

ЛАУРЕАТ ПРЕМИИ  
РОССИЙСКИЙ  
СТРОИТЕЛЬНЫЙ  
ОЛИМП-2010

## В HOMEPЕ:

## IN THE ISSUE:

- «Простор за пределом», или как нанотехнологии могут изменить мир бетона
- «There's plenty of room at the bottom», or how nanotechnologies can change the world of concrete
- Интернет-журнал «Нанотехнологии в строительстве» – лауреат премии «Российский Строительный Олимп-2010»
- Internet-Journal «Nanotechnologies In Construction» – laureate of the «Russian Construction Olympus – 2010» Award
- Предлагается повышать качество неавтоклавных пенобетонов стабилизацией пены добавками наноразмера
- Foam stabilization by nanosized additives is proposed to use as the means for increasing the quality of non-autoclave foam concretes
- Приведен анализ патентной информации о модификации композиционных материалов за счёт введения функциональных комплексных добавок и/или нанодобавок
- The paper presents the analysis of the patent information about modification of composite materials by introducing functional complex additives and/or nanoadditives

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## Nanotechnologies in construction: a scientific Internet-journal

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## CONTENTS

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<b>Bazhenov Yu.M.</b> Laureates of the «Russian Construction Olymp-2010» award are the most deserving organizations and professionals of the industry.....	6
<b>Falikman V.R., Sobolev K.G.</b> «There's plenty of room at the bottom», or how nanotechnologies can change the world of concrete. Part 2.....	21
<i>Events</i>	
Forum «Stroyindustria – 2011» in Sochi – effective business platform.....	34
<b>Ananyan M.A.</b> VII Theoretical and Practical Conference «Nanotechnologies for manufacture 2010» proved the importance and benefit of the meetings between developers of nanotechnological sphere and production specialists ....	38
<i>Suggestions and comments</i>	
<b>The letter from Chernyshov E.M.</b> , Academician of RAACS, Chairman of Central Regional Department of Russian Academy of Architecture and Construction Sciences.....	48
<b>Svatovskay L.B., Sychova A.M., Eliseeva N.N.</b> Increasing of non-autoclave foam concrete quality by nanosized additives.....	50
<i>Events</i>	
<b>Fedorova A.</b> Session of «Engineering Club» in Saint-Petersburg: «Modern industrial technologies and equipment. Application of nanotechnologies» .....	63
<i>Researches, developments, patents</i>	
<b>Kuzmina V.P.</b> Modification of composite materials on the basis of binder materials .....	70
On the build-up of intellectual capital and its protection by means of patenting.....	78
<i>In the world of the books</i>	
Scientific and technical literature. Nanomaterials and technologies .....	79
The list of requirements to the material presentation and article publication conditions.....	84

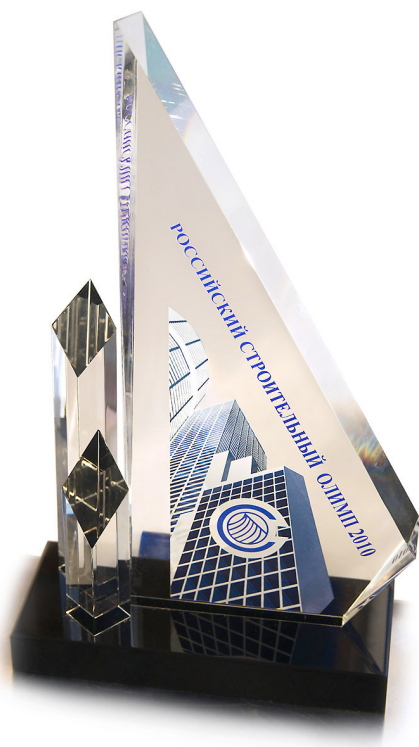


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**LAUREATES OF THE «RUSSIAN CONSTRUCTION OLYMP-2010»  
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УДК 691.32

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## «THERE'S PLENTY OF ROOM AT THE BOTTOM», OR HOW NANOTECHNOLOGIES CAN CHANGE THE WORLD OF CONCRETE Part 2

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It's quite impossible to imagine modern construction without concrete. Today the world volume of concrete being produced is more than 4 milliard of m<sup>3</sup> per year. Concrete is used under different operational conditions, it is ecologically friendly material and it has unlimited source of raw materials and comparatively low cost.

