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**ABSTRACTS**

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**TECHNICAL SCIENCES**

**Aliieva L. I., Shkira A. V., Goncharuk K. V. Using the mathematical apparatus for determining the energy-power characteristics of combined triangular extrusion // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The leading trend in the development of mechanical engineering and metallurgy is the development of resource-saving technologies, including combined extrusion. A simulation of a combined triangular extrusion of parts by the finite element method using the software DEFORM 3D is done. The goal of this study is the construction of plots of combined energy and power characteristics of the tripartite review of extrusion parts and forming the blank with different geometrical parameters. According to the research, it is found that the deformation zone is centered on the transition edges of the deforming tool. Methods of planning the experiment were prepared according to the combined efforts of the tripartite squeezing parts and forces disclosure of half-matrix geometry parameters of the received part. The regression equation and regression coefficients for determining the energy and power characteristics of the process are also received.

**Andreev A. A., Korchak E. S. Development of industry hot isostatic presses frames with optimal metal intensity // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Constructive and operating peculiarities of industry hot isostatic presses frames are revealed. Special consideration is given to its stressed-and-deformed state investigation. Diagrams of strains, deformations, displacement and cycle life under maximum stressing of the frame with optimal metal intensity are analyzed. The detailed description of constructive features of such frames is given. Hollow columns design with the necessity of their coupling with the beams by means of spaces with variable hardness is substantiated. Practical recommendations of industry hot isostatic presses frames with optimal metal intensity designing are delivered.

**Belokon' Y. A. Mathematical and physical modeling of deformation processes of TiAl alloys at SHS-pressing // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The paper considers the influence of the stress-strain state of the formation of structure and properties of  $\gamma$ -TiAl alloys obtained under SHS-pressing by computer simulation program Deform. In solving the problem of thermo-compression deformation  $\gamma$ -TiAl alloys have been integrated into the program of the rheological properties of  $\gamma$ -TiAl alloys obtained experimentally on complex Gleeble-3800, which allows the numerical calculations of the kinetic dependences of the main parameters of the process of pressing the product high-temperature synthesis. The extrusion process is characterized by the tension bar of hydrostatic compression, which provides  $\gamma$ -TiAl alloys the best plastic properties in these conditions. The simulation results of pressing  $\gamma$ -TiAl alloys have allowed to fix the four clearly marked zones defining staging of pattern formation at SHS-pressing.

**Bolgova A. S., Kolesnichenko A. V. Application package MexBIOS for modeling electromechanical systems // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

We consider the establishment of modeling systems. The basic shortcomings of existing software systems, such as, MathLab Simulink, VisSim are revealed. The complexity of the development and implementation of software systems create additional barriers to the technical experts in the implementation of their ideas in the field of complex electromechanical objects. The developed software package MexBIOS provided a significant reduction in terms of the development of electronic control modules, to obtain the necessary external performance and lower cost microprocessor control systems of electric drives. MexBIOS is a development environment and simulation of embedded software control systems of electric drives, technological systems, programmable logic controllers. The main features and benefits of the package MexBIOS compared to other systems modeling are considered.

**Getman A. Y., Razzhivin A. V. Mathematical modeling of thermal parameters of quenching workpieces in a vertical shaft furnace // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article deals with a mathematical model that describes the thermal processes during quenching the workpiece in a vertical shaft furnace, based on the nonlinear differential equations in partial derivatives, containing different kinds of boundary conditions, and the conditions for determining the position of the boundary of a phase transition. Creation of the mathematical model will allow to improve thermal management system quenching, which will support the directive schedule at the established level of the temperature schedule. In this article a method of accounting for the spatial distribution of integrated indicators in the analysis of energy processes in a vertical shaft furnace, by solving differential equations in partial derivatives is proposed. This solution allows us to describe the thermal processes, distributed in time and space.

**Gribkov E. P., Zavgorodniy A. V., Gavrilchenko E. Yu., Gorbenko A. S. Software for the design of technological settings of levelers // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Manual calculation and adjustment of levelers leads to the accumulation of errors and inefficient overlap purpose of working rollers, which in turn, leads to a marriage of finished rolled metal products, including the incorrigible. Therefore, the challenge is to improve the quality of products through the introduction of new and effective information and computer technologies. In this paper we consider a software product designed to reduce manual labor in manufacturing plants, and as a result to improve the quality of products. For example, at the levelers plate mill 2800 of Asha Metallurgical Plant, the usefulness of the program for the calculation of the optimal configuration of working rolls of the leveler is experimentally confirmed. The obtained results are used in the manufacture to improve process efficiency.

