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| УДК 553.411.08**O.A. Belavina, V.A. Shvetsov***Kamchatka State Technical University, Petropavlovsk-Kamchatky, 683003**e-mail: oni@kamchatgtu.ru***RESEARCHING BULK SAMPLE MIXING OF GOLD-CONTAINING ORES BY SIFTING METHOD**The article presents the results of the study on mixing bulk sample of gold-containing ores by sifting method. It is shown that a sieve with 1–2 mm openings should be used for mixing bulk samples of gold-containing ores by sifting method. Organoleptic properties of bulk samples can be used as criteria for homogeneity of the bulk sample material of gold-containing ores. The proposed method to mix bulk samples increases the expressivity of the mixing operation and provides the accuracy of the results to reveal gold by assay and atomic emission methods.**Key words**: bulk samples of gold-containing ores, mixing by sifting method, mixing of bulk samples by sifting method, homogeneity of the material of bulk samples, accuracy of the analysis results.*DOI: 10.17217/2079-0333-2016-36-6-11***Information about authors****Belavina Olga Aleksandrovna** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Specialist in Technical and Scientific Information of Science and Innovation Department; oni@kamchatgtu.ru**Shvetsov Vladimir Alekseevich** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Doctor of Chemical Sciences; Associate Professor; Professor of Electrical and Radio Equipment of Ships Chair; oni@kamchatgtu.ru |
| УДК 620.197-791.2:629.5.023**P.A. Belozerov1, V.A. Shvetsov1, O.E. Petrenko1, D.V. Korostylev1, O.V. Belavina1, V.V. Kirnosenko2** *1Kamchatka State Technical University, Petropavlovsk-Kamchatsky, 683003; 2“Kamchatskenergo”, Plc, Petropavlovsk-Kamchatsky, 683030**е-mail: oni@kamchatgtu.ru***RATIONALE FOR CHOOSING A PORTABLE MILLIVOLTMETER FOR MEASURING PROTECTIVE POTENTIAL OF STEEL HULLS OF SHIPS AND VESSELS**According to State Standard Specification 9.056-75, regular measuring of hull potential is necessary when protection systems of vessels are in operation. However, crews of ships and vessels do not fulfill this job. One of the reasons of not performing their responsibilities is the absence of precise instructions on the choice of a portable millivoltmeter. The aim of this investigation is to justify the choice of a portable millivoltmeter (multimeter) suitable for fulfilling measurements of the protective potential of steel hulls in test points. To achieve this aim it is necessary to find out the dependence of the results of protective potential measuments on the type of a millivoltmeter. The stated aim has been achieved with the help of experiments and methods of mathematical statistics. The results of the investigation show that measurements of hull potential can be done with any domestic multimeter. The precision of the results of the investigation conforms to the requirements of State Standard Specification 9.056-75. Thus, the expenditures for measuring potential of steel hulls can be reduced. It enables crews of ships and vessels to fulfill operational control over the systems of corrosion protection of steel hulls. The results of this control will in turn enable to direct ships and vessels to the dock and it will reduce the costs and due dates of ship-repair works.**Key words**: corrosion of steel hull, multimeter, millivoltmeter, electrical-chemical protection of the hull from corrosion, measuring of protective potential of hull, reference electrode, methodology of measuring the protective potential of ships and vessels.*DOI: 10.17217/2079-0333-2016-36-12-18***Information about authors****Belozerov Pavel Aleksandrovich** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Postgraduate; oni@kamchatgtu.ru**Shvetsov Vladimir Alekseevich** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Doctor of Chemical Sciences; Associate Professor, Professor of Electrical and Radio Equipment of Ships Chair; oni@kamchatgtu.ru**Petrenko Oleg Evgenevich** – Federal State Budgetary Organization «Kamchatka’s Directorate for Technical Supply of Sea Supervision»; 683031, Russia, Petropavlovsk-Kamchatskу; Engineer-hydrologist of Information and Analytical Work and Planning Department; poe\_kam@mail.ru**Korostylev Dmitrij Viktorovich** – Kamchatka State Technical University; Petropavlovsk-Kamchatskу, Russia, 683003; Student; dmitriikorostelev1991@mail.ru**Belavina Olga Aleksandrovna** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Specialist in Technical and Scientific Information of Science and Innovation Department; oni@kamchatgtu.ru**Kirnosenko** **Vladimir Vladimirovich** – Branch of «Kamchatskenergo» Central Electrical Networks, Plc.; Petropavlovsk-Kamchatskу, Russia, 683030; Head of Technological Connection to Electrical Networks Department; oni@kamchatgtu.ru |
