Saint-Petersburg State Polytechnical University
Civil Engineering Institute

Program
XLII scientific and practical conference for students, graduate students and young scientists
"Week of Science in SPbSPU"

02.12.13 First day

Time	Event	Place
14.00-15.30	**Ceremony of rewarding of excellent students following the results of summer session 2012-2013 уч. years**	White hall of the Main educational case Politekhnicheskaya St., 29 (Politekhnicheskaya metro station)
16.00-18.00	**Workshop**	Department «Resistance of Materials» Politekhnicheskaya St., 29 (Politekhnicheskaya metro station)

03.12.13 Second day

Time	Event	Place
16.00-16.30	**Rewarding of partners for a contribution to development of construction science and higher education support**	Hall №2 Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-20.00	**«Hydraulic engineering work»**	Hall №1 Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-20.00	**«Environmental safety of civil engineering and municipal facilities»**	Small conference room Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-19.00	**«Structural mechanics»**	Hall №3 Grazhdansky Ave., 28 (Akademicheskay metro station)
16.30-20.00	**«Building technology and organization»**	Hall №2 Grazhdansky Ave., 28 (Akademicheskay metro station)
19.00 -21.00	**«Foundations, underground structures»**	Hall №3 Grazhdansky Ave., 28 (Akademicheskay metro station)

04.12.13 Third day

Time	**Event**	Place
16.00-17.30	**«Heating, ventilation, air conditioning, gas supply and illumination»**	Hall №1 Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-20.00	**«Water supply, sewerage, construction of water-resources conservation»**	Small conference room Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-20.30	**«Building materials and construction products**	Hall №2 Grazhdansky Ave., 28 (Akademicheskay metro station)
16.00-20.00	**«Building constructions, buildings and structures»**	Hall №3 Grazhdansky Ave., 28 (Akademicheskay metro station)
18.30-20.30	**Competition «Renovation of «Hydrotechnical building-2»**	Room 411, Hydrotechnical building-2 Politekhnicheskaya St., 29 (Politekhnicheskaya metro station)

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Hydraulic engineering work»

Hall №1, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: head of department "Hydraulics", Dr.Sci.Tech., prof. Petrichenko Mikhail Romanovich

Secretary: Zolotova Juliya

16.00-16.15 Opening. Welcome speech. Petrichenko Dr.Sci.Tech., prof. Petrichenko Mikhail Romanovich

16.15 – 19.30 Reports:

1. Makpal Assembayeva. *Evaluation of wind power capacity and determination of parameters of wind turbines for power supply network of the city of Astana*
2. Ekaterina Ignatyeva. *Uniaxial compression strength of sea ice*
3. Mark Kreiniuk. *Protection of hydralic structures from ice forming*
4. N. P. Lavrov and A. V. Shipilov. *Classification of ice pass constructions according to evolutionary principle*
5. Y.S. Lebedeva and I.G. Kudryashova. *Economic status of pumped-storage plant in Russian and foreign power systems*
6. Filipp Togo and Igor Lisovskiy. *Hydraulic structures safety Assesment*
7. Kseniia Gorbunova. *The protection of harbor from moving ice*
8. Anton Agafonov. *Protection of Artificial Islands from the Action of Ice*
9. Daria Ksenofontova. *Protection the Harbor and Dock Structures from the Ice*
10. Nikolay Belyaev, Evgeny Mikhalenko, Vasily Krupin, Viktor Popko and Vladislav Kovalev. *Water surface and drainage area measuring with satellite navigators*
11. Yuliya Natynchyk and Irina Kudryasheva. Making the overfall dam of Votkinskaya *hydroelectric power plant 3D model in AutoCAD.*
12. Julia Zolotova. *Algebra of looping*
13. Olzhas Aitleuov. *Power supply of agricultural autonomous objects on the basis of solar energy in the southern region of Kazakhstan.*
14. Vitaly Terleev, Alexander Topaj and Daria Kuritcina. *Modeling the hydro-physical properties of soil taking into account the hysteresis phenomenon*

19.45-20.00 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Environmental safety of civil engineering and municipal facilities»

Small conference hall, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: head of department "Civil engineering and applied ecology", Cand.Tech.Sci., associate professor Chusov Alexander Nikolaevich, PhD, Associate professor Cheremisin Aleksey.

Secretary: Cheremisin Aleksey

16.00-16.15 Opening. Welcome speech, PhD, Associate professor Cheremisin Aleksey.