One should also mention its high architectural and construction expression, comparative simplicity and accessibility of technology, opportunity to use widely local raw materials and anthropogenic wastes utilization in its production, low energy intensity, ecological safety and operational reliability. Undoubtedly it is the reason why concrete will remain the main building material in the foreseeable future.

**Key-words:** concrete, nanotechnologies, polycarboxylates, nanoadditives for concrete, photocatalysis, nanocomposite materials, nanostructure, nanoparticles, nano-modified materials, nanosilicates, nanofibres.

**Dear colleagues!****The reference to this paper has the following citation format:**

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## **VII THEORETICAL AND PRACTICAL CONFERENCE «NANOTECHNOLOGIES FOR MANUFACTURE 2010» PROVED THE IMPORTANCE AND BENEFIT OF THE MEETINGS BETWEEN DEVELOPERS OF NANOTECHNOLOGICAL SPHERE AND PRODUCTION SPECIALISTS**

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**VII Theoretical and Practical Conference «Nanotechnologies for manufacture 2010»** which took place on 1–3 December in innovative city Fryazino, gathered the leading scientists and specialists from different industries from Russia, Ukraine, Kazakhstan, Latvia and Germany interested in practical application of nanotechnological achievements and creation of competitive production based on it.

**Key-words:** conference, nanotechnologies, production, nanoproducts, nanostructured coatings, nanotubes, nanoporous matrixes, nanocores, nanofibers, nanowire, nanoplates, nanoadditives.

УДК 999.666

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## INCREASING OF NON-AUTOCCLAVE FOAM CONCRETE QUALITY BY NANOSIZED ADDITIVES

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**Foam stabilization by nanosized additives is proposed to use as the means for increasing the quality of non-autoclave foam concretes. Sols of silicic acid and iron hydroxide were chosen to be such additives. The paper shows that nanosized particles make it possible not only to increase the resistance of the foam itself and foam concrete mix but also to use cement hardening activators without foam destruction.**

**Key-words:** silicic sol, iron hydroxide sol, draft, strength.

**Dear colleagues!****The reference to this paper has the following citation format:**

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«MODERN INDUSTRIAL TECHNOLOGIES AND EQUIPMENT.  
APPLICATION OF NANOTECHNOLOGIES»**

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RESEARCHES, DEVELOPMENTS, PATENTS

УДК 69

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## MODIFICATION OF COMPOSITE MATERIALS ON THE BASIS OF BINDER MATERIALS

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The paper presents the analysis of the patent information about modification of composite materials by introducing functional complex additives and/or nanoadditives.

Inventions can be applied in building technologies in order to produce nanomodified composite materials on the basis of air and hydraulic binder substances, that will allow us to intensify considerably industrial production of nanomodified composite materials by introducing new compositions of additives.

**Key-words:** patent, invention, functional composite additives, nanoadditives, nanomodified, air-setting and hydraulic binder, composite materials.

**Dear colleagues!**

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IN THE WORLD OF THE BOOKS

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## SCIENTIFIC AND TECHNICAL LITERATURE. NANOMATERIALS AND NANOTECHNOLOGIES

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**Some information on the books proposed by the limited company «Techinform» in the sphere of nanomaterials and nanotechnologies is given.**

**Key-words:** nanomaterials, nanoworld, nano- and microcrystalline materials, nanotechnologies, nanoobjects, nanotubes, nanoparticles, nanoshaping, nanostructures.