

2018 • Tom 10 • 6

NANOTEHNOLOGII V STROITEL'STVE

nauchnyj Internet-zhurnal

2018 • Vol. 10 • 6

NANOTECHNOLOGIES IN CONSTRUCTION A Scientific Internet-Journal**ISSUED WITH SUPPORT OF**
**RUSSIAN ACADEMY
OF ENGINEERING**

**INTERNATIONAL ACADEMY
OF ENGINEERING**

**WUHAN UNIVERSITY
OF TECHNOLOGY (CHINA)**
PUBLISHER INFORMATION

(EDITORIAL COUNCIL; EDITORIAL BOARD; THE EDITORS; FOUNDERS; PUBLISHER;
PUBLICATION ETHICS; CONTACTS; MINIMAL SYSTEM REQUIREMENTS
TO ACCESS THE EDITION; JOURNAL PRODUCTION SCHEDULE)

**EDITORIAL COUNCIL
PUBLIC ADVISORY BODY**
Chairman of the editorial council

GUSEV Boris Vladimirovich – Editor-In-Chief of Electronic Edition «Nanotechnologies in Construction: A Scientific Internet-Journal», Corresponding Member of RAS, President of Russian Academy of Engineering and International Engineering Academy, Head of Department «Construction Materials and Technologies», Moscow State University of Railway Engineering, Honored Scientist of RF, Laureate of USSR and RF State prizes, Doctor of Engineering, Professor, Russian Federation

Members of the Editorial Council

IVANOV Leonid Alekseevich – Head of the Project «Nanobuild.ru», Chief Academic Secretary and Vice-President of the Russian Academy of Engineering and the International Academy of Engineering, Academician of RAE and IAE, PhD in Engineering, as a Guest Professor of Wuhan University of Technology (China), Member of the International Federation of Journalists, Russian Federation

FU Zhengyi – Chief Professor of the Wuhan University of Technology (China); Cheung Kong Scholar of the Ministry of Education of China; Academician of the World Academy of Ceramics; State Key Lab of Advanced Technology for Materials Synthesis and Processing, Wuhan University of Technology, China

KALIUZHNIY Sergei Vladimirovich – Scientific Advisor of Chairman of Board «RUSNANO», Chief Scientist, Member of Board «RUSNANO», Doctor of Chemistry, Professor, Russian Federation



KOROLEV Evgeniy Valerjevich – Prorector for Education, Director of the Research and Educational Center «Nanotechnology», National Research University «Moscow State University of Civil Engineering», Adviser of RAACS, Doctor of Engineering, Professor, Russian Federation

TELICHENKO Valerij Ivanovich – President of National Research University «Moscow State University of Civil Engineering», 1st vice-president of RAACS, Academician of RAACS Honored Scientist of RF, Doctor of Engineering, Professor, Russian Federation

FIGOVSKY Oleg L'vovich – Full Member of European Academy of Science, Foreign Member of RAE and RAACS, Editor-in-Chief of SITA, OCJ и RPCS, Director of «Nanotech Industries, Inc.» (USA), and Director of International Nanotechnological R&D Center «Polymate» (Israel), President of IAI, Chairman of the UNESCO Chair «Green Chemistry», USA, Israel

CHERNYSHOV Evgenij Mikhailovich – Full member of RAACS, Chairman Presidium of Central Regional Department of Russian Academy of Architecture and Construction Sciences, Director of Educational Creative Academic Center «Archstroynauka» SUACE Department of Academic Scientific and Educational Cooperation, Doctor of Engineering, Professor, Russian Federation

Surendra P. SHAH – Walter P. Murphy Emeritus Professor of Civil and Environmental Engineering of Northwestern University, Ill., USA, Honorary Professor at the University of L'Aquila, Italy, and Hong Kong Polytechnic University; Member of American National Academy of Engineering, Chinese Academy of Engineering, and Indian Academy of Engineering, USA

SHEVCHENKO Vladimir Yaroslavovich – Director of Institute of Silicate Chemistry of Russian Academy of Sciences, Head of Scientific Council RAS on Ceramic and Other Non-metal Materials, Vice-Chair of Coordinating Council on Development of Nanotechnologies attached to the Committee of the Council of the Federation of the Federal Assembly of the RF on Science, Culture, Education, Medicine and Ecology, Member of RAS, Doctor of Chemistry, Professor, Russian Federation