16.30-20.00 Reports:

1. Anna Kasjanova. *Smart Grid in Russia. Opportunities and Prospects*
2. Igor Konstantinov. *Application of number models for assessment and prediction of environmental conditions of marine waters*
3. Bui Viet. *Dioxins in the environment*
4. Maria Ryzhakova and Vladimir Maslikov. *Geoecological Aspects of Municipal Solid Waste Containing Hazardous Components Treatment*
5. Egor Kolotov. *Problems of ecological rehabilitation of territories of carrying out industrial nuclear explosions*
6. Dustin Vaca, Alla Danilovna and Eliecer Guzman. *About possibility of building of biogas*
7. Philipp Tarasevsky and Vladimir Badenko. *Evaluation of land parcels with drainage systems for its renovation*
8. Vladislav Derizemlya and Vladimir Badenko. *Exploring the spatial variation of soil properties using geoinformation methods*
9. Ekaterina Gabdullina, Marina Zubkova and Vladimir Maslikov. *Cleaning living spaces air from carbon dioxide using sorbents*
10. Valeria Ryabykh. *Green roofs of residential and public buildings and their positive effects on humans*
11. Lydia Mansurova and Ekaterina Nikonova. *Characteristics of features of production environment*

20.00 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Structural mechanics»

Hall № 3, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: head of department "Construction mechanics and construction designs", Dr.Sci.Tech., prof. Lalin Vladimir Vladimirovich.

Secretary: Zdanchuk Elizabeth

16.00-16.15 Opening. Welcome speech, Dr.Sci.Tech., prof. Lalin Vladimir Vladimirovich

16.15 – 18.45 Reports:

1. Nikita Chernukha. *Structural analysis of buildings at explosive actions in SCAD*
2. Daria Kushova and Lalin Vladimir. *New exact solutions to the problems of the stability of elastic rods*
3. Stanislav Dyakov. *FEM implementation for static and dynamic analysis of the thin-walled bars within the semi-shear theory*
4. Ekaterina Nekliudova, Artem Semenov, Boris Melnikov and Sergei Semenov. *Experimental research and finite element analysis of elastic and strength properties of fiberglass composite material*
5. Kononov Vycheslav, Kluev Kirill, Holmin Mihail and Galymichev Alexander. *Glass single-point fixing test*
6. Alexey Grishchenko, Artem Semenov, Boris Melnikov and Sergei Semenov. *Influence of structural parameters of the masonry on effective elastic properties and strength*
7. Elizaveta Zdanchuk. *Nonlinear thermodynamic model for granular medium*
8. Mikhail Kabakov. *The study of the edge effect in the shells of rotation*
9. Irina Bazarova. *The method of the design and calculation of masonry vaulted and shell structures*

18.45-19.00 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Building technology and organization»

Hall №2 , Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: Kolosova Natalia Borisovna associate professor

Secretary: Avsyukevich Anastasia

16.30-16.45 Opening. Welcome speech, Kolosova Natalia Borisovna, associate professor

16.45– 19.45 Reports:

1. Anastasiia Avsiukevich. *Integral Rating Of Efficiency Of Commercial Apartment Buildings Construction*
2. Vladimir Rasporskiy. *Allocation of transportation and social infrastructure facilities during construction affordable housing*
3. Lauri Tenhunen and Seppo Niittymäki. *On the Micro-economic Theory of Sharing Risks in Public-Private Partnership (PPP) Implementations*
4. Julia Bykova, Ekaterina Dzonik and Anastasia Fidrikova. *Comparative analysis of methods for estimating the project risks of unique buildings and structures.*
5. Turya Ganguly, Päivi Jäväjä and Sunil Suwal. *BIM Based Energy Efficiency Evaluation of Modern Buildings*
6. Alexey Bublik, Roman Zayashnikov and Tatyana Morozova. *The organization of housing construction at complex building of quarters*
7. Kononov Vycheslav and Kononova Maria. *The feature of the use of 3ds Max in redevelopment*
8. Maksim Vyatkin, Tatyana Mussorina and Irina Ptukhina. *The role of aspects of cost engineering and their influence on implementation of the investment project*
9. Andrei Mushinskii. T*raffic congestion - possible solutions and suggestions in Saint-Petersburg.*
10. Daria Likhaia. *The problem of unawareness of multicultural business etiquette*
11. Natalia Makusheva and Natalia Borisovna Kolosova. *Comparative analysis of metal reinforcement and fiber-reinforced plastic bar*

19.45-20.00 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Foundations, underground structures»

Hall № 3, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: Dr.Sci.Tech., prof. Synyakov Leonid Nikolaevich