| УДК 681.5**G.A. Pyukke***Kamchatka State Technical University, Petropavlovsk-Kamchatskу, 683003**e-mail: geopyukke@yandex.ru***EULER’S FORMULA ON THE BODY OF QUATERNION**The proof is considered and transformations to obtain the analytical form of the spelling of Euler’s formula are executed on the basis of a set of hypercomplex numbers with three imaginary units. It opens new opportunities and expands a circle of engineering problems decided in different areas of a modern engineering science.**Key words:** quaternion, Euler’s formula, vector product, scalar size, commutatively, associativity, body, algebra..*DOI: 10.17217/2079-0333-2016-36-19-27***Information about author****Pyukke Georgij Aleksandrovich** – Kamchatka State Technical University; Petropavlovsk-Kamchatskу, Russia, 683003; Doctor of Technical Sciences; Associate Professor; Professor of Control Systems Сhair; geopyukke@yandex.ru |
| УДК 664**A.V. Aleshkov1, T.K. Kalenik2, E.V. Motkina2***1Khabarovsk State University of Economics and Law, Khabarovsk, 680000;* *2Far Eastern Federal University, Vladivostok, 690950**e-mail: aleshkov@inbox.ru***FOOD INDUSTRY INNOVATIONS:** **SYSTEMATIC SYNTHESIS**The article presents the systematic synthesis of the material on modern trends and innovations in the food industry. The classification of innovations in the food industry is given, the most important of them including the results of authors’ own researches are considered. The problem of the organic aquaculture production, primarily non-fish aquatic organisms is focused. It is proposed to extend the regulatory documents in the field of organic production including the aquaculture facilities, fish farming and fishing.**Key words:** food industry, innovation, functional foods, organic products, aquaculture, non-fish aquatic organisms.*DOI: 10.17217/2079-0333-2016-36-28-38***Information about authors****Aleshkov Aleksej Viktorovich –** Khabarovsk State University of Economics and Law; 680000, Russia, Khabarovsk; Candidate of Technical Sciences; Associate Professor; Assistant Professor of Commodity Research Chair; aleshkov@inbox.ru**Kalenik Tatiana Kuzminichna** – Far Eastern Federal University; 690950, Russia, Vladivostok; Doctor of Biological Sciences; Professor; Head of Biotechnology and Functional Foods Chair; kalenik.tk@dvfu.ru **Motkina Elena Viktorovna** – Far Eastern Federal University; 690950, Russia, Vladivostok; Candidate of Medical Sciences; Associate Professor; Assistant Professor of Biotechnology and Functional Foods Chair; motkina.ev@dvfu.ru  |
| УДК 664.95**K.M. Afanasyeva, N.K. Luyenko***Kamchatka State Technical University, Petropavlovsk-Kamchatsky,**683003**e-mail: oleinikovaks@yandex.ru***CHARACTERISTICS OF FISH PRODUCTS WITH HAM STRUCTURE**The article describes the characteristics of fish products with ham structure. The developed recipes of fish products with ham structure are shown. The functional and technological properties, the chemical composition of finished products are presented. The organoleptic evaluation is given.**Key words:** fish foods, ham structure, recipes, chemical composition, organoleptic evaluation.*DOI: 10.17217/2079-0333-2016-36-39-43***Information about authors****Afanasyeva Kseniya Mikhajlovna** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Candidate of Technical Sciences; Head of Postgraduate and Doctoral Studies Department; oleinikovaks@yandex.ru**Luyenko Natalya Konstantinovna** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Undergraduate; natasha\_kostya@mail.ru |