Xu Li Da – Foreign Member of Russian Academy of Engineering, Member of European Academy of Sciences, Ph.D., Fellow of IEEE (Institute of Electrical and Electronics Engineers), Founding Editor-in-Chief of the *Journal of Industrial Information Integration*, Eminent Professor of Information Technologies & Decision Sciences Department, Old Dominion University, USA

EDITORIAL BOARD

Chairman of the editorial board

GUSEV Boris Vladimirovich – Editor-In-Chief of Electronic Edition «Nanotechnologies in Construction: A Scientific Internet-Journal», Corresponding Member of RAS, President of Russian Academy of Engineering and International Engineering Academy, Head of Department «Construction Materials and Technologies», Moscow State University of Railway Engineering, Honored Scientist of RF, Laureate of USSR and RF State prizes, Doctor of Engineering, Professor, Russian Federation

Members of the editorial board

BAZHENOV Yury Mikhailovich – Head of Department «Binders and Concrete Technologies», Scientific Adviser of the Research and Educational Center «Nanotechnology» in National Research University «Moscow State University of Civil Engineering», Member of RAE, Academician of RAACS, Honored Scientist of RF, Doctor of Engineering, Professor, Russian Federation



Prof. Peter J.M. BARTOS – The Queen’s University of Belfast, UK, Chair of RILEM Technical Committee TC 197-NCM on Nanotechnology in Construction Materials (2002–2009), former Head of Scottish Centre for Nanotechnology in Construction Materials (University of West Scotland), UK

BELOV Vladimir Vladimirovich – Vice-Rector for Innovative Development of Tver State Technical University, Head of Department «Production of Building Materials and Wares», Honoured Scientist and Figure of Higher Education of Tver Region, Advisor of RAACS, Doctor of Engineering, Professor, Russian Federation

VAKHRUSHEV Alexander Vasilievich – Head of the laboratory «Mechanics of nanostructures», Institute of Mechanics (Ural Branch of RAS), Head of the chair «Nanotechnologies and microsystem equipment» in State Technical University named after M.T. Kalashnikov (Izhevsk), Associate Member of RAE, Doctor of Physics and Mathematics, Professor, Russian Federation

LYNKOV Leonid Mihailovich – Head of the Department «Information Security», Belarussian State University of Informatics and Radioelectronics, Doctor of Engineering, Professor (Minsk, Belarus), Belarus

MECHTCHERINE Viktor Sergeevich – Director of the Institute of Construction Materials, Chair of Construction Materials, Technische Universität Dresden, Professor, Doctor of Engineering, Germany

SOBOLEV Konstantin Gennadievich – Head of Technical Committee of American Concrete Institute ACI 241 «Nanotechnologies of Concrete», Professor of University of Wisconsin-Milwaukee, USA

URKHANOVA Larisa Alekseevna – Head of Department «Production of Building Materials and Wares» East-Siberian State University of Technologies and Management, Doctor of Engineering, Professor, Russian Federation

FALIKMAN Vyacheslav Ruvimovich – 1st vice-president of Structural Concrete Association, Academician of RAE, Regional Convener of International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM) in East Europe and Central Asia, Member of Technical Committee of American Concrete Institute ACI 241 «Nanotechnologies of Concrete», Professor of MSUCE, Doctor of Material Science and Engineering, Russian Federation

KHOZIN Vadim Grigorievich – Head of Department «Technology of Construction Materials, Products and Structures», Kazan State University of Architecture and Engineering, Honoured Scientist of Russian Federation and the Republic of Tatarstan, Honoured Figure of Higher Education of RF, Doctor of Engineering, Professor, Russian Federation

THE EDITORS

Editor-in-Chief

D.Eng., Prof. **B.V. GUSEV**

Executive Editor

YU.A. EVSTIGNEEVA

Consultant

D.Eng., Prof. **V.N. KARPOV**

Journalists:

Ph.D. (Engineering) **V.A. VLASOV, K.N. BROEVA**

Design and layout

A.S. REZNICHENKO

The Chief for Foreign Relations

Ph.D. (Engineering) **S.R. MUMINOVA**



FOUNDERS

The Russian Academy of Engineering;
OOO «CNT «NanoStroitelstvo»

PUBLISHER

OOO «CNT «NanoStroitelstvo»:

- Member of the Publishers International Linking Association, Inc. (PILA);
- Member of the Association of Scientific Editors and Publishers (ASEP).