Secretary: Ibrayeva Julia

19.00-19.15 Opening. Welcome speech: Dr.Sci.Tech., prof. Bruises Leonid Nikolaevich

19.15-20.45 Reports:

1. Maria Del Mar Crespí Quintana, Christian Brewer and Andrew Petersen. *The Economics of Photovoltaic Solar Farms in Vineyards*
2. Dmitriy Kolomiytsev and Georgy Bulatov. *Osterberg method of testing high capacity bored- piles*
3. Valerii Toshchev. *Calculation and theoretical justification for the reconstruction possibility of the socle space of a building: SPb, Marata str., 61*
4. Yuliya Ibraeva and Olesia Petrochenko. *Interaction of concrete with acidic environments*
5. Aleksandr Nikonorov. *Pile construction technologies, used in Saint-Petersburg*
6. Georgiy Yakovlevich Bulatov, Natalia Borisovna Kolosova and Andrey Borisovich Teplov. *Bearing capability of driven piles with different types of cross section*
7. Heidi Merikukka. *Parking facilities and shelters in rock*
8. Evgeniy Kolosov, Anastasiia Povzun. *Criterion of choice of the type of foundation depending on conditions of the building and the kind of construction*
9. Vladimir Korovkin, Dang Thu Thao *Lateral soil pressure in calculating thin quay walls*

20.45-21.00 End

«Heating, ventilation, air conditioning, gas supply and illumination»

Hall №1 , Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: head of department "Hydraulics", Dr.Sci.Tech., prof. Petrichenko Mikhail Romanovich

Secretary: Darya Chernik

16.00-16.15 Opening. Welcome speech. Petrichenko Dr.Sci.Tech., prof. Petrichenko Mikhail Romanovich

16.15 – 17.30 Reports:

1. Shuravina Daria. *Compression heat pumps as an energy efficient heat conversation devices*
2. Tatiana Igorevna Spiridonova, Irina Alexandrovna Duvanova and Anna Olegovna Vilinskaya. *Energy efficiency heating installation of country house in Northern Western region*
3. Darya Nemova, Darya Tarasova, Anastasia Staritsyna and Anna Nefedova. *Results of inspection of educational building Gidrokorpus-2*
4. Nikolay Vatin, Darya Nemova, Dmitry Ceitin, Lina Khazieva and Darya Chernik. *Distant learning course «Energy efficient refurbishment management»*
5. Zhanna Teplova, Kristina Solovyeva, Darya Nemova, Darya Trubina and Darya Petrosova. *Thermotechnical calculation of an enclosure structure of comprehensive school*

17.30-17.45 End

«Water supply, sewerage, construction of water-resources conservation»

Small conference hall, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: head of department "Civil engineering and applied ecology", Cand.Tech.Sci., associate professor Chusov Alexander Nikolaevich, Aleksey CHEREMISIN, PhD, Associate professor

Secretary: Lednova Julia

16.00-16.15 Conference Registration

16.15-16.30 Welcome Addresses

16.30-20.00 Reports:

1. *Darya Kolosova and Ludmila Molodkina. Track membranes in the analysis and purification of soil properties using geoinformation methods*
2. Ivan Antonov and Alexander Shishkin. *Technological rationing of influence with use of geoinformation modelling system*
3. Ekaterina Azarova. *Improvement of a methodology of calculation of technogenic loading for the certain rivers of northern part of the Gulf of Finland*
4. Aleksandra Badisova and Alla Gorbovskaya. *Lammin-Suo lakes hydrobiological studies*
5. Aleksander Kushnerov and Aleksander Shishkin. *Quality management of water objects with use of complex and integrated indicators*
6. Sven Euller and Andrew Petersen. *Drinking Water Contamination Caused By Uncontrolled Landfills*
7. Aleksandr Cherniavskii. *Treatment system of oil and chromium containing machinery industry wastewater.*
8. Komissarova Liza and Molodkina Ludmila. *Treatment technology of coke production wastewater*
9. Ekaterina A. Bondarenko, Vyacheslav A. Starkov and Maria Ju. Andrianova. *Fluorimetric tracing of sewage effluents in the Murinsky creek*
10. Victoria Chugunova. *Water purification in Saint-Petersburg. Problems and prospects. Offers for improvement.*
11. Artem Krivtcov. *Water supply of residential high-rise buildings in Saint-Petersburg*

19.30 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Building materials and construction products»

Hall № 2, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairman: Cand.Tech.Sci., associate professor Belyaeva Svetlana Vyacheslavovna
Secretary: Pertseva Olga
16.00-16.15 Opening. Welcome speech, Cand.Tech.Sci., associate professor Belyaeva Svetlana Vyacheslavovna
16.15 – 20.15 Reports:

