International Scientific and Technical Conference "Metrology, Standardization, Quality: Theory and Practice" (MSQ-2017)

Journal of Physics: Conference Series Volume 998

Omsk, Russia 14 – 16 November 2017

ISBN: 978-1-5108-6167-1

ISSN: 1742-6588

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© (2017) by the Institute of Physics All rights reserved. The material featured in this book is subject to IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

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

Phone: 845-758-0400 Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

Table of contents

Volume 998

"Metrology, Standardization, Quality: Theory And Practice" (MSQ-2017)

14-16 November 2017, Omsk, Russian Federation

Accepted papers received: 21 March 2018

Published online: 13 April 2018

Preface

METROLOGY, STANDARDIZATION, QUALITY: THEORY AND PRACTICE (MSQ-2017)

Peer review statement

Papers

Study of sandy soil grain-size distribution on its deformation properties

L B Antropova, A V Gruzin, M I Gildebrandt, L D Malaya and V B Nikulina.....1

Bootstrap and Counter-Bootstrap approaches for formation of the cortege of Informative indicators by Results of Measurements

M V Artemenko, I E Chernetskaia, N M Kalugina and E N Shchekina.....5

The Papers Printing Quality Complex Assessment Algorithm Development Taking into Account the Composition and Production Technological Features

Kh A Babakhanova, L G Varepo, I V Nagornova, E B Babluyk and A P Kondratov.....11

Intelligent sensor in control systems for objects with changing thermophysical properties

O A Belousov, D Yu Muromtsev and M P Belyaev.....17

<u>Investigation of the Bitumen Modification Process Regime Parameters Influence on Polymer-Bitumen Bonding Qualitative Indicators</u>

P S Belyaev, S V Mishchenko, V P Belyaev, O A Belousov and V A Frolov.....23

<u>Development of Decision-Making Automated System for Optimal Placement of Physical</u> Access Control System's Elements

Olga Danilova and Zinaida Semenova.....30

<u>Comparative Analysis of the Specifications on the Power Quality of the European Union</u> and the Russian Federation

A V Ded, V N Maltsev and S P Sikorski.....35

SENSORS FOR METERING HEAT FLUX AREA DENSITY AND METROLOGICAL EQUIPMENT FOR THE HEAT FLUX DENSITY MEASUREMENT

D O Doronin....41

Development of the disable software reporting system on the basis of the neural network

S Gavrylenko, O Babenko and E Ignatova.....48

The mathematical model accuracy estimation of the oil storage tank foundation soil moistening

M I Gildebrandt, R N Ivanov, AV Gruzin, L B Antropova and S A Kononov.....56

Two-point method uncertainty during control and measurement of cylindrical element diameters

V I Glukhov, V V Shalay and H. Radev.....60

The linear sizes tolerances and fits system modernization

V I Glukhov, V A Grinevich and V V Shalay.....67

Automation is an Effective Way to Improve Quality of Verification (Calibration) of Measuring Instruments

M Golobokov and S Danilevich.....75

<u>Software and Hardware System for Fast Processes Study When Preparing Foundation</u> Beds of Oil and Gas Facilities

A V Gruzin, V V Gruzin and V V Shalay.....79

Assessment of adequacy of the monitoring method in the activity of a verification laboratory

R N Ivanov, V A Grinevich, A A Popov, V V Shalay and L D Malaja.....87

Approaches to decrease the level of parasitic noise over vibroacoustic channel in terms of configuring information security tools

A V Ivanov, I L Reva and A A Babin....95

<u>Development of the information model for consumer assessment of key quality indicators</u> by goods labelling

S Koshkina and L Ostrinskaya....100

Considering the effect of the logging cable stretching under the influence of its own mass in the well on the accuracy of geophysical parameters determining

A A Kozhushko, A N Pahotin, V N Mal'tsev, L V Bojarnikova and E P Stepanova.....105

Measurement of machine parts dimensions positional deviation with regard to their geometric accuracy

D B Martemyanov, V V Pshenichnikova, V A Penner and A E Zemtsov.....112

<u>Supervised Multi-Authority Scheme with Blind Signature for IoT with Attribute Based Encryption</u>

O V Nissenbaum, K Y Ponomarov and A A Zaharov.....116

Geometric model of pseudo-distance measurement in satellite location systems
K.L. Panchuk, A.A. L.vashkov and E.V. Lvubchinov, 125

Pyrometer with tracking balancing

D B Ponomarev, V A Zakharenko and A G Shkaev.....130

Errors in Air Permeability Rationing as Key Sources of Construction Quality Risk Assessment

A A Popov, A A Nitievski and R N Ivanov.....134

<u>Statistical Methods in Assembly Quality Management of Multi-Element Products on Automatic Rotor Lines</u>

V V Pries and N E Proskuriakov.....139

Features calibration of the dynamic force transducers

M Yu Prilepko D. Sc. and V G Lysenko.....144

Improving the Quality of Backup Process for Publishing Houses and Printing Houses

N E Proskuriakov, B S Yakovlev and V V Pries.....150

Smart transducer with radiomodem

V.N. Pugach and E.L. Voronin....157

<u>Transient Oscilliations in Mechanical Systems of Automatic Control with Random Parameters</u>

B Royev, A Vinokur and G Kulikov.....165

Expanded uncertainty estimation methodology in determining the sandy soils filtration coefficient

A D Rusanova, L D Malaja, R N Ivanov, A V Gruzin and V V Shalaj.....171

The study of the stress - strain state of the tank with bottom water drainage during operation

Yu V Shchipkova and V V Tokarev.....175

Comparative tests of bench equipment for fuel control system testing of gas-turbine engine

E V Shendaleva.....181

Quality Control of the Print with the Application of Statistical Methods

K V Simonenko, G S Bulatova, L B Antropova and L G Varepo....191

Revisiting measuring colour gamut of the color-reproducing system: interpretation aspects

I A Sysuev, L G Varepo and O V Trapeznikova.....197

<u>Accuracy Improvement of Multi-Axis Systems Based on Laser Correction of Volumetric Geometric Errors</u>

V I Teleshevsky, V A Sokolov and Ya I Pimushkin....201

Structural fabrication quality as a factor of industrial facilities safety

E V Tishkov, E M Kardaev, S Yu Stolbova and O S Shishova.....207

The information protection level assessment system implementation

E V Trapeznikov.....215

<u>Information security system quality assessment through the intelligent tools</u>
E V Trapeznikov220
Printing quality control automation
O V Trapeznikova226
Applying an overstress principle in accelerated testing of absorbing mechanisms
V G Tsyss, M Yu Sergaeva and A A Sergaev231
Methods of Measurement the Quality Metrics in a Printing System
L G Varepo, A Yu Brazhnikov, I V Nagornova and O A Novoselskaya237
Software for Quantitative Estimation of Coefficients of Ink Transfer on the Printed Substrate in Offset Printing
L G Varepo, O V Trapeznikova, A V Panichkin, B A Roev and G B Kulikov242
The strength study of the rotating device driver indexing spatial mechanism
N V Zakharenkov and I N Kvasov248
Hydrocarbons pipeline transportation risk assessment
A V Zanin, A A Milke and I N Kvasov253
Accuracy increase of the coordinate measurement based on the model production of geometrical parts specifications

O Yu Zlatkina.....259