Poster

Applications

Calibrations

Methods

No.	Title/Author
A10	**Time Resolved Reflectivity measurements on HOPG**
	S. Pagliara[1], G. Galimberti[1], S. Ponzoni[1], S. Mor[1], G. Ferrini[1] 1 Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, I-25121 Brescia, Italy
A11	**NanoBio-Chips for quantification of clinical markers based on ID-SERS**
	F. Yaghobian*, R. Stosch, T. Weimann, T. Dziomba and B. Güttler Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany, * Fatemeh.yaghobian@ptb.de
A12	**Spectral studies of laser-induced carbothermal reduction of titanium oxides**
	Věra Jandová, Zdeněk Bastl, Jan Šubrt, Josef Pola Institute of Chemical Process Fundamentals, ASCR, 16502 Prague
A13	**The effect of growth condition on morpohology of Zinc Oxide nanowires**
	H. Minaee *, H. Haratizadeh, S.H. Mousavi Physics Department, Shahrood University of Technology, Shahrood, Iran hminaphy@yahoo.com
A14	**A Nanolayer Biosurfactant Film Adsorbed at a Solid-Liquid Interface**
	Sagheer A. Onaizi[1,*], Lizhong He[2] and Anton P.J. Middelberg[1,2] The University of Queensland, St Lucia QLD 4072, Australia. 1. Centre for Biomolecular Engineering, School of Chemical Engineering. 2. Centre for Biomolecular Engineering, Australian Institute for Bioengineering and Nanotechnology,. Email:sagheer.onaizi@uqconnect.edu.au Surfactin,
A15	**Synthesis and electrical investigation of PMN-PT ceramics nanopowders**
	M. Ghasemifarda, M. Zavarb, H. Ghasemifardc aDepartment of physics,Tarbiat Moallem University of Sabzevar, Sabzevar, Iran Sama Organization (affiliated with Islamic Azad University)- Quchan Branch cDepartment of Medical Enginearing, Azad University of Mashhad, Mashhad, Iran

No.	Title/Author
C01	**A method for linearization of laser interferometer down to picometre level with a capacitive sensor**
	J. Seppä, V. Korpelainen, M. Merimaa, A. Lassila Centre for metrology and accreditation (MIKES), P.O. Box 9, FI-02151 Espoo, Finland jeremias.seppa@mikes.fi
C02	**Measurement uncertainty for difference measurements with a homodyne interferometer**
	Institute of Process Measurement and Sensor Technology Faculty of Mechanical Engineering, Ilmenau University of Technology Ilmenau, Thuringia, Germany
C03	**Active standards as calibration tools for SPM**
	Sergey S.Golubev*, Igor V.Yaminsky** * All-Russian research institute of metrological service (VNIIMS), Ozernaya st. 46, Moscow, 119361, Russia, phone/fax: +7 495 781-4413, mail: sergolub@mail.ru ** Advanced Technologies Center (ATC), Stroitelei st. 4-5-47, Moscow, 119311, Russia
C04	**An ISO compliant method for calibrating the noise levels and flatness of areal surface texture measuring instruments**
	Claudiu Giusca*, Richard Leach*, Lakshmi Nimishakavi*, Franck Helary† *Engineering Measurement Division, National Physical Laboratory, UK †Laboratoire de Mécanique et Procédés de Fabrication, Arts et Métiers ParisTech, France. claudiu.giusca@npl.co.uk
C05	**Methods for determining and processing 3D errors and uncertainties for AFM data analysis**
	P Klapetek [1], A Yacoot [2], L Koenders [3], D Nečas [4], A Campbellová [1], J Valencia [2] 1 Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic 2 National Physical Laboratory, Hampton Road, Teddington, Middlesex, TW11 0LW, UK 3 Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig,Germany 4 Department of Physical Electronics, Faculty of Science, Masaryk University, Kotlářská 2, 611 37, Brno, Czech Republic
C06	**A fast and accurate method to determine scan direction for pitch calibration**
	Liu Yi, Li Yuan, Zou Ziying, Shanghai Institute of Measurement and Testing Technology, 1500 Zhangheng Road 201203 Shanghai, China
C07	**Estimating the uncertainty contributions of the standard algorithm used to determine the position and width of a graduation line**
	R. Köning[1], K. Karovic[2], G. Wimmer[3,4,5] and V. Witkovsky[2] 1 PTB Braunschweig, Germany 2 Institute of Measurement Science, Slovak Academy of Sciences, Slovakia 3 Mathematical Institute, Slovak Academy of Sciences, Slovakia 4 Faculty of Natural Sciences, Matej Bel University, Slovakia 5 Institute of Mathematics and Statistics, Masaryk University, Czech Republic
C08	**Comparison of Layer Thickness Measurements of Polymers and Metals on Silicon or SiO2**
	Uwe Brand[1], Erik Beckert[2], Andreas Beutler[3], Gaoliang Dai[1], Claudio Geisen[4], Andreas Hertwig[5], Petr Klapetek[6], Jürgen Koglin[7], Richard Thelen[8], Rainer Tutsch[9] 1 PTB, 2 IOF, 3Mahr, 4 IWF Berlin, 5 BAM, 6CMI Brno, 7 FRT, 8 KIT, 9IPROM
C09	**The improvement of the structures height measurement by implementation of direct peak force control mode**
	Andrzej Sikora, Łukasz Bednarz, Agnieszka Iwan, Electrotechnical Institute, ul. M.

