CONFERENCE PROGRAM
November 19-20
Congress center of Peter the Great St. Petersburg Polytechnic University (29 A-F Build, Polytechnicheskaya str., St. Petersburg, Russia) & ZOOM platform

Information about ZOOM:

Virtual room 1
Link: https://us02web.zoom.us/j/82405312498?pwd=REE0M2dySmptQ3NxaklVSEtUZxRPXZz09
ID 82405312498
password 285826

Virtual Room 2
Link https://us02web.zoom.us/j/85800617189?pwd=a0RjTml2ZjdqRFN0dHk0cmVxTXFFsUT09
ID 85800617189
password 864259

Detail Instruction to Joining the Meeting as a Speaker below

19 November

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<td>Keynote Lecture, Small conference hall &amp; ZOOM platform (Virtual room 1)</td>
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<td>Summing up the conference, Best Paper Award &amp; ZOOM platform (Virtual room 1)</td>
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1. Vitaly Sergeev (RAS), Vice-rector for research, Dr.sc., Professor, corresponding member of Russian Academy of Sciences, Peter the Great Saint-Petersburg Polytechnic University
2. Mikhail Fedorov (RAS), Dr.Sc., Professor, Academician of the Russian Academy of Sciences, President of the Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia
3. Yuriy Vasiliev (RAS), Dr.Sc., Professor, Academician of the Russian Academy of Sciences, Scientific Supervisor of the Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia
4. Galina Kozinets, D.Sc., Professor, Director of director of Institute of Civil Engineering, Director of the Higher School of Water Resources and Hydrotechnical Engineering, Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia
5. Yuri Lazarev, D.Sc., Professor, Director of the Higher School of Civil Engineering and Road Construction, Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia
6. Sergey Zverev, Cand.Sc., Associate Professor, Director of Institute of Energy, Director of the Higher school of Electric Power Systems, Peter the Great St. Petersburg Polytechnic University (SPbPU), Russia

10:30-12:30  Keynote Lecture, Small conference hall & ZOOM platform (Virtual room 1)

1. Enrico Sciubba
Dr., professor, Sapienza University of Rome, Italy, Editor-in-Chief, Energies
Keynote Lecture:

2. Vincenzo Bianco
Dr., Professor, DIME/TEC, Division of Thermal Energy and Environmental Conditioning, University of Genoa, Genova, Italy
Keynote Lecture: Energy savings in buildings: a global approach

3. Umberto Berardi
Dr., Professor - BeTOP Lab director, Faculty of Engineering and Architectural Science, Ryerson University, Toronto, ON.
Keynote Lecture:

4. Ricardo Alvarez
Dr., Professor, Santa Maria Technical University
Keynote Lecture: Flexible technologies and their benefits in (future) low-carbon power systems /smart grids

12:30-13:30  TOPICS: Energy Efficient and Green Buildings; Development of New Perspective Materials and Technological Products (Virtual room 1)
1. Luka Akimov, Vladimir Lvov, Abantika Sengupta, Kevin De Mei, Andrea Giovanni Mainini, Marco Pesenti, Nikolai Bolshakov and Vladimir Badenko. Comparative bioclimatic approach for dynamic façade design to reach daylight performance improvement.
2. Vitaly Sergeev (RAS), Irina Anikina, Konstantin Kalmykov and Milana Treshcheva. Efficiency of simultaneous operation of heat pumps with a heating unit of a CHPP with steam cross-communications of boilers.
3. Oleg Krotov, Svetlana Belyaeva, Pavel Gronyko, Marina Gravit and Shukhrat Sultanov. Thermal conductivity of geopolymer concrete with different types of aggregate.
4. Khashayar Sadeghi, Seyed Hadi Ghazaie, Riccardo Chebac, Ekaterina Sokolova, Evgeniy Fedorovich, Antonio Cammi and Marco Enrico Ricotti. Implementing large-scale hybrid desalination system driven by ALFRED reactor and parabolic-trough solar power plant, equipped with phase change material storage system: The case of Emirate
13:30-14:00 | Break

14:00-15:30 | **Keynote Lecture, Small conference hall & ZOOM platform (Virtual room 1)**

1. **Anatolijs Borodinecs**
   Prof. Dr.sc., Department of Heat and Gas Technology, Institute of Heat, Gas and Water Technology, Riga Technical University, Latvia
   Keynote Lecture: Modern energy efficient living districts

