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**MODERN TRENDS OF PRICE INCREMENT CONTROL  
AT FINANCIAL MARKET OF RUSSIA**

*Price increment at finance market plays a dramatic role in the regulation of financial markets. The change of the price increment results in the change of the microstructure and quality of financial markets. Therefore it is necessary to give the theoretical substantiation for the price increment change and forecasting the after-effects, which evaluation acquires great importance.*

*On October 1, 2014, the Moscow stock exchange has changed the price increment for 332 shares and depositary receipts. The article describes the international practice in price increment change control and after-effects of financial market regulation. The structure of price increment change on the market was analyzed and its dependence on the qualitative indicators of the market was identified.*

**Key words:** *minimum price change, tick size, regulation, market microstructure, financial market modeling, liquidity, volatility.*

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**V. N. Bulgakov**

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**REGIONAL COMPONENT OF INDUSTRIAL ENTERPRISES  
TRANSITION TO SUSTAINABLE DEVELOPMENT IN  
CONDITIONS OF RATIONAL AND IRRATIONAL EXPECTATIONS**

*The article considers the issues of the industrial enterprises transition to sustainable development in the context of rational and irrational expectations. The fundamental assumptions of economic theory, the findings of Russian and foreign scientists provide the theoretical and methodological basis for the research. Due to the methodological principles of comprehensiveness, the unity of theory and practice, the data obtained from the analysis of production and economic activity of regional industrial enterprises, the article describes modern approaches and suggests strategic directions and components for enterprises' transition to sustainable development. The conclusion is made that order and safety, survival and persistence of structures are inherent to the process of sustainable development of industrial enterprises in the context of rational and irrational expectations. In business the unity of economic interests is determined by the expectations and their source .*

*The article is addressed to researchers and graduate students studying the problems of socio-economic processes in the region, students of economic specialties, territorial administration practitioners.*

**Key words:** *rationality, irrationality, expectations, sustainable development.*

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**Sh. M. Valitov**

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## INNOVATIONS IN ENERGY SAVING AREA

*Power engineering differs significantly from other sectors of the national economy both in terms of its development, and in terms of the industrial functioning. This power engineering specific character can be explained by consumer properties of electricity, as well as by the basic technological principles of production.*

*The problem of efficiency is relevant due to the lack of effective incentives to energy savings.*

*The article considers new innovative approaches to energy saving and distinguishes the following three ones: energy-saving technologies in lighting, alternative energy in heating and use of modern thermal insulation for heat pipelines.*

*Energy efficiency measures involving innovative technologies enable to improve national energy saving scale. At the initial stage the government support is essential because of the high costs.*

*The findings allow to develop various scenarios for energy efficiency and make a conclusion about the effectiveness of the innovative approach to energy saving.*

**Key words:** *energy saving, energy efficiency, innovation, innovative technologies, energy-efficient technologies, renewable energy, thermal insulation, heat loss.*

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## FORMATION OF SUSTAINABILITY INDICATOR SET FOR SOCIAL AND ECONOMIC SYSTEMS: INTERNATIONAL PRACTICE

*The development of sustainability indicators set for a social and economic system (SES) has become today a fundamental concept for the evolution of the world society.*

*The article analyzes the experience of some international organizations such as the Organization for Economic Cooperation and Development (OECD) and the Commission on Sustainable Development (CSD) in the area of sustainability indicators set development.*

*Set development cases, that have yielded positive results in some areas of human activity in different areas, were considered. The importance of their use as well as its advantages and disadvantages in the socio-economic system were substantiated.*

**Key words:** *sustainability, sustainability indicators of socio-economic system, indicators OECD, indicators of Commission on Sustainable Development (CSD).*

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**EVALUATION OF ENERGY GENERATING COMPANY  
SUSTAINABLE DEVELOPMENT INDICATORS**

*The article considers various approaches to the evaluation of energy generating company sustainable development, determines the main characteristic features of evaluation techniques and analyses the international practice in this area.*