No.	Title/Author
	Sklodowskiej-Curie 55/61, 50-369 Wroclaw, Poland
C10	**Limitations of Groove Depth MeasurementsOn LFSB Roughness Referent Standards**
	Gorana Baršić [1], Sanjin Mahović [2], Biserka Runje [3], Gian Bartolo Picotto [4], Mohamed A. Amer [5] 1,2,3 Faculty of Mechanical Engineering and Naval Architecture, I. Lučića 1, 10000 Zagreb, Croatia 4 Istituto Nazionale di Ricerca Metrologica, Strada delle Cacce 73, 10135 Torino, Italy 5 National Institute of Standards, Tersa St.-El Haram-Giza, 12211 Egypt gorana.barsic@fsb.hr
C11	**Interferometric step-height measurements at different lambdas**
	R. Bellotti and G.B. Picotto Istituto Nazionale di Ricerca Metrologica, INRIM, Italy
C12	**Stable, large monoatomic Si-terrasses as reference samples for high-resolution microscopies**
	André Felgner*, Thorsten Dziomba, Monika Kotzian, Rolf Krüger-Sehm, Ludger Koenders Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany * corresponding author, e-mail Andre.Felgner@ptb.de, Tel. +49 531 592-5126
C13	**The regularized blind tip reconstruction algorithm as a scanning probe microscopy tip metrology method**
	G. Jóźwiak, A. Henrykowski, A. Masalska, T. Gotszalk, Faculty of Microsystem Electronics and Photonics, Wroclaw Univesity of Technology, ul. Janiszewskiego 11/17, 51-627 Wroclaw I. Ritz, H.Steigmann Fraunhofer Institute for Non-Destructive Testing, Maria-Reiche-Strasse 2, D-01109 Dresden
C14	**Ion-etched GaAlAs/GaAs heterostructure systems as SPM test samples**
	Monika Kotzian, Thorsten Dziomba*, Silke Lutz, Klaus-Peter Hoffmann, Dirk Beecken, Ludger Koenders Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany * corresponding author, e-mail Thorsten.Dziomba@ptb.de, Tel. +49 531 592-5122
C15	**Nanoroughness mesurements: camparative investigations using power spectral density**
	C. Zerrouki[1], Z. Silvestri[2], N. Fourati[3], H. Nasrallah[3], M. Zerrad[4], P. Pinot[2], F. de Fornel[3], C. Deumié[4], C. Amra[4], S. Monnoy[5], S. Ducourtieux[6] 1 : Laboratoire de Physique LP-Cnam (Paris), 2 : Institut National de Métrologie LNE-INM/Cnam (Paris), 3 : Institut Carnot de Bourgogne ICB-OCP (Dijon), 4 : Novasic (Le Bourget du Lac), 5 : Institut Fresnel IF (Marseille), 6 : Laboratoire National de Métrologie et d'Essai LNE (Paris)
C16	**3D-Surface Reconstruction and in situ Calibration for 4Q-BSE Detectors in Scanning Electron Microscopes**
	Alexander Thiel[1], Dirk Berger[2], Matthias Hemmleb[3], Volker Rodehorst[1] 1 Computer Vision and Remote Sensing, Technische Universität Berlin, Franklinstr. 28/29, 10587 Berlin, Germany 2 Zentraleinrichtung Elektronenmikroskopie, Technische Universität Berlin, Strasse des 17. Juni 135, 10623 Berlin, Germany 3 m2c microscopy measurement & calibration GbR, Alt Nowawes 83a, 14482 Potsdam, Germany
C17	**Analysis of Monte Carlo simulated pyramidal 3D Structures for**

