

ABSTRACTS

Method of identification of physiology descriptions for the system of the distance determination of emotional state of the special divisions fighters of the Ministry of Internal Affairs / R. Belzetskyi, A. Shyian // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 7—10: fig. 3. Tables 1. Refs.: 10 titles.

A method for identification of physiology descriptions of the psycho physiological state of the human is offered in the paper. The subject domain of activity of individual, characteristic for activity of fighters of the special division of the Ministry of Internal Affairs is thoroughly investigated. The series of experiments on the imitator of battle situations proved, that frequency of heart rate of man was an informing factor that allows identifying a type of battle situations. In the conditions of experiment the frequency of heart rate was determined exactly by the emotional status of the fighter. The frequency of breathing is considered to be the less informative factor which also should be taken into consideration.

The role of crushed stone products in solving the housing problem / V. Serdiuk, I. Huchok // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 11—15: fig. 3. Tables 4. Refs.: 8 titles.

The current state of housing constructing in Ukraine is analysed, the basic trends of application of the products of non-metallic industry, used in the production technology of concrete and ferroconcrete products are considered, the current state of the market of the crushed stone products in Ukraine is investigated in the paper. The evaluation of importance of nonmetallic materials industry in solving the housing problem, in the problem of roads construction is presented in the article.

Analysis of influence of seismic load on high-rise building deformations depending on the number of floors / I. Boiko, V. Sakharov, G. Getun, V. Melnyk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 16—20: fig. 5. Refs.: 7 titles.

The results of analysis of changes of construction stress-strain state with different number of floors under seismic loads are presented in the article. Calculations by the finite element method under direct time integration with Newmark scheme are made, taking into account damping. It is shown, that maximum building oscillations can appear under partial height of a building. This effect should be taken into consideration in designing the buildings.

Mathematical model of prognostication of the efficiency of the waste gas production for the development of strategy, complex of machines and equipment for handling hard domestic wastes / O. Bereziuk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 21—24: fig. 2. Tables 1. Refs.: 7 titles.

Parameters that influence the efficiency of the waste gas production in different countries are defined. The mathematical model of prognostication of the efficiency of the waste gas production is developed in the paper.

CFD modeling of the air pollution circulation in micro districts / T. Rusakova, M. Biliaiev // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 25—30: fig. 6. Refs.: 11 titles.

CFD model for the analyses of air pollution in micro district of the city is developed in the paper. This model can be both used to analyze air pollution from the transport, and from emissions on the roads. The model is operational in the implementation of the PC so it can be applied for routine calculations. A model of vortex separation flows of ideal fluid and model, where the equation of convective-diffusive transfer of pollutant is applied, is used in the paper. The results of numerical calculations confirm the possibility of using the suggested model for the solution of actual problems of urban ecology.

Forecasting and analytical support of strategic management decisions in the process of technical innovation creation / B. Grabovetskyi, V. Zianko // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 31—38: refs.: 15 titles.

Various aspects of information of strategic management decisions in the creation process and market innovative products are examined in the article. The organic relationship between strategic analysis and prediction, their place and role in strategic management are described. The example of real research related to the production and market of innovative high-tech products is given.

Modern approaches to calculations of power losses and energy from transit crossflows / P. Lezhniuk, N. Semeniuk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 39—41: fig. 1. Tables 2. Refs.: 3 titles.

The actuality of determination of transit losses of power is examined at modern requirements to functioning of the wholesale electricity market; the analysis of existent methods of determination of losses is conducted from transit crossflows and possibility of their practical application for determination of transit losses and setting of norms of technological charges of electric power of ES.

Modification of the dynamic characteristics of the load in the calculation of the power system stability to account the self-starting of induction motors / V. Avramenko, T. Hurieieva, N. Yunieieva // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 42—44: fig. 5. Refs.: 2 titles.

Using the piecewise linear approximation of induction motors parameters as a function of their slip, modification of dynamic characteristics of load is made in the program for calculation of EPS transient stability. Using the modified model of load the analysis of the stability of small power system with big induction motors is fulfilled.

Estimation of influence of renewable energy sources on providing of balance reliability in electric network / P. Lezhniuk, V. Komar, D. Sobchuk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 45—47: fig. 5. Refs.: 3 titles.