*Available from the analysis information enables to compare various approaches and make conclusion about the efficiency of control over the sustainable development in energy generating companies.*

*Reporting practice can result in better information transparency of energy power industry. It can provide further insight into regional peculiarities when forming social policy and in the long-term prospect contribute to the development of industrial nonfinancial report that meets all demands of industrial sustainable development.*

*Taking into consideration international industrial reporting standards it is necessary to develop a set of indicators for the objective comparison of energy generating company sustainable development indicators.*

**Key words:** *sustainable development, risks, energy generating company, electrical energy industry, performance evaluation.*

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**TOPICAL ISSUES OF OBLIGATORY CIVIL EMPLOYEES  
INSURANCE IN RUSSIAN FEDERATION**

*The article in question considers the state insurance of civil employees in the constituents of the Russian Federation. Nowadays this relevant issue is the most important element of the state guarantees system.*

*The legislation of the RF constituents on obligatory state insurance as well as the social potential and prospects of its further development are studied in the article.*

*The tendencies in the regional government authorities' activity suggest, on the one hand, the improvement of articles, insured events and the rate amount, and on the other hand, legal and regulatory framework for the issues of the civil employee's obligatory state insurance.*

*The obligatory state insurance is a reliable tool for the efficient employees performance, their legal and social security and staff stability.*

*The article substantiates the necessity of optimal and effective model for the obligatory state insurance of the civil employees in the constituents of the Russian Federation.*

**Key words:** *public civil service, constituent of the Russian Federation, state guarantees, obligatory state insurance, insurance payments, insured, insurer.*

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## **EFFICIENCY IMPROVEMENT TECHNIQUE FOR INNOVATIVE PROJECTS**

*The article suggests a technique, which consists of 25 stages and aims at a comprehensive approach to producing the goods of military and dual-use purpose by military-industrial enterprises in cooperation with universities on the basis of project management. The function of each stage is briefly described.*

*Structure of the technique is based on the principle of sequential fulfillment, so that the output results of the previous stage become the input information for the next stage. The team, consisting of scientists and manufacturers, implement the technique, they are responsible for the coordination of all links in the project and the timely achievement of its objectives to create new products. At that moment top managers do not make decisions on current issues, but the performance importance of the project team increases.*

*The suggested technique enables military-industrial companies and universities to control their resources, optimize the time expenditures and logistics processes, apply advanced technology into production, focus top managers' attention on their development and improve the quality of products and services.*

**Key words:** *defense companies, innovation, technique, production of military and dual-use items.*

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**Ye. G. Revkova**

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## **ADAPTIVE DEVELOPMENT OF ORGANIZATION AS OPEN DYNAMIC SYSTEM**

*Any organization adapts to environmental changes, which can result in changes in the whole organization or in some of its departments.*

*The article considers the process of organization dynamic adaptive development and studies the characteristics of the organization as an open dynamic system according to G. Morgan.*

*The notion of openness emphasizes the relations between the environment and internal system functioning.*

*External and internal functions, influencing the adaptive development as well as body of principles that intermediates this development were studied. Inertial effects were revealed on the basis of theory by M. T. Hannan and G. Friman*

*The comprehension of the factors enables to evaluate the probability of success from the changes and overcome the resistance. The characteristic features of the organization control adaptive system were identified and the principles and forms of its development as an adaptive system were specified.*

*The article is supported financially by the Ministry of education and science of Russia.*

**Key words:** *open dynamic system, organization, adaptive development, changes, factors, principles and forms, adaptive development.*

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**STIMULUS SPENDING OF MUNICIPAL SOCIO-ECONOMIC DEVELOPMENT**

*The article presents the results of the stimulus spending evaluation of Orenburg region municipalities, conducted by the author's method. Efficiency can be achieved when a contribution to the development of the municipality is ensured, that is manifested in the increase of budget revenues, reduction of higher budget dependence, local authorities performance improvement, stability of the socio-economic development. According to the survey, the appropriate authorities face two types of decisions: the efficiency evaluation of the stimulus spending funds (in the article – grants), and decision-making on funding a municipality in future years.*

