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Nanotechnologies in Construction: A Scientific Internet-Journal

Nanotehnologii v stroitel'stve: nauchnyj Internet-zhurnal

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THE DEVELOPMENT OF NANOTECHNOLOGIES – STRATEGIC TASK OF THE COUNTRY'S INNOVATION DEVELOPMENT

Creative activity of the country's engineer corps is an important factor for its rapid social and economic development, increase of competitive ability on the world market, formation of positive image of Russia as a high technological state with developed economy. Construction needs scientific and technical engineers, first of all, in order to develop nanotechnologies, innovation building technologies aimed at creating comfortable and ecologically friendly building materials and architectural forms of new generation.

Key-words: Congress of Russian Engineers, All-Russian Scientific and Technical Conference, Higher Engineering Council, modernization of economy, nanotechnologies in construction and housing and communal services.

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 1

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^3 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: application of nanotechnologies in construction, nanomodifiers in concrete compositions, nanostructured modifiers, non-clinker binders , hyperplasticizers, mechanoactivation, nanosize.

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THE INFLUENCE OF CARBON METAL-CONTAINING NANOSTRUCTURES ON THE STRENGTH OF CONCRETE COMPOSITES

The paper represents the results of the researches studying influence of metal-carbon nanocomposites on the increasing strength of concrete and foam concrete composites. The super small quantities of nanocomposites, depending on their composition, result in rising concrete strength.

Key-words: metal-carbon nanocomposites, carbon metal-containing nanostructures, dense concrete, foam concrete, super small quantities.

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

Akhmetshina L.F., Kodolov V.I.,Tereshkin I.P., Korotin A.I. The influence of carbon metal-containing nanostructures on the strength of concrete composites. Nanotechnologies in Construction: A Scientific Internet-Journal, Moscow, CNT «NanoStroitelstvo». 2010, Vol. 2, no. 6, pp. 35–46. Available at: http://www.nanobuild.ru/magazine/nb/Nanobuild_6_2010.pdf (Accessed __ _____ ____). (In Russian).

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УДК 691.316

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SILICATE MATERIALS WITH NANOMODIFICATOR

Answering the question posed at the II International theoretical and practical online-conference «Application Of Nanotechnologies In Construction Industry» concerning application of nanomodifiers in concrete compositions, ceramics and silicate materials, the article presents results of researches on production of silicate materials and wares using nanostructured modifiers and on creation of protective layer on the surface of silicate materials with the help of low-temperature plasma.

Key-words: application of nanotechnologies in construction, nanomodifiers in concrete compositions, nanostructured modifiers, clinkerless binding agents, hyperplasticizers, mechanoactivation, nanosize.

Dear colleagues!
The reference to this paper has the following citation format:
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INCREASING OF THE LEVEL AND STABILITY OF HOT- AND COLD-ROLLED METAL CHARACTERISTICS USING PURPOSEFUL NANOSTRUCTURING OF HIGH-STRENGTH LOW-ALLOY ELECTRIC STEELS

Tendency of increasing the whole complex of steel properties (for example, strength, plasticity, stampability, corrosive resistance) which are as a rule difficult to mix to a limit level causes the necessity to apply fundamentally new methods for obtaining proper structure, high technological, mechanical, physical and chemical characteristics of metal. Nanostructuring plays the key role in this process. Nanostructuring is performed by the regulation of non-metals excessive phases' isolation and/or strengthening structural constituents which formation should occur under strictly regulated conditions at the certain stages of steel production.

Key-words: steel nanostructuring, cementitious steel constituent, complex of properties, complex of characteristics, stability of metal products properties, modern metallurgical technologies.

Dear colleagues!
The reference to this paper has the following citation format:
Shakhpazov E.Kh., Zaytsev A.I., Rodionova I.G. Increasing of the level and stability of hot-and cold-rolled metal characteristics using purposeful nanostructuring of high-strength low-alloy electric steels. Nanotechnologies in Construction: A Scientific Internet-Journal, Moscow, CNT «NanoStroitelstvo». 2010, Vol. 2, no. 6, pp. 68–86. Available at: http://www.nanobuild.ru/magazine/nb/Nanobuild_6_2010.pdf (Accessed __ _____ ____). (In Russian).

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«Nanotechnologies in Construction»

NANOTECHNOLOGIES IN CONSTRUCTION – ON THE THRESHOLD OF NEW REALITY

On 1–3 November, 2010, Moscow saw the III International Forum on Nanotechnologies RUSNANOTECH 2010 which was hold in Expocenter. In addition to eventful scientific, technological and business programs and exhibition the program of modern art «High-tech as a premonition» was presented on the Forum. Nearly 7200 persons took part in it within 3 days. You may find more information about III International Forum on Nanotechnologies RUSNANOTECH 2010 on the web site http://www.rusnanoforum.ru.

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Фото с сайта www.rusnanoforum.ru

IN THE WORLD OF THE BOOKS

SCIENTIFIC AND TECHNICAL LITERATURE. NANOMATERIALS AND NANOTECHNOLOGIES

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.

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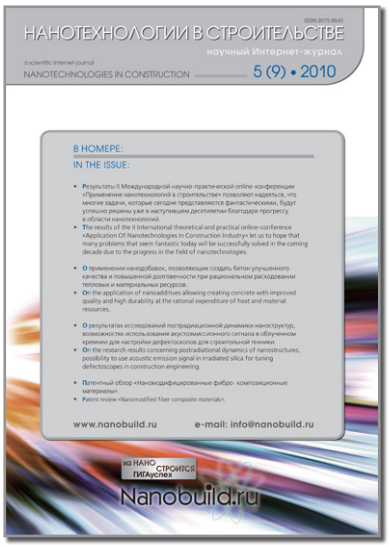
3 №3/2009

4 №4/2009



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