**Datsenko P. V., Donchenko E. I. Study of energy saving technologies in the development of sensor sowing crops in order to increase uptime // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article deals with the construction of the wireless network ZigBee, problem-solving communication with sensors sowing crops. The analysis of the various ways to save energy and proposed methods to reduce energy consumption is done. To this end, a mathematical model that simulates the operation of the devices in different modes of power, held its simulation is developed. As a result, optimal schedule periods of network activity, which will increase the battery system, given the requirements for network bandwidth was found.

**Zagoryanskiy V. G. Influence of bond strength and temperature on the ability to bend bimetallic strips obtained by explosive cladding // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

In the paper the analysis and clarification of laws, linking the plastic properties of bimetallic compositions prepared by coating the explosion, with the strength of the connection layers is developed. The method of finding the optimal energy parameters of the process, determining the strength of the connection layer bimetallic compositions is proposed. The strong influence of hardening in the preparation of the explosion cladding copper-aluminum bimetal blanks makes them tested for ductility (by bending test). In the event of a significant reduction of the plastic properties the bimetal should be subjected to a heat treatment (annealing). The analysis of the effect on the plastic properties of the compositions of the heating temperature is done. In an optimum mode annealing copper-aluminum bimetallic (to increase the deformability of the bimetal without deteriorating its electrical properties) it is proposed to use heating to 200...250 °C and holding for 0,5 hours.

**Kovalevs'kiy S. V., Goncharova N. S. A device for growing complex profile parts from metal materials // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article discusses and describes the installation created by shaping, which is building a layered piece of bar stock. The essence of the work is as follows: the material as molten microspheres, which are continuously supplied to the zone of formation, using a hub of strong electric currents and is applied onto the surface with compressed air. Power supply by a high frequency current is a standard high frequency generator of electric current. With this technology the part is created by adding new layers to already existing and is dramatically different from traditional methods of working the pieces by cutting. New methods contribute to reduction of materials usage and increase the productivity which is very important in the creation of industrial samples and ready made parts.

**Kovalevskiy S. V., Poddubniy S. A. 3D - modeling is industrial bending systems // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

This article describes how to examine and expand the assembly shop of the plant, which is constructed as multistage machine for processing hard core parts. The essence of the work is as follows: the basis of a conventional plant or industrial site is taken and is placed vertically. Due to this we have reduced location for this workshop, and reduced time to deliver blanks and finished parts, between the shops and sites.

Based on the spatial and functional analysis of multiple variants of production systems, a model search for optimal criterion of the relative power layout decisions is proposed. The proposed approach is implemented through the establishment of neural network models with a qualitative assessment factors of layout.

**Krol' O. S., Krol' A. A., Bel'kov M. A. 3D- modelling and investigation for drive of machining centre // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The complex 3D-models of main drive machining center in an environment of KOMPAS-3D using application design libraries and module of rendering are created. The procedure of parametric modeling of transverse drive layouts in CAD WinMachine is suggested. The solution of the problem of determining compliance of the spindle of assembly of multioperational machine using the project module ARM SHAFT for the case of rigid and elastic supports is given.

**Kozhemjakin V. G., Shapovalov V. A., Burnashev V. R., Biktagirov F. K. The experimental equipment for determining the durability of hardened copper alloys // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

To compare the wear resistance of the surface layer of copper plates of cast, the technique and experimental equipment were designed that allow to simulate the main processes occurring in the border of mold wall - metal. The samples received by plasma-arc welding of copper-copper-nickel alloys with different contents of nickel were tested. It is shown that the wear resistance of nickel-copper alloy is increased in comparison with pure copper 1,2–1,4 times.

**Kulik T. A., Kulik N. A. Mathematical modeling of the stress-strain state of the metal when rolling billets with uneven temperature field // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Implementation of rolling processes from an uneven temperature field is characterized by asymmetry of the mechanical properties on thickness, indicating into the feasibility of a comprehensive analysis of the processes both in terms of power parameters and from the point of view of the mechanisms of defect formation and methods to remove them. The finite element model, which allows to study the influence of uneven distribution of the temperature field through the thickness of the workpiece on its resultant curvature is developed. This model can be used to assess the effectiveness of the proposed technological adjustment and modes of mill in each case.

**Kindenko N. I. Analysis of hypotheses on the causes of increasing tool life in result of the magnetic field on the cutting zone // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The present work is devoted to the study of issues related to improving the performance properties of tools made of high speed steels by magnetic-pulse treatment, representing a combination of electromagnetic and thermodynamic control methods for non-equilibrium structure of matter. The analysis of existing methods of magnetic treatment was carried out, on the one hand, as methods of increasing the life of cutting tools by applying to the cutting zone of the magnetic field and on the other hand, as the impact of magnetic field on the material of the tool. It is found out that durability and quality of instrument methods associated with treatment of material of the tool constant, variable and pulsed magnetic fields the most consistently improves. It is shown that the efficiency of the method of magnetic treatment depends on a number of factors related both to the exposure to the magnetic field instrument and the conditions in which this tool operates.

