

Topic 1: Precision engineering and measurement technology

Session 1.1 Precision measurement technology

Article ID: 1.1.009

A laser dilatometer setup to characterize dimensionally stable materials from 100 K to 300 K

Hamann, Ines; Kumanchik, Lee; Wanner, Gudrun; Gohlke, Martin; Sanjuan, Josep; Braxmaier, Claus:

DOI: <https://doi.org/10.22032/dbt.58683>

Article ID: 1.1.026

Yatsyshyn, Svyatoslav; Mykyichuk, Mykola; Bubela, Tetiana:

Development of quantum temperature standard and verification of thermoelectricity laws

DOI: <https://doi.org/10.22032/dbt.58678>

Article ID: 1.1.034

Köning, Rainer; Schötka, Eugen; Bergmann, Detlef; Krüger, Jan; Janik, Marcel; Schumann, Matthias; Bodermann, Bernd:

Development of a test setup for the characterization of an optical microscope for high precision length metrology applications

DOI: <https://doi.org/10.22032/dbt.58684>

Article ID: 1.1.039

Wagner, Johannes; Niedermeier, Corinna; Wagner, Andreas:

Study of the effect of matting agents on the measurability of geometrical objects

DOI: <https://doi.org/10.22032/dbt.58676>

Article ID: 1.1.080

Dziomba, Thorsten; Felgner, André; Gao, Sao; Hemmleb, Matthias; Ritter, Martin; Gärtner, Eva; Frühauf, Joachim:

How reliable are optical measurements of surface roughness?

DOI: <https://doi.org/10.22032/dbt.58670>

Article ID: 1.1.081

Yatsyshyn, Svyatoslav; Zeng, Xinyu:

Metrological risks at design stage for multidisciplinary-based objects

DOI: <https://doi.org/10.22032/dbt.58677>

Article ID: 1.1.095

Dai, Gaoliang; Thiesler, Jan; Degenhardt, Johannes; Tutsch, Rainer:

Recent progress and challenges in AFM-based true-3D micro and nanometrology

DOI: <https://doi.org/10.22032/dbt.58681>

Article ID: 1.1.099

Fischer Calderón, Sebastian J.; Straube, Guido; Kissinger, Thomas:

A novel point-to-point length measurement concept based on range-resolved interferometry

DOI: <https://doi.org/10.22032/dbt.58680>

- Article ID:** 1.1.104
Shmagun, Vitalii; Gerhardt, Uwe; Manske, Eberhard; Fröhlich, Thomas; Kissinger, Thomas:
Resolution enhancement in Fabry-Perot interferometers through evaluation of multiple reflection using range-resolved interferometry
DOI: <https://doi.org/10.22032/dbt.58695>
- Article ID:** 1.1.106
Liao, Chen-Yu; Lin, Hsi-Hui; Chen, Liang-Chia:
Development of a compact DFB laser interferometer for high-speed inline displacement measurement
DOI: <https://doi.org/10.22032/dbt.58679>
- Article ID:** 1.1.119
Xu, Xin; Pahl, Tobias; Serbes, Hüseyin; Lehmann, Peter:
Robust reconstruction of the topography of metal additive surfaces based on focus variation microscopy
DOI: <https://doi.org/10.22032/dbt.58697>

Session 1.2 Nanofabrication

- Article ID:** 1.2.015
Rodenberg, Madeline; Münker, Lukas Jonathan; Tutsch, Rainer; Walla, Peter Jomo; Weimann, Thomas:
Using photo-activated localization microscopy (PALM) for imaging fluorophore-doped photoresists
DOI: <https://doi.org/10.22032/dbt.58726>
- Article ID:** 1.2.093
Ma, Tianran; Fahrbach, Michael; Xu, Jiushuai; Boye Anang, Frank Eric ; Vergin, Maximilian; Meierhofer, Florian; Brand, Uwe; Waag, Andreas; Peiner, Erwin:
Imaging the mechanical properties of nanowire arrays
DOI: <https://doi.org/10.22032/dbt.58938>
- Article ID:** 1.2.113
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Wafer bonding technologies for nano-, micro- and macro-system realization and integration
DOI: <https://doi.org/10.22032/dbt.58698>
- Article ID:** 1.2.118
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Insights into the writing process of the mask-free nanoprinting fluid force microscopy technology
DOI: <https://doi.org/10.22032/dbt.58725>
- Article ID:** 1.2.121
Huaman, Alex S.; Reger, Johann:
Robust adaptive tracking control for highly dynamic nanoprecision motion systems
DOI: <https://doi.org/10.22032/dbt.58700>

