



*International scientific conference*

**«Modern technologies and the development  
of polytechnic education»  
(POLYTECH-2015)**

**September 14-18th 2015  
Vladivostok, Russia**



Обратная сторона  
титulyного листа



Ministry of Education and Science of the Russian Federation  
Far Eastern Federal University

**INTERNATIONAL SCIENTIFIC CONFERENCE  
«MODERN TECHNOLOGIES AND THE DEVELOPMENT  
OF POLYTECHNIC EDUCATION»  
(POLYTECH-2015)**

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**CONFERENCE PROGRAM**

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September 14-18th 2015  
Vladivostok, Russia

## ПЛАН-ГРАФИК ПРОВЕДЕНИЯ КОНФЕРЕНЦИИ

Время проведения	Номера аудиторий						
	E319	E320	E321	E322	E323	E519	E615
<b>14 сентября, понедельник</b>							
10 -00 – 11 -30	Прибытие участников конференции в ДВФУ и размещение в гостинице			6МКН		1КПК	
11 -30 – 12 -00				Кофе-брейк			
12 -00 – 13 -30				6МКН		1КПК	
13 -30 – 14 -30	Обед						
14 -30 – 16 -00	Экскурсия по Инженерной школе и кампусу			6МКН		1КПК	
16 -00 – 16 -30				Кофе-брейк			
16 -30 – 18 -00			6МКН		1КПК		
19 -00 – 21 -00	Фуршет						
<b>15 сентября, вторник</b>							
09 -00 – 10 -00	Регистрация участников конференции (холл корпуса С)						
10 -00 – 11 -30	Открытие конференции (С636)			6МКМ		1КПК	
11 -30 – 12 -00	Кофе-брейк						
12 -00 – 13 -30	2ПЗ	3МПР	1УО	6МКМ	5ПЗ	1КПК	
13 -30 – 14 -30	Обед						
14 -30 – 16 -00	2ГГД	5ТЭ	1УО	6МКМ	5ЭГ	1КПК	2МК
16 -00 – 16 -30	Кофе-брейк						
16 -30 – 18 -00	2ГГД	5ТЭ	1УО	6МКМ	5ЭГ	1КПК	2МК
19 -00 – 21 -00	Банкет						
<b>16 сентября, среда</b>							
10 -00 – 11 -30	2МД	2ТОТ	4МТМ	6МКМ	5ЭЭ	1КПК	
11 -30 – 12 -00	Кофе-брейк						
12 -00 – 13 -30	2МД	2ТОТ	4МТМ	6МКМ	5ЭЭ	1КПК	
13 -30 – 14 -30	Обед						
14 -30 – 16 -00	2МД	2ТОТ	6РПО	6МКМ	5ЭЭ	1КПК	
16 -00 – 16 -30	Кофе-брейк						
16 -30 – 18 -00	2МД	2ТОТ	6РПО	6МКМ	5ЭЭ	1КПК	
<b>17 сентября, четверг</b>							
10 -00 – 11 -30	2КС			6МКМ		1КС	
11 -30 – 12 -00	Кофе-брейк						
12 -00 – 13 -30	Заккрытие конференции (E319)						
13 -30 – 14 -30	Обед						
14 -30 – 18 -00	Автомобильная экскурсия						
<b>18 сентября, пятница</b>							
10 -00 – 16 -00	Морская прогулка						
<b>19 сентября, суббота</b>							
09 -00 – 18 -00	Отъезд участников конференции						

## УСЛОВНЫЕ СОКРАЩЕНИЯ

1КПК	Курсы повышения квалификации «Комплексное устойчивое управление отходами в сфере коммунального хозяйства» (проект TIWaSiC программы «Темпус» Европейской Комиссии)
1КС	Круглый стол секции «Управление отходами»
1УО	Заседание секции «Управление отходами»
2ГГД	Заседание секции «Геология и горное дело»
2МД	Заседание подсекции «Маркшейдерское дело»
2КС	Круглый стол секции «Геология и горное дело»
2МК	Мастеркласс «Высокоточные специализированные маркшейдерские работы»
2ПЗ	Пленарное заседание секции «Геология и горное дело»
2ТОТ	Международный семинар «Технологии освоения топливно-энергетических ресурсов»
3МПР	Заседание секции «Мехатроника и промышленная робототехника»
4МТМ	Заседание секции «Материаловедение и технология материалов»
5ТЭ	Заседание подсекции «Теплоэнергетика»
5ЭЭ	Заседание подсекции «Электроэнергетика»
5ЭГ	Международный семинар «Энергетика и горение»
6МКМ	Мастер-класс «Модернизация на компетентностной основе двух уровней (магистратура, бакалавриат) учебных программ в области материаловедения в соответствии с лучшим опытом Болонского процесса» (проект MMATENG программы «Темпус» Европейской Комиссии)
6МКН	Мастер-класс «Новая модель третьего уровня инженерного образования в Белоруссии, России и Украине в соответствии с Болонским процессом» (проект NETCENG программы «Темпус» Европейской Комиссии)
6РПО	Заседание секции «Развитие политехнического образования»