**Loveykin V. S., Pochka K. I., Loveykin A. V. Justification of edge acceleration when optimally reversing roller molding installation // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

To increase the reliability and durability of roller forming installation the combined mode of back and forth motion of the forming cart with a reversal under optimum regional conditions on acceleration of the third order is calculated. The design of the drive of installation as the cam mechanism is developed. The cam profile for providing the combined mode of back and forth motion of the forming cart is constructed. The design of roller forming installation with the drive from the high-moment step engine, which is built in the rolling rollers of the forming cart of installation is also offered. The use of the specified driving mechanism in installation leads to the improvement of surface quality of the processed concrete mix, reduction of dynamic loadings in elements of driving mechanism, disappearance of excess destructive loads of frame design and, respectively, increase of reliability and durability of installation in general.

**Lutaja A. V., Kartamyshev D. A. Development of mathematical model of the control system for movement for electrodes drive movement of the electric arc furnace (EAF) // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

A mathematical model of the control system for movement for electrodes drive movement of the electric arc furnace was developed. It describes each structural component in the form of a system of ordinary differential equations and it evaluates the output parameters of each element of the control system. Graphs of transients for each structural element are obtained from the equations, which were received in the solution of the system. These graphs allow to evaluate the nature of the processes in the control system by the electrodes drive movement. It is proved that the equation system, describing the change in the length of the arc, is fully consistent with the characteristics of the electric arc furnace. The nature of the process, accompanied by the increase in the length of the arc, confirms the system's response to the impact of the input signal in the form of feed to the opening flap and lifting the electrode.

**Markov O. E., Zligorev V. N., Rudenko N. A., Kolyadenko A. V. Increasing quality of large forgings by using forgings schemes with intensive plastic deformation // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Effect of wedge angle and depth of the convex dies concavity faces on closure of the axial defects and stress state in the axial zone was considered in the paper. It was found out, that increasing wedge angle and depth of concavities dies faces increases the degree of closure of the axial defects. Reduction in diameter was 25 % for flat dies, for angle 160° – 35 %, for angle 140° – more than 35 %. Angle 140° was inefficient for obtaining four-ray workpieces with the point view of closure of axial defects. Intensive closure of defects occurs in the four-ray workpieces during reduction of 25 ... 30 % in the dies with the angle in the range 160 ... 180°. High level of compressive stresses provides full closure of axial defects. These results are explained by index of rigidity of stress state in axial zone to form the four-ray workpiece. These data are confirmed by experimental studies.

**Mirantsov S. L., Tulupov V. I., Onishchuk S. G. Improved methods for the combined-processing surfaces of machine parts based on turning with electric pulse heating // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The method of combined treatment of surfaces of electric heating machines based on mechanical action of the cutting tool on the timber, accompanied by local heating of the surface layer of electric shock is considered. The structural and mathematical models of the process of turning combined with electro-heating pulse, which includes elements of the technological system of the machine, the cutting process and about the process of electro-heating are developed. The proposed complex model turning with electric pulse heating, which is implemented in the package Simulink MatLab, allows to consider such important technological parameters as stiffness of technological system, the parameters of cutting mode, changing the components of the cutting force when processing, the movement of the tool on the trail of unreinforced and reinforced sections of the treated surface, and also random errors occurring in the process system.

**Oliinyk S. Yu. Technological solutions for quality improvement of the surface of glassceramic thin-walled shells // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The analysis of technological solutions and methods that provide the improvement of the quality and accuracy of shells with complex shape is presented in the article. The technology of machining of large shell of complex shape from glassceramic is examined. The result of work is a general conclusion of information on the composition and interaction of input factors. To improve the quality of surface the directions for further research are identified. The topical directions are the development of rational schemes of machining, which will be the basis for the design of a new special machine; development of mathematical models of formation of surface geometry with the allowance the scheme of cutting, cutting conditions, intricate profile of workpiece, vibrations in the technological system; stress-strain state in the cutting zone for their use in the development of control programs for CNC machines.

**Savchenko N. F., Tretyak V. V., Onopchenko A. V. Improvement of repairs of large structures using the method of local stamping // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

One of the possible methods of parts and semi-finished products stamping directly in the area of operation of large facilities in order to reduce time and cost of repairs is studied. The assessing techniques of the degree of deformation depending on the dimensions of the workpiece and the flange deformation are considered. The stamping method of large products with artificial adjustment of imperfections, such as local stampings or corrugation on the surface of semi-finished products, size control of the plastic stability zone is offered. The evaluation of the effectiveness of the proposed method for the manufacture of large components in their area of operation and installation is made.