Session 1.3 Measurement and sensor technology

Article ID: 1.3.017

Wittke, Martin; Torres Melgarejo, Mario André; Darnieder, Maximilian; Theska, René:

Investigation of a novel monolithic stiffness-compensated mechanism for high-precision load cells

DOI: <https://doi.org/10.22032/dbt.58735>

Article ID: 1.3.023

Fleischmann, Patrick; Happel, Julius; Gundelsweiler, Bernd:

Analysis and development of a sensor concept for multistable actuators with passive magnetic shape memory alloy

DOI: <https://doi.org/10.22032/dbt.58733>

Article ID: 1.3.055

Chauhan, Jaydeep; Gourishetti, Saichand; Rohe, Maximilian; Sennewald, Martin; Hildebrand, Jörg; Bergmann, Jean Pierre:

Empirical study on DED-Arc welding quality inspection using airborne sound analysis

DOI: <https://doi.org/10.22032/dbt.58732>

Article ID: 1.3.073

Calderón Ch., J. Alan; Barriga G., E. Benjamin; Tafur S., Julio C.; Lozano J., John H.; Lozano N., Hugo; Iglesias L., José:

Wireless intelligent sensors based in nanostructures with energy self-sufficiency to study the consequences of high temperatures in combustion motors

DOI: <https://doi.org/10.22032/dbt.58731>

Article ID: 1.3.078

Bubela, Tetiana; Yatsuk, Vasyi; Yatsyshyn, Svyatoslav:

Simulation of electrochemical systems by analyzing impedance spectra

DOI: <https://doi.org/10.22032/dbt.58730>

Article ID: 1.3.086

Bubela, Tetiana; Yatsuk, Vasyi; Mykyjchuk, Mykola; Yatsuk, Yuri:

Non-dismantling control possibilities of distributed systems measuring channels in-situ operation place

DOI: <https://doi.org/10.22032/dbt.58729>

Article ID: 1.3.097

Schulze, Sven; Arumugam, Kumar; Schlamminger, Stephan; Fitzgerald, Ryan; Verkouteren, R. Michael; Theska, René; Shaw, Gordon:

Development of a high precision electrostatic force balance for measuring quantity of dispensed fluid as a new calibration standard for the becquerel

DOI: <https://doi.org/10.22032/dbt.59188>

Article ID: 1.3.116

Brand, Uwe; Li, Zhi; Popadic, Radovan; Hiller, Karla; Hahn, S.; Peiner, Erwin; Gärtner, Eva; Frühauf, Joachim:

Small force metrology for AFM, stylus instruments, CMM and nanoindenter via reference springs and sensors

DOI: <https://doi.org/10.22032/dbt.58734>

Article ID: 1.3.140

Bader, Oumaima; Ben Amara, Najoua Essoukri; Kanoun, Olfa:
Evaluation of 3D current injection patterns for human lung monitoring in
Electrical Impedance Tomography

DOI: <https://doi.org/10.22032/dbt.58728>

Article ID: 1.3.141

Alasasfeh, Hayat; Hafsa, Mariem; Bader, Oumaima; Kanoun, Olfa:
Machine learning approach to EIT image reconstruction of the human forearm
section for different hand signs

DOI: <https://doi.org/10.22032/dbt.58727>

Session 1.4 Precision engineering and optics

Article ID: 1.4.003

Erbe, Torsten; Linß, Sebastian:
Flexure hinge-based lens manipulators: a concept survey