1. David Kvachadze. *Effect of modified nano-carbon additions on the strength of concrete*
2. Egor Ezay, Lali Kuprava and Jurij Kadushkin. *The use of carbon-base materials to reinforce bearing structures*
3. Luisa Berninger. *Testing and Optimizing of Dual Timber Columns*
4. Sebastian Dietrich. *Resistance and Stiffness of a timber shear wall*
5. Denis Stelmashuk, Vladislav Grigoriev, Maxim Druzhkov, Alexander Mityugaev, Alexandr Novikov and Oleg Stolyarov. *Investigation of the tensile properties of geotextiles and geogrids used in civil engineering*
6. Yannick Göbel. *Effects of slippage on the load carrying capacity of composite reinforced concrete columns*
7. Patrick Herrmann. *Investigation of fresh and hardened properties of Calcium sulfoaluminate (CSA) cement blends*
8. Olga Pertseva and Sergey Nikolskiy. *Possible reference method for the determination of concrete's frost resistance*
9. Pavel Vasilyev. *Reconstruction of residential building*
10. Artem Frolov, Ludmila Chumadova, Artemiy Tcherkashin and Luka Akimov. *The economy of use and the impact of nanoparticles on properties of lightweight high-strength concrete*
11. Nikolay Vatin, Issa Togo, Denis Iotti, Svetlana Matoshkina, Darya Nemova and Mariia Platonova. *The influence of the airproof compositions on the thermotechnical characteristics of the enclosing structures*
12. Olga N. Beskorovainaia and Dmitriy S. Bychkov. *The quickly erected modular buildings of light nanomodificated concrete*
13. Artemy Churakov. *Biaxial hollow slabs with innovative types of voids*
14. Akhatuly Alisher and Alzhanova Raushan. *Fiberglass reinforcement with enhanced performance characteristics*
15. Zhanna Teplova, Svetlana Kiski, Darya Nemova and Aleksey Sokolov. *The composite reinforcement of LLC «Building composites»*

20.15-20.30 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

«Building constructions, buildings and structures»

Hall № 3, Grazhdansky Ave., 28 (Akademicheskay metro station)

Chairmans: Dr.Sci.Tech., prof. Strahov Dmitry Aleksandrovich., Cand.Tech.Sci., associate professor Rybakov Vladimir Aleksandrovich

Secretary: Haziyeva Lina

16.00-16.15 Opening. Welcome speech, Cand.Tech.Sci., associate professor Rybakov Vladimir Aleksandrovich

16.00 – 19.45 Reports:

1. Nursultan Niyaz. *Stuying of seismic stability of constructions with use of elements of vibration control.*
2. Denis Smirnov. *A prototype of an Expert System for assessment of existing concrete beams*
3. Airat Yunusov. *The overall stability of the flat arches in their plane*
4. Alexandr Simonenko. *Classification of skylights by functional purpose and designs*
5. Alexander Kuznetsov. *Building a finite element model and calculation of the wind load large-span spatial hinged design exhibition complex*
6. Alena Pakhomova. *St.Petersburg cultural heritage reconstruction and its adaptation for modern use*
7. Lutz Loh. *Stress distribution of Submerged RC Structures under the Influence of corrosion*
8. Mika Lindholm, Dieter Bunte and Mahdi Siami. *Implementing Risk management in typical residential projects for Oil and Gas Industry*
9. Mariya Ananina. *Influence corrosion on the light steel gauge framing*
10. Serafima Vershinina. *The use of vertical gardening in the design of buildings and facilities of St. Petersburg*
11. Alexey S. Sinelnikov, Anna V. Orlova and Lidiya L. Shurovkina. *Thin-walled cross sections: tests and fem-modelling*
12. Petr Zarubin, Mikhail Baranovskiy and Vladimir Tarasov. *Tekla Structures – is innovation of structres's modeling*
13. Elena Vostrikova. *Energy-efficient renovation of residential buildings of the 1960s*
14. Alexander Galyamichev, Dmitry Matsukatov, Lina Hazieva, Valeriya Efimova and Alexander Gulbe. *Operation of composite sections of aluminum translucent constructions*
15. Oksana Zhilenko and Vasiliy Alekseenko. *New technologies to provide earthquake resistance of Orthodox shrines in Sevastopol*

19.45-20.00 End

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

Scientific and practical competition with the international participation «Renovation of «Hydrotechnical building-2»