2. **Alexey Dedov (RAS) (and coauthors Vasily Glazkov, Georgy Yankov)**
   Head of department, Dr.sc., Professor, corresponding member of Russian Academy of Sciences, National Research University "Moscow Power Engineering Institute"
   Keynote Lecture: Waste-free thermal destruction of solid municipal waste based on large-scale technologies

3. **Vitaly Sergeev (RAS)**
   Vice-rector for research, Dr. sc., Professor, corresponding member of Russian Academy of Sciences, Peter the Great Saint-Petersburg Polytechnic University
   Keynote Lecture: Energy use of plant biomass

15:30-16:30 | **TOPICS: Renewable energy; Heat and Mass Transfer (Virtual room 1)**


2. **Aida Mukhamezhtianova and Renat Sadykov.** Numerical modeling of transfer processes through enclosing structures of buildings and constructions in the presence of internal heat sources.

3. **Vladimir Lalin, Elizaveta Zdanchuk and Fuad Babaev.** CFD simulation of pressure distribution on the facade with loggias.

4. **Andrey Ponomaryov, Aleksandr Zakharov, Nikolai Vatin.** Investigations of soil body temperature fields

16:30-17:30 | **Keynote Lecture, ZOOM platform (Virtual room 1)**

**Zunino Pietro**
Dr., professor, director of department, University of Genoa, Italy
Keynote Lecture:

**Nikolay Pribaturin (RAS)**
Dr. sc., Professor, corresponding member of Russian Academy of Sciences, Senior Researcher, FGBUN Institute of Thermophysics. S.S. Kutateladze SB RAS
Keynote Lecture: Tasks and results of experimental modeling of thermophysical processes in reactor facilities (Задачи и результаты экспериментального моделирования теплофизических процессов в реакторных установках (presentation will be in Russian))

17:30-18:30 | **New Construction Materials and Technologies in Energy Saving; Fluid Mechanics, ZOOM platform, Development of New Perspective Materials and Technological Products (Virtual room 1)**

1. **Artem Ryzhenkov, Olya Zilova, Alexey Mednikov, Alexander Tkhabisimov and Sergey Sidorov.** Results of measurements of substrate deformation and determination by bending of internal stresses in Ti-TiC-DLC coating obtained by using HiPIMS technology

2. **Kristina Lebedeva, Tatjana Odineca, Lana Migla and Galina Kashkarova.** Future perspectives in district heating plants

3. **Olesia Averianova.** Method for selecting balancing devices in heat supply systems
4. Valery Antonov, Nikolay Kalinin and Anatoly Kovalenko. Simulation of electromagnetic implosion of metal shells to obtain supercritical fluids.

16:30-17:30 **Keynote Lecture, ZOOM platform (Virtual room 2)**

**Andrey Mityakov**
Dr.sc., Professor, Institute of Energy, Peter the Great Saint-Petersburg Polytechnic University
Keynote Lecture: Heatmetry - The Science and Practice of Heat Flux Measurement

**Saurav Dixit**
Dr., RICS School of Built Environment, Amity University
Keynote Lecture: Analysing the impact of lean construction in infrastructure projects: an empirical study in Indian scenario

17:30-18:30 **TOPIC: BEM and BIM (Building Energy Modeling and Building Information Modeling); New Construction Materials and Technologies in Energy Saving, ZOOM platform (Virtual room 2)**

5. Ilizar Mirsayapov and Renat Nurmukhameтов. FEA analysis of fiberglass piles’ bearing capacity at water saturated soft clay.

20 November

10:00-10:15 **Opening speech**

10:15-12:30 **TOPIC: Development of New Perspective Materials and Technological Products (Virtual room 1)**

1. Galina Kozinets, Petr Chernov, Natalia Muromtseva, Dmitry Zotov, Timo Karki, Ville Lahtela. Scan-to-BIM for wooden composite construction
2. Vladislav Jos, Vladimir Rybakov, Vadim Sviridenko and Tatiana Brailova. Quality indicators of nanocements and products based on them
3. Alexander Galyamichev, Ekaterina Gerasimova, Elizaveta Usievich, Denis Egorov and Selcuk Dogru. Stress-strain state of an aluminum frame of mullion-transom glass facade systems
5. Anastasia Ragazina. Reuse of polymers in the production of building composite materials
8. Galina Slavcheva, Ekaterina Britvina and Mohammad Mannan. 3D-printable artificial marble.
9. Ivan Dmitriev, Marina Gravit and Mariya Shakhova. Simulation of SBI test in Pyrosim

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List of poster presentation

19-20.11.2020 Online poster session (10:00-18:00)
Virtual room 1
Link: https://us02web.zoom.us/j/82405312498?pwd=REE0M2dySmptQ3NxakjVSEtUZXpXZz09
ID 82405312498
password 285826
Presentations available on: https://drive.google.com/drive/folders/1W_GD4cRiZXlm8HyiaD45tVjMZEFeeSlAA?usp=sharing

1. **Nikita Borisov, Varvara Kleshchevnikova, Matthias Sievers and Svetlana Belyaeva.** The effect of high-strength concrete and concrete reinforced with steel fiber on the stress-strain state of columns in high-rise buildings.