**Sapon S.P. Regularities of parameters accuracy formation of spindle knot according to the temperature of working fluid in the hydrostatic bearing of spindle // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Regularities of parameters accuracy formation of spindle knot precision turning machine according to the temperature and pressure of the working fluid in the hydrostatic bearing of spindle were researched in this paper by experimentally. The results of experimental researches of influence of the working fluid temperature to rotation accuracy of the spindle and processing accuracy of samples-wares are shown. It was established, when increasing pressure in the pockets of the hydrostatic bearing, deviation of spindle axis from the initial position and the influence of temperature on the accuracy of forms of the processed surfaces in the whole range of temperatures of working fluid decreases. The revealed regularities allow to choose rational operating parameters for hydrostatic bearings of spindle when lathing.

**Seleznyov M. E., Borovik P. V. A comparative theoretical analysis of application efficiency of chevron knives with a complex shape of the cutting edge // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The practice of cross-cut sheet metal with a classic chevron knife showed the presence of residual deformation of the finished sheet, while there are several technical solutions to reduce this defect consisting in modifying the shape of the cutting edge of chevron knife. A comparative theoretical analysis of the effectiveness of two different designs of chevron knife with a complex shape of the cutting edge, carried out on the basis of finite element modeling in order to identify the most promising in terms of the quality of the finished sheet and power parameters of the cutting process is shown. It is found out that when the applying a chevron knife with a fillet the residual strain is 7.4% higher in comparison with an alternative knife construction.

**Tarovik N. G. Mathematical model of bridge crane by wind loads // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Loads design scheme for a bridge crane, taking into account the impact of the wind load is developed. The crane scheme with load as a material system with five degrees of freedom, represented in a Cartesian coordinate system, which characterize directly the parameters of the working process of the crane is designed. Wind load is represented as the sum of its two components: static and dynamic. The obtained mathematical model of gantry crane in the wind conditions can be applied to improve the efficiency of the use of gantry cranes under wind loads, as well as to formulate recommendations on adjusting the brake mechanisms of movement, anti-theft devices and selection of wind-measuring devices.

**Tulupov V. I., Onishchuk S. G., Mirantsov S. L. Engineering of surface of details of machines by the combined treatment on the basis of sharpening with the electro-impulsive heating // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

A method for the combined treatment of surfaces of machine parts heating electric pulse based on the mechanical action of the cutting tool to the workpiece is considered, which is accompanied by local heating of the surface layer of electric shock. A general pattern of the impact of turning on the heat with electric pulse microhardness of steel is exposed. Empirical power equation is derived that allows us to calculate the value of the rate of wear in the investigated range of variables and near the area to build the response surface and turning the mode selected with the electric pulse heating and to ensure maximum durability of the material increase in the friction pair within the investigated range of values of technological factors. Modes of treatment turning to electric pulse heating, under which the minimum rate of wear are defined.

**Holodnyak Yu. S., Perig A. V., Kaporovych S. V. I-beams strength computation methodology development // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The equivalent stress distribution along the height of an I-beams cross-section has been studied. The zones of maximum equivalent stress in conjunction with the I-beams geometric parameters and power load at the section have been found. The conditions for maximum equivalent stresses have been specified to not exceed the allowable values. An improved method for the comprehensive assessment of I-beams strength against the normal, tangential and equivalent stresses has been proposed. This computational approach may be recommended to lecturers and students of technical universities as well as engineering specialists in the field of strength computations.

**Sheremet A. I., Soldatenko A. A. Comparative analysis of the methods of measurement of electrical and mechanical parameters of electric drives with DC motors // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The analysis of modern methods of measurement of electrical and mechanical parameters and the selection of the most suitable sensors for the stand are presented. The analysis of modern and efficient high-precision current sensor is carried out; the connection of the selected current sensor is presented. Possible options for the voltage measurement, the election of the voltage sensor and reviewed its operating principle are reduced. On the basis of modern methods for measuring the motor speed has been chosen as the most rational way to measure rotational speed and positioning of the motor shaft during rotation, checking the selected sensors on technical, operational and economic parameters.

**Sheremet O. I., Lebed V. T. Synthesis of the current controller for a closed electron-roprivodom management system using the Heaviside's function // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article is devoted to analytical synthesis of controller for closed-loop electric drive control. When this method is used temporal equalizer, i.e. artificial partitioning the desired dynamic characteristic of the output to discrete intervals with their subsequent implementation by the respective regulator. We give formulas to synthesize regulators in accordance with the specific transfer functions open or closed systems and the desired controller. The theme of article is aimed at improving methods of regulators synthesis for providing efficient management of complex technological processes.

