

CONTENTS

Acquisition of Signals in a Wind Tunnel Using the DasyLab Software Package	1
<i>Krzysztof Pytel, Zygmunt Szczerba, Ihor Farmaga, Franciszek Kurdziel, Adam Kalwar, Stanislaw Gumula</i>	
Adaptive Numerics for Linear ODE Systems with Time-Dependent Data, with an Application in Photovoltaics	5
<i>Winfried Auzinger, Petro Pukach, Roksolyana Stolyarchuk, Myroslava Vovk</i>	
Algorithm of Tuning Heating Source Thermophysical Parameters in Smart Home	9
<i>Oleh Sinkevych, Liubomyr Monastyrskii, Bohdan Sokolovskii, Yaroslav Boyko, Zenyk Matchyshyn, Daniil Berezhansky</i>	
Analysis of a Mathematical Model of Plate Structures Oscillations in MEMS	13
<i>Oksana Malanchuk, Maria Vistak, Ruslan Politanskyi, Ivanna Andrusyak</i>	
Application of Correlation Analysis for Impact Assessment of Air Quality on the Possibility of Using Chosen Source of Renewable Energy	17
<i>Krzysztof Pytel, Wiktor Hudy, Franciszek Kurdziel, Adam Kalwar, Stanislaw Gumula, Mohamed Hassan Soliman</i>	
Application of Fractional Order Transfer Functions in Approximation of Voltage Divider With Supercapacitor Model	22
<i>Bohdan Kopchak, Andrii Kushnir, Marianna Kopchak</i>	
Application of Information Technology Engineering Tools to Simulate an Operation of a Flow Machine Rotor	28
<i>Krzysztof Pytel, Uliana Marikutsa, Zygmunt Szczerba, Franciszek Kurdziel, Adam Kalwar, Mohamed Hassan Soliman</i>	
Arduino Based Ambient Air Pollution Sensing System	32
<i>Mykhailo Lobur, Dmytro Korpyljov, Nazariy Jaworski, Marek Iwaniec, Uliana Marikutsa</i>	
Assisted Living System Architecture Based on Bluetooth Low Energy and Wearable Sensors	36
<i>Marcin Kajor, Dominik Grochala, Michał Grochala, Marek Iwaniec, Justyna Lemejda</i>	
Built-In Processor for Sharing Passwords Through the Open Information Space	40
<i>Volodymyr Shevchenko, Denis Berestov, Igor Sinitcyn, Viktor Shevchenko</i>	
Capacitance Deviations for Deformed Parts of Solid MEMS Sensors	45
<i>Jacek Nazdrowicz, Adam Stawiński, Andrzej Napieralski</i>	
Determination of Dispersion Medium Parameters by Intelligent Microelectromechanical System	49
<i>Andriy Zdobytskyi, Mykhailo Lobur, Volodymyr Dutka, Mykola Prodanyuk, Olha Senkovych</i>	