The method of determining the coefficients that allow taking into account the dependence of the power generated by renewable energy sources, natural conditions in solving the problem to ensure the carrying reliability is suggested in the paper.

Simulation of current in the reacting organ of protection device from single-phase earth fault of stator winding synchronous generator that operates in a block with a transformer / V. Kutin, O. Shpachuk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 48—51: fig. 2. Tables 4. Refs.: 4 titles.

The paper presents a block diagram of the device protecting the stator winding synchronous generator that operates the block with a transformer from single-phase earth fault. It was suggested that a mathematical model to determine the signals in reacting organ protection device and obtained the corresponding dependence for different types of synchronous generators.

The process investigation in no-loaded power autotransformer during geomagnetic disturbances / V. Kyryk, R. Nagornyi // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 52—54: fig. 8. Refs.: 4 titles.

The influence of geomagnetically induced currents on “АОДЦТН–333000/750/330 kV” power autotransformer is investigated in this paper. A new model for modeling GIC flowing is developed. The dependences of the effect of surface potential values on the harmonic structure of the no-load current and reactive power consumption of the autotransformer are established.

Mathematical modelling of induction motor with dynamic saturation / V. Syvokobylenko, S. Vasylets // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 55—58: fig. 1. Tables 2. Refs.: 3 titles.

The mathematical model of induction motor is improved by taking into account dynamic saturation of magnetic circuits on the way of main flux and leakage flux of stator and rotor.

Complex optimization of modes of systems of power supply and illumination of cities / F. Govorov, V. Govorov, O. Korol, K. Govorova // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 59—61: refs.: 4 titles.

Scientific-methodical bases and optimization of parameters of power supply and lighting of cities as a single electrical complex in view of the multicriteria problem, numerical incommensurable and uncertain nature of the criteria is considered in the paper.

Approaches to the optimal control of modes of distribution power networks with distributed generation / O. Yandulskyi, G. Trunina // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 62—64: refs.: 5 titles.

Approaches to the optimal control of modes of distribution networks with distributed power generation are considered. Forming the optimization objective it is suggested to take into account the deterioration of the quality of electric power due to voltage fluctuation in the network.

Analysis of electromagnetic processes rectifier with pulse-width modulation / K. Ivakina // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 65—67: fig. 3. Refs.: 2 titles.

The expressions for regulating characteristics and the transfer coefficient pulse-width modulation (PWM) rectifier are received. It is shown that with PWM rectifier exhibits a variable transfer coefficient at each clock interval PWM. The graphical-analytical method of the harmonic analysis is suggested in the paper.

An optimum efficiency control system for hydroelectric units operating at variable speed / S. Artiukh, I. Chervonenko // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 68—70: fig. 5. Refs.: 3 titles.

The article shows that hydroelectric pumped storage plants reduce their efficiency when working under variable pressure. To solve this problem, it is advisable to transfer these hydraulic units to work at variable speed. An algorithm and a control system are introduced to allow maintaining the optimum efficiency of hydraulic units at lower head and respective speed.

Internal symmetrization in knots of joining of lines with monophas loading / L. Tereshkevych, I. Bandura, O. Vladyko // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 71—73: fig. 1. Tables 1. Refs.: 1 titles.

A mathematical model which allows expecting the optimum connecting of lines with the monophas loading to the collapsible tires of TP is developed. Efficiency of its use is demonstrated on the real example.

Optimization of the ship's power plant to improve the quality of electricity / A. Savenko // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 74—78: fig. 5. Refs.: 5 titles.

The reasons of decrease of power quality of the ship's power plant are considered in the paper. The algorithm of work of a control system to reduce the amplitude of the exchangeable power fluctuations is developed. During realization of researches the mathematical model is used and an experiment is conducted in the real ship terms.

Experimental research of energy efficiency of electro-drive pumps of the water supply system of the pool / O. Kyianiuk, I. Ghlad // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 79—81: fig. 3. Tables 2. Refs.: 3 titles.

