ABSTRACTS

TECHNICAL SCIENCES

Makshantsev V. G., Makshantsev E. V. The parameters of mathematical model adjusting the brook forming form cast steel slab on vertical MNLZ // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The mathematical model of forming form cast steel slab is developed, based on the main the theory about heat transfer in multiphase media, which allows to calculate the parameters of soft reduction zone and determine the place of the rational application force to the soft reduction ingot. To describe the processes of transferring the heat into a ingot blank and to calculate the field of temperature equalization, reflecting power balance in the system, is used. Hydrodynamic processes in a liquid phase, resulting in a convective heat transfer in the liquid small hole of ingot blank, taken into account unobvious by introduction the proper amendments to the heat coefficient conductivity in this area. Another advantage of model is an temperature dependence liquids and solidus from chemical alloy composition.

Saviuk I., Rud' V., Samchuk L., Povstyana Y. Thermite mixture based on waste PC «Kovelsilmash» // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The article analyzes the main methods of recycling and waste processing engineering, namely iron scale. The main methods of such waste disposal are given. The chemical composition of steel slag 18H2N4MA has been determined. The scale steel powder 18H2N4MA showed that regardless of faction powder with particles of scale plate shape with sharp edges has been analyzed. Experimentally the combustion of termite mixture in a weight ratio of 23% aluminum 77% pure metal output scale is 52-54%, the rest - slag. To increase the metallic particles to thermite charge proposed to add small chips of steel 40 in the amount of 30% of the original weight charge.

Turchanin M. A., Kassov V. D., Berezshnaya O. V., Malygina S. V., Malugin S. O. Thermodynamic study on technological addition composition during the electro pulse consolidation on the powder material // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The selection of the powder material in technological composition, which improves the adhesion of the powder components during the heating under the electro pulse consolidation in conditions of electric contact deposition, was provided. The calculation of the selected system phase transformations has been completed. The provided thermodynamic search allows given recommendations about the mixture ratio as the technological addition. It is shown that according to the specified conditions of heating and operational parameters the usage of the proposed technological addition allows improvement on the thermodynamic conditions of the moistening powder layer components.

Yushchenko K. A., Kakhovskyi Yu. N., Evdokymenko A. S., Kakhovskyi N. Yu., Suprun S. A. The automated control method of technological parameters on production of the self-protective cored wires // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

This article highlights one aspect of the manufacture self-protective cored wires for mechanized and automated welding. The trend of global automation welding equipment, highlights issues are given in this article related to the quality improvement with welding materials production, are highly relevant. This work considers the control system fill cored wire level. Automation of dispensing the work piece cored wire has allowed to raise productivity to the level of manufacturing equipment efficiency 0.85...0.95. Experimental-industrial pattern of designed system has been successfully tested and used at the plant of welding materials E.O. Paton Electric Welding NAS Ukraine.

Aliieva L. I., Goncharuk K. V, Lebed V. T., Tahan L. V. Investigation of stress-strain state and forming under combined radial–direct extrusion using FEM // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Increasing practical use of research results is one of the main directions in the development of metallurgy and machine building. The most important factor in solving the technological problems is the development of new processes to obtain high-quality products with desired performance characteristics. In this regard, it is necessary as the continuous improvement of the traditional cold extrusion process and the transition from simple basic to more complex processes - combined and combined extrusion. One of the problems in the calculation of the combined extrusion process is the lack of recommendations for the definition of energy-power parameters of the process. These factors, which significantly influence the process of stress, are the stress-strain state and forming process. The purpose of this paper is to analyze the stress-strain state and forming on the energy-power parameters of the process of combined extrusion. By using the finite element method was obtained by an array of data that allowed us to estimate the stress-strain state and describe the deformation of the part.

Afanasjeva M. A., Lutaja A. V. Kinematic process analysis of mutual tool-free run-in tubular blanks // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The kinematic process analysis of mutual break-tubular blanks without specialized tools friction was made. The influence has been investigated on the basic technological parameters metal process distribution to the wall thickness of the product led to the conclusion and accepted variation within the original data and the determining the pipe wall thickness equal to the thickness of the bottom wall. A comparison of the radius values in the respective diametrical sections of the flat bottom platen and the theoretical curve profile showed that the differences do not exceed 5%, moreover, they are minimal, if the heating zone boundaries coincide with the length with the site location of the initial overlap blanks. In this case, the effect of non-contact deformation zone - minimum.

Gavrish P. A, Berezshnaya O. V., Malugin N. O. Creating of the heat-proof coatings by powder materials // Scientific bulletin of the DSEA. – 2016. – № 2 (20E).

