Science Book Publishing House, USA

Baku State University, Azerbaijan

Lipetsk State Technical University, Russian Federation

Academy of Federal Security Guard Service of the Russian Federation, Orel, Russian Federation

Don State Technical University, Rostov-on-Don, Russian Federation

Voronezh State Technical University, Russian Federation

Vologda State Technical University, Russian Federation

MODERN INFORMATIZATION PROBLEMS IN THE TECHNOLOGICAL AND TELECOMMUNICATION SYSTEMS ANALYSIS AND SYNTHESIS

Proceedings of the XVIII-th International Open Science Conference (Lorman, MS, USA, January 2013)

Science Book Publishing House

Lorman, MS, USA - 2013

Modern informatization problems in the technological and telecommunication systems analysis and synthesis: Proceedings of the XVIII-th International Open Science Conference (Lorman, MS, USA, January 2013)/ Editor in Chief Dr. Sci., Prof. O. Ya. Kravets. - Lorman, MS, USA: Science Book Publishing House, 2013. – 151 p. (297-447).

ISBN 978-1-62174-014-8

Collected papers summarizing the results of the XVIII-th International Open Science Conference "Modern informatization problems in the technological and telecommunication systems analysis and synthesis", held in November 2012 - January 2013. It contains information within the following areas: analysis and synthesis of complex systems; telecommunication systems and applications; automatic and computer-aided design of power grids, electro-mechanical and technological systems; information systems and their applications.

Data gathered within collected papers may be useful to researchers and engineering technicians, whose work involves various aspects of modern society informatization, as well as to postgraduates and students studying subjects related to informatics and computer engineering.

Proceedings Editorial Board:

O.Ya. Kravets, Dr. Sci., Prof. (editor in chief, Science Book Publishing House, USA); **A.A. Aliyev**, Dr. Sci., Prof. (Baku State University, Azerbaijan); **S.L. Blumin**, Honored Scientist of Russian Federation, Dr. Sci., Prof. (Lipetsk State Technical University, Russian Federation); **E.V. Lebedenko,** Ph.D. (Academy of Federal Security Guard Service of the Russian Federation, Orel, Russian Federation); **A.D. Lukyanov,** Ph.D. (Don State Technical University, Rostov-on-Don, Russian Federation); **S.L. Podvalny**, Honored Scientist of Russian Federation, Dr. Sci., Prof. (Voronezh State Technical University, Russian Federation); **A.M. Vodovozov**, Ph.D. (Vologda State Technical University, Russian Federation)

ISBN 978-1-62174-014-8 Ó **Authors, 2013**

Preface

Dear Colleagues!

Present proceedings were published to summarize the results of the XVIII International Open Conference "Modern informatization problems". The conference was held through the joint efforts of Science Book Publishing House (USA), Voronezh State Technical University, Baku State University (Azerbaijan), Vologda State Technical University, Lipetsk State Technical University, Don State Technical University (Rostov-on-Don), and the Academy of Federal Security Guard Service of the Russian Federation (Orel), in November 2012 – January 2013.

It was decided to hold three thematically differentiated conferences within the main one - «Modern informatization problems in economics and safety», «Modern informatization problems in modeling and social technologies», «Modern informatization problems in the technological and telecommunication systems analysis and synthesis».

The conference was held to encourage exchange of experience between leading experts in utilization of information technologies in various spheres of science, engineering, and education. The conference followed the traditions established by its predecessors.

Representatives of leading research centers and educational institutions some countries introduced the audience to the results of their research, which are available not only in this collected works, but on http://www.sbook.ru/spi .

Present book contain conference proceedings within the following areas:

- analysis and synthesis of complex systems;
- telecommunication systems and applications;
- automatic and computer-aided design of power grids, electromechanical and technological systems; information systems and their applications.

Organizing Committee Chair,
Editor in Chief
Dr. Sci., Prof. O.Ya. Kravets

Contents

Preface 299

1. Analysis and synthesis of complex systems 303

Baranov I.J., Saitov S.I. Two-level agent's system of autentification on keyboard handwriting.....303
Blyumin S.L. Matrix Pascal triangle for signless laplacians of hypergraphs ...305
Burkova I.V.Basic principles of tasks differentiation depending on the level of the group.....308
Gadzhiev Y.A. 9-point biorthogonal DCT algorithm with 5 multiplications, 6 shifts and 29 additions.....311
Grafov O.B. Increasing performance of soft-decision decoding for Reed-Solomon codes by filtering the aggregate reliability of the code word symbols.....314
Hromyh A.A., Preobrazhensky A.P. About the approach of estimation of propagation characteristics of Wi-Fi indoor.....317
Myatov G.N. The comparative analysis of the piecewise-linear objects on the base of fuzzy linear regression and fuzzy similarity measures.....319
Nelyubin A.P. Sensitivity analysis of multicriterial choice using criteria importance theory with interval importance information 323
Sandler I.L. Algorithm of recurrent estimation of parameters of multidimensional linear dynamic systems of the different order with the noises present in output signals.....328
Shahvorostov G.I., Kravets O.Ja. Features of the data caching protocol development on the basis of temporal tags for the special transaction processor.....330
Statnikov I.N., Firsov G.I. Problems of the construction of the equation of linear regression in the PLP-search 335
Voliansky R.S., Sadovoy A.V. Iterative analysis method of frequency characteristics for nonlinear dynamic objects 341
Бортновский С.В., Дьячук П.П. (мл.), Суровцев В.М. Конечные автоматы постоянного и эпизодического контроля и регулирования учебных действий.....349
Кацюба О.А., Семашкин В.Г. Параметрическая идентификация многомерных нелинейных динамических систем разного порядка при наличии помех в выходных сигналах.....353
Шульга Т.Э., Сластихина М.Д. Решение задачи анализа для класса конечных детерминированных автоматов, заданных полиномами с рациональными коэффициентами 356