| УДК 664.951.32M.V. Blagonravova*Kamchatka State Technical University, Petropavlovsk-Kamchatsky, 683003**е-mail*: *mblagonravova@mail.ru*RESEARCHING THE INFLUENCE OF EDTA-NA2 ON QUALITY AND USE-BY DATE OF COLD-SMOKED HALIBUTThe article presents the results of the study on the influence of entering EDTA-Na2 on physical-chemical parameters of products during the manufacture of cold-smoked halibut as well as on its energy value and use-by dates. It is proved that cold-smoked halibut produced with addition of EDTA-Na2, has high organoleptic and physical-chemical parameters, long use-by date and high energy value.**Key words:** cold-smoked fish, halibut, use-by dates, oxidation, acid number, antioxidizing effect, nitrogen of the flying bases.*DOI: 10.17217/2079-0333-2016-36-44-50***Information about author****Blagonravova Majya Vladimirovna –** Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Candidate of Technical Sciences; Assistant Professor of Food Production Technologies Chair; mblagonravova@mail.ru  |
| УДК 664.955**A.S. Grishin1, A.S. Pomoz2,1, O.V. Bredikhina2, A.A. Paroshin3***1Dmitrov Fisheries Technological Institute, Rybnoe, 141821;* *2Moscow State University of Technologies and Management named after K.G. Razumovskiy,* *Moscow, 109004;* *3Far Eastern Federal University, Vladivostok, 690950**e-mail: canssa@mail.ru* **COMPARATIVE RATING OF CANNED FOOD RECIPES FROM CATFISH ROE AND MILT WITH DIFFERENT COMPOSITION BY MEANS OF STANDARD OPTIMIZATION TASK SOLUTION**The article presents the results of comparative rating of canned foods with different composition made from catfish roe and milt. The most significant qualitative indexes for comparison were defined by means of the apriori ranking. The comparison of the canned food recipes was implemented by means of the quality indexes normalization and standard optimization task solution. It has been found out that a new type of canned food “Catfish roe-and-milt paste” has a maximum value of optimality.**Key words:** catfish, roe, milt, canned foods, quality indexes, comparison.*DOI: 10.17217/2079-0333-2016-36-51-56***Information about authors****Grishin Aleksandr Sergeevich** – Dmitrov Fisheries Technological Institute; 141821, Russia, Rybnoe; Candidate of Technical Sciences; Associate Professor; Assistant Professor of Food Technologies and Commodity Research Chair; canssa@mail.ru**Pomoz Aleksej Sergeevich** – Moscow State University of Technologies and Management named after K.G. Razumovskiy; 109004, Russia, Moscow; Candidate of Technical Sciences; Assistant Professor of Bioecology and Ichthyology Chair; plepik@mail.ru**Bredikhina Olga Valentinovna** – Moscow State University of Technologies and Management named after K.G. Razumovskiy; 1009004, Russia, Moscow; Doctor of Technical Sciences; Associate Professor; Head of Food Technologies Chair; bredihinaov@rambler.ru**Paroshin Aleksej Anatolevich** – Far Eastern Federal University; 690950, Russia, Vladivostok; Candidate of Physical and Mathematical Sciences; Assistant Professor of Computer Science, Mathematical and Computer Modeling Chair; info@progrishin.ru |
| УДК [641.1:641.52]:[536.24:532/533.001.572]**H.-H. Nugmanov, I. Yu. Aleksanyan***Astrakhan State Technical University, Astrakhan, 414056**e-mail: albert909@yandex.ru***PHENOMENOLOGICAL MODELS OF TRANSPORTING FOOD CALORIES IN FOODS**The article presents the results of the study on the character to change energy value (calorie content) in foodstuffs at the stage of culinary innovations owing to the influence on the course of heat and mass transfer process. Calorie content is the energy characteristic. It makes possible to use it as a base of the heat and mass transfer theory for the general formulation of the problem and its solution, in order to describe the transfer of food energy, due to its transition from one phase to another, and in phase, as a result of molecular and convective diffusion and heat transfer. Equations describing the processes of heat and mass transfer in a modified form are also given. The basic theory of food calories transfer is offered and systematized. The mechanism of the described process and the characteristics of the interaction between the individual influencing factors on its occurrence are analyzed.**Key words:** foodstuffs, energy value, calorie content, differential equations of heat and mass transfer, theory of heat and mass transfer, flux density, heat transfer, Bio criterion, Fourier criterion, Reynolds criterion.*DOI: 10.17217/2079-0333-2016-36-57-62***Information about authors****Nugmanov Albert Hamed-Harisovich** – Astrakhan State Technical University; 414056, Russia, Astrakhan; Candidate of Technical Sciences; Assistant Professor of Technological Machines and Equipment Chair; albert909@yandex.ru**Aleksanyan Igor Yuryevich** – Astrakhan State Technical University; 414056, Russia, Astrakhan; Doctor of Technical Sciences; Professor; Head of Technological Machines and Equipment Chair; albert909@yandex.ru |