DOI: <https://doi.org/10.22032/dbt.58737>

Article ID: 1.4.005

Erbe, Torsten:
Basic considerations for circumferential adhesive bonds in order to reduce lens
deformations

DOI: <https://doi.org/10.22032/dbt.58682>

Article ID: 1.4.006

*Hirniak, Yurii; Ivakhiv, Orest; Nevodovskyi, Petro; Vidmachenko, Anatolyi;
Geraimchuk, Mykhailo; Zbrutskyi, Olexandr:*
Developing of the space satellite-based polarimeter

DOI: <https://doi.org/10.22032/dbt.58742>

Article ID: 1.4.008

*Krauhausen, Michael; Priem, Roland; Claßen, Ralf; Prellinger, Günther;
Pollinger, Florian:*
High-resolution absolute range sensors based on the combination of frequency
modulation and laser triangulation for heavy industry application

DOI: <https://doi.org/10.22032/dbt.58842>

Article ID: 1.4.013

Wolf, Matthias; Wittke, Martin; Torres Melgarejo, Mario André; Theska, René:
Scaling of a compliant mechanism for high-precision force measurement
applications

DOI: <https://doi.org/10.22032/dbt.58847>

Article ID: 1.4.021

Zettlitzer, Lucas; Gross, Herbert; Risse, Stefan; Theska, René:
Tolerancing of centering of a reflective dual field-of-view optical system based
on Alvarez-Principle

DOI: <https://doi.org/10.22032/dbt.58848>

- Article ID:** 1.4.025
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Development of a tool-changing system for nanofabrication machines
DOI: <https://doi.org/10.22032/dbt.58846>
- Article ID:** 1.4.071
Torres Melgarejo, Mario André; Henning, Stefan; Zentner, Lena; Theska, René:
Synthesis of optimized compliant mechanisms for ultra-precision applications
DOI: <https://doi.org/10.22032/dbt.58844>
- Article ID:** 1.4.077
Hahm, Christoph; Erbe, Torsten; Theska, René:
Cement-bound mineral casted parts in precision engineering
DOI: <https://doi.org/10.22032/dbt.58740>
- Article ID:** 1.4.079
Miettinen, Mikael; Vainio, Valtteri; Haverinen, Petteri; Leutonen, Onni; Viitala, Raine; Theska, René:
Validation of experimental setup for aerostatic bearing simulation
DOI: <https://doi.org/10.22032/dbt.58841>
- Article ID:** 1.4.082
Layher, Michel; Bliedtner, Jens; Theska, René:
A laser beam deflection system for heat treatments in large scale additive manufacturing
DOI: <https://doi.org/10.22032/dbt.58739>
- Article ID:** 1.4.094
Schaeffer, Daniel; Klenkert, Daniel; Stauch, Julian; Kufner, Maria; Foerg, Raimund; Ebbecke, Jens:
Fabrication of asymmetric multimode splitters in glass by planar ion exchange and laser ablation
DOI: <https://doi.org/10.22032/dbt.58843>
- Article ID:** 1.4.101
Keck, Lorenz; Seifert, Frank; Newell, David; Theska, René; Haddad, Darine:
Preliminary characterization of anelastic effects in the flexure mechanism for a new Kibble balance at NIST
DOI: <https://doi.org/10.22032/dbt.58743>
- Article ID:** 1.4.107
Vainio, Valtteri; Majuri, Jaakko; Haverinen, Petteri; Miettinen, Mikael; Viitala, Raine:
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- Article ID:** 1.4.108
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Aerostatic pump seal
DOI: <https://doi.org/10.22032/dbt.58840>
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Article ID: 1.4.112

*Darnieder, Maximilian; Wittke, Martin; Pabst, Markus; Fröhlich, Thomas;
Theska, René:*

Monolithic compliant mechanism for an EMFC mass comparator weighing cell

DOI: <https://doi.org/10.22032/dbt.58738>

Article ID: 1.4.117

Hebenstreit, Roman; Theska, René:

Calibration of positioning microsystems with subatomic accuracy

DOI: <https://doi.org/10.22032/dbt.58741>
