

621.317.7
B 47

ISSN 0368-6418 (Print)
ISSN 2617-846X (Online)

ВИМІРЮВАЛЬНА ТЕХНІКА ТА МЕТРОЛОГІЯ

Measuring Equipment and Metrology

Том 80. Випуск 1. 2019



CYPRESS advanced system-level solutions
EMBEDDED IN TOMORROW™

**MEASURING EQUIPMENT
AND METROLOGY**

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

MEASURING EQUIPMENT AND METROLOGY

SCIENTIFIC JOURNAL

Editor-in-chief - Prof, Dr. Sc. Bohdan Stadnyk

Founded in 1965

Volume 80 Number 1

doi.org/10.23939/istcmtm2019.01

Lviv
Lviv Polytechnic Publishing House
2019

I

-

- -

1965

80, 1

doi.org/10.23939/istcmtm2019.01

“ ”

(52 26.02.2019 .)

(13038-1922 20.07.2007 .)

Index Copernicus, CrossRef (DOI)

:

- “ ”, ; **Bohdan Stadnyk**, Prof., Dr Sc.,
Lviv Polytechnic National University, Ukraine,
(*editor-in-chief*);
- “ ”, ; **Tetiana Bubela**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine,
(*vice-editor*);
- “ ”, ; **Svyatoslav Yatsyshyn**, Prof, Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
(*vice-editor*):
- “ ”, Prof, Dr. Sc.,
Rzeszow Polytechnic, Poland;
- “ ”, ; **Orest Ivakhiv**, Prof., Dr. Sc.,
Lviv Polytechnic National University', Ukraine;
- “ ”, ; **Yevhen Pokhodylo**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Ruslan Mygushchenko**, Prof., Dr. Sc.
National Technical University “KhPI”, Ukraine;
- “ ”, ; **Roman Dunets**, Prof. Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Zenoviy Kolodiy**, As.-Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Larisa Kosheva**, Prof., Dr. Sc.,
National Aviation University, Kyiv, Ukraine;
- “ ”, ; **Halina Klym**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Myroslav Tyhan**, As.-Prof, Dr. Sc.,
Lviv Polytechnic National University, Ukraine,
- “ ”, ; **Roman Baitsar**, Prof, Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Thomas Fröhlich**, Prof, Dr. Sc.,
Technical University, Ilmenau, Germany;
- “ ”, ; **Vasyl Parakuda**, As.-Prof, Ph. D.,
State R&D Institute “System”,
Ukraine;
- “ ”, ; **Vitaliy Babak**, Prof, Dr. Sc.,
Institute of Technical Thermophysics of the National Academy
of Sciences, Kyiv, Ukraine;
- “ ”, ; **Yevhen Volodarsky**, Prof., Dr. Sc.,
Kyiv Polytechnic National University, Ukraine;
- “ ”, ; **Pylip Skoropad**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Ihor Mykytyn**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Eberhard Manske**, Prof., Dr. Sc.,
Technical University, Ilmenau, Germany;
- “ ”, ; **Yaroslav Lutsyk**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, \ ; **Natalia Hots**, Prof, Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Mykola Mykyychuk**, Prof, Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Vasyl Yatsuk**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine;
- “ ”, ; **Vasyl Motalo**, Prof., Dr. Sc.,
Lviv Polytechnic National University, Ukraine

“ ”

, 12, 79013, -13
e-mail: ivt@polynet.lviv.ua

© “

”, 2019



.....5

..... 11

.....17

.....21

.....24

.....27

.....34

.....41

.....46

..... 51

ISO/IEC 17025:2017.....67

. . V

“Technical using of measurement-2019”.....75

CONTENT

TRANSFORMING AND PROCESSING THE MEASUREMENT SIGNALS

- Valerii Hraniak, Samoil Katsyv, Vasyl Kukharchuk.* Theoretical-experimental method of calculation of weight coefficients of the artificial neural-like network in diagnostic systems of hydroagregates..... 5

MEASUREMENT OF NON-ELECTRIC QUANTITIES

- Vasyl Chyhin.* Measurement of coordinates of unmanned aerial vehicle radio beacon..... 11
Volodymyr Maksymovych, Roman Stakhiv, Marta Stakhiv. The modified structure of the two-level digital frequency synthesizer for dosimetry..... 17

BIOMEDICAL MEASUREMENTS AND DEVICES

- Ivan Saievych, Tetiana Stasiv.* The research of content of chemical elements using the method of atomic emission spectrometry with inductively coupled plasma..... 21
Svyatoslav Yatsyshyn, Bohdan Stadnyk, Yuriy Khoma, Mykola Mykyichuk, Dmytro Mihunov, Thomas Froehlich, Rostyslav Mastylo. Development of software and hardware for the method of rehabilitation of patients with obliteration of atherosclerosis of the limb vessels..... 24

MEASURING SYSTEMS

- Nadiia Maidaniuk.* Problems and prospects for industrial enterprises JoT technology application..... 27

MEANS FOR MEASURING THE THERMAL QUANTITIES

- Ihor Mykytyn, Pylyp Skoropad.* Dependence of the pyrometric measuring temperature on the emissivity factor of objects..... 34

METROLOGY, QUALITY, STANDARDIZATION AND CERTIFICATION

- Volodymyr Bolshakov, Nataliia Kosach, Ganna Pavlova, Olexandr Chernyshenko.* Epistemological aspects of technical regulation of providing production quality..... 41
Svyatoslav Yatsyshyn, Sergii Lazarenko. Development of the dosimetric standards base..... 46
Vasyl Motalo. Analysis of verification and calibration methodologies of measuring instruments..... 51
Oleg Melnichenko, Oleg Horoshilov, Olga Maletka. Analysis of requirements for equipment and techniques according to ISO/ EC 17025:2017..... 67
Vasyl Yatsuk. V All-Ukrainian conference of young scientists in the field of metrology “Technical using of measurement-2019”..... 75