| УДК 582.272.46(265.52)**E.V. Kasperovich1, V.A. Shvetsov2, O.E. Petrenko2, D.A. Archibisov1, 2, M.S. Lyakishev1***1Kamchatka’s Directorate for Technical Supply of Sea Supervision,* *Petropavlovsk-Kamchatskу, 683031;* *2Kamchatka State Technical University, Petropavlovsk-Kamchatsky, 683003**e-mail: kasperovichev@mail.ru***CORRELATION DEPENDENCES OF THE POLLUTANT CONTENT IN BOTTOM DEPOSITS ON THE EXAMPLE OF GUBA AVACHINSKAYA**The article deals with the monitoring problem of bottom deposits in water bodies liable to chronic pollution on the example of Guba Avachinskaya (Kamchatsky Krai). As an alternative method to define the content of polluting substances in the bottom deposits, the correlation and regression analysis is offered. The article presents the application of the results received to estimate the pollution of bottom deposits of Guba Avachinskaya. **Key words**: Guba Avachiskaya, bottom deposits, heavy metals, petrochemicals, correlation and regression analysis.*DOI: 10.17217/2079-0333-2016-36-63-73***Information about authors****Kasperovich Ekaterina Vladimirovna** – Federal State Budgetary Organization «Kamchatka’s Directorate for Technical Supply of Sea Supervision»; 683031, Russia, Petropavlovsk-Kamchatskу; Candidate of Biological Sciences; Director; kasperovichev@mail.ru**Shvetsov Vladimir Alekseevich** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Doctor of Chemical Sciences; Associate Professor, Professor of Electrical and Radio Equipment of Ships Chair; oni@kamchatgtu.ru**Petrenko Oleg Evgenevich** – Federal State Budgetary Organization «Kamchatka’s Directorate for Technical Supply of Sea Supervision»; 683031, Russia, Petropavlovsk-Kamchatskу; Engineer-hydrologist of Information and Analytical Work and Planning Department; poe\_kam@mail.ru**Archibisov Dmitry Aleksandrovich** – Federal State Budgetary Organization «Kamchatka’s Directorate for Technical Supply of Sea Supervision»; 683031, Russia, Petropavlovsk-Kamchatskу; Deputy Director; d.a.archibisov@mail.ru**Lyakishev Mikhail Sergeevich** – Federal State Budgetary Organization «Kamchatka’s Directorate for Technical Supply of Sea Supervision»; 683031, Russia, Petropavlovsk-Kamchatskу; Candidate of Economic Sciences; Environmental Engineer; lyakishev-kstu@mail.ru |
| УДК 582.272.46(265.52)**N.A. Lopatina1,2, N.G. Klochkova2***1Kamchatka branch of Pacific Institute of Geography, FEB RAS, Petropavlovsk-Kamchatsky, 683000;* *2Kamchatka State Technical University, Petropavlovsk-Kamchatsky, 683003**e-mail: miranda-n@yandex.ru*; *ninakl@mail.ru***THE GENUS *LUKINIA* (RHODOPHYTA: GIGARTINALES) IN THE FAR-EASTERN SEAS OF RUSSIA**The species *Lukinia dissecta* (Rhodophyta) is described on the basis of the results of the study of algological materials from different areas of Russian Far-Eastern seas. For the first time illusrtations of the type speciment and features of the species internal structure are given. Morphological and anatomical distinctions of *Lukinia* from related genus *Sparlingia* and *Palmaria* are pointed out.**Key words**: Rhodophyta, red algae, genus *Lukinia*, geographical variability, Far-Eastern seas.*DOI: 10.17217/2079-0333-2016-36-74-78***Information about authors****Lopatina (Pisareva) Nina Aleksandrovna –** Kamchatka branch of Pacific Institute of Geography, FEB RAS; Petropavlovsk-Kamchatskу, Russia, 683000; Candidate of Biological Sciences; Research officer of Hydrobiology Laboratory; miranda-n@yandex.ru**Klochkova Nina Grigorevna –** Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Doctor of Biological Sciences; Professor of Ecology and Nature Management Chair; ninakl@mail.ru |
