ABSTRACTS

TECHNICAL SCIENCES

Aliieva L. I., Goncharuk K. V, Shkira A. V., Hnizdilov P. V. Analysis of the effect of the size of the deformation zone on the parameters of the combined extrusion // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Increase the practical use of research results is one of the main directions in the development of metallurgy and engineering. Using combined simple circuits extrusion opening reserves for stamping parts with complicated shape and reduce the number of process steps. One of the problems in the calculation of the combined extrusion process is the lack of recommendations to determine the power parameters of the process. One of the factors that significantly affect the force of the process is the shape of the deformation zone. The purpose of this paper is to analyze the influence of the form of the deformation zone in the power parameters of the combined process of extrusion. Power balance method, a mathematical model of a combined radial-backward extrusion. The dependences of the reduced pressure on the geometric parameters of the process for circuits with different deformation zone. Analyzed the influence of the form of the deformation zone on the power parameters.

Andronov O.Yu., Kuznetsova E. A. The management reliability level exploitation cutting tools for heavy lathes // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

On the basis of semi-markov processes analysis for the scheme of not loaded duplication with restoration the mathematical model of modular cutter reliability for heavy lathe are developed. Proved performance tests to improve the modular cutter reliability for heavy machine-tool magnetic-charge processing.

Mathematics models for evaluation of tool life has been developed. Its consider the wear and the distraction of cutting tools. The method of calculation of the summary tool life was worked out. It give possibility to decrease the quantity of using cutting tools for heave lathes.

Berezhnaya E. V., Chepel Yu. A., Kassov V. D. Control system structure microcontroller with electro-deposition // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

It was improved the compression device of the welding rollers for electric-welding wire by two roller electrodes. The control of effort on the electrodes of electric-welding machine is carried out by the microprocessor control system. Compressive force of the electrodes is measured by using of the semiconductor strain gauges. The received data of change of the effort signal on the roller electrodes allows to adjust the power parameters of the process directly within the welding current pulse flowing and allows to implement into the real production process the theoretical dependence and the recommended modes of surfacing.

Guschin O. V. Synergetic approach to the processes of structured movement aeromixture powder metallurgy materials in pneumatic conveying pipe // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

It is shown that the creation of new types of highly efficient pneumatic conveying systems for transportation of bulk materials used in powder metallurgy, based on studies of phase transitions in aeromixturemagistraleprovode. Structured analysis modes (wave and an à la carte) movement aeromixture invited to perform on the basis of a synergistic approach. The phase portrait of self-oscillatory processes with a traveling wave front. The process of forming a structured flow of powder materials under the influence of additional air jets with the occurrence of bifurcation zones. To analyze and evaluate the synergies process has a Lorenz model.

Kindenko N.I. The physical essence of the classification of methods of magnetic treatment of tool pieces // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The given article deals with the research of the problems connected with increasing of service properties tools made of high-speed steels by means of magneto-pulse machining which is the combination of electromagnetic and thermodynamic means of unbalanced structure material control. The analysis of existent methods of magnetic treatment is conducted, from one side, as methods of increase of firmness of toolpiece by imposition on the zone of cutting of magnetic-field and on the other hand, affecting of magnetic-field material, which an instrument is made from. It is set that most stably promotes firmness and quality of instrument the methods, related to treatment of material of instrument in permanent, variable and impulsive the magnetic fields. It is shown, that efficiency of method of magnetic treatment depends on a number of the factors, related both to the terms of affecting instrument by the magnetic field and to the terms which this instrument is exploited in.

Klimenko G. P., Polonnikov S. A. Increase of accuracy of processing of details on machines with CNC // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

In work the problem of creation of system for automatic control of accuracy of processing of details for machines with CNC is considered. Are considered the main errors influencing accuracy of processing, and the reasons causing them, methods of increase of accuracy of machines with CNC. Methods and means of technological control are outlined and the technique of creation of systems of automatic control of process of mechanoprocessing for improvement of its accuracy is offered. It is shown that the establishment of such systems of automatic diagnosis will significantly improve the quality of machined parts, reliability and productivity of the process of machining.

Martynov A. P., Dyachkin B. A. Management and evaluation of organizational and technical level assembly of products for single and small batch production // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Taking into account the requirements of the standards ДСТУ ISO 9000:2007 and ДСТУ ISO 9001:2009, a model and a system of indicators of organizational and technical level assembly processes in single and small batch production as well as quality cards , allowing to realize the required standards of monitoring, measurement, analysis and improvement of the system based on the process approach .

