

## Inhalt

	Seite	
M. Gnyba Raman Spectroscopy for Investigation of Sol-Gel Materials and Ceramic Materials	1	
<b>Plenary I</b>		
M. Koch, L. Beckmann, F. Rutz, P. Knobloch, T. Kleine-Ostmann, K. Pierz, G. Hein, H. Niemann, B. Gütter	Sensing with THz Imaging	11
<b>Session 1: Spectroscopy and Scattering Techniques</b>		
S. Karella, J. Karl, Th. Metz, S. Kuhn	Use of the Raman Spectroscopy for the Analysis of the Product Gas from the Allothermal Biomass Gasification	23
St. Gleich, A. Duparré	Light Scatter Technique for Application in Optics, Nanotechnology, and Engineering	31
I. Krohne, K. Eder, T. Pfeifer, D. Rohrmann, P. Firek	Minimally-Invasive Measurement of Oxygen Saturation in Blood and Tissue by Diffuse Reflectance Spectroscopy	39
<b>Session 2: Interferometry</b>		
D. Bergner, H. Bernitzki, Th. Herrmann, J. Röder, R. Schreiner	Precision Cylinder Optics	47
M. Küchel	Spatial Coherence in Interferometry	59
Th. Kinder, K.-D. Salewski	Progress in Absolute Distance Interferometry Based on a Variable Synthetic Wavelength	79
R. Mokdad, P. Pfeiffer, B. Pécheux, I. El-Hafidi	Extraction and Correction of Phase Nonlinearities in an Interferometric Signal	87
D. Dontsov, W. Schott, G. Jäger, H.-J. Büchner, U. Gerhardt	Fibre-Coupled Homodyne Interferometer for Vibration Analysis	93

J. Möbius, K. Moldenhauer, J. Czarske, W. Ertmer, A. Ostendorf	External Cavity Laser Diode with Synchronous Pumping for Precise Distance Measurements	101
<b>Session 3: Optical Measurement in Micro- and Nanotechnologies</b>		
R. Christoph, W. Rauh	Multisensor Coordinate Measuring Machines for Dimension, Form and Surface Structures of Micro Parts	109
R. Artigas, F. Laguarta, C. Cadevall, M. L. Novella, F. Rominski, A. Wójcik	3D Shape and Texture Measurements on the Micro and Nano-Scales Using a New Dual-Technology Optical Sensor Head	121
K. Molt, S. Berentsen, A. Röseler	Spectroscopic FT-IR-Ellipsometry of Anodized Aluminium	131
R. Aswendt, Th. Dean	Analysis of Active Micromembranes with Nanometer Resolution	151
<b>Poster Session</b>		
M. Lahrache, M. Torzynski, D. Vukičević	AFM Evaluation of Silver Halide Material for Holography	163
T. Pfister, L. Büttner, T. Razik, J. Czarske	Two-Wavelength Velocity Profile Sensor for the Measurement of Rotating Objects	171
M. Durak, Ö. Bazkır, O. Çelikel, F. Samadov	Improvements in the Optical Measurements Using Laser Stabilization Optics	183
A. Baybakov, V. Gurenko, E. Konstantinova, K. Kuchinsky, S. Plotnikov, V. Sotnikov	Using the Triangulation Measurement Method for Industrial Inspection of Dynamic Objects	189
J. A. Quiroga, D. Crespo, N. Fournier, J. C. Martinez	Automatic Demodulation of Single-Image Fringe Patterns with Application in the Evaluation of External Defects in Aeronautical Surfaces by Shadow-Moiré	199
K. Splitthof, S. Stecklum	3D Digital Image Correlation	209
C. Ye	A liquid Crystal Spectral Filter Based on the Optical Rotatory Dispersion	217

R. González-Moreno, J. Alonso, J. A. Quiroga, E. Bernabeu	Improvements in Laser Beam Characterization with a CCD-Based Setup	225
S. Piecha, M. Müller	Colour Determination of Ophthalmic Lenses	235
R. Reichle, Ch. Pruss, W. Osten, H. Tiziani, F. Zimmermann, Ch. Schulz	Microoptical Sensor for Integration in a Functional Spark Plug for Combustion Analysis by UV-Laser Induced Fluorescence Spectroscopy	245
A. H. Rawicz	Stacked Integrated Photoluminescent Concentrators for Full Color Vision Receptive Fields in an Artificial Eye	257
T. Alt, K. Badstuebner, A. Ansorge, B. Michel	Structural Health Monitoring by Embedded Fiber Bragg Gratings	267
K. Imai, Y. Takaya, T. Miyoshi, T. Ha, K. Kimura	Position Sensitivity of Micro Probe with Transverse Vibration Using Optical Trap	277
S. Firdous, K. Hassan, M. Ikram	Modeling of Electro-Optic Devices for Scattering and Absorption of Polarized Light with Muller Matrix	285
<b>Plenary II</b> S. Takahashi, R. Nakajima, T. Miyoshi, Y. Takaya, T. Yoshioka, T. Hariyama, K. Kimura, T. Nakao, K. Takamasu	Nano-Defects Inspection of Semiconductor Wafer using Evanescence Wave	307
<b>Session 4: Structured Illumination Techniques</b> J. Eckstein, P. Ott	Proof of Principle and Specification of a Rotational Symmetric Triangulation Sensor with Low Cost Reflective Optics	317
M. Petz, R. Tutsch	Reflection Grating Photogrammetry	327

	Seite	
K. Körner, U. Droste, Th. Schuster, W. Osten	Depth-Scanning Techniques in Optical 3-D Metrology	339
G. Notni, St. Riehemann, P. Kühmstedt	OLED Based Fringe Projection System for Microshape Measurement	349
<b>Session 5: Development of Measurement Systems</b>		
T. Pfeifer, S. Driessen, B. Engelmann	Process Observation for the Assembly of Hybrid Micro Systems	357
Th. Fries	A Multi Sensor Metrology Tool for Nanometer to Meter Measurements	369
K. E. Meissner, W. B. Spillman, Jr.	Dual-Mode Optical Fiber Vibration Sensor	379
K. Schulmeister	Maximising Optical Emission under the International Laser and LED Safety Standard	389
Ü. Aydin, J. Makowe, R. Noll	Fast Identification of Light Metal Alloys by Laser-Induced Breakdown Spectroscopy for Material Recycling	401
<b>Session 6: Speckles, Image Analysis and Cameras</b>		
A. Purde, A. Meixner, T. Zeh, K. Bachfischer, A. W. Koch	Recent Developments in Surface Contouring by Means of Speckle Interferometry	413
T. Pfeifer, D. Dörner, K. Schneefuß	Approach to a Machine-Integrated Measurement Device for the Interferometric Testing of Ultraprecise Surfaces	423
Yu. Chugui, L. Finogenov, V. Kiryanov, V. Nikitin, A. Sametov, P. Zavyalov	Inspection of Holes Parameters Using a Ring Diffractive Focuser	433
Yu. V. Chugui, N. A. Yakovenko, M. D. Yaluplin	A Fresnel Method for Measurement of Objects Dimensions in Coherent Light	445
M. Heizmann	Segmentation of Striation Patterns Using Illumination Series	461
	List of Authors	471