| УДК 595.383.3(265.52)**N.A. Sedova1, M.Yu. Murasheva1, S.S. Grigoriev2***1Kamchatka State Technical University, Petropavlovsk-Kamchatsky, 683003,* *2Kamchatka State University named after Vitus Bering, Petropavlovsk-Kamchatskу, 683003,* *3Kamchatka branch of Pacific Institute of Geography, FEB RAS, Petropavlovsk-Kamchatsky, 683003**e-mail: sedova67@bk.ru***CHARACTERISTICS OF SOME SCARCE AND SELDOM CAUGHT SPECIES OF MYSIDS (CRUSTACEA, MYSIDACEA) IN NEAR KAMCHATKA AND ADJACENT WATERS**The article is devoted to the morphology of eight scarce and seldom caught species of mysids from Avacha and Anadyr Gulfs and from the eastern part of the Sea of Okhotsk: *Archaeomysis grebnitzkii, Eucopia grimaldii, Exacanthomysis borealis*, *Meterythrops robustus*, *Mysis oculata*, *Neomysis rayii*, *Stilomysis grandis* и *Pseudomma truncatum.* Drawings of the general form of the mysids and their characteristic structure are given. Brief information on distribution of these species is presented.**Key words**: mysids, morphology, features, antennal scale, telson, spines, distribution.*DOI: 10.17217/2079-0333-2016-36-79-87***Information about authors****Sedova Nina Anatolevna** – Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Candidate of Biological Sciences; Associate Professor; Assistant Professor of Water Bioresources, Fishery and Aquaculture Chair; sedova67@bk.ru**Murasheva Mariya Yur'evna** – Kamchatka State University named after Vitus Bering; 683003, Russia,Petropavlovsk-Kamchatskу; Postgraduate; rossiavaslubit@gmail.com**Grigoriev Sergej Sergeevich** – Kamchatka branch of Pacific Institute of Geography, FEB RAS; 683000, Russia, Petropavlovsk-Kamchatskу; Candidate of Biological Sciences; Research officer of Hydrobiology Laboratory; sgri@inbox.ru |
| УДК 593.96(265.5)**V.G. Stepanov1, Е.G. Panina1, R.A. Shaporev2***1Kamchatka branch of Pacific Institute of Geography, FEB RAS, Petropavlovsk-Kamchatsky, 683000;* *2Kamchatka Research Institute of Fisheries and Oceanography, Petropavlovsk-Kamchatsky, 683000**e-mail: vgstepanov@inbox.ru***SPECIES COMPOSITION OF THE SEA CUCUMBERS (HOLOTHUROIDEA) IN THE FAR-EASTERN SEAS OF RUSSIA, VIII: THE AMOUNT OF TAXONS, GENERAL CHARACTER OF PLACEMENT**The article presents the data on distribution and vertical placement of holothurians in the Far Eastern seas of Russia. The amount of holothurian species entering different taxons is given. The multidimensional analysis of the resemblance of the holothurian species list for different regions of the Far-Eastern Shield is made.**Key words:** holothurian, sea cucumber, Holothuroidea, list of species, distribution, Far-Eastern seas of Russia.*DOI: 10.17217/2079-0333-2016-36-88-96***Information about authors****Stepanov Vadim Geogievich –** Kamchatka branch of Pacific Institute of Geography, FEB RAS; 683000, Russia, Petropavlovsk-Kamchatskу; Candidate of Biological Sciences; Research officer of Hydrobiology Laboratory; vgstepanov@inbox.ru**Panina Elena Grigorevna –** Kamchatka branch of Pacific Institute of Geography, FEB RAS; 683000, Russia, Petropavlovsk-Kamchatskу; Candidate of Biological Sciences; Research Assistant of Hydrobiology Laboratory; panina1968@mail.ru**Shaporev Roman  Aleksandrovich** – Kamchatka Research Institute of Fisheries and Oceanography, 683000, Russia, Petropavlovsk-Kamchatsky; Research officer Freshwater Bioresources and Aquaculture Laboratory |
| УДК 332.14**S.M. Kazantceva1, V.V. Shelomentsev2,3** *1Tyumen State University, Tyumen, 625003;* *2Regional Academy of System Technologies and Amplification Thinking, Tyumen, 625048;* *3Tyumen State Academy of World Economy, Management and Law, Tyumen, 625051* *e-mail: siv\_ksm@mail.ru; 355243@inbox.ru***PROBLEMS OF REGIONAL BUSINESS DEVELOPMENT**The article shows the results of the study of regional enterprises. It is proved that regional business-models have weak control systems. They are not competitive in relation to federal players. Positioning of big business in the Russian capital and effective absorption of regional players in the federal network causes a high level of monopolization in mature markets of the country. This fact reduces the motivation for entrepreneurial activity and explains the migration of active labor force of the region to the capital. Further strengthening of regional inequality threatens the economic security of the country and raises a number of social problems.**Key words:** regional development, regional disparities, mergers and acquisitions.*DOI: 10.17217/2079-0333-2016-36-97-100***Information about authors****Kazantceva Svetlana Mikhajlovna**  – Tyumen State University; Tyumen, Russia, 625003; Doctor of Economic Sciences; Associate Professor; Professor of Management, Marketing and Logistics Chair; siv\_ksm@mail.ru**Shelomentsev Valery Vladimirovich** – Management company «Regional Academy of System Technologies and Amplification Thinking» / Tyumen State Academy of World Economy, Management and Law; Candidate of Sociological Sciences; Director for Research / Assistant Professor of Management Сhair; 355243@inbox.ru |