Developing a Model of Cloud Computing Protection System for the Internet of Things	53
<i>Olexander Belej, Natalia Nestor, Orest Polotai, Sofiia Panchak</i>	
Development of Nano Cavities in Aluminum Oxide Membrane for Bioparticle Manipulation by Acoustophoresis Method	59
<i>Yatin Patel, Giedrius Janusas , Arvydas Palevicius, Justas Ciganas</i>	
EM Wave Scattering on Thin Flexible Films Supplemented by a Set of Micro Particles	64
<i>Mykhaylo Andriychuk, Yarema Kuleshnyk, Volodymyr Senyk</i>	
Errors Compensation of Ring-Type MEMS Gyroscopes Operating in Differential Mode	68
<i>Valeriy V. Chikovani, Olha A. Sushchenko, Valeriy M. Azarskov, Yurii M. Bezkorovainyi, Volodymir M. Korolov, Olha V. Korolova</i>	
High-Sensitive Sensors Based on QCR for Smart Devices	72
<i>Volodymyr Savchenko, Oksana Mnushka</i>	
Identification of Combinations of Faults in Multilevel Information Systems	76
<i>Olena Nechyporuk, Ivan-Farkhod Kashkevich, Olha Suprun , Vitaliy Nechyporuk, Oleksiy Poburko, Nataliya Apenko</i>	
Influence of fringing fields on parallel plate capacitance for capacitive MEMS accelerometers	82
<i>Cezary Maj, Michał Szermer</i>	
Information Technology of the Increasing Sensors Term of Use Considering Their Movement	86
<i>Volodymyr Petrivskyi, Victor Shevchenko, Oleksiy Bychkov , Maksym Brazhenenko</i>	
L-C- Electronic Elements Based on Silicon Microstructures	90
<i>Anatoly Druzhinin, Igor Kogut , Yuriy Khooverko, Nazar Kucherepa</i>	
Modeling and Computer Analysis of Temperature of a Dental Crown Made Of Isotropic Functionally Gradient Metal-Ceramics	94
<i>Roman Musij, Uliana Zhydyk, Khrystyna Drohomiretska, Nataliia Melnyk</i>	
Modeling of the Temperature-Force Regime of an Electrically Conductive Spherical Implant in Unstable Electromagnetic Fields	98
<i>Roman Musij, Mykhaylo Melnyk, Khrystyna Drohomiretska, Oksana Oryshchyn, Svitlana Tsymbrylo, Valentyn Shynder</i>	
Organization of Decentralized Real-Time Information-Control System	102
<i>Vitaliy Mazur</i>	
Predicting the Use of Solar Photovoltaic Panels for Generating Electricity in the Area with Air Pollution	107
<i>Krzysztof Pytel, Mykhaylo Melnyk, Wiktor Hudy, Franciszek Kurdziel, Adam Kalwar, Stanislaw Gumula</i>	
Sensitive Data Transmission System for Biopotential Measurements in Wearable Application	111
<i>Dominik Grochala, Marcin Kajor, Michał Grochala, Paweł Smoleń, Marek Iwaniec, Justyna Lemejda</i>	

Simulation Analysis of Noise Influence on Operational of Capacitive Sensor Readout Circuit	115
<i>Mariusz Jankowski</i>	
Simulation of Acoustophoretic Separation of Microplastic Particles in mkFluidic Lab-chip	123
<i>Oleh Matviyiv, Tamara Klymkovych, Nataliia Bokla, Mykhailo Lobur, Mykhaylo Melnyk, Anna Timofiejczuk</i>	
Simulation of Corrugated Graphene Structure by Microlevel Cellular Models and Gaussian Random Field	127
<i>Nazariy Jaworski , Marek Iwaniec, Nazariy Andrushchak, Janusz Woźny, Mykhailo Lobur, Volodymyr Karkulovskyy</i>	
Simulation of the Temperature-Force Regime of a Conductive Cylindrical Implant in Unsteady Electromagnetic Fields	133
<i>Roman Musii, Nataliia Melnyk, Veronika Dmytruk, Uliana Marikutsa, Hanna Shayner, Valentyn Shynder</i>	
Stiffness Matrix of MEMS on the Stress-Strain Method Basis	142
<i>Igor Nevliudov , Victor Palagin, Iryna Botsman, Nataliia Demska, Victoria Nevlyudova, Kostyantyn Kolesnyk</i>	
Synchronous Auscultation of Temporomandibular Joints Using Electronic Stethoscopes	146
<i>Justyna Lemejda, Marcin Kajor, Dominik Grochala, Marek Iwaniec, Jolanta E. Loster</i>	
The Comparison of Microservice and Monolithic Architecture	150
<i>Konrad Gos, Wojciech Zabierowski</i>	
The Development of Operation Algorithm of Heat Detector with Variable Response Parameters	154
<i>Andrii Kushnir, Bohdan Kopchak , Andrii Gavryliuk</i>	
The Importance of Factors for UV Ink Printing by Digital Printers	160
<i>Vyacheslav Repeta, Olena Tsimer, Ihor Myklushka</i>	
The Studying of Hydrogen Diffusion Non-Stationary Processes Near a Crack in the Field of Heterogeneous Mechanical Tensions for the Encapsulated MEMS Devices	164
<i>Winfried Auzinger , Yaroslav Pelekh, Mykola Ihnatyshyn , Roksolyana Stolyarchuk , Oksana Kozar , Serhii Mentynskyi</i>	
The use of Automation Systems in Ventilation Stations as a Support in the Process of Generating Cold for the Needs of Central air Conditioning	169
<i>Krzysztof Pytel, Mykhailo Lobur, Franciszek Kurdziel, Adam Kalwar, Stanislaw Gumula, Bassel I. Nesser</i>	