



## В НОМЕРЕ:

## IN THE ISSUE:

- **28** ноября 2012 года в «Президент-Отеле» состоялась Торжественная церемония награждения лауреатов премии «Время инноваций–2012» – независимой награды за достижения в области инновационной деятельности, получившие общественное и деловое признание. Премия «Время инноваций» инициирована Фондом «Социальные проекты и программы» при поддержке Минэкономразвития и Минсвязи РФ. Среди победителей, получивших награду – Госкорпорация «Росатом» и ООО «Центр энергоэффективности ИНТЕР РАО ЕЭС», «РИА Новости», ОАО «Концерн «Созвездие», Компания «МегаФон», Концерн «Океанприбор», ОАО «Ростелеком», ОАО «РТИ», ОАО «Северсталь», Международный аэропорт Шереметьево, ОАО «РЖД» и др. Лауреатом премии «Время инноваций–2012» в номинации «Лучший проект по популяризации инновационной деятельности» признан Интернет-журнал «Нанотехнологии в строительстве».
- On the 28th of November, 2012, the Ceremony awarding to laureates the prize «Time of Innovations–2012» took place in President Hotel, Moscow. This prize is an independent award given for achievements in the area of innovation activities, which are acknowledged by social and business communities. The prize «Time of Innovations» was initiated by the Fund «Social Projects and Programs» supported by the Ministry of Economic Development and Ministry of Telecommunications and Mass Communications of Russian Federation. These are the winners of the award – The State Atomic Energy Corporation ROSATOM, INTER RAO UES Power Efficiency Centre, RIA Novosti, JSC Concern «Sozvezdie», Company «Megafon», Concern «Oceanpribor», JSC «Rostelecom», JSC «RTI», JSC «Severstal», International Airport Sheremetyevo, JSC «Russian Railways» et al. Internet-Journal «Nanotechnologies in Construction» was recognized as the laureate of «Time of Innovations–2012» award in the nomination «The best project on popularization of innovation activities».

*С Новым, 2013 годом!  
Happy New Year 2013!*

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# Нанотехнологии в строительстве: научный Интернет-журнал

## Nanotechnologies in construction: a scientific Internet-journal

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## NANOTECHNOLOGIES IN CONSTRUCTION: A SCIENTIFIC INTERNET-JOURNAL

## NANOTEHNOLOGII V STROITEL'STVE: NAUCHNYJ INTERNET-ZHURNAL

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## TO THE NEW SUCCESS IN THE NEW YEAR!



## **THE LAUREATES OF THE AWARD «TIME OF INNOVATIONS–2012» HAVE BEEN CHOSEN**

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УДК 553.9 (470.22)

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## APPLICATION OF NATURAL FULLERENE CONTAINING MINERAL SHUNGITE IN CONSTRUCTION INDUSTRY AND BUILDING TECHNOLOGIES

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The paper presents composition and structural properties of amorphous, noncrystallized, fullerene-like carbon containing natural mineral – shungite from Zazhoginskoe deposit in Karelia (Russian Federation), possessing high absorptional, catalytic and bactericidal activity. The data concerning nanostructure obtained with the use of scanning electronic microscopy, and physico-chemical properties of this mineral are given. Prospects of application of shungite in construction industry and building technologies are demonstrated.

**Key words:** mineral, shungite, nanostructure, fullerens, building technologies.



**Dear colleagues!**

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## **FORUM «SOCHI-BUILD» – THE LARGEST AUTUMN INDUSTRIAL EVENT IN THE SOUTH OF RUSSIA!**

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УДК 691.322:691.618.93:620.3

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## THE LIGHTWEIGHT GRANULATED FOAM GLASS CONCRETE MODIFIED BY NANOSTRUCTURES

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The paper deals with results of the research investigating possibility to use concrete lightweight aggregate – granulated foam glass. Methods aimed at reduction of damaging interaction between filler and aggressive alkaline concrete environment by introducing ultrafine additives have been studied.

**Key words:** lightweight concrete, foam glass, reactive silica, nanostructures.

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## **MODIFICATION OF CONSTRUCTION MATERIALS BY CARBON NANOTUBES: CURRENT TRENDS IN THE DEVELOPMENT OF INDUSTRIAL TECHNOLOGIES**

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The paper presents the results of the experimental investigations concerning nanomodification of construction materials by carbon nanotubes. The authors consider technologies used to produce nanomodified concrete and nano-modifying additive based on carbon nanomaterial «Taunit». The studies showed potentialities of industrial application of these technologies.

**Key words:** carbon materials, modifier, fine concrete, physical and mechanical properties.

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1. *Tkachev A.G.* Investigation of the effect of modifying additives based on the gel dispersion of carbon nanomaterials on the properties of building composites / A.G. Tkachev, Z.A. Mikhaleva, A.I. Popov et al.// Nanotechnologies in Construction: A Scientific Internet-Journal. Moscow. CNT «NanoStroitelstvo». 2012. № 4. P. 15–23. St. register. 0421200108. URL: <http://www.nanobuild.ru>.
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RESEARCHES, DEVELOPMENTS, PATENTS

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## **CREATION OF BUILDING MULTILEVEL STRUCTURED COMPOSITES BY INTRODUCING NANOADDITIVES OF TYPE «FROM TOP TO DOWN»**

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**The paper analyses the approaches which are proposed to be used in creation of building multilevel structured composites by introducing of nanoadditives of type «from top to down».**

**Key words:** patent, invention, building composites, nanoadditives «from top to down», nanomodification, multilevel structure, contact zone of building composites, strength, durability.

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