



Scientific and technical journal.
The journal is published since 2013.
The journal is published 4 times a year.
№3(15), 2016
(July-September)

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Journal is registered in Russian federal service for

monitoring communications, information technology

and mass communications

The certificate of registration: ПИИ № ФС77-56639

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BIOSPHERE COMPATIBILITY: HUMAN, REGION, TECHNOLOGIES

The founders

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P.N. KURANOV, V.V. ALEKSASHINA, T.M. NOVIKOVA

POLLUTION INDUSTRIAL AREAS AND OIL PRODUCTS THE VALUE OF THIS PROCESS THE EARTH'S BIOSPHERE

The article is devoted to ecological safety of construction and municipal economy, town-industrial areas exposed to anthropogenic risks. The methodology used is the best-est available technologies (BAT), including technology risk assessment of oil pollution. You performed a risk analysis of the functioning of oil-contaminated territories. Analyzed different scenarios of hydrocarbon contaminated areas, considering the main stages of the flow of oil and oil products from producer to consumer. The factors contributing to leakage of petroleum. Quantitative indicators to assess the possible number of accidents, the volume of leaks in accidents of different kinds, the real and the expected damage in different accidents on the basis of analogies.

Key words: urban and industrial areas, man-made and natural risks, oil contamination, the best available techniques.

A.V. ZVIAGINTSEVA, G.V. AVERIN, A.S. KHORUZHENKO

THE URBAN STATE AND DEVELOPMENT COMPREHENSIVE EVALUATION ON THE CHARACTERISTIC EVENTS PROBABILITIES CALCULATING BASIS

The urban facilities complex estimation technique on the characteristic events probabilities determining basis proposed. On this methodology basis the Europe's cities status and development comprehensive assessment is made, together the major economic and environmental performance. It was found that by assessing the joint complex event simultaneous observations probability the three indicators and the entropy definition and the objects potential state can be held multiparameter ranking cities. Established the ranks of Europe's capitals and performed their comparison with ranks capitals that are valued at well-known expert technique (City Index), the Siemens Economist corporation together with the Intelligence Unit proposed. Technique developed by the authors do not use the expert approaches the diverse information study and based on data analysis objective methods.

Keywords: comprehensive assessment, the ranks of state and urban development, assessment methodology.

V.Z. ABDRAKHIMOV, D.A. LOBACHEV, E.S. ABDRAKHIMOV

THE USE OF COAL WASTE IN THE PRODUCTION OF LIGHTWEIGHT BRICKS

Based on waste products of fuel and energy complex without the use of traditional natural materials ceramic lightweight bricks, the density of which does not exceed 1250 kg/m³. The studied wastes have high calorific value, therefore it is advisable to use not only as otoshidama, but also as a burnable additives, to prevent the use in the compositions of ceramic masses of anthracite, coke breeze, etc. the Use of waste fuel and energy complex in the production of ceramic materials will significantly dispose of industrial waste, saving of scarce traditional natural materials, to expand the resource base of construction materials and will make a significant contribution to environmental protection.

Key words: waste coal, lightweight brick, the fuel and energy complex urban farming.

D.V. AZAROV, D.V. LUKANYING, M. OSTAALI

ASSESSMENT OF AIR EMISSIONS FROM THE DUST REMOVAL SYSTEM WITH DUST COLLECTOR WITH COUNTER SWIRLING FLOWS

The article presents theoretical research: the emission of dust particles into the atmosphere in ventilation systems with dust collectors to counter swirling flows (VZP). The result: for larger dust sizes breakthrough is possible by improving the constructive working parameters in large sizes of dust collectors.

Key words: dust collector, counter swirling flows.

V.A. SMIRNOV, G.M. KRAVCHENKO

PRACTICAL SOLUTIONS FOR PERFORMANCE ESTIMATION OF LINEAR AND NONLINEAR VIBRATION ISOLATION SYSTEM

This article studies the problem of performance estimation for linear and nonlinear vibration isolation systems aimed to protect precision equipment from low-frequency ground oscillations both human and natural origin. The problem is subdivided into two smaller tasks. The first one deals with the estimation of vibration isolation coefficient as a ratio between the isolated mass oscillations to the ground oscillations when using each type of the isolators. The last one determines the probability of vibration isolation system to exceed the specified vibration criteria, e.g. vibration limit stated by the equipment's manufacturer (maximum or root-mean-square acceleration of the isolated equipment).

Key words: vibration isolation, precision equipment, low-frequency vibrations, linear isolator, nonlinear isolator.

B.I. SHILIN, A.A. ULIANOV

STATISTICAL MODELLING OF PROCESS OF CLEARING OF FLUID FILTERS OF VOLUMETRIC TYPE

Filtering as stochastic process of interoperability of particles of pollution with a porous partition is considered. Calculation of the filter should be aimed at predicting the cleaning efficiency and service life of the wiper depending on its type and the filtering baffle modalities. This formulation of the problem involves the creation of a mathematical model of the filtration process.