## ECONOMIC SCIENCES

**Balashova E. V. Influence of tax politics of the state on the financially economic state and further development of enterprises of country // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Essence of tax politics is considered in the article, basic defects and problems of taxation are analyzed. Certain basic priorities of tax politics on the future by the performance of main objective are defined to provide forming of such system of taxation, that would assist to development of economy, to forming of valuable subjects of market with the simultaneous gradual decision of problem of narrowing of the deficit of budget and achievement of the financial stabilizing with the further passing to the economy growing. The ways of decision of existent problems are offered in a tax sphere.

**Bolotina E. V., Radkovskaya A. I. «Information explosion» and management practices // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

In this article on the basis of research the reasons, consequences and ways of a solution of the problem of «information explosion», its values in society reveal are disclosed. The theory of three revolutions and types of information technologies are described. Need of fast and effective preparation of mankind for huge flows of information is revealed and proved. The latest statistical data concerning this problem are provided. The undertaken study confirms that the transforming economy is a specific state of the economy development, which requires specific analysis and management. The transforming economy management is a relevant issue, requiring consideration and research of various factors. Good Governance is the new scientific system of management by the information society as post-industrial society. The «information explosion» prepared the coming of post-industrial society a. modification of the phychosphere of human.

**Gladyschewa O. V., Rowenska V. V., Feditschewa V. V. Die Formierungsfaktoren des Arbeitskräftepotenzials // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Im Artikel wird das Wesen des Arbeitspotenzials des Unternehmens betrachtet. Wichtige Aspekte für die Bewertung der Arbeitsleistung der Mitarbeiter sind definiert. Die Besonderheiten der Bildung und Nutzung von Arbeitskräftepotenzial sind berücksichtigt.

Auch in diesem Artikel sind die wichtigsten Faktoren beschrieben, die auf die Bildung von Arbeitskräftepotenzial einwirken. Sind die Merkmale der Bildung von Arbeitskräftepotenzial in Deutschland und der Ukraine definiert. Sind die Richtungen für die Erhöhung der Effizienz des Prozesses der Bildung von Arbeitskräftepotenzial angeboten.

**Golovach A. A. Mechanism of management of machine-building enterprises in the conditions of eurointegration // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Signing of agreement Ukraine at associations with the European union and free trade Zone, from one side, opened the row of new possibilities for the Ukrainian enterprises, from other – resulted in elimination or substantial reduction of before existing economic connections with the countries of the CIS. In the article the mechanism of management machine-building enterprises is developed in the conditions of eurointegration, being based on the complex forming of strategy of development of machine-building enterprise taking into account the plans of modernization on the basis of having a special purpose indexes of world leaders, that allows to provide a competitiveness Ukrainian machine-building enterprises in the conditions of eurointegration. Development of this mechanism can be clarification of features of work of the incoming in a mechanism going near modernization and development of strategy of development of machine-building enterprise.

**Grozny I. S. Quality rating based on qualimetry approach // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The expediency of using of qualimetry approach is justified. The proposed approach allows to provide an objective quantitative assessment of the extent of implementation of requirements for the development of production processes. The results of using of qualimetry approach can form an adequate management decisions for the development of production processes of industrial enterprise; select the desired level of quality, select a specific process, which requires improving the quality, and develop appropriate corrective actions in order to fulfill the specific requirements, improving the efficiency of resource management, better technology.

**Yeletsikh S. J. Strategic aspects of personnel management in the enterprise // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The actual problem associated with the formation mechanism of strategic HR management is considered, based on the gradual movement from concept and principles of personnel management to human resources policy, and from it - to development of HR strategies. The construction and implementation of a flexible mechanism for strategic HR allows more efficient to use of human resources within the overall strategy of the enterprise is proved. An implementation of HR strategies can based on the establishment of strategic HR department, which performs the following functions: monitoring of the external environment, internal environment analysis, definition of mission and development strategy of personnel management, creating and maintaining of high image and attractiveness as an employer.

**Zhukevich S. N. Accounting as informative base of analysis of the financial state of enterprises in the conditions of integration of Ukraine in EU // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

In the article it is investigated and reflected, that an accounting is the supplier of state information and directions of development of enterprise, and that it forms basis of the informative providing of management an enterprise on the whole and his financial state in particular. Objects of the informative providing of management an enterprise are formed in part of tasks of accounting. In basis of making decision of financial and economic character, there is concrete actual information, that presents the measurable indexes of the financial state, which are calculated on the basis of data of accounting control. Certainly, that one of major descriptions of the financial and economic state of enterprise is productive energy of his potential (economic resources and capital) from position long-term prospects.

**Melnikov A. Yu., Kiyashko Yu. Yu. Process modeling of office equipment maintenance by system and technical support department // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Processing of office equipment maintenance applications by system and technical support department has been considered. The approach how to choose the right specialist to process applications has been offered. The mathematical model of decision making support for employee appointment to perform the required tasks on the basis of agent-oriented approach has been worked out. The information model that implements the mathematical model has been developed by UML. The software implementation in a programming environment Embarcadero Delphi XE2 has been considered. The program has been tested on PAO «NKMZ»example.