No.	Title/Author
	Photogrammetry in Scanning Electron Microscopy
	D. Gnieser[1,2], C.G. Frase[1], H. Bosse[1], R. Tutsch[2], K.-P. Johnsen[1] 1. Physikalisch-Technische Bundesanstalt, Bundesallee 100, 38116 Braunschweig, Germany 2. Technische Universität Braunschweig, Institut für Produktionsmeßtechnik, Schleinitzstraße 20, 38106 Braunschweig, Germany
C18	**Uncertainty of FIB Pt-deposition for the fabrication of 3D calibration structures**
	M. Ritter[a*], W. Gesatzke[b], M. Hemmleb[a], T. Dziomba[c], G. Dai[c], H.-U. Danzebrink[c] a m2c microscopy measurement & calibration GbR, Alt Nowawes 83a, 14482 Potsdam, Germany b Bundesanstalt für Materialforschung und -prüfung (BAM), Unter den Eichen 87, D-12205 Berlin, Germany c Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, D-38116 Braunschweig, Germany *Corresponding author: martin.ritter@m2c-calibration.com
C19	**The impact of static electric potentials and specimen charging on image contrast and line width evaluation in SEM**
	K.-P. Johnsen, C. G. Frase, T. Klein, W. Häßler-Grohne
C20	**Analysis of the magnetic moments of single magnetic nanoparticles with magnetic force microscopy.**
	Sievers, Sibylle[1]; Dziomba, Thorsten[1*]; Braun, Kai-Felix[1]; Eberbeck, Dietmar[1]; Schumacher, Hans W.[1]; Siegner, Uwe[1] 1 Physikalisch-Technische Bundesanstalt, Braunschweig and Berlin, Germany. *presenting author, e-mail Thorsten.Dziomba@ptb.de, Tel. +49 531 592-5122

No.	Title/Author
M01	**The interferometer setup in progress at INRiM for the NANOTRACE project.**
	Roberto Bellotti, Andrea Giugni and Gian Bartolo Picotto Istituto Nazionale di Ricerca Metrologica, INRIM, Italy
M02	**Two wavelength homodyne interferometer residual mutual nonlinearity**
	Petr Kfen Czech Metrology Institute
M03	**Laser interferometry method with stabilized DFB laser diode at 760 nm wavelength**
	Bretislav Mikel*, Martin Cizek, Zdenek Buchta, Josef Lazar and Ondrej CipInstitute of Scientific Instruments, Academy of Sciences of the Czech Republic, Královopolská 147, 612 64 Brno, Czech Republic
M04	**Laser source for multidimensional interferometry**
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M05	**White-light fringe detection based on novel light-source and colour CCD camera**
	Zdeněk Buchta, Břetislav Mikel, Josef Lazar, Ondřej Číp Institute of Scientific Instruments, Academy of Scientist of the Czech Republic Královopolská 147, Brno, Czech Republic buchta@isibrno.cz
M06	**Displacement interferometer with noise-type modulation for linear measurements in the nanometer range**
	V.S. Kupko, S.B. Kovshov, I.V. Lukin, A.V. Omelchenko NSC "Institute of metrology", Kharkiv, Ukraine
M07	**Nanoscale interferometry with compensation of fluctuations of the refractive index of air**
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M08	**Interferometry for dimensional drift measurements with picometer uncertainty**
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M09	**Thermal drift study on SPMs**
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M10	**Characterisation of thermal expansion coefficient with using a femtosecond frequency comb**
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M11	**High resolution actuator with 0.1mm travel and 10pm accuracy to be used as transfer standard for calibration of interferometers.**
	Andrea Giugni and Marco Pisani Istituto Nazionale di Ricerca Metrologica, INRiM, Italy
M12	**A digital based servo-control system for x-ray interferometers**
	Andrew Yacoot[1], Ulrich Kuetgens[2] and Scott Jordan[3] 1 National Physical Laboratory, Hampton Road, Teddington, Middlesex TW11 0LW, UK.2 Physikalisch-Technische Bundesanstalt, Bundesalle 100, Braunschweig, D38116 Germany3 PI (Physik Instrumente) L.P., 6537 Fall River Drive, San Jose, California USA
M13	**Characterization of an Ultra-Violet (UV) microscope for dimensional metrology applications**
	S. Vertu[1], R. Koning[1] and J. Flügge[1] [1]Physikalisch-Technische Bundesanstalt (PTB), Bundesallee 100, 38116 Braunschweig, Germany
M14	**3D-Microscopy with Structured Illumination**
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M15	**Mikes metrological atomic force microscope**
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M16	**Further improvements on the metrological large range AFM**
	Gaoliang Dai, Frank Pohlenz, Hans-Ulrich Danzebrink, Jens Flügge Physikalisch Technische Bundesanstalt, 38116 Braunschweig, Germany
M17	**Long range scanning probe microscope for automotive reflector optical quality inspection**
	Petr Klapetek[1], Miroslav Valtr[1], Martin Matula[2] [1]Department of Nanometrology, Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic [2]Visteon-Autopal, Lužická 14, 741 01 Nový Jičín, Czech Republic
M18	**New investigations in a metrological scanning probe microscope for high-speed, long-range, traceable measurements**
	N. Dorozhovets, T. Hausotte, E. Manske, G. Jäger
M19	**Design of a metrological Scanning Probe Microscope for traceable nanoscale length metrology**
	Jan Herrmann[1,*], Christopher Freund[1], Malcolm Lawn[1], Bakir Babić, John Miles[1], Malcolm Gray[1], Daniel Shaddock[2] 1National Measurement Institute Australia, Lindfield, Australia