Key words: filtration, suspension, cleaning factor in the filter capacity.

A.A. ZHIVODEROV, T.A. MASLAKOVA, E.D. KONSTANTINOVA,
Yu.V. SHALAUMOVA

THE AIR ATMOSPHERE OF THE INDUSTRIAL CITY AND IT'S IMPACT ON HUMAN HEALTH

The study of snow cover pollution as a marker of air pollution in the Kamensk-Ural'skiy city was carried out. Two territories – one relatively cleaned and contaminated one were investigated. A comparison of the incidence of colds in those territories was carried out. The impact of increased concentrations of suspended solids, contained in samples of snow contaminated area, on the child's chance to get into the group of sickly children in comparison with the conditionally clean area was found («odds ratio» = 2,4).

Key words: snow cover pollution, air atmosphere, mathematical modeling, environmental-dependent diseases.

N.V. BAKAEVA, I.V. CHERNYAEVA

FUNCTION BIOSPHERICCOMPATIBILITY CITY AND THEIR AVAILABILITY TO PERSON

Reveals the concept and essence of the functions biospherecompatibility of the city as the implementation of one of the fundamental principles of creation of favorable and comfortable environment. The notion of availability function biospherecompatibility of his city resident. The classification of availability of the functions of the city according to the territorial, temporal and personal characteristics. The algorithm of adaptation of social infrastructure for people with disabilities and people with limited mobility in terms of their availability. Conclusion: the availability and feasibility functions biospherecompatibility city contribute to the full development of the human and increase the human potential development strategy of the state policy of innovative urban development.

Key words: biosphericcompatibility city, city functions, geographical accessibility, temporal accessibility, personal affordability, design of the city

B.S. ISTOMIN, T.N. KOLESNIKOVA, E.V. KUPTSOVA

PROBLEMS OF ARCHITECTURE OF ENVIRONMENTALLY FRIENDLY DWELLINGS FROM A POSITION OF VIDEOECOLOGY

The article considers the problems of creation of favorable visual environment for the formation of Kaposi alternative home. The significant importance of ensuring the visual comfort of the environment during the formation of the architecture of the buildings taking into account the physiological and biological peculiarities of th-person architecture eco-homes. The main negative factors and problems in the formation of a visa-cial environment for the modern settlements. The proposed principles and techniques of the architectural formation of favorable visual environment of dwellings, where the colour acts as a powerful compositional means of achieving a holistic perception, and the landscaping of the interior, roofs and facades that animates the architecture of the deposits and gives a positive effect. Create a clean home leads to a higher quality of life.

Key words: organic housing, the video-ecology, visual environment, landscaping, color scheme.

E.G. TSUBLOVA, G.V. LEVKINA, S.I. MARCHENKO, I.N. GLAZUN,
A.A. ROMANENKO, Z.N. MARKINA, S.I. SMIRNOV, V.P. GAMAZIN

ASSESSMENT OF THE TERRITORY OF REGIONAL SANCTUARIES WITH POSITIONS OF BIOSPHERE COMPATIBILITY

This paper presents the results of complex ecological survey of regional significance reserve the «Klintsovsky». The survey was carried out by means of environmental monitoring. Have estimated the condition of landscapes and soils, hydrological conditions in the territory, the conditions of the biota and the level of human impact on the environment. The study identified the objects, largely affecting to the environmental situation within the reserve. Asked to make changes to the existing boundaries of the reserve to bring the territory to the relevant rules of protected areas. The contribution of the settlements located within the reserve to change the state of natural complexes and objects was evaluated. It is concluded about increasing the biosphere compatibility of these rural settlements.

Key words: biosphere compatibility of rural settlements, specially protected natural areas of regional importance, anthropogenic impact.

A.M. SHARYGIN, V.P. SHELUHO

USE OF WOODS TYPOLOGICAL ANALYSIS IN ASSESSING MELLIFEROUS CAPACITY OF FORESTS

Forest resources, especially those that are contiguous with the inhabited conglomerations, play a special role in maintaining of ecological balance of areas, as well as in sustaining the environment that provides healthy conditions for people. Beekeeping production does not only bring economic benefits but also raises forests productivity by enhancing forest plants pollination processes, which contributes to the preservation of biological diversity and improves the resistance of anthropologically changed forest areas. When organizing forest beekeeping, it is necessary to take into consideration particular features of each forest type as well the presence and variety of melliferous plants. The article presents a typological analysis of forest ranges as a case-study of North-West highlands of sag-and-swell moraine plain of the right bank of the Desna river located in the Southern belt of the mixed forests subarea (the North-West part of Bryansk Oblast). It has been found that the local forests have high honey production potential, and there has been given a case for possible creation of melliferous plants ranges by means of silvicultural measures.

Key words: non-woody forest production, increase of forest productivity, the forest bee-keeping, melliferous capacity.