**Koverga S. V., Stepanets D. S. Creating of vertically integrated production structures and factors of their efficiency // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article proved that the basic features of vertically integrated structures are sectoral and inter-sectoral business combination involving manufacturing production chain with high added value as well as internal resource provision at all levels of inter-branch chain costs.

It is proved that the economic efficiency of vertical integration is achieved by saving on transaction costs associated with the formation and maintenance of contracts with third parties, and also the cost savings due to the scale of production. Its value of in the integration is that it helps to get higher profitability of production with the companies closely related to each other than in a situation where they are managed separately.

**Kosova T. D., Steblianko I. O. Budgetary decentralization as structural reforms direction in the national economy // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The reformed model of the budgetary system is formalized on the basis of decentralization as structural reforms direction in the national economy. The critical estimation of new approaches to forming of profit and expense parts of local budgets, determination of principles of transfer policy and organization of interbudgetary relations is given. The mechanisms for implementation of tasks to ensure the budgetary autonomy and financial independence of local budgets, independent formation and approval of local budgets, strengthening every link in self-government stable revenue base for implementation of its functions. The financial and socio-economic consequences of introduction of the new approaches to the budget alignment and limitation of money withdrawal in the state budget are defined. Pre-conditions for expansion of financial and investment activities of local budgets in accordance with international standards are revealed.

**Krivun V. S., Korchak E. S. Peculiarities of engineering enterprise intellectual capital functioning under innovative economics // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The importance of industrial property for modern machine-building enterprise functioning is analyzed. Informative-and-analytical and working data bases for increasing of intellectual power of enterprise are described. The main stages of innovative project development and innovative activity results introduction into industry (drawing up of innovative project, its fulfilment, analysis of innovative project implementation and its availability) are considered. Universal system of innovative activity results introduction into industry to create conditions for industrial intellectual capital effective functioning is developed. The example of rational usage of intellectual capital by modern machine-building enterprise is given.

**Krivutsa A. V. Development of scenario predictions of economic development of Ukraine taking into account political and economic instability // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article describes the scenario predictions of economic development in Ukraine, taking into account political and economic instability. The aim of the article is to develop both pessimistic and optimistic scenarios of economic development of Ukraine until 2020. The dynamic range of the integral index of socio-economic development of Ukraine and the integral index of limit values for the multiplicative form was calculated based on projections for the economic development of Ukraine in two scenarios, taking into account the weights were calculated. A set of recommendations to improve the socio-economic development of Ukraine based on the prediction was proposed.

**Lazarenko D. O, Ukrainka O. O. Providing of information content of accounting figures for the current management of economic processes // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article deals with the main problems arising from the various business processes. It is proved that the existing accounting systems do not always form the real indicators of enterprise financial condition. The need for improved accounting methodology to improve information management is shown. The use of the mechanism of information chronograph is suggested. The example of the chronograph, which characterizes a business process is given. Management capabilities that make the proposed method more attractive are defined. The mechanism of monitoring of business transactions, which is provided by information messages is characterized. The following stages of the study related to the development of a number of options of control information to meet the different information needs are defined.

**Lantukh I. V. To the question of business ethos // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Business ethos as a system formation involving utilitarian and pragmatic activity of social subject, ethical normativity and personal capacity on the example of domestic business of late XIX - early XX centuries is analyzed in the article. Personality of O. M. Paul was an example of realization of business ethos in the domestic industry. Thanks to his efforts Kryvbass became an industrial district. Personality of O. M. Paul wasn't accidental in the sphere of domestic business. He confirms businessman ethos as a system formation and establishes its right to exist in business practice.

**Melnikov A. Yu., Larchenko A. V. Research of intellectual methods of budget allocation and development of decision support system for systemic and technical department of PAO «NKMZ» // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The process of budget allocation of the systemic and technical department of PAO «NKMZ», including the analysis of the specific charge of the budget per tonne of produced products is considered. The development of mathematical model of decision support on budgeting, using dynamic programming is shown. The information model of the system is provided. The description of software development in the Embarcadero Delphi XE4 programming and an example of using this system is considered.

**Logvina E. V. The development of the small hotel business in Europe // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The issues related to the development of the small hotel business in Europe are considered. The countries with the largest number of mini – hotels of the hotel chain «Small Luxury Hotels of the World», etc. are given. The hotel chain of small hotels in European countries are considered by the author and concluded, what is the growth and development of small hotels in Europe. The organization of business services sector is proved to a differentiated approach, focusing on the specific needs of customers in today's market. Taking into account individual needs of the guests and providing high quality services that can satisfy the consumer, are the basis for the strategy of modern small hotel enterprise. The conclusions about the increase in number and development of mini hotels in Europe are made.

