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***First Announcement***

**Bauman Moscow State Technical University**

**UMI CNRS 2615 J.-V.Poncelet**

**Russian Foundation for Basic Research**

**Research Federative Structure MODMAD FED 4169**

**FR CNRS 3490 - LABEX MILYON - ICJ UMR CNRS 5208**

**Fifth International Conference**

**on the Multiscale Modeling and Methods:**

**Upscaling in Engineering and Medicine**

**June 25-28, 2015,**

**Bauman Moscow State Technical University, ul. Baumanskaya 2-ya, 5/1, Moscow, Russia**

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|  | **Fifth International Conference on the Multiscale Modeling and Methods: Upscaling in Engineering and Medicine (3MUEM-2015)**  will take place at the  Bauman Moscow State Technical University, Moscow,  on June 25-28, 2015. |

The multiscale analysis of heterogeneous structures is actually an important and effective tool of mathematical modeling in physics, technique and biology. The mathematical theory on the up-scaling (passage from micro-scale to the macro-scale) called homogenization appeared in early seventies of the XXth century independently in the USSR, France, Italy and USA. Although since then the homogenization theory has been considerably developed and generalized, there are still open problems in constructing realistic models of new materials and engineering structures, biological processes, especially combining different scales or discrete and continuous approaches.

The **3MUEM-2015** conference is the fifth event in the set yearly-organized international conferences on the multiscale methods and modeling. The first three were held in the University of Saint-Etienne, France. The fourth was held in Moscow, in the Institute of Numerical Mathematics of Russian Academy of Sciences (RAS) in October 2014. It was organized in the frame of the thematic year on the multiscale methods and modeling in biology and medicine organized by the Russian-French laboratory J.-V.Poncelet. The present conference will be held as well in the frame of the thematic year.

The conference is devoted to an important trend in mathematical modeling, the multiscale methods and its applications in engineering and medicine. Such methods combine microscopic and macroscopic descriptions of the phenomena and are usually based on asymptotic and numerical analysis of the microscopic model equations. The application of these methods allows constructing new materials with given properties, creating new more adequate and more precise models in biology and medicine.

The conference will bring together the well-known specialists in the topic and young researchers and students. The theoretical results on the mathematical analysis of multiscale models will be presented together with the numerical and computer experiments.

**About Bauman Moscow State Technical University (BMSTU)**

July 1st, 1830 Emperor Nicholas I approved «[Statute of Moscow Craft School](http://www.bmstu.ru/history/hmstu/origins)». It was inception of the first Russian technical university. By 1868 education became so good that MCS was reorganized as Imperial Moscow Technical School (IMTS). The main purpose of IMTS was to «educate construction engineers, mechanical engineers and industrial technologists». IMTS system of handicraft education of engineers was recognized all over the world. «Russian method» became especially well-known after Vienna World Exhibition (1873) where it was awarded Big Gold Medal. IMTS was recognized the best machine-building education institution of Russia and joined the ranks of the world leading polytechnic schools. A lot of outstanding scientists taught in IMTS, such as D. Mendeleev, N. Jukovsky, P. Chebychev, S. Chaplygin, A. Yershov, D. Sovetkin, F. Dmitriev, A. Letnikov, A. Gavrilenko.

In the Soviet period a lot of prominent scientists and engineers graduated from Bauman Moscow State Technical University. The list includes aircraft and rockets designers such as Andrey Tupolev and Sergey Korolev; Nicholay Dollezhal, a designer of nuclear stations; prominent metallurgist Alexander Tselikov, Sergey Lebedev – a chief designer of the first Soviet computer.

BMSTU has 19 departments providing full-time education. University provides postgraduate and doctorate programs and has two affiliated secondary schools. More than 19,000 students study in BMSTU, and specialties cover all range of modern machine and instrument building. More than 320 doctors of science (Russian degree higher than PhD) and 2000 candidates of science (similar to PhD) teach and do research in BMSTU. Main parts of the University are eight scientific and educational divisions. Each of them consists of scientific and educational branch. Several branch departments also exist, they deal with particular fields of industry. They are based on big factories and organizations, situated in Moscow, Moscow suburbs (Reutov, Krasnogorsk and Korolev) and in Kaluga. BMSTU has unique experience of teaching hearing-impaired students since 1934.

BMSTU has wide international cooperation: student exchanges, postgraduates, doctorates, teachers and scientists, teaching international students, common research, education methodology development, conferences, seminars, and congresses. Now the University has relations with more than 70 universities in Europe, America and Asia.

BMSTU combines precise calculations with engineering intuition, follows traditions of Russian engineering school method, subtly appreciates new fields of activity, carries socioeconomic approach to complex engineering problems and humanist approach to education. All of that allows BMSTU to be on the cutting edge of scientific and engineering progress.

Bauman University — National Technological University – carries research in cutting-edge areas of science and technology, basing on eight technological platforms. 32 companies included BMSTU in their innovational programs. Today the University conducts 90 considerable scientific programs in different fields. BMSTU is Skolkovo founder.