Room 411, Hydrotechnical building-2

Politekhnicheskaya St., 29 (Politekhnicheskaya metro station)

18.30-18.45	**Competition opening, welcome speech to participants of the project from organizers of competition**	1. The vice rector at Administrative work Romanov Sergey Vladimirovich 2. 2 . Director of the construction Batting institute Nikolay Ivanovich 3. 3 . Director general of JSC ALFASTROY-SERVIS (representation of the French company Parexlanko) Iza Togo.
18.45-18.50	Definition of sequence of reports. Lot.	Speakers
18.45-20.00	Presentations of projects of 10-15 min., questions	Speakers, jury, listeners
20.00-20.15	Summing up, estimates of projects	Jury
20.15-20.30	Announcement of results, competition closing	Jury, Director of the civil engeneering institute Vatin Nikolay Ivanovich

Projects finalists:

№	**project name**	Participant / research team
1	What we see the institute	Avsyukevich A.D. Shuravina D. M.
2	Our institute. New shape.	Tarasova D. Staritsyna A.
3	New building to favourite institute	Platonov M., Perlov E. Karpov S.
4	Engineering factory	Timofeeva M., Kuponosov K. Makarevich. With
5	To ICE 4rever	Edward and Alexandra

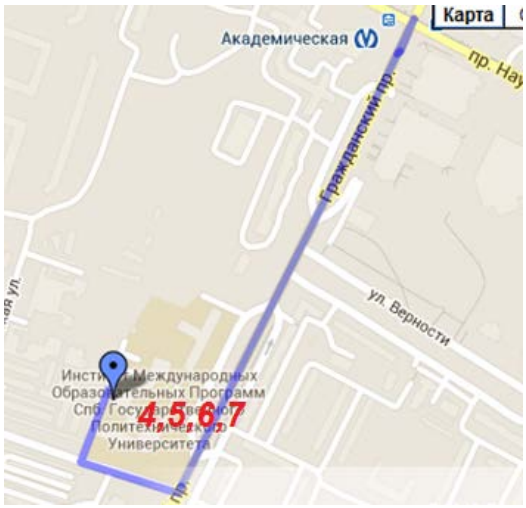
Состав жюри/ Jury:

Имя/Name	Должность/Position	Университет/University	Страна/Country
Романов Сергей Васльевич/Romanov Sergey Vasilevich	Проректор/ vicerector	Санкт-Петербургский государственный политехнический университет/Saint-Petersburg State Polytechnical University	Россия/Russia
Ватин Николай Иванович/ Nikolay Ivanovich Vatin	Д.т.н., проф. Директор Инженерно-строительного института/Dr. sci., Prof. Director of Civil Engineering Institute	Санкт-Петербургский государственный политехнический университет/Saint-Petersburg State Polytechnical University	Россия/Russia
Исса Того/Issa Togo	К.т.н., доцент, генеральный директор/Cand.Tech.Sci., associate professor, general director	ООО «АЛЬФА-СЕРВИС»/ JSC ALFASTROY-SERVICE	Россия, Франция/Russia, France
Горшков Александр Сергеевич/Alexandr Sergeevich Gorshkov	К.т.н., доцент/Cand.Tech.Sci., associate professor	Санкт-Петербургский государственный политехнический университет/Saint-Petersburg State Polytechnical University	Россия/Russia
Гаевская Злата Анатольевна	Кандидат архитектуры доцент/ Candidate of architecture, associate professor	Санкт-Петербургский государственный политехнический университет/Saint-Petersburg State Polytechnical University	Россия/Russia
Эрик Поллак/ Eric Pollock	Архитектор/ Architect	Хельсинкский университет прикладных науки Метрополия/Helsinki Metropolia University of Applied Sciences	Финляндия/Finland

Saint-Petersburg State Polytechnical University
Civil Engineering Institute

Contacts:

1. White hall of the Main educational case Politekhnicheskaya St., 29, (Politekhnicheskaya metro station)
2. Department «Resistance of Materials», Politekhnicheskaya St., 29, (Politekhnicheskaya metro station)
3. Room 411, Hydrotechnical building-2, Politekhnicheskaya St., 29, (Politekhnicheskaya metro station)
4. Small conference room, Grazhdansky Ave., 28, (Akademicheskay metro station)
5. Hall №1, Grazhdansky Ave., 28 (Akademicheskay metro station)
6. Hall №2, Grazhdansky Ave., 28 (Akademicheskay metro station)
7. Hall №3, Grazhdansky Ave., 28 (Akademicheskay metro station)



Campus maps: http://www.spbstu.ru/directory/campus/campus.asp