There was the investigation of the possibility of increasing the durability of blast lances by thermal spraying. The expediency and efficiency of the burner use for thermal Euro DzhetXS 7-spraying were presented. The optimal modes of powder material deposition process to ensure the high quality of the applied layer and preventing delaminating of the coating were presented. The phase composition and microhardness of the deposited layer of powder material was investigated. It is shown that the composition of the selected particulate material during spraying lance has enhanced heat resistance.

Gavrish P. A, Berezshnaya O. V., Sobolev-Butovchenko E. A. Gas-thermal sputtering of an covering against friction details of the TAKRAF crane overloader // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The big requirement of the industry for antifriction materials which could maintain heavy unit loads, high cost of traditional antifriction materials cause the necessity of search of the new antifriction materials. Work's purpose is to research the properties of a vapor-deposited covering powder material PG-19M-01. Fe – 4%, Cu – a basis, Al – 8,5 … 10,5 are included into powder. This powder for gas-thermal sputtering has HRB 65…70 hardness. The vapor-deposited covering is easily processed by turning. It is executed gas-thermal sputterings of sliding bearings of the ore and clamshell TAKRAF overloader. The form and the sizes of particles of powders are investigated, dependences of temperature are determined by a flame torch axis from a sputtering distance.

Grin' A. G., Trembach B. A., Trembach I. A. Choosing the direction of filler parts optimization subjected to hydroabrasive wear // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The influence of individual factors on different types of weakening is considered. Based on the influence of weakening certain requirements, which are required for weld metal are defined. It is found that the carrier environment have big influence the weld metal resistance to hydroabrasive wear; while the carrier medium is on the thermal regime at the contact surface and the abrasive, and the corrosion surface wear. A scheme of selection of properties for surfacing material depending on operating conditions is developed. For the conditions of hydroabrasive wear martensitic steel with increased heat resistance should be advised, with high performance properties and comprising 3...5% Cr, as well as other reinforcing phases (carbonitrides, carboboridy, borides and intermetallic compounds).

Efimenko N. G., Korol N. A., Bartash S. N, Sitnikov P. A. Technology and equipment for welding of studs in cooling systems of power plants // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

There are the data on the developed installation and welding of studs technology for cooling systems of power equipment. On the basis of the developed source inverter, a specialized type setting PUSH was created. These technological recommendations for semi-automatic welding of studs can reduce the disadvantages of the existing technology of welding of studs on the "Nelson" scheme and improve the quality characteristics of the welded joints.

Kassow V. D. Martynovskaya E. V. Optimization of welding mode with forced transportation of the electrode material // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The use of wear-resistant coatings with the strengthening and rebuilding of machine parts contributes to their longevity, but it is limited by the difficulty of machining. The proposed optimization mode surfacing material with forced transfer of details to determine the optimal modes of surfacing that provides a set of metal welding characteristics with minimal machining allowance, which in turn reduces the cost of recovery and the details of the operation. Using the computer allows to select the most accurate surfacing mode, which will be an economic and effective for specific conditions.

Iskrickij V. M., Vodolazskaja N. V. Analytical researches of assembly process of group threaded connections // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Features of assembly technologies on an example of group threaded connections are analyzed in this paper. Questions of influence of a suppleness of joint elements on degree of an inhaling of fixing details are considered. Analytical dependences for definition of change of nature of loading of these details for a symmetric flange joint in the

course of their serial pair inhaling are received. Several type of calculation of efforts change in tightened pairs of threaded connections and also their graphic interpretation are presented. Recommendations about use of the received settlement dependences are offered at an inhaling for one and several rounds.

Sorokin T. I., Donchenko E. I. Modeling of the milling process with the calculation of cutting forces by Rosenberg method // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The analysis of the dynamics of the face milling process using the method of calculation of cutting forces proposed by Rosenberg is made. The existing mathematical model of the milling process has been improved. The analysis of the face milling process for different values of treatment parameters is made by simulation in Matlab program environment. Verification of the mathematical model's adequacy was performed by comparing the simulation results with the data obtained on the basis of empirical dependences and it showed a positive result.

Loveykin V. S., Chovnyuk Y. V., Kadikalo I. O. Dynamic optimization of load-lifting mechanisms of cranes when lifting loads «with wings» // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

In the framework of a single-mass model of the amplitude variations of all crane parts at the stage of elastic deformation and dynamic loading when lifting loads "with wings" are minimized. Analytical expressions for the motion laws of lifting loads «with wings» which minimize the variations occurring during the above mentioned process are established. The results obtained in work can further be used to refine and improve the existing engineering methods of calculation of the mechanisms of load lifting of cranes both at the stages of design and their actual operation.