Now strategy of the University is to provide human resources for cutting-edge areas of Russian science and technology, in prior economic development directions of the country, such as: information and communication systems; nanosystems and materials industry; power supply and conservation; biosystems; security and counterterrorism; transportation and aerospace systems; promising military equipment.

BMSTU is always ranked the first among Russian engineering education institutions

**Organizing committee:**

Prof. Yu. Dimitrienko, BMSTU, Russia (co-chairman),

Prof. G. Panasenko, J.-V.Poncelet University, France (co-chairman),

Prof. G. Kuvirkin, BMSTU, Russia,

Prof. S. Lurie, Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia,

Prof. A. Manzhirov, Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia,

Prof. A. Polyanin, Institute for Problems in Mechanics of the Russian Academy of Sciences, Russia,

Prof. D. Prikazchikov, Keele University, UK,

Prof. S. Sheshenin, Lomonosov Moscow State University, Russia,

Prof. Yu. Temis, Baranov Central Aviation Institute for Motor Building, Russia,

Prof. V. Zarubin, BMSTU, Russia,

Dr. I. Dimitrienko, BMSTU, Russia ,

Dr. E. Gubareva, BMSTU, Russia ,

Dr. A. Zakharov, BMSTU, Russia,

B. Goryachkin, BMSTU, Russia,

V. Chibisov, BMSTU, Russia,

M. Koryakov, BMSTU, Russia,

A. Prozorovsky, BMSTU, Russia,

A. Stroganov, BMSTU, Russia

**Program committee:**

Prof. А. Аlexandrov, Rector of BMSTU, Russia (chairman),

Prof. I.Fedorov, Academician of RAS, BMSТU, Russia,

Prof. Yu.Evtushenko, Academician of RAS, Dorodnicyn Computing Centre of RAS, Russia,

Prof. А.Krischenko, Corresponding Member of RAS, BMSTU, Russia,

Prof. А. Borovkov, St.Peterburg Polytechnic University, Russia,

Prof. D.Georgievsky, MSU, Russia,

Prof. Yu.Dimitrienko, BMSTU, Russia ,

Prof. I.Emri, Ljubljana University, Slovenija,

Prof. Yu.Kaplunov, Keele University, UK,

Prof. G.Panasenko, J.-V.Poncelet University , France,

Prof. M.E.Perez, University of Santander, Spain,

Prof. A.Shamaev, MSU, Russia,

Prof. V.Volpert, University Claude Bernard, France

Prof. V.Zimin, BMSTU, Russia

Prof. V.Zhikov, Vladimir University, Russia

**Invited speakers:**

A.Amosov, Russia, Moscow,

D.Borisov,Russia, Ufa,

A.Bratus, Russia, Moscow,

G.Chechkin, Russia, Moscow,

J.Clairambault, France, Paris,

Yu. Dimitrienko, Russia, Moscow,

A.Elbert,Russia, Ekaterinburg,

D.Georgievsky, Russia, Moscow,

S. Lurie, Russia, Moscow,

G. Panasenko, France, St-Etienne/Moscow,

L.Paoli, France, Saint-Etienne,

S.Pastukhova, Russia, Moscow,

M.E.Perez, Spain, Santander,

A.Piatnitski, Norway, Narvik,

E.Radkevich, Russia, Moscow,

A.Shamaev, Russia, Moscow,

T.Shaposhnikova, Russia, Moscow,

S. Sheshenin, Russia, Moscow,

A.Tokerev, Russia, Moscow,

Yu.Vassilevski, Russia, Moscow,

V.Zhikov, Russia, Vladimir

**Publication** :

*Book of Abstracts* (English) will be indexed in RISC-e-library.ru

*Applicable Analysis Journal* (English), papers, recommended by Program Committee

Book of selected papers (English), papers, recommended by Program Committee

**Registration Form and Abstracts** :

Registration Form and One page Abstract Example are acceptable at the

[**www.mccme.bmstu.ru**](http://www.mccme.bmstu.ru)

**Abstracts in the format Microsoft Word 97-2003 (RTF) should be sent to** [**fn11.bmstu@mail.ru**](mailto:fn11.bmstu@mail.ru)

**The volume of abstracts is up to 3 pages A4 in Times New Roman12 pts without formulas or with formulas done in Microsoft Equation or MathType**

**Languages** :

Working languages: English and Russian

**Important dates:**

Deadline for Registration and Abstract Submission: **May 30, 2015**

Decision on acceptance of contributions for the conference: **June 06, 2015**

The Conference Period: **June 25 to June 27, 2015**

Decision on acceptance of contributions for publication

in *Applicable Analysis*  Journals and Book of selected papers: **July 15, 2015**

Deadline for Full Paper Submission: **August 31, 2015**

Publication in Int. Journals and Book of selected papers: **2016**

**Contacts:**

[**www.mccme.bmstu.ru**](http://www.mccme.bmstu.ru)

[**www.mccme.ru/poncelet/**](http://www.mccme.ru/poncelet/)

All correspondence should be sent to:

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**We look forward to meet you this year in BMSTU !**