*The current grant-making procedure to urban districts and municipal areas of the Orenburg region depends on the results of the local authorities performance evaluation, but does not consider the impact of the results on a budget, and the dynamics of important financial and economic parameters.*

*According to result-based evaluation, stimulus spending of municipalities of the Orenburg region for the period 2011–2012 can be described as not providing their significant socio-economic development. The analysis showed that a greater number of municipalities that received grants in 2011, are included into the group of inefficient stimulus spending. That is, the budget funds in the form of grants provided to municipalities of the Orenburg region according to performance efficiency evaluation do not contribute to their sustainable socio-economic development.*

**Key words:** *efficiency, local governments, stimulus spending, budget funds, municipality.*

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**METHODOLOGICAL ASPECTS OF RESEARCH FOR CATEGORY «ECONOMIC INTEGRATION»**

*The processes of integration and globalization are the basic areas of contemporary economic development. The interaction conditions of economic units shape the level of consistency for integration, submitting the market laws. Economic integration as a specific form of relations reflects the united trend of business units, technological and innovation exchange, attracting investments, cost saving.*

*At the same time the research suggests the wide range of treatments for “economic integration” and its models. Presenting a model the authors include different functional characteristics inherent to economic integration. The conclusion is that modern scientific theories do not suggest the comprehensive concept. The functional conditions and frames influence the development of economic essence of the notion.*

*Thus, the study of the integration processes and the analysis of the notion “economic integration” are relevant theoretical areas. The goal of the article is to identify the main characteristics of the notion “economic integration” and to create the synthesized notion. The comprehensive approach based on the analysis of theory and methodology, methods of comparison and generalization was applied.*

**Key words:** *economic integration, approach, theory, economic system, interaction, concatenation, contamination, solvation.*

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**IMPACT OF MODERN INTERACTIVE TECHNIQUES ON  
DEVELOPMENT OF STUDENTS PROFESSIONAL COMPETENCE**

*The article considers the communicative interactive tools, which enable to model the training process in virtual environment, summarise the professional competencies according to performance capabilities of new technological platforms. The construction of dyadic educative models, using game-training for metacognitive skills development was described.*

*Modern dyadic theories, such as social cognitive science, social pedagogics, behavioral and motivation training theories, were used for construction of new dyadic media models. For example, Game Based Learning (training based on playing simulation) produce the motivation effect and improve the cognitive potential of training with the help of videogames.*

*Thus they enable to model educational and playing situations in different space environments, interim periods for solving different tasks. According to the authors of the article the qualitative model for training specialists of different professions involves three components: simulation aimed at the intuition development, search of alternative ways of problem-solving, supervision tools which can be considered as technology of "fading aid".*

**Key words:** *technological platform, interactive techniques, professional competencies of specialists-to be.*

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**DATA FLOW CONTROL IN HIGH LOAD INFORMATION SYSTEMS BASED ON CLOUD ACCOUNTS**

*The article studies the issues of efficiency improvement for the use of information systems deployed in cloud systems. To achieve the goal a model should be developed that describes main peculiarities of flow serving taking into consideration the system topology, net services and current systems for planning tasks and the methods of data flow control between processes of computational tasks.*

*Within the frames of the article the model research of a cloud system and efficiency evaluation of control schemes with different planning algorithms were studied. For this purpose the cloud system simulation method, effectiveness metrics and techniques for experimental development of planning algorithm and methods of data flow control were developed.*

*Simulation model is identified by the capacities of separate computational nodes and connected flows between the services of the whole system. They include the serving time of an application flow, intensity of serving, serving discipline, class of serving, number of applications.*