Substantiated a set of measures to improve the collection of engineering products for single and small batch production management system in TQM.

Mirnenko V. I., Kalinichenko V. I., Tkach N. Y. Formation of modern model state regulation of economy // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The files of the article provides an overview of powerful numerical methods for solving engineering problems nayriznomanitnyh finite element method , which is critical in predicting the performance space of elements under the action of the drill string operational factors. For specific calculations used the software NASTRAN, which has a common base calculated based on the finite element method is one of the applications of finite element analysis. Using this method performed a comparative evaluation of the stress- strain state of the specimen with steel 40 as the consolidation by vacuum hazotermotsyklichnoho ion-plasma nitriding and without hardening under the influence of cyclic loading. The result shows that the method of finite element analysis can predict work steel structural elements of the drill string from the surface hardened layer under conditions of cyclic loading, such as the limit of endurance, the number of cycles to fracture, and a fracture.

Obukhov A. N., Palamarchuk V. A. Cross movement of suspended thread in case, when the point of suspension moves horizontally by desired law // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Problem of the transverse displacements of the ponderable unspecified sectional view fiber, wherein the upper end moving horizontally by $f(t)$ law, was set and solved. The solutions were obtained for the three different ways of moving of the upper end: $f(t) = V_0 t$, $f(t) = \Delta \sin \omega t$, $f(t) = \Delta (1 - e^{-\beta t})^2$. Phenomenon of resonance in the case when the frequency of ω movement of the upper end coincides with the free oscillations k_1-harmonica was investigated. Resonance of the amplitude of the growth k_1-harmonics was found. It is established that the considered cases the relative movement of unspecified sectional view fiber have a continuous oscillatory nature. It is shown that the series of obtained solutions converge quite rapidly, and the obtained results can be limited to the first two terms of series in the case of practical using.

Popivnenko L. V., Eremkin E. A., Bochanov P. A. Device for mixing powder materials with stepless drive // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The prospective design of the installation for mixing powder materials periodic operation with stepless drive were considered in the article. Drive of devices for mixing powder materials are encouraged to apply arc stators frequency-controlled asynchronous motor. This layout mechanical mixer of its design will make it easier, the metal consumption will reduce, the efficiency of the installation will increase, the time of mixing powder components will reduce and the mixing quality will improve. In addition, the possibility of contactless and continuously variable speed drum mixer appears It will be possible depending on the properties of powder materials that must be mixed, as well as on the properties of the environment in which the mixing.

Semenov V. M., Kabatsky A. V., Malygina S. V. To the question of producing medium-carbon steel weldments using electroslag welding // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The aim of the work was the development of a low-waste technology of electroslag welding of parts such as a bandage for their manufacture of medium carbon steel 50 having poor weldability. The principal possibility of manufacturing weldments with simultaneous welding of two or more components by installing them one to another was shown. This will reduce the time necessary for preparation and start-up operations by 40 %, improve performance

by approximately 30 % and reduce energy costs by 50% due to simultaneous heat treatment details. The obtained experimental data allow to recommend to assemble bands taking into account the shrinkage of the weld metal during welding of similar product designs.

Fedotyeva L. P. Determination behavior of the elastic system grinding spindle supports headstock // Scientific Herald of the DSEA. – 2014. – № 1 (13E).
One of the promising directions to reduce vibration of the spindle unit is the use of controlled hydrostatic bearings (HSB), which can not only improve the accuracy of rotation of the spindle, but also due to the high damping capacity, increase the vibration of the machine and the quality of machining. The article presents the data model the behavior of the elastic system of grinding head when changing the stiffness of supports: stiffening supports fluid friction by 10 % leads to a decrease in the oscillation amplitude by 25 %. Thus, the design supports the fluid friction, which makes it possible to control the value of the rigidity of supports depending on the requirements of the quality of the surface layer by grinding (surface roughness) allow a slight increase in stiffness significantly reduce the roughness of the treated surface. However, for optimum use of this method of increasing the vibration resistance is necessary to use an automatic control of the gap fluid friction in the bearings.