**Mazur Yu. O. Analysis of evolutionary approaches to economic development // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Evolutionary theory is used in the modern economic thought for the study of economic development and changes in the socio-economic environment. Its fundamental feature is the consideration of some sets of rules of conduct and their distribution in the environment under the influence of various external and internal factors. The basic approaches of evolutionary economic theory such as Darwinism and Lamarckism are studied. For the study of the introduction of tax incentives for economic innovation in enterprises Darwinian approach to the economy should be used.

**Malakhova A. V. Process of management of educational services under conditions of transition to European standard // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article investigates the state and development of educational sector based on the experience of Western countries considering the necessity of management of innovative development domestic market of educational services. The rational market management of educational services will allow us to use it as an indicator of development of the domestic economy, a decisive condition of development of population, actuality and relevance of those or other educational services, readiness to receive them at the appropriate level of quality. The suggested system of indexes and the model of resource support and rational mechanism of market development management of educational services will allow us to strengthen its competitiveness.

**Mykhaylychenko N. M. Controlling of goal-setting and strategic thinking // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The methodology of controlling goal-setting from the standpoint of the concept of strategic thinking of D. Derner is developed. Controlling goal-setting methodology that takes into account the systemic nature of the company, makes it possible to build an effective system of controlling of planning and management of the company. The concept of strategic thinking can be used as a methodological basis while developing planning system of controlling the company, which has provided the flexibility of the latter; and further work in this area should be focused on the adaptation of strategic thinking and in management system organization on the whole.

**Podgora E. O., Shimko E. V., Reshetnyak O. A. The application of game theory to optimize business decisions // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The studies of the application of game theory to optimize business decisions in modern enterprises are made. The studies have revealed the nature and the socio - economic importance of making economically sound business decisions and fine the place and role in the management solutions. Theoretical approaches to the definition of the concept of game theory and it's the criteria and the influence of game theory application in making economic decisions are studied. The conclusion is that game theory can help you in applied marketing, management accounting, and in building effective tactics and strategies in management, allowing you to choose the best way to solve the problem taking into account the ideas of other players, their possible actions, and potential resource given the existing risks.



**Podlesny S. V., Tarasov A. F., Pyschulyna E. V. Methodology for Calculating of professor-lecture's staff composition DSEA // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

At the state universities of Ukraine a two-tier system of calculating state operates. On the first level, the Ministry of the number of students determines the number of staff and allocate appropriate funding. On the second (Intrahigh) level, these states are allocated to departments. Recently existed, system determines the number of staff departments by study load that was a part of a fundamental contradiction with the system of the first level. In order to eliminate this contradiction, the technique of calculating institute departments staff by contingent of the students.

**Groznyj I. S., Prokopenko R. V. Approach to parameterization of diversification model of external economic cooperations of Ukraine // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

As a result of the Russian-Ukrainian conflict Ukraine is forced to diversify the external economic connections. Therefore the development of estimation methods how different vectors of foreign economic activity will influence on the economy of Ukraine is actual. In the article the developed scientific-methodical going is expounded near parameterization of diversification model of external economic co-operations of Ukraine. A method is based on providing stability and flexibility of simulation model. It allows to promote design exactness and adequacy of reflection of foreign economic activity dependences. The development of this approach can be an increase of the investigated indexes amount and clarification of different vectors of foreign economic activity influence.

**Melnikov A. Yu., Solomko Yu. A. Process modeling technology of reliability performances calculation for the equipment by system and technical support department // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Processing of measure calculation of reliability of the equipment applications by system and technical support department was considered. The mathematical model of measure calculation of reliability of the equipment on the basis of a probable-physical method and a lambda-method approach were worked out. The information model that implements the mathematical model was developed by UML diagrams. The software implementation in a programming environment Embarcadero Delphi XE3 was. The program has been tested on PAO «NKMZ».

**Turlakova S. S. Analysis of approaches to construction of reflexive models of making decision for the use in the modelling of processes of herd behavior reflexive management at enterprises // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

There is an absence of universal mechanisms in the models of making decision in the economic systems. The least studied direction in modelling of reflexive processes of herd behavior display at enterprises is selected. The analysis of approaches conducted of reflexive models of making decision for the use in the modelling of processes of herd behavior reflexive management at enterprises. It is certain during analysis, that for the use in the modelling of processes of herd behavior reflexive management at enterprises the selection of separate elements of the resulted models and their adaptation are probed to subject domain needed. There are perspective directions of researches in development of reflexive models of the processes of herd behavior display at enterprises.