Rasskazov Y. B., Sokolov Y. V. Mathematical modeling of automatic hydraulic drive of technological equipment // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Mathematical models of the dynamic characteristics of the automatic electric hydraulic drive with displacement regulation of technological equipment are suggested. Structural schemes of mathematical models of equipment with the hydraulic drive of the rotational motion as an object of automatic control are presented. The adequacy of mathematical models of the displacement regulation process of pump and also the actuator as a whole is confirmed experimentally. Mathematical models of technological equipment with hydraulic drive of rotary motion as an object of automatic control are the basis of further studies on the system synthesis of automatic control of equipment.

Boyko D. S., Ivchenkov N. V. Development of interface of hardware and software complex for connection of control software with microcontroller unit based on the embedded systems // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The article describes the interface development of hardware and software complex for connection of control software with microcontroller unit, which allows of obtaining the interface of object control easy to use and understand with a small amount of time and the use of the software of the open type. Project interface is designed on the basis of embedded systems.

Belobrov Y. A., Ivchenkov N. V. Development of hardware and software complex for remote control of interconnected electric drive on the basis of embedded systems // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The article discusses a hardware and software complex for remote control of interconnected electric drive, which allows of studying the principles of how the individual modern electric drive and control systems of technological object (an overhead crane) are constructed. It can be used in the subjects connected with the study of microprocessors and digital control systems of electromechanical complexes, programming and adjusting of embedded systems when organising the remote laboratory work.

Shelekhova O. G. Assessment criterion of the thermal state of the induction motor when deviating of voltage of direct sequence in continuous mode // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The research results presented in the paper allowed of determining non-iterative dependence of the stator current of the induction motor (IM) on voltage of direct sequence at different parameters of G-shaped equivalent circuit. Assessment criterion of the thermal state of IM when operating in conditions of low voltage of direct sequence in continuous mode is suggested. The obtained results can be used in the development of operation algorithms of protection devices of induction motors against thermal overloads and in control and prediction systems of thermal state of IM.

Babash A. V., Kvashnin V. O. Development of an algorithm for processing data from a text file // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The problems of processing data bulks contained in lines of text files are considered here. The algorithm of data acquisition from lines for their further processing is developed. The graphic description of an algorithm of line data processing is given here. The interface of the developed Windows application which allows to receive data arrays from

text files is represented in the article. The main features of the developed application are presented here. Typical IMDS text file with data in the form of lines is given. The algorithm of the analyzer of lines (parsing) is also demonstrated. Restrictions of standard applied software packages such as Matlab, Excel, Mathcad, when processing large data arrays are considered in this article.

ECONOMIC SCIENCES

Bolotina E. V., Birukov K. V. Formation of the European model of public management in Ukraine // **Scientific Herald of the DSEA. – 2016. – № 2 (20E).**

Problems of the formation of public management in Ukraine and necessity of its orientation to the European standards are considered in the article. The main issue which is discussed: whether Ukraine can quickly and effectively move to the new model of public administration. Whether there is an opportunity to completely replace a control system which was created by the Soviet authorities, and what consequences of transition to the European standards will be. Whether it is possible to change consciousness of the population and convince the community of the necessity of these processes. The Soviet model of power can no longer exist under the conditions which have developed in our country.

Borysova S. Yev., Shvetsova I. V. Ways of increasing profitability of commercial banks // **Scientific Herald of the DSEA. – 2016. – № 2 (20E).**

The essence, types and functions of profit of commercial banks are considered. The analysis of the main indicators of profitability of commercial banks is carried out. The profit is the main parameter of the result of bank activity which confirms the character of activity of an establishment. Increasing efficiency of activity is a primary purpose which is set by owners of a bank, and management of profitability is one of the most important tasks of financial management of banking institutions. In this regard actions for increasing profitability of commercial banks have been considered.

Dobykina E. К, Ponomareva V. A. Relevance of the formation of human resources in the structure of the enterprise and improvement of the system of labor potential management // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The authors analyze the methods of assessment of realization and management of labour capacity of the enterprise, as well as systematize the essence of the concept of labour capacity of the enterprise. The proposed method of complex evaluation of structure, balance, levels of personnel potential realization allows to reveal the available reserves for forming not only labour, but also enterprise potential in general, to develop reasonable administrative decisions aimed at its further development on the basis of graphic-analytical method "capacity square". In the future the offered method of human resource management will become the main one in evaluating the efficiency of the company taking into account all risks arising at each stage of development of the enterprise.

Zaytcev V. S. Incentives of employment based on the balanced scorecard system of the industrial enterprise // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Theoretical and practical approaches to the implementation of effective employment incentives for achievement of strategic goals on the basis of the balanced scorecard system (BSS) at the industrial enterprise are presented. Methodical bases for selection of employment incentives and implementation of the balanced scorecard system are determined. Strategic goals, key indicators on BSS components which are interconnected with the employment incentive system and can be used in practical activity of an enterprise are formed.