*Method of experimental research pre-supposes the efficiency evaluation of virtual machines mutual work and methods of data flow control according to described metrics. The solutions suggested in the article lay the basis for the developed simulator of cloud system.*

**Key words:** *cloud accounts, information systems, data flows.*

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**FILTRATION OF MESSAGES AT THE SERVER LEVEL**

*The article considers the spam filters software implementation for websites. Apart from general issues of information security and personal data protection the Internet resources should be provided with the efficient systems of message filtering for site domains.*

*The issue of spam detection is considered relevant. To achieve the goal a client-server application to provide spam filtering due to database mining techniques was developed.*

**Key words:** *spam, spam filter, client server, web server, messages filtering, classification.*

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## ANT COLONY OPTIMIZATION AND ITS APPLICATION FOR DEVELOPMENT OF EFFICIENT ALGORITHMS FOR ROUTING AND PROVIDING QoS IN ENTERPRISE SOFTWARE DEFINED NETWORKS

*Due to the method of ant colony the routing algorithm, that provides QoS parameters for data flow and determine their transmission paths, was developed. The algorithm considers the network topology and its current state including network capacity and delays. To develop the algorithm a mathematical model of the enterprise network in the form of a directed multigraph was created.*

*On the basis of the model the enterprise network simulator for experimental study of the algorithm was developed. The research aims to determine the dependence of QoS parameter (minimal guaranteed bandwidth and maximal guaranteed delay) violations percent on flow intensity. The findings confirmed the efficiency of the proposed algorithm and proved the necessity to implement it for the real enterprise software defined networks.*

**Key words:** *ant colony algorithm, routing, QoS, OpenFlow, software-defined networks.*

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## ON ONE OF WAYS FOR IMPROVING RELIABILITY OF CLASSIFICATION ANALYSIS

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*The paper deals with the organization and implementation of the combined classifier of objects. The mathematical setting of the problem for a classification of objects into categories (classes) was suggested. Two statistically similar methods of Bayes and Fisher were applied for object classifiers and a modification of these methods to the task of classification analysis was described.*

*To improve the quality and reliability of the solution the analysis of subsets with set intersection detected by both methods was used. The absolute measure – the number of common objects in these sets, which is determined by the merger of the involved sets, – was used as proximity measure of two sets. The article is based on the practical implementation of joint spam filter to classify messages in interactive sections of sites.*

**Key words:** *classification of objects, statistical methods of Bayes and Fisher, proximity measure of two sets.*

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**WIDEBAND WIRELESS NETWORKS MODELING SYSTEM WITH NS-3 SIMULATOR**

*Wireless networks have taken a rightful place in many areas. The rapid development in recent years has increased the density and velocity of networks that have affected the quality. The article describes the modeling system of wireless networks with broadband transmission features. The use of different modeling simulation environments was researched and the state machine for PHY was developed. The article specifies the mechanism of automatic threshold for packet filtering low signal levels; considers the medium access control mechanism and submits a proposal to split overhead processing functions at a basic rate and channel speed data receive.*

*The findings demonstrated high accuracy of the models that allows the use of NS-2 system as the base for creating large-scale simulations.*

**Key words:** modeling, wideband networks.

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**IMPORTANCE OF PHILOSOPHY OF MEDICINE FOR HUMAN HEALTH**

*Health is a multidimensional phenomenon, pre-determined by the development of cultural, environmental, economic, social, and intellectual components of the human activity. The article substantiates the idea that human health depends not only on the development of medicine, but also on the achievements of philosophical thought. The interaction mechanisms between philosophy and medicine as well as the development of philosophy of medicine were studied.*

*The article suggests the idea that human-friendly and health-oriented philosophy of medicine should solve this problem comprehensively, taking into account the identity of a patient, his or her interactions with the doctor. This approach enables to identify a disease, to improve public health and to forecast further development of medicine.*