**Turlakova S. S., Rudneva M. V. Mathematical modeling of the system for decision support to optimize the flow of resources of machine-building enterprise // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

In conditions such as emerging and steadily developing market economy, improving the efficiency of movement of commodity flows is achieved mainly by improving their financial services. Which, in turn, causes the necessity of selection and study logistics and financial flows relevant to the movement of commodity-material and commodity-non-material values. Technology material flow management reviews financial flows such as those that ensure the functioning of already existing systems, although with their help the control of production activities is ensured. A promising approach is to consider the interaction of material and financial flows through transformation tools in the material resources.

**Shandova N. V. Factors of corporate social responsibility development // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article discusses aspects of the social responsibility formation in the Ukrainian companies. In the article the urgency of studying the effect of the relationship between business and society on the development of corporate social responsibility. The studies resulted corporate social responsibility to be represented as a specific response to the demands of society in their actions reflect the interests, values and expectations of stakeholders. The studies identified and systematized the main internal and external factors that determine the particular implementation and support of social responsibility in the activities of domestic enterprises.

**Shashko V. O., Yaschishina Y. M. Outsourcing of non-core functions at the industrial enterprise as a tool for effective management // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Expediency of outsourcing non-core industrial enterprises function, in particular service functions as a tool for effective management, are grounded. The concept of outsourcing is disclosed, the main distinctive features and characteristics of outsourcing are presented. The basic reasons that force the managers of industrial enterprises think about the use of outsourcing are allocated. The importance and value of the outsourcing industry are demonstrated. The list of possible scenarios for the reorganization of production infrastructure of the industrial enterprises involving companies outsourcers are presented.

**Shevchenko V. V., Pleskach V. P., Drobit'ko I. O. Inventive work motivation: regional aspect of encouragement with state awards // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

Special attention is given to importance of inventive work motivation for increase of company's innovation activity. The author reviews statistical data about submitted applications for an inventions, obtained patents and used patented knowledge in Ukraine. The author also established the facts of giving the rank "Honoured inventor of Ukraine" and determined the trends for awarding. The study analyzed the awards distribution in terms of companies and inventors location and determined the regions where the most state awards had been obtained. The article represents the dynamics of patents for an inventions obtaining in Ukraine as well as application of inventions and utility models by the companies. It was concluded that number of received awards had been decreased in the regions leading in inventive work. It was also noted that the total number of honoured titles awarded to Ukrainian inventors had been reduced.

**Shimko E. V., Podgora M. K. The possibilities of renewal of fixed assets through effective leasing // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

An effective evaluation method of the modern leasing in upgrading basic production assets on the basis of establishing a close relationship stages of evaluation after evaluation of the selection criteria was proposed. The method allows properly take into account the financial equivalence of lease payments. It does not contradict the basic economic interests of the main subjects of leasing relations, and enables cost-correct and transparent count reward for the lessor to consider all possible tax flows within the leasing project. That is often the most important, it is flexible and transparent, based in the justification to the lessee.

**Yaschishina Y. M., Shashko V. O. The use of interactive teaching methods in teaching the course «Mental technologies of Staff Management» // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article is devoted to the introduction of interactive teaching methods in the higher educational process. There is the brief retrospective analysis of the use of interactive teaching methods in domestic and foreign education. The role and importance of interactive teaching methods in the educational process is defined. There is an analysis of the features of interactive teaching methods at the higher educational institution. The article acquaints with the experience in implementing interactive methods in teaching of the course "Mental technologies of Staff Management". There are the examples of modified interactive exercises that were developed and tested during the educational process.

**Olkhovskaya O. L., Konovalenko S. V. Decision support system for the accreditation of insurance company bank // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The system of support of making decision is worked out for accreditation of insurance company a bank as веб-приложения on the basis of the modern instruments used for creation of web-foods : Microsoft Visual Studio 2013; instrument for the visual planning of databases : DataBase; programming languages: CSharp, Javascript; фреймворков: ASP.NET; СУБД: DataBase; language of the hypertext marking of HTML; cascade tables of styles of CSS. This product allows to estimate the financial state of insurance company on the basis of row of the criteria formed by a bank; to conduct the analysis of the got result and form corresponding recommendation allowing to the financial analyst to make decision about a further collaboration with an insurer or to give up his services.

**Tahan A. V. Resistance staff organizational changes in the enterprise // Scientific Herald of the DSEA. – 2015. – № 2 (17E).**

The article deals with the problem of resistance of staff during organizational changes in the company. We studied the methods of overcoming resistance to organizational changes at the company. In may vary depending on the type of changes in the method of selection of resistance. The need for organizational changes due to the increasing complexity of the environment and increased competition in the market economy. In this connection there is need for the creation of both theoretical and practical change management mechanism under the direction of management.