Chigarev V. V., Golub D. M.,Volkov D. A. Investigation of the effect of the build-up welding on the chemical composition of the weld metal built-up metal // Scientific Herald of the DSEA. – 2014. – № 1 (13E).
It is shown, that at multi-layer submerged arc build-up welding chemical composition of built-up metal depending on composition electrode wire, building-up modes and interaction of the metal and slag, more weak effect have arc shift speed. It has been complete building-up welding of samples in copper water-cooled chill mold diameter 35 mm and height 420 mm. building-up modes (direct current, reversed polarity): the welding current 250–600 A, the arc voltage is 24–40 V, the arc movement speed was constant and was equal to 20 m/h. With statistical data processing were obtained regression equation of describing the effect of the technological building-up modes on chemical composition of built-up metal. The range of modes within which to obtain the desired chemical composition of built-up metal at build-up welding with the ПП-К15М15Н5Х3В2 flux-cored wire grade diameter 3 mm under flux АН-60. It compose: at the arc voltage is 25–30 V, the welding current 200–500 A; at the arc voltage is 30–40 V, the welding current 200–600 A.

Sheyko S. P. The Determination of resistance deformation to low-alloy steel for the wheeled production // Scientific Herald of the DSEA. – 2014. – № 1 (13E).
For low-alloy steel the applied in the wheeled production is set conformities to law of plastic flowage in the conditions of hot deformation. The regressive model of calculation of resistance of deformation is got 10ХФБТч became at the temperatures of 800–900 °C, to relative deformation 20–90 % in the interval of speeds of deformation of 1–100 s^{-1}. The error in determining resistance of the metal deformation using a regression model developed does not exceed 5 %, compared with the experimental data.

ECONOMIC SCIENCES

Vasyutkina N. V. Design of steady development of enterprises in the context of forming of his potential // Scientific Herald of the DSEA. – 2014. – № 1 (13E).
In this article are considered interlevel and intralayer cooperations of constituents of potential, during that a direct and reverse cross-coupling will be realized between his resources, results and competenses; reasonable basic intercommunications; certainly and the level of influence of environment is taken into account on development of enterprise; the model of steady development of enterprise is built, that allows to systematize and subordinate corporate custom controls through establishment of hierarchical and dynamic intercommunications between resources, competenses and results of material, power and informative levels of potential.

Dasiv A. F. Conceptual positions and response mechanism of economic industrial // Scientific Herald of the DSEA. – 2014. – № 1 (13E).
The necessity and urgency of developing conceptual positions and response mechanism of economic enterprises. Conceptual positions are theoretical and methodological, methodical, instrumental and organizational levels. The mechanism involves the collection and processing of information on the operation of enterprises, identifying stages of their life cycle, forecasting economic reactions counterparties and competitors of the enterprise, training and management decision-making on economic response based on predictive actions of its counterparties, management decision-making to respond in other areas of functioning, assess the impact of decisions on the response of the enterprise. The mechanism is aimed at development and implementation of managerial enterprises economic reactions, which provide reduction of damage or maximizing the benefits from the effects of time-dependent factors.

Zhukov S. A., Fedurtsia V. P. Public-private partnerships: theory and practice in the implementation of the aircraft manufacturing industry sector of Ukraine // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The article clarified the importance of interaction between government and business, which is a prerequisite for the development of market economy of any country. Established the relevance of public-private partnerships for strategic sectors of the Ukrainian economy, to which the aviation industry. In the study proved the necessity and practicality of implementing and enhancing public-private partnership in the aviation industry. On the basis of this study the author proposed a scheme of the process of formation and implementation of public-private partnership. Analysis of the results showed that the aeronautics industry is the leading sector of Ukraine, but the aviation industry requires new transformational approaches to preserve competitive advantage and competitiveness in the global market for aircraft construction products. And this approach may be the use of programs of public-private partnership.

Ivanytska T. E. The efficiency assurance of construction enterprise resource management // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Construction enterprise uses different types of resources in its activity. Different types of resources have different importance in terms of its effectiveness in spite of the necessity to involve all kinds of resources in the process of construction enterprise. Therefore, the importance coefficients of various types of resources should be specified for the resource efficiency complex index calculation of construction enterprise management.

The paper's proposal is the determination of complex resource efficiency indicators of five construction enterprises and it is based on the results of the expert survey data.

Isikova N. P. Analysis of models of accommodation of dealers of industrial enterprises in the development of new markets // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The validity of the objectives of territorial distribution of various objects was considered. The models the distribution of industrial enterprises were analysed. The features of the models in the treatment of different authors studied. The approaches used in deciding on the placement of dealers industries in the development of new markets were seen. Determined the importance of the influence of selected provisions in the present work on improving the efficiency of the sales of the company-producer. Scheduled perspective problems for further research in the field of modeling accommodation of dealers of the industrial enterprises in the development of new markets. Using identified in this paper will improve the effectiveness of the creating of adequate models of accommodation of dealers of the industrial enterprises in the development of new markets.