2. **Varvara Kleshchevnikova, Svetlana Belyaeva and Aleksey Baranov.** Optimization of mix designs and experimental study of the properties of concrete mix for 3D printing.

3. **Evgenii Zalevskii, Nikita Borisov, Marco Abshoff and Tatyana Simankina.** Dynamic digital model for monitoring the temperature distribution over the surface of a monolithic structure during winter concreting.

4. **Dmitriy Mescheryakov, Anatoly Kovalenko, Alexey Shchuklinov, Artyom Koptyukhov and Victor Gusanov.** Heat and mass transfer processes in devices for localization of a corium melt at nuclear power plants.

5. **Sergej Maspanov, Igor Bogov, Vladimir Sukhanov and Valerij Tolmatchew.** Calculation of flame ignition in the combustion chamber of a gas turbine for electric power generation.


8. **Nazir Sibgatullin and Rinat Safiullin.** Adiabatic efficiency of a monoblock air supply unit with a humidification module based on porous rotating atomizers.


14. **Aleksandr Kalyutik, Vladimir Kiselev and Dario Barsi.** Real Efficiency of Piston Machines.

15. **Kseniia Usanova.** Effect of high-calcium oil shale ash additives on concrete properties.

16. **Anatoly Krutov, Bekhzod Norkulov and Fatima Artikbekova.** Unsteady flow movement at damless water intake in meandering river bed conditions.

17. **Norkobul Rakhatmatov, Sanatjon Khidirov, Farokhiddin Uljaev, Zokhidjon Ishankulov and Dayana Krasnalobova.** Experimental studies to regulate the flow and straighten the Amudarya river in the area of the damless water intake.
18. Larisa Popova, Olga Ivanchenko, Galina Njanikova, Sergei Vershilov, Viktoria Suchilova and Bhati Gaurav. Perfluorosubstituted derivatives of 1,3-diazine and 1,2,4-triazole as a means of protecting industrial structures from microbiologically induced corrosion

19. Seyed Hadi Ghazaie, Khashayar Sadeghi, Ekaterina Sokolava, Evgeniy Fedorovich and Amirsaeed Shirani. On the use of small modular reactor integrated with a thermal energy storage system for district heating

20. Mikhail Petrichenko, Daria Nemova, Evgeny Kotov, Irina Vasileva. Energy-efficient facades: form double skin façade to a triple-skin façade


22. Bakhtiyor Obidov, Oybek Vokhidov, Gennady Sidorenko, Lyudmila Maksudova and Guljakhon Obidova. Hydrodynamic loads on the water chamber with cavitating dampers

23. Levon Mailyan, Sergei Stele’mach, Evgenii Sherban, Komov Vasily, Moreno Ferrarese and Alexandr Koposov. Calculation of Integral Properties of Vibrated and Centrifugated Concrete


27. Michael Sergeev, Michail Lukin and Mikhail Lisyatnikov. Non split wooden beam reinforced with composite reinforcement


30. Yixin Zhang, Tatiana Nazmeeva and Vladimir Rybakov. Seismic performance of the Buckling-restrained brace outrigger


33. Vladimir Korsun and Aleksey Baranov. Mechanical properties of high-strength concrete after heating at temperatures up to 400°C

34. Alexey Vasiliev and Roman Dobretsov. Prospects for the use of road trains with an active semitrailer in the construction of bridge structures

35. Mikhail Sokolov, Yuri Kozhukhov, Nikolay Sadowskii, Alexander Petrov, Huu Nhan Nguyen and Aleksey Aksenov. Investigation of the real gas conversion method for a low-temperature methane compressor

36. Mikhail Peleh, Andrey Koruskevich and Maria Spiridonova. Analysis of the fire safety system of a general education school by calculating fire risk


38. Yuriy Lavirko, Mikhail Taymarov, Rimma Akhmetova, Eduard Akhmetov and Aigel Sabirzyanova. The scheme for producing synthetic coal oil using hydrogenation autoclave