**Key words:** philosophy, medicine, philosophy of medicine, person, health, illness, formation.

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**FREEDOM OF THOUGHT IN RUSSIA BEFORE AND DURING THE FIRST WORLD WAR (1914–1918 Г.)**

*During World War I Russia witnessed profound and fundamental changes: first the Russian Empire and then the Russian Republic broke, disappeared and were replaced by the Soviet era. The state confessional policy, position of religious organizations, ensuring human rights for freedom of conscience were the components that influenced the attitude that a huge part of the population of Russia felt towards the war. The article considers these public and social phenomena on the basis of analysis of scientific literature, periodicals and archive documents .*

**Key words:** *freedom of thought, First World War, religious policy of the state, law on religious denominations, Orthodox Church, Protestant unions, patriotism, national chauvinism, political parties and religious issues, religion, atheism.*

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**MINISTERS FOR FOREIGN AFFAIRS AND RUSSIAN-US RELATIONS AT TURN OF CENTURIES**

*The article analyzes the role of the personality in the development of Russian foreign policy over the 1992 to 2000. A.V. Kozyrev's, E.M. Primakov's and I.S. Ivanov's activities during their tenures of Ministers for Foreign Affairs of the Russian Federation are considered. The special attention is paid to the role of the Russian foreign policy agency in the development of the relations with the USA.*

*On the basis of analysis of biographic sources, newspaper articles, polls materials the evolution of the Russian-American relations from mutual hopes in the early 90-ties to the period of cooling in bilateral relations at the beginning of the XXI century was depicted. All the Ministers for Foreign Affairs looked for the most effective ways of using the reduced sources of country's foreign policy. Thus, the features of the diplomats' characters, their working experience played a significant role in the choice of forms for a bilateral dialogue, and in the development of the Russian foreign policy in whole.*

*The continuity of Russian foreign policy in the course of changes of Ministers for Foreign Affairs, dependence of foreign policy on situation within the country was studied in the article. The conclusion was made about the change of priorities of the Russian foreign policy from unconditional commitment to the West headed by the USA to recognition of necessity to develop cooperation with CIS countries and traditional allies of Russia in the Middle East. Pragmatism and mutual benefit of bilateral cooperation became fundamentals of the Russian foreign policy at the end of the period.*

**Key words:** *foreign policy of Russia, Ministers for Foreign Affairs, international relations, American-Russian relations.*

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**«HUMAN ARCHETYPE» CONSIDERED AS CATEGORY OF ANTHROPOLOGICAL METAPHYSICS**

*The article in question considers a relevant topic of modern philosophical anthropology that is the of theoretical description of a human being based on the integrative approach. The approach includes the interaction of essential and phenomenological and existential ways of solving the human problem. The category “human archetype” is suggested as the initial point for the development of the conceptual space of the philosophical and anthropological description of a human being. The category presents a certain abstract and common, axiological and information structure, a scheme of generic human existence.*

*Spatial-temporal cultural social codes contain human archetypes which are considered as humanity development, a kind of synthesis of abstract, anthropologic and human-valued characteristics. The research considers the content-oriented aspect of the archetype, particularly the problem of embodiment as the fundamental anthropological structure.*

*The author of the article using the ideas of structural anthropology, ethnography and archeology, describes the process of staged “contraction” and grouping of anthropological characteristics into human “proto-image”, gestalt which has pre-configuring meaning for the development of human reality and embodies unity of ideally-moral and physical aspects of norm.*

*Due to the research of different cultural and philosophic body images the conclusion is made that archetypical embodiment as inter-embodiment and ontological ego-consciousness can become the first phase of human institutionalization, which is connected with the sources of generic existence: intentionalities of instrumental, cognitive, social and cultural activities.*

*The concept “human archetype” (used in this particular research) enables to focus findings of different conceptual solutions, relating to creation of philosophical and theoretical human image and essential comprehension of human origin.*

**Key words:** *anthropological metaphysics, human archetype, physical subjectivity, archetypical phenomenal physicality, types of intentionality.*