The article deals with the questions of providing of maximal energy efficiency of electro-drive chem-pumps through the experimental measuring of actual power arguments and their comparing to the passport values. The use of the hardwarily-programmatic providing is substantiated for registration of instantaneous values of tensions and currents of three-phase four-wire network. It is discovered that deviations of indexes of quality of electric power and power parameters of pump from nominal increase the losses of energy and reduce coefficient of efficiency of the aggregate. It is therefore required to develop methods and controls of energy efficiency of ЭВН directly in place of their functioning with minimum interference with the technological process of pumping over of liquid.

Determination of distributed generation power value with island modes / V. Bodunov, O. Gai // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 82—83: fig. 3. Refs.: 3 titles.

The problems of rational use of dynamic island mode in electric networks of rural regions with distributed generation sources are considered.

Criteria for training fuzzy classifier taking into account the cost matrix / S. Shtovba, O. Pankevych, A. Nagorna // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 84—90: fig. 4. Tables 3. Refs.: 9 titles.

The tie "input – output" is described by linguistic if – then rules where antecedents contain fuzzy terms "low", "medium", "high" in the fuzzy classifiers. To enhance the correctness it is necessary to train fuzzy classifier on experimental data. The paper extends the criteria for training fuzzy classifier to the case of the cost matrix, which consist of costs of the different types of errors. Computer experiments on the task of heart disease diagnosis have shown that the best quality setting enables the use of the training criterion, in which the distance between the fuzzy inference results and experimental data for the cases of misclassification is multiplied by penalty coefficient.

Analytic summary of geoinformation-power networks technologies and methods of their stability increasing / V. Kozhemiako, V. Malinovskiy, N. Tarnovskiy, Ya. Yaroslavskiy // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 91—97: fig. 3. Refs.: 15 titles.

Modern technologies and factors of influence on the information stability of the computer information network and distributed geoinformation-power networks (GIPN) are analyzed in the paper. An approach to increase their information stability, which is based on the use of distributed solar light photovoltaic energy sources in information networks, is suggested. Also the comparative analysis of geoinformation-power networks technologies is conducted on the bases of which the basis major weaknesses and the optimal conditions for improvement of the information stability are defined.

Two-level logic dynamic management model vibration machinery of agricultural purposes / V. Lyssogor, O. Zelinska // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 98—101: fig. 1. Refs.: 4 titles.

A two-tier logical model of the dynamic vibration and vibro devices of farm machinery with multistage working cycles of power load, which include an actuator - vibrating device and controlled rate of the influence power is developed and suggested in the article.

The system model of project management of the strategy for the motor transport organization steps in their life cycle / V. Bilichenko, S. Romaniuk // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 102—107: fig. 2. Refs.: 6 titles.

The system model of project management of the strategy for the organization of the motor transport stages of its life cycle as the projects and the processes is developed in the paper. Project management approach of the two strategies separately or together interrelated aspects is implemented.

Historical component of training of the future engineers-teachers / V. Kurok, B. Shevel // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 108—110: tables 2. Refs.: 5 titles.

The importance of the historical component in the training of future engineers-teachers is outlined in the article, some of its aspects are analyzed, expediency of introduction of the special course «History of Engineering Education» for students of direction «Professional Education» is substantiated; the necessity of preparation of the appropriate educational-methodical ensuring is considered in the paper.

Usage of the systems of computer mathematics to create software for educational purposes / O. Tiu-tiunnyk, V. Mykhalevych // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 111—116: refs.: 19 titles.

Analysis of the existing classifications of the systems of computer mathematics is executed. Two main classes are defined, one of which is the computer algebra systems. Clarification of well-known interpretations of the system of computer algebra is suggested. The criteria for rating and selection of SCM as an environment for creating PSUN and training simulators and automated playback step by step progress of solving common math tasks are first formulated.

Multimedia technologies as a means of future economists' management culture formation / O. Homik // Вісник Вінницького політехнічного інституту. — 2013. — № 6. — P. 117—120: fig. 1. Refs.: 9 titles.

The effectiveness and feasibility of using multimedia technologies as a means of Future Economists' Management Culture Formation have been substantiated. The essence of concepts "electronic media", "multimedia", "multimedia technologies" has been proved; benefits and features of multimedia technologies usage in higher education learning and educational process have been given. The author's definition of the term "future economists' management culture forming by means of multimedia technologies" has been given.