39. Aleksey Yablokov, Nikolay Sadowskii, Ivan Yanin and Minh Hai Nguyen. The theoretical head coefficient influence analysis on the low-flow centrifugal compressor stage characteristics

41. Irina Maksimova, Nikolay Makridin, Vladimir Erkeev and Dmitriy Barabanov. Study of the properties of water-hardened cement stone depending on the water-cement ratio and age
42. Ekaterina Fateeva, Alexander Lebedev, Irina Toloknova, Alexander Burakov, Andrey Tikalov and Huu Nhan Nguyen. Calculation and research of the diaphragm compressor main elements
43. Yuri Abzaev, Aleksei Gnyrya and Sergei Korobkov. Lothenbach’s Model of von Mises Stress Distribution in Portland Cement in Curing and Temperature Gradient Conditions
44. Anatoly Novik, Igor Sentsov, Natalia Maidanova, Evgenia Fedotova, Nadezhda Morozova and Efrem Belskii. The influence of artificial asphaltite on the physical and mechanical properties of asphalt concrete
45. Arina Mohireva, Vladimir Bespalov, Proskurovskis Arturs, Levon Nazinyan, Ekaterina Glebova and Ekaterina Zabolonskaya. Variables of the properties of masonry under moisture impact in elementary volume scale
46. Andrey Dmitriev and Vladimir Lalin. Validation of computational procedures for the progressive collapse analysis of reinforced concrete structures
47. N Nasyrova, Oleg Glovatsky and Fotima Artykbekova. Operation of the cascade of pumping stations of the Karshi Main Canal
48. Ilya Grishin, Rashit Kayumov and Gennady Ivanov. Computational model of a slab supported by a cross-ribbed system
50. Aleksander Lebedev, Lebedeva Svetlana, Lopulalan Genri, Nguyen Hay, Kozhuhov Yuri and Ivanov Vaycheslav. Unsteady processes in a centrifugal compressor: from a physical experiment to a virtual stand
51. Vladimir Lalin, Valentin Nenashev, Iana Utimisheva, Anastasija Sumtsova, Irina Latina and Roman Orlovich. Bending of geometrically exact cantilever beam loaded by following moment
52. N Nasyrova, Sanatjon Khidirov and D Tadjieva. Use of combined floating structures at water inlets of pumping stations
53. Maksim Terekh and Nadezhda Morozova. A conceptual model for an energy efficient innovative multi-unit reuse house
54. 131 Sergey Sapozhnikov, Vladimir Mityakov, Andrei Mityakov, Andrey Pavlov, Pavel Bobylev, Andrei Gusakov and Milana Bernans. Study of the boiling of nanofluids by gradient heatmetry
56. Luka Akimov, Vladimir Lvov, Abantika Sengupta, Kevin De Mei, Nikolai Bolshakov, Yulia Volkova, Vladimir Badenko and Vitaly Terleev. Dynamic façade: from algorithm-aided concept to realization
57. Aleksandr U. Tumanov, Alexey Kulinkovich, Vladimir A. Tumanov, Artem Solovyov and Go Anton. Ensuring the safety of floating nuclear power plants in the face of project accidents in the arctic.
59. Vadim Davydov, Yuri Kuznetsov, Igor Kravchenko, Dmitry Gerashenkov, Mikhail Markov, Alina Bykova and Anna Mozhayko. Improving the durability of electric motor bearing shields using combined technology
60. Olga Solovyeva, Lyubov Marenina and Andrey Kotlov. Numerical research of the velocity at the inlet to the impeller interblade channels using one-dimensional and quasi-three-dimensional approaches
62. Inna Prokhorova. Group joint of longitudinal reinforcement with anchor rails and locking nuts

63. Anastasiia Ostrovaia, Anton Barabanov and Mikhail Petrichenko. Experimental assessment of the velocity in DSF structure

64. Olga Solovyeva, Aleksandr Drozdov and Vasilii Semenovskiy. Application of a quasi-three-dimensional approach to the calculation of 3D impellers in a mathematical model of the Universal Modeling Method

65. Dmitry Strakhov, Anastasia Vasilenko and Jaroslav Agafonov. Application domain of high-strength concrete in ec-centrally compressed elements with symmetrical rein-forcement

66. Olga Bolotnikova, Julia Bazarnova, Ekaterina Aronova, Natalia Mikhaylova and Maigul Kizatova. Bioethanol production from renewable non-edible sources of plant biomass

67. Anna Pavlenko, Ekaterina Palii, Anna Kniazeva and Mellat Tuleshova. Operation of principles of parametricism and eco-architecture in the design of public buildings of the future