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**ENERGY DISSIPATION IN SECONDARY ENERGY SUPPLY SOURCES WITH GALVANIC ISOLATION “OPTICAL SOURCE-PHOTOELECTRIC TRANSDUCER”**

*The article presents the findings for the analysis of energy dissipation in the systems of secondary energy supply with galvanic isolation “optical source-photoelectric transducer”.*

*The energy loss index can vary from 10 to 60%. Minimum loss values correspond to sources with a certain wattage output and solid sources of optical radiation, photo converter, which band gap exactly corresponds to the converted radiation frequency.*

*The maximum loss value takes place if light-emitting diode sources and photo converters based on heterostructures are the parts of an electric power source, if there is a wide-band gap, corresponding to the maximum converted radiation bandwidth at the outlet, if a base has got a running value of the band gap.*

**Key words:** secondary energy source systems, optical emission loss, galvanic isolation, photoelectric transducer.

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**ENERGY CONSUMPTION OPTIMISATION WITH DIAPHRAGM DISCHARGE WATER DISINFECTION INSTALLATION**

*Disinfection of domestic wastewater is a relevant technical issue. The greatest effect is achieved when using diaphragm electric discharge.*

*The main disadvantage of the installations with diaphragm electric discharge is the significant power consumption reaching 0,3–0,4 kWh / cubic meter. The power consumption limits the widespread use of these systems instead of ultra-violet installations at wastewater treatment plants.*

*The article considers the issues of diaphragm discharge water disinfecting process efficiency improvement from the viewpoint of energy consumption. The research findings prove that diaphragm discharge reactor structure and its operation optimization reduces energy consumption in comparison with the original diaphragm discharge installation. The estimation of possible power consumption reduction by 2 times due to an intermittent rating regime is suggested.*

**Key words:** diaphragm discharge, diaphragm, Diaphragm discharge reactor, disinfection, hydrogen peroxide, copper ions, power efficient.

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**PROVISION OF LIPOPHILIC MICRONUTRIENTS AND SERUM IRON LEVELS IN RESIDENTS OF AGROINDUSTRIAL REGION**

*The article connects the provision of lipophilic micronutrients – vitamins A and E, serum iron, lipid profile and antioxidant enzyme activity in young men aged 17–18 with living conditions in Orenburg region agroindustrial areas with different oxidative stress.*

*Maximum load of iron was found in the western parts of the region, where live the greatest number of persons with both reduced and increased levels of serum iron. Number of lipophilic antioxidants (vitamins A and E) is characterized by the increase, especially in the east and west of the region.*

*The tendency towards intensification of lipid peroxidation, evaluated by chemiluminescence, is identified in the residents of the central zone. The maximum activity of SOD and catalase was indicated in students living in the east of the region. According to the analysis of basic biochemical parameters depending on the area of residence, the evaluation of collateral lipophilic nutrients supply must be combined with the identification of the body's balance of pro- and antioxidants.*

**Key words:** *iron status; antioxidant vitamins; lipophilic micronutrients; chemiluminescence; antioxidant enzymes; adolescents.*

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**ADAPTIVE MEDICINE: FROM HISORY TO MODERN AGE**

*The article presents the time-tested approaches to implementation of modern treatment and prevention, sanatorium and resort institutions into healthcare process as well as drug-free modalities for treatment and prevention of chronic, non-contagious diseases.*

*The multi- and single- seater vacuum pressure chambers, speleochambers and training devices that use mountain air healing properties were manufactured in 90s of XX century.*

*However the priority of the drug therapy, long-term treatment practice, apothecary chain growth and its prosperity due to high prices of medicinal products outshone the success of adaptive medicine between 1980–2000.*

*The article aims at initiating new technologies that defend people from harmful industrial effects and developing new healthcare activities.*

**Key words:** *adaptive medicine, treatment-preventive process, medical chamber “Ural-1”, population health.*

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