Kniazieva T. V. Criteria of international eco-efficiency of economic relations and their interpretation // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The article stipulates that it is the principles of the theory of economic efficiency should be the basis of the mechanism of solving international problems of nature. Improved procedure for determining the effectiveness of ecological and economic relations of nature on the basis of differentiation results of environmental activities, classification factors limiting action cost criteria in the assessment of environmental activities in order to improve the validity of measures in the areas of natural resources and protection of the environment and for the first time is justified by a mathematical economics model, which allows to visualize the criteria of the international eco-efficiency of economic activity and the impact of negative factors on it.

Lepa R. N., Russiyan E. A. Organizational support of the economic and social development city program formation // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The detailed analysis of the performers and coordinators interactions of the economic and social development Donetsk city program (program) was carried out; the functions of the program responsible and coordinator were investigated; the problems at the stages of program formation were identified; the assess of functional load level of departments and offices employees of the Donetsk city council, district executive committees and other stakeholders during the development of the program was carried out; the organization directions of the executives and program coordinators interaction improvement were proposed.

Madyh A. A. Systematization of functions and optimization of interaction between participants of the formation of the socio-economic development of the city // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Article analyzes the organizational structure and the interaction between the participants of the formation of the program of socio-economic development of Donetsk city, systematizes their functions, identifies problems and to substantiates directions of organizational interaction of responsible executives and program coordinators. The main result is the set of regulations and recommendations for the creation of organizational support for the formation of the program of economic and social development of Donetsk city. May be promising automation of the processes of formation of the program. This can lead to a redistribution of functions and actors even before the change in the organizational structure of the coordinators and performers of the formation program.

Machika Yu. B.Problems and employment prospects of young people in the labor market in Ukraine // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The state and solved the problem of youth employment in Ukraine. The dependence of the efficiency of economic and legal support to the level of youth employment. It was found that young people today , having developed progressive physical and mental abilities , can produce material goods and provide services with greater performance than is capable members of other age groups. The expediency of developing legitimate procedures at both the state and local levels of government to achieve a satisfactory level of youth employment . The urgent task and proposes concrete steps to increase employment of this category of the economically active population.

Myronenko E. V, Saveliev V. S. Professional and administrativecompetence of manager // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

Offered authorial professional and administrative competence of manager. In construct "professionally-dministrative competence of manager" weare distinguish such components: cognitive, emotional, volitional, reflection. Attention is accented on experience, askey description of competent manager. And at the sametime it is necessary to mark that not experience is important, and idea shown out of experience.

Thus, the professionally-administrative competence ofmanager can be defined as his capacity for effectiverealization in administrative practice of the system of thesocially approved valued options and achievement of thebest administrative results due to professionally-personality.

Mutalimov V. A. Political-economic nature of external borrowing and their impact on macroeconomic stability // Scientific Herald of the DSEA. – 2014. – № 1 (13E).13E).

The current classification of risks and threats to public debt macroeconomic stability. Contents of debt risks and threats to national economy. The author described the influence of external borrowings for macroeconomic stability during the global financial crisis. Studied methodological and organizational mechanism of the process of managing the risks of public debt. The role of the subjects of public debt management. Justified the need for appropriate risk management systems to ensure macroeconomic stability and economic security of the country. Systematic approaches to assessing and managing the risks associated with public debt.

Turlakova S. S., Varlamova Y. N. Development of the structure of decision support system for the distribution of the budget of the city // Scientific Herald of the DSEA. – 2014. – № 1 (13E).

The structure of decision support system for the distribution of the budget of the city by constructing its functional model has been developed. The main stages of the system, its functions and processes and their sequence, were introduced. Basic data and material objects needed to deploy the system functions and the resulting passage of all the processes have been identified. Rules, policies, procedures and standards of management resources that support the implementation of the functions have been identified. Decomposition of the most important processes of the system has been implemented. Final structure of the system was presented in the form of IDEF0-diagrams. The urgency of further object and mathematical design of decision support system for the distribution of the budget of the city, followed by software implementation in Delphi based on the developed structure in the form of a functional model was justified.