho Sun Shin, Joon Sung Lee, Seong Gi Jeon, Jin Yu, Jae Yong Song</i>	
INTE-COMPARISON OF TORQUE STANDARDS IN RANGE OF 20 N.M UP TO 2000 N.M BETWEEN KRISS AND NIS	2148
<i>Min Seok-Kim, K. M. Khaled, A. G. Abusinna, G. Aggag, M. I. Mohamed, E. H. Hasan, A. E. Abuelezz</i>	
MEASUREMENT OF THE FIGURE-OF-MERIT OF THERMOELECTRIC DEVICES	2153
<i>Suyong Kwon, Yong-Gyoo Kim, Sanghyun Lee, Jong Chul Kim</i>	
THE KRISS PLUS (PULSED LASER-BASED UNIFORM SOURCE) FACILITY FOR MEASUREMENT OF SPECTRAL RADIANCE RESPONSIVITY	2156
<i>Dong-Hoon Lee, Kee Suk Hong, Yong-Shim Yoo, Seongchong Park, Chul-Woung Park, Seung-Kwan Kim, Seung-Nam Park</i>	
CALIBRATION OF PRIMARY REFERENCE SOLAR CELLS AT KRISS	2158
<i>Dong-Hoon Lee, Seung-Nam Park, Seongchong Park, Jae-Keun Yoo, Seung Kwan Kim</i>	
IMPLEMENTATION OF WIRELESS SENSOR NETWORK FOR MONITORING PHYSICAL PARAMETERS OF A MOVING OBJECT USING 16-BIT MICROCONTROLLER	2161
<i>Dalia Pratihar</i>	
MEASUREMENT OF PARTICLE SIZE DISTRIBUTION BY ACOUSTIC EMISSION METHOD	2165
<i>Miroslav Uher, Petr Benes</i>	
MEASUREMENT OF EFFECTIVE ELECTRON SOURCE SIZE BY USING NANO-BIPRISM	2170
<i>B. Cho, Y. Cho, S. Ahn, H. Lee, B. Park, C. Hwang</i>	
GLOBAL SYSTEM OF UNIVERSAL TIME BASED ON RECEIVING SIGNALS FROM PERIODICAL PULSATING STARS	2176
<i>M. Konkanov</i>	
VERIFICATION OF EFFECTS UPON THE SHORT-DISTANCE-DASH-START THROUGH THE DEVELOPMENT OF AN IMPROVED PRECISION SENSOR IN THE STARTING BLOCKS	2179
<i>Jeong-Tae Lee, Dong-Ki Kim, Ik-Soo Jeong</i>	

STUDY FOR MINIMIZING MEASUREMENT UNCERTAINTIES OF NANOPARTICLE SIZE USING DYNAMIC LIGHT SCATTERING	2183
<i>B.-J. Park, D. Khishigmaa, N. W. Song</i>	
PHOTOCHEMICAL PROPERTIES AND CYTOTOXICITY OF TiO₂ NANOPARTICLES DEPENDING ON THE DEGREE OF AGGLOMERATION	2187
<i>N. A. Lee, M. Yoon, N. W. Song</i>	
DEVELOPMENT OF STANDARD MEASUREMENT PROTOCOL FOR THE SIZE ANALYSIS OF SiO₂ NANOPARTICLES USING A SCANNING ELECTRON MICROSCOPY	2190
<i>Hyuksang Kwon, Soo Jin Kim, Eun Ji Noh, Seon Hwa Park, Nam Woong Song</i>	
OBSERVATION OF TIME EVOLUTIONARY PHYSICOCHEMICAL PROPERTY OF SILICA NANOPARTICLES AS CRM CANDIDATES	2193
<i>S. J. Kim, N. W. Song</i>	
NON-LINEARITY COMPENSATION OF HIGH-PERFORMANCE DATA ACQUISITION SYSTEMS FOR MAGNETIC MEASUREMENTS	2196
<i>P. Arpaia, P. Cimmino, L. Fiscarelli, S. Rapuano</i>	
MEASURING MULTIPOLE FIELD ERRORS IN MAGNET APERTURES OF LARGE ASPECT RATIO BY MEANS OF AN OSCILLATING WIRE ON ELLIPTIC TRAJECTORIES	2200
<i>P. Arpaia, C. Petrone, S. Russenschuck</i>	
SPECTRAL RESPONSIVITY MEASUREMENT OF KIM-LIPI STANDARD RADIATION THERMOMETER TRACEABLE TO ABSOLUTE CRYOGENIC RADIOMETER	2203
<i>Aditya Achmadi, Helmi Zaini, Hidayat Wiradinata, Seung-Nam Park, Ghufron Zaid</i>	
LIGHT-EMITTING-DIODE-BASED FOURIER-TURNFORM SPECTRAL RESPONSE MEASUREMENT SYSTEM FOR PHOTOVOLTAIC CHARACTERIZATIONS	2207
<i>Behrang H. Hamadani, John Roller, Brian Dougherty, Howard W. Yoon</i>	
TRACEABILITY IN MEASUREMENT FOR ROCKWELL, BRINELL AND VICKERS HARDNESS	2211
<i>Gun-Woong Bahng, Nae Hyung Tak, Seong-Gu Hong, Junhee Hahn</i>	
ACQUISITION OF DATA FROM ADC USING FPGA	2217
<i>Janusz Mindykowski, Damian Hallmann, Romuald Masnicki</i>	
BEYOND MERCURY MANOMETERS: ARE OPTICALLY-BASED PRIMARY STANDARDS FOR REALIZATION OF THE PASCAL WITHIN REACH?	2221
<i>Jay Hendricks, Jack Stone, Greg Strouse, Doug Olson, Jacob Ricker, Patrick Egan</i>	
AN ANALYSIS ON HIGH PRESSURE DYNAMIC CALIBRATORS USED IN THE DEFENSE AREAS	2222
<i>Sung Soo Hong</i>	
LASER FOCUSING OF CHROMIUM ATOMS	2232
<i>C. Yin, J. Qian, J. Wang, C. Shi</i>	
CHALLENGES AND PERSPECTIVES OF REGIONAL COOPERATION WITHIN COOMET – THE EURO-ASIAN REGIONAL METROLOGY ORGANIZATION	2235
<i>P. Neyezhnikov, K-D. Sommer</i>	
A NOVEL CONCENTRIC ANNULAR CLEARANCE MEASURING METHOD BASED ON PNEUMATIC FLOWRATE BALANCE	2238
<i>Zhipeng Xu</i>	
TEACHING OF MEASUREMENT BASED ON DIGITAL IMAGES	2241
<i>K. Marjanen, M. Mettinen, H. Ihalainen</i>	
FETAL BIOMETRY IN KOREAN FETUS	2246
<i>Sung Eun Hur, Sung Ki Lee, B. Dongjoo Shin, Hyun Kyoong Lim, Se Jin Park</i>	
CURRENT STATUS AND PROSPECT FOR DEVELOPMENT AND DISSEMINATION OF STANDARD REFERENCE DATA IN KOREA	2249
<i>Kee Hoon Kang, Sang Tae Lee, Kyum Sik Chae, Chang Geun Kim</i>	
THE SIGNIFICANT ROLE OF ERRORS IN METROLOGY – JUSTIFICATION BY SYSTEM THEORY	2250
<i>Karl H. Ruhm</i>	
Author Index	