## ОТКРЫТИЕ КОНФЕРЕНЦИИ, ПЛЕНАРНОЕ ЗАСЕДАНИЕ

Opening of the conference, plenary session

Moderator: Academician RAS **Khanchuk A.I.**, co-chair of the conference organizing committee, Director of Far Eastern Geological Institute FEB RAS

**15 September, 10-00 – 11-30 (C636)**

Welcome word:

- FEFU Rector **Ivanets S.V.**
- Acting Director of the School of Engineering FEFU **Tsuprik V.G.**
- Prof. **R. Grubliauskas**, Vilnius Gediminas Technical University, Lietuva
- Prof. **D. Eskin**, Brunel University London, UK
- Dr. **N. Kinaev**, Strategic Energy Consulting Pty Ltd & University of Queensland Energy Initiative, Brisbane, Australia
- Prof. **Okhotin A.L.**, Vice-president of International Society for Mine Surveying, Irkutsk National Research Technical University

1. **Tsuprik V.G.** (FEFU)

The School of Engineering of FEFU – developing education and science

2. **Maruta K.** (IFS Tohoku University, Sendai, Japan, FEFU)

Micro- and mild- combustion: combustion with recirculation process

3. **Ulanova O.V.** (INRTU, Irkutsk), Christoph Wunsch (TU Dresden, Germany)

Professional training of waste management experts for industry complexes of Siberia and Primorsky Region

### Panel 1

#### «WASTE MANAGEMENT»

Moderators: Prof. Evangelos Gidaracos (TU of Crete, Greece), Prof. **Petukhov V.I.** (FEFU)

**15 September, 12-00 – 13-30 (E321)**

1. **Stefan Salhofer** (BOKU University, Vienna, Austria)

**How can we make the collection and recycling of packaging more efficient? – An Austrian case study**

2. **Evangelos Gidaracos**, **Aris Nikolaou** (Technical University of Crete, Greece)  
**Innovative technologies for soil and groundwater remediation from petroleum hydrocarbons – industrial site applications**

3. **Aikaterini Valouma**, **Evangelos Gidaracos** (Technical University of Crete, Greece)

**Management of asbestos deposits and Asbestos Containing Material (ACM) in abandoned mining and manufacturing sites in Greece**

4. **Thomas H. Christensen**, **A. Damgaard** (Technical University of Denmark, Copenhagen)

**The Role of Life-Cycle-Assessment in Modern Waste Management**

5. **Christina Dornack** (Technical University, Dresden, Germany)

**Residues from paper industry – unused biomass**

6. **Starostina V.U.**, (Irkutsk National Research Technical University)

**Analysis of the features of the Russian legislation in the field of environmental protection**

**15 September, 14-30 – 16-00(E321)**

1. **Ulanova O.V.**, **Zyryanova E.E.** (Irkutsk National Research Technical University)  
**The development of guidelines for environmental impact assessment related to landfilling municipal solid waste**

2. **Eskin A.A.**, **Tkach N.S.**, Kim M.I. (FEFU)

**Intensification of oily waste waters purification by means of liquid atomization**

3. **Zhukov A.V.**, **Shcheklein S.E.**, **Fedoreev S.A.**, **Goman V.V.** (Ural Federal University, Ekaterinburg)

**Cogeneration unit based on CO-gasifier and ORC-steam generator fueled by biofuel**

4. **Makarova N.V.**<sup>1,2</sup>, **Potapov V.V.**<sup>2,3</sup>, **Chusovitin E.A.**<sup>1</sup>, **Amosov A.V.**<sup>1</sup>, **Kozin A.V.**<sup>2</sup>, **Nepomnyashchiy I.V.**<sup>1</sup> (<sup>1</sup>Institute of Automation and Control Processes FEB RAS, Vladivostok, <sup>2</sup>FEFU, <sup>3</sup>Geological Research and Development Center, RAS, Petropavlovsk-Kamchatsky)

**Using nanodispersed silica as a supplement for cement composites**

5. **Tkach N.S.**, **Eskin A.A.**, **Zakharov G.A.** (FEFU)

**Oily waste dewatering method**

6. **Yarusova S.B.**<sup>1</sup>, **Makarenko N.V.**<sup>1</sup>, **Zemnukhova L.A.**<sup>1,2</sup>, **Azarova Yu.A.**<sup>1</sup> (Institute of Chemistry FEB RAS, Vladivostok)

**Kinetics of sorption of heavy metals ions with sorbents produced from rice waste**

**15 September, 16-30 – 18-00 (E321)**

1. **Tretyakova M.O.**, **Lazareva L.P.** (FEFU)

**Impact assessment of construction materials plants on water bodies**

2. **Vlasenko V.S.**, **Slesarenko V.V.**, **Gulkov A.N.**, **Lapshin V.D.** (FEFU)

**Storage and transportation of hydrocarbon gas hydrate dispersed systems**



3. Slesarenko V.V.<sup>1</sup>, Perfilyev A.A.<sup>2</sup>, Kisel A.A.<sup>2</sup>, Yudakov A.A.<sup>2</sup> (<sup>1</sup>FEFU, <sup>2</sup>Institute of Chemistry FEB RAS, Vladivostok)

**Development of galvanic wastewater treatment technology from heavy metals**

4. Opanasiuk A.A. (FEFU)

**