Koverga S. V. Ways of detecting imbalances and approaches to formalization of economic systems functioning // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

In the article the relationship between concepts that characterize basic phenomena concerning imbalances in economic systems are analyzed, reasons, features and consequences of imbalances are systemized from different points of view. The approach to the assessment of balanced functioning and development of economic systems based on the usage of the process approach to formalization of their functioning is proved. It allows not only to get dot estimates of balance, but also to calculate the integral balance indicators of economic system, estimate a contribution of each separate imbalance and balance processes dependent on it, determine the effect of increasing in balance of separate elements on the balance of functioning system in general, specify the most important imbalances for the studied system.

Ronin A. M., Chernenko N. O. Question chinese - ukrainian scientific and technical relations in the modern world // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The article is devoted to the study of the state scientific-technical relations between Ukraine and China in the modern world. Was analyzed the state of the Chinese economy using GDP and rate of R & D spending by authors, which indicates a country`s interests in developing new technologies and products. Using indicators of the "gravity

model" explored the possibility of cooperation between Ukraine and China. Stated disadvantages of the above method of calculation. Basic problems of economic and trade cooperation between the two countries. Offered a measures to improve relations and deepening of cooperation between the countries in scientific-technical sphere.

Simakov K. I. Methods and problems of organization of management accounting in industrial enterprises with IFRS // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Investigated the current state and methods of management accounting in industrial enterprises. Summarizes the scientific problems of creation of complex system of accounting and analytical support innovative development of industrial enterprises. The proposed application of international standards in the context of management accounting. The peculiarities of management accounting at the enterprises of Ukraine. To improve the information quality of management accounting recommended the introduction of a unified accounting system for enterprises.

Turlakova S. S., Shumilo Y. N. Approach to managing the herd behavior of consumers to markets // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The article analyzes the approaches to the management of the herd behavior of consumers in the markets. It sets out the concept of consumer behavior management and herd behavior. Given the concept of herd behavior of consumers in the markets. The main location of the object, subjective and alternative approaches to the management of consumer behavior on the markets in the classical economic theory. The conclusions that examined approaches to the management of consumer behavior have a number of drawbacks for use in the display of herd behavior of consumers in the markets. It was revealed that the most effective approach to the management of the herd behavior of consumers in the markets is a reflexive approach. Contains prospect modeling herd behavior management mechanism based on the consumer markets reflexive approach.

Shevtschenko V.V. Stimulation of innovative work: regional aspect of honorary title awards // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

Attention is drawn to the role of rationalization activity stimulation in the increase of enterprises innovative activity level. Statistical data in Ukraine about the number of enterprises where rationalization proposals are used, the number of used rationalization proposals in the enterprise performance and the quantity of authors of rationalization proposals have been considered. The facts of "Honored innovator of Ukraine" title of honor awarding have been established and the tendencies in awarding have been determined. The analysis of awards distribution according to the territorial location of organizations and innovators has been carried out as well as the regions of the country where the most of the national awards were received have been defined. The dynamics of relative indicators of innovative activity of the country regions has been reflected and the conclusions regarding the increase of relative indicators of innovative activity of regions being the leaders according to the innovative activity indicators and regarding the simultaneous decrease of share of national awards received by the innovators of these regions have been made.

Shubnaya E. V., Trofimova Y. V. Problems of functioning of the jewelry industry in Ukraine and their influence on consumer behavior of the population // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The main problem of the functioning of the jewelry industry in Ukraine: lack of own raw material base and dependence on imports of foreign raw materials, continuous increase in raw material prices, bad tax policy of the state, the lack of the state program of development of branch and state support for domestic producers, the vulnerability of the illegal import of foreign products, and counterfeiting. As a key problem jewelry industry of Ukraine considered the decrease in demand for jewelry due to lower customer solvency.

Shubnaya E. V, Pechenaya T. A. Modern problems and prospects of development of the IT industry in Ukraine // Scientific Herald of the DSEA. – 2016. – № 2 (20E).

The analysis of the characteristics of the macro and micro environment in which the industry operates information technologies in Ukraine. The basic tendencies and problems in the functioning of IT companies in Ukraine. The main reasons for non-compliance of basic professional education of IT professional requirements of the innovation economy. Based on the analysis of prospects of development of the IT industry in Ukraine, the necessity of solving the problems in achieving compliance with the skill level of graduates needs of the industry, increasing young people's interest in IT specialties, and improve the process of training of specialists in the IT sector.