68. Lyubov Marenina and Aleksey Rekstin. Optimization of the return channels of centrifugal compressor stages with different specific speed

69. Ernest Ivanov, Kirill Semenov, Sergey Manovitskij, Aleksandra Makeeva and Aleksey Kuleshin. Influence of basement strain characteristics on thermal stress state of massive concrete slabs during the construction period

70. Arina Mohireva, Nikolai Bolshakov, Proskurovskis Arturs, Ekaterina Zabolonskaya, Levon Nazinyan and Ekaterina Giebova. Systematization of data As-built and operational calculations in information models

71. Ivan Maksimenko, Andrey Kotlov and Vasilii Semenovskiy. Design and CFD-calculation of a highly efficient centrifugal compressor gas pumping unit volute

72. Victoria Holodkova, Aleksandr Titov, Alina Kovalenko and Yuri Ryabkin. Use of innovative materials in the organization of access to oil fields

73. Artem Blinov, Nikolay Malastowski and Leonid Myagkov. Numerical Modeling of Transient Thermal Behavior of Monolith Catalytic Converters

74. Evgenii Vdovin, Victor Stroganov and Nikita Konovalov. Modification of cement soils with activated fillers


76. Vladimir Rybitskiy and Anton Radaev. Optimization model for the distribution of production resources by elemental sections of railway mainline

77. Roman Kleimanov, Sergey Alexandrov and Andrey Korshunov. Aerodynamic atomizer based on flat de Laval nozzle

78. Asror Yangiyev, Maksim Kukolev, Sanatjon Khidirov, Dilmurod Adjimuratov, Farida Yunusova and Odil Qodirov. Distribution of pressure and specific energy in the swirling flow for the confuser section

79. Tarasov Aleksei, Davlechina Anna, Bogdanov Dmitry, Cvetkov Pavel, Smetankin Anatoly and Busko Igor. Virtual testing in problems of modern car development base on digital twins. Demonstration of development process using digital design approach (VI: RFMEFI57818X0269)

80. Vladimir Rybakov, Olga Gracheva and Mikhail Ogurtsov. The blast relief sandwich panel fixing under the explosion energy action


82. Dilshod Bazarov, Vladimir Troitsky, Bakhtiyor Uralov and Oybek Vokhidov. Influence of the channel morphometric elements and roughness on the pressure losses of the machine canals of irrigation pumping stations

84. Aleksandr Semenov. “Smart city”: concept and control system for artificial lighting of the space in the interests of law enforcement agencies

85. Aleksandra Masenene, Evgeny Timofeev, Nikolay Vatin and Aleksandra Masenis. Water-permeable polymer concrete pavement for streets and sidewalks in conditions of prolonged water saturation

86. Tatiana Elchishcheva, Victor Afonin, Irina Erofeeva, Paul Spiridonov, Alexander Petrov, Tatiana Saltanova, Elena Zaharova, Alexei Atmanzin and Catherine Matrosova. Biostability of plastering systems in buildings and structures


88. Irina Ryndina, Marina Altukhova, Maria Lyulina and Vladimir Chudny. Calculation methods of marginal steady-state modes of electric power systems and algorithms for their realization.
Joining the Meeting as a Speaker (Panelist). Prerequisites

- A good internet connection (wired is preferable over Wi-Fi);
- an external microphone (a computer headset with a boom microphone, a compatible phone headset or a dedicated USB microphone) and headphones;
- webcam;
- laptop or computer;
- Zoom Desktop Client: https://zoom.us/download, Windows or MacOS.

Join the Meeting via your Zoom desktop client or Mob app entering. ID and password are in the Conference Program

Easy steps for your online meeting

1. You are welcome to be tested with us from 13.00 till 18.00 (Moscow time) on November 18. The test meeting ID: 82405312498 password: 285826
   Link: https://us02web.zoom.us/j/82405312498?pwd=REE0M2dySmptQ3NxakJVeUxZpXZz09
2. If you are not sure to share your presentation on ZOOM, please send your presentations by monomaxpco@gmail.com before the conference (file in ppt or pdf) in advance. The aspect ratio is 16:9.
3. Follow the meeting timing strictly. Please be online at the beginning of your section.
4. Do not look through the chat while speaking. The Chair will read them after your presentation.

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Testing your video while in a meeting: Click the arrow next to Start Video / Stop Video. Select Video Settings.
Your presentation. Sharing screen:

Open the PowerPoint or Pdf file you want to present in advance. At the beginning of your talk click Share Screen in the meeting controls. Select your monitor or the presentation window then click Share.