| УДК 334**I.V. Matuzova***Taimyr branch of Pushkin Leningrad State University, Dudinka, 647000**e-mail: matuzik@yandex.ru***PRINCIPLES FOR THE ANALYSIS OF BUSINESS ACTIVITY**In a crisis, the development of methods for assessing entrepreneurial activity and the identification of problems to improve it are urgent issues. Thus the object of the study in the article is entrepreneurial activity. The concept of "entrepreneurial activity" and the basic principles of the methodology to analyze entrepreneurial activity are defined. Entrepreneurial activity is considered as a complex characteristic of activity of economic entities. Its basic components such as entrepreneurship, entrepreneurial potential and business climate are determined. The analysis of business entities by the example of the city of Norilsk MO, aimed at meeting the basic needs of the population in the area of trade and public catering.**Key words:** region, entrepreneurial activity, entrepreneurial potential, business climate.*DOI: 10.17217/2079-0333-2016-36-101-107***Information about author****Matuzova Irina Vladimirovna** – Taimyr branch of PushkinLeningrad State University; 647000, Russia, Dudinka; Candidate of Economic Sciences; Associate Professor; Head of Economics and Law Chair; matuzik@yandex.ru |
| УДК 332.14**N.N. Shilova1, E.P. Kiselica2, S.A. Luft3***1Tyumen Industrial University, Tyumen, 625000; 2Tyumen State University, Tyumen, 625003; 3Dostoevsky Omsk State University, Omsk, 644077**e-mail: frmtmn@yandex.ru***EVALUATION OF THE INFLUENCE OF THE INDUSTRIAL CLUSTER ON REGIONAL ECONOMY**The article focuses on the feasibility of applying the cluster approach in the implementation of industrial policy in the region. Methodological approaches to the assessment of efficiency of industrial cluster functioning are revealed. The method to estimate the influence of the industrial cluster on the regional economy is presented. It is based on the effectiveness analysis of scientific organizations that make up the core of the cluster, assessment of the effects of localization, and evaluation of the effectiveness of the cluster based on the theory of intensive and extensive development of the cluster economy.**Key words:** industrial policy, innovation, industrial cluster, effectiveness of cluster, extensive and intensive cluster development.*DOI: 10.17217/2079-0333-2016-36-108-114***Information about authors****Shilova Natalia Nikolaevna** – Tyumen Industrial University; Russia, 625000,Tyumen; Doctor of Economic Sciences; Professor; Professor of Management in Branches of Fuel and Energy Complex Chair; frmtmn@yandex.ru**Kiselica Elena Petrovna** – Tyumen State University; 625003, Russia, Tyumen; Doctor of Economic Sciences; Associate Professor; Professor of Economic Theory and Applied Economics Chair; oles\_73@mail.ru**Luft Svetlana Alekseevna** – Dostoevsky Omsk State University; 644077, Russia, Omsk; Assistant of Management Chair; luftsa@yandex.ru |
| УДК 330.14 **S.A. Shushpanov***Kamchatka State Technical University, Petropavlovsk-Kamchatskу, 68300**e-mail: shoosa@mail.ru***ABOUT CONFORMITY OF BUSINESS TRANSACTIONS TO STAGES OF WORKING CAPITAL CIRCUIT** The article presents models of business processes of commercial enterprises. The place and importance of capital circulation are shown. The scope of capital circulation on the basis of the target is pointed out. The relationship of the circuit stages of working capital to business transactions and accounting records is shown.**Key words**: capital circulation, accounting, system thinking, process approach, modeling.*DOI: 10.17217/2079-0333-2016-36-115-122***Information about author****Shushpanov Sergej Anatolevich –** Kamchatka State Technical University; 683003, Russia, Petropavlovsk-Kamchatskу; Senior Lecturer of Accounting and Finance Chair; shoosa@mail.ru |