2. Telecommunication systems and applications.....360

Abylkhassenova D. Network technologies of parallel programming.....360
Afanasyev V.V., Artyomova E.V. Digital watermark as a means of the electronic library's content copyright protection.....362
Choporov O.N., Bolgov S.V., Kutashov V.A. Development system for data analysis, modeling and integral estimation in medical research.....365
Fedosin M.E. Supporting tools for research projects in virtual information-computational laboratories.....367
Filimonov A.V. Virtualization services support technique on corporate networks.....371
Glagolev S.N., Belousov A.V., Koshlich Y. A., Bystrov A.B. Web-based access to technological information in monitoring systems of energy consumption objects.....373
Lugovtsov I.I. Improving of video data traffic security, transferred by wireless IP cameras.....377
Mironov O.Y., Lyashenko V.V. Development of methods of protection against unauthorized access to information using established tools to work with active directory in the network under control of Windows 2008 Server..380
Redkin Y.V. Low-frequency ism band monitoring system of distributed objects.....382
Trofimenkov A.K., Romanuk K.I. High speed label switching features for modern packet data network.....385
Vorobyov V.A., Lebedenko E.V. The automation of Windows 2003 Server security subsystem administration process in protected document flow systems.....387

3. Automatic and computer-aided design of power grids, electro-mechanical and technological systems.....391

Andreev A.N., Andreev M.A., Lipilina A.P. Generation of pseudorandom signals streams with controlled probability.....391
Bolotov A.N., Razinkin K.A. To the question of resource management of the enterprises of the mining industry on the basis of the assessment of risk of software integration OF SAP ERP.....394
Fedosin M.E., Samovarov O.I. Creating a virtual information-computational laboratory in computational fluid dynamics.....398
Kolesnichenkio D.A. Computer simulation of the asynchronous machine in generator mode.....400
Krasavin A.V., Lukjanov A.D. Peculiarities of the cutting forces in wood milling by cylindrical cutter.....403
Kravtsov A.G., Mikhailov V.N. Optimization of the machine-tools conStruction with parallel kinematics.....407

Lobachev I.V. Analysis of automated control systems service center.....412
Polosin A., Chistyakova T. The algorithm for synthesis and analysis of mathematical models for determination of extruder configurations at changeover of productions of multi-assortment polymeric materials.....415
Romanov A.V., Komolykh A.V., Sergeev M.Y. Problems of electric drives CAD system software development.....420
Safronova A.P. Analysis of the methods of structural synthesis solutions for quadratic assignment problem.....425
Vyalikov I.L., Sukhostan A.V., Shevchenko N.O. Combined vibration and ultrasonic processing.....434
Zyubin V.E., Sizov M.M. Data calibration algorithm for mobile muonic densitometer.....438
Якунин Д.А. Обзор системы управления верхнего блочного уровня атомной электростанции и возможности её модернизации.....441

Author's index.....445

Author's index

Abylkhassenova D. 360
Afanasyev V.V. 362
Andreev A.N. 391
Andreev M.A. 391
Artyomova E.V. 362
Baranov I.J. 303
Belousov A.V. 371
Blyumin S.L. 305
Bolgov S.V. 365
Bolotov A.N. 394
Burkova I.V. 308
Bystrov A.B. 373
Chistyakova T. 415
Choporov O.N. 365
Fedosin M.E. 367
Fedosin M.E. 398
Filimonov A.V. 371
Firsov G.I. 335
Gadzhiev Y.A. 311
Glagolev S.N. 371
Grafov O.B. 314
Hromyh A.A. 317
Kolesnichenkio D.A. 400
Komolykh A.V. 420
Koshlich Y. A. 371
Krasavin A.V. 403
Kravets O.Ja. 330
Kravtsov A.G. 407
Kutashov V.A. 365
Lebedenko E.V. 387
Lipilina A.P. 391
Lobachev I.V. 412
Lugovtsov I.I. 377
Lukjanov A.D. 403
Lyashenko V.V. 380
Mikhailov V.N. 407
Mironov O.Y. 380
Myatov G.N. 319
Nelyubin A.P. 323
Polosin A. 415
Preobrazhensky A.P. 317
Razinkin K.A. 394
Redkin Y.V. 382
Romanov A.V. 420
Romanuk K.I. 385
Sadovoy A.V. 341
Safronova A.P. 425
Saitov S.I. 303
Samovarov O.I. 398
Sandler I.L. 328
Sergeev M.Y. 420
Shahvorostov G.I. 330
Shevchenko N.O. 434
Sizov M.M. 438
Statnikov I.N. 335
Sukhostan A.V. 434
Trofimenkov A.K. 385
Voliansky R.S. 341
Vorobyov V.A. 387
Vyalikov I.L. 434
Zyubin V.E. 438
Бортновский С.В. 349
Дьячук П.П. (мл.) 349
Кацюба О.А. 353
Семашкин В.Г. 353
Сластихина М.Д. 356
Суровцев В.М. 349
Шульга Т.Э. 356
Якунин Д.А. 441

Science issue

MODERN INFORMATIZATION PROBLEMS IN THE TECHNOLOGICAL AND TELECOMMUNICATION SYSTEMS ANALYSIS AND SYNTHESIS

Proceedings of the 18-th International Open Science Conference

Issue is published in author's edition

Cover designed by Sofia A. Kravets.

Assigned to print 10.01.2013. Format 60x84 1/16.
CPP 9,5. Order 0000. Circulation 500.

Science Book Publishing House
6698 Red Lick Rd., Lorman, Mississippi, 39096 USA
http://www.sbook.pro/