

# Contents

---

Summaries .....	567
-----------------	-----

## **IMAGE PROCESSING FOR MEDICAL AND INDUSTRIAL APPLICATIONS**

Wojciech Bieniecki, Artur Gródecki, Szymon Grabowski, Katarzyna Kościelska-Kasprzak, Dominika Drulis-Fajdasz, Oktawia Mazanowska, Marian Klinger The Application of Hit-Miss Algorithm to the Segmentation of Color Microscope Images in ELISPOT Examination .....	585
Wojciech Bieniecki, Michał Węgrzyn, Szymon Grabowski, Katarzyna Kościelska-Kasprzak, Dominika Drulis-Fajdasz, Oktawia Mazanowska, Marian Klinger Application of Adaptive Thresholding Algorithms to Color Microscope Image Segmentation in ELISPOT Examination .....	599
Zbigniew Bubleński, Mirosław Jabłoński SIMD Extensions in Digital Image Processing .....	609
Agnieszka Dąbrowska-Boruch, Kazimierz Wiatr Implementation of MPEG-2 Standard Codec in FPGA Chips .....	615
Anna Fabijańska, Dominik Sankowski Optical Filters in Vision System for High-Temperature Measurements of Metal and Alloy Surface Properties .....	625
Jarosław Gocławski, Joanna Sekulska-Nalewajko, Patryk Anioł The Method of Mitotic Index Automated Evaluation for Onion Cells Population Using Decision Tree .....	641
Mirosław Jabłoński, Zbigniew Bubleński Video Pipeline Integration on Reconfigurable Platform .....	657
Sławomir Jeżewski, Michał Jaros Scanning of Three-Dimensional Room Space .....	669
Renata Kopeć, Piotr Pawlik Analysis of Images from Thermoluminescent Reader with CCD Camera for Individual Dosimetry .....	675
	541

Przemysław Korohoda	
Comparison of Two 3-D Digital Image Modelling Techniques Based on Taylor Second Order Series .....	683
Tomasz Kryjak, Marek Gorgoń	
Hardware Accelerator for Data Stream Encryption .....	695
Patryk Orzechowski, Marcin Waśko	
Method of Fraction Differentiation Basing on Image Analysis of Human Serum Proteins .....	709
Roman Vorobel, Krzysztof Przybyszewski	
Image Contrast Enhancement as One of Approaches to Its Quality Improvement .....	723
Paweł Wołoszyn, Mirosław Jabłoński, Łukasz Malicki	
On the Research of Human Ability to Perceive Spatial Acoustic Scene .....	733
 <b>SIGNAL PROCESSING FOR IDENTIFICATION AND CONTROL SYSTEMS</b>	
Marcin Bąkała, Tomasz Koszmider	
Computerized Vision System for Certain Brasing Parameters Indication ....	741
Grzegorz Ciesielski, Andrzej Albrecht, Rafał Wojciechowski	
The Project of Distributed Environment for Nonlinear System Research Using the Java RMI Technology .....	749
Maciej Garbacz, Mieczysław Zaczyk	
Mobile Robot Khepera III – Programming for MATLAB Environment .....	759
Szymon Grabowski	
Making Dense Codes Even Denser .....	769
Przemysław Korohoda	
Indirect Measurement of Human Limbs and Trunk Bioimpedance .....	781
Przemysław Korohoda	
Comparative Study of the GFR Reference Formulas Based on Cystatin C .....	793

---

Paweł Kośła, Marcin Raniszewski New Feature Selection Methods and Reference Set Reduction Algorithms for 1-NN Classifier .....	805
Konrad Kułakowski, Jarosław Wąs, Marcin Szpyrka Autonomous Mobile Robot Architecture with Dynamic World Model .....	821
Konrad Kułakowski, Jarosław Wąs, Marcin Szpyrka Dynamic World Representation in Control of Autonomous Mobile Robot .....	833
Piotr Urbanek, Andrzej Frączyk, Jacek Kucharski Algorithm of Elimination of Surface Emissivity Variations in Non-Contact Temperature Measurement of the Rotating Steel Cylinder .....	841

## **IMAGE ANALYSIS AND RECOGNITION**

Leszek Kotulski, Adam Sędziwy Stochastic Methods of IE Graphs Generation .....	853
---	-----

## **PROCESS TOMOGRAPHY**

Robert Banasiak, Radosław Wajman, Zbigniew Chaniecki, Krzysztof Grudzień, Andrzej Romanowski, Jakub Betiuk 4D ECT Real-Time Imaging of Bulk Solids Flow in Industrial Environment .....	863
Robert Banasiak, Radosław Wajman, Manuchehr Soleimani System of Capacitance Tomography for Three-Dimensional Real-Time Imaging .....	871
Krzysztof Grudzień, Maciej Niedostatkiwicz, Zbigniew Chaniecki The Diagnostic of Solid Flow During the Discharging of the Cylindrical Silo .....	879
Mariusz R. Rząsa, Anna Błaszak-Gawlik, Radosław Wajman Capacitance Tomography for Identification of Volume Fraction in Two-Phase Gas-Liquid Flows .....	891

Yong-Bo He, Hua-Xiang Wang, Dominik Sankowski Analysis of Electrical Impedance Tomography Sensitive Field Based on Multi-Terminal Network .....	903
Zhijian Liu, Laurent Babout, Robert Banasiak, Dominik Sankowski Image Reconstruction Based on Rotatable ECT Sensor .....	911
<b>NEURAL NETWORKS</b>	
Joanna Grabska-Chrzastowska An Attempt of Neural Modelling of Radioactive Cobalt Content Depending on the Chemical Constitution of Water in a Nuclear Reactor .....	919
Zbigniew Mikrut Examination of the Differentiation Level of Signatures Generated by the ICM Pulsed Network .....	925
<b>BUSINESS INFORMATION SYSTEMS</b>	
Lidia Dutkiewicz, Edyta Kucharska An Algebraic-Logical Model for Problem of Route Planning for $m$ Salesmen .....	933
Edyta Kucharska, Lidia Dutkiewicz Heuristic Search of Solution Tree for Scheduling Problem with Parallel Machines .....	945
Wiesław Popielarski Sequencing and Scheduling in Management of Business Processes .....	957
Dominik Sankowski, Sławomir Jeżewski, Roman Krzeszewski, Jacek Nowakowski Integrated Computer System for Regional Tourist Activities Management .....	967
Tadeusz Szuba, Paweł Skrzyński Adam Smith's Invisible Hand Paradigm Based on the Collective Intelligence Model .....	975

---

Michał Turek	
Modified Shape Grammars Theory for Automatic 3D-Mesh Generating.....	993
Mirosław Zajdel, Bogusław Filipowicz	
Optimization Methods' Selection for Transportation Networks.....	999
 <b>COMPUTER SCIENCE IN EDUCATION</b>	
Bogusław Filipowicz, Joanna Kwiecień	
The Use of Queueing Theory to Modeling of Administrative Units in Education .....	1011
Dominika Lisiak, Izabela Politowska, Maciej Szmit	
<i>Ignorantia Iuris Nocet.</i> The Consciousness of Law Aspects of Computer Use Among Computer Science Specialist .....	1019
Krzysztof Przybyszewski	
Application of the Fuzzy Sets for Evaluation of Different Aspects of the Learning Systems .....	1033
Agata Skowrońska-Kapusta, Andrzej Szelejak, Piotr Goetzen, Paweł Kapusta	
Project of International Linux Certification Center for Administrators of Linux Systems and Linux Networks .....	1047
Style Sheet .....	1066