The Electronic Edition «Nanotechnologies in Construction: A Scientific Internet-Journal» is registered as an independent mass media in the Ministry of Communication and Mass Media of The Russian Federation. (Registration Certificate ЭЛ № ФС77 – 35813 of 31 March 2009 issued by the Federal Service on Supervision in the Sphere of Connection and Mass Communications).

The Electronic Edition «Nanotechnologies in Construction: A Scientific Internet-Journal» has been included in the list of peer-review journals in which the candidates for Ph.D. and Doctorate degree must publish the main results of their theses.

The electronic edition «Nanotechnologies in Construction: A Scientific Internet-Journal» has been included: Chemical Abstracts (USA); DOAJ (Sweden); EBSCO Publishing (USA); ESCI Web of Science (USA); EZB (Germany); ProQuest (USA); Global Impact Factor (Australia); CrossRef (USA); ISSN 2075-8545 (France); Readera (Russia); ResearchBib (Japan); ResearchGate (USA); Scientific Electronic Library (Russia); Ulrich's Periodicals Directory (USA) et al. Each paper is assigned UDC, DOI, HTML-code.

PUBLICATION ETHICS

Editorial Council, Editorial Board and the editorial staff second the politics aimed at observance of ethical publishing principles and recognize that keeping track of observance of ethical publishing principles is one of the main components in reviewing and publishing activities. The basic ethical principles of reviewing and publishing are available at website <http://www.nanobuild.ru>.

The authors of the published materials are responsible for the reliability of the presented information and utilization of the data which are not to be published avowedly. The editors have the right to make corrections. The opinion of the editors can be different from the authors' opinions, the materials are published to discuss the up-to-date problems. The editors are not responsible for the content of advertisement.

Any full or partial reprinting of the materials is possible only with editors' written permission.



CONTACTS

Address: Russian Federation, 125009, Moscow, Gazetny per., bld. 9, str. 4

Internet: <http://www.nanobuild.ru>

E-mail: info@nanobuild.ru

MINIMAL SYSTEM REQUIREMENTS TO ACCESS THE EDITION

Windows

- Intel Pentium® III or equivalent processor.
- Microsoft® Windows® 2000 with Service Pack 4; Windows Server® 2003 (32-bit or 64-bit editions) with Service Pack 1; Windows XP® Professional, Home, Tablet PC(32-bit or 64-bit editions) with Service Pack 2 or 3(32-bit or 64-bit editions); or Windows Vista® Home Basic, Home Premium, Ultimate, Business, or Enterprise with Service Pack 1 or 2 (32-bit or 64-bit editions).
- 128MB of RAM (256MB recommended for complex forms or large documents).
- 170MB of available hard-disk space.
- Microsoft Internet Explorer 6.0 or 7.0, Firefox 1.5 or 2.0, Mozilla 1.7, AOL 9, Google Chrome 5.0, Opera 10.6.

Macintosh

- PowerPC G3, G4, G5 or Intel processor.
- Mac OS X v10.4.11–10.5.5.
- 128MB of RAM (256MB recommended for complex forms or large documents).
- 170MB of available hard-disk space (additional space required for installation).
- Safari® (Shipping with supported OS).

JOURNAL PRODUCTION SCHEDULE IN 2018

№№	Papers submission deadline	Editing, proof-reading, layout, agreement	The approval of the issue by the Editor-in-Chief	Website publication	Note
2018, Vol. 10, № 1	25.01.18	9.02.18	15.02.18	28.02.18	
2018, Vol. 10, № 2	23.03.18	05.04.18	12.04.18	30.04.18	
2018, Vol. 10, № 3	25.05.18	08.06.18	14.06.18	29.06.18	
2018, Vol. 10, № 4	18.07.18	26.07.18	20.08.18	29.08.18	
2018, Vol. 10, № 5	11.09.18	24.09.18	27.09.18	24.10.18	
2018, Vol. 10, № 6	02.11.18	15.11.18	22.11.18	24.12.18	

Issue 2018, Volume 10, № 6 approved on 22.11.2018