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M20	**Further developments in the implementation of a concept of AFM measurements using a-priori-knowledge**
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M21	**Finite element method for estimating geometrical dimensions of nanostructures**
	Beka Bochorishvili Faculty of Exact and Natural Sciences, Tbilisi State University, Tbilisi 0128, Georgia
M22	**Critical factors in cantilever Scanning Near-Field Optical Microscopy**
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M23	**Near-field scanning optical ellipsometry for metrology applications**
	Petr Klenovský[1,2], Petr Klapetek[1], Miroslav Valtr[1] 1Department of Nanometrology, Czech Metrology Institute, Okružní 31, 638 00 Brno, Czech Republic 2Department of Condensed Matter Physics, Faculty of Science, Masaryk University, 611 37 Brno, Czech Republic
M24	**Development of a MEMS SPM head array for large scale topography measurement**
	Sai Gao, Konrad Herrmann, Uwe Brand Physikalisch-Technische Bundesanstalt, 38116 Braunschweig, Germany
M25	**AFM cantilevers as the sensors for real time two directional translation displacement measurements**
	Xiaomei Chen[1,2] Ludger Koenders[1] Helmut Wolff[1] Frank Haertig[1] Meinhard Schilling[2] 1 Physikalisch-Technisch Bundesanstalt (PTB), Bundesalle 100, 38116 Braunschweig, Germany 2 International Graduate School of Metrology (igsm), Technical University Braunschweig, 38106 Braunschweig, Germany
M26	**The accuracy of optically supported fast approach support system for SPM measuring devices**
	Andrzej Sikora, Łukasz Bednarz, Electrotechnical Institute, ul. M. Sklodowskiej-Curie 55/61, 50-369 Wroclaw, Poland
M27	**Investigation of complex cantilever response of NC-AFM in measuring true 3D structures**
	Wolfgang Häßler-Grohne, Dorothee Hüser, Gaoliang Dai, Harald Bosse Physikalisch Technische Bundesanstalt, 38116 Braunschweig, Germany
M28	**Measuring the tip-sample interaction on graphite in the thermal oscillations regime**
	Giovanna Malegori[1,3],Vittorio Spreafico[2], Stefano Prato[2], Gabriele Ferrini[1] 1 Dipartimento di Matematica e Fisica, Università Cattolica del Sacro Cuore, I-25121 Brescia, Italy 2 A.P.E. Research s.r.l., I-34012 Trieste, Italy 3 Dipartimento di Fisica, Università degli Studi di Milano, I-20122 Milano, Italy

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M29	**The impact of local residual electrostatic charge on dimensions measurement accuracy in AFM measurements**
	Andrzej Sikora, Electrotechnical Institute, ul. M. Sklodowskiej-Curie 55/61, 50-369 Wroclaw, Poland
M30	**Novel light-induced attractive force between two bodies separated by a sub-wavelength slit**
	Vladimir Nesterov[1], Leonid Frumin[2] 1 PTB, Braunschweig and Berlin, Bundesallee 100, 38116 Braunschweig (Germany) 2 IA&E SB RAS, Koptjug Avenue 1, 630090 Novosibirsk (Russia)
M31	**Characterization of PTB´s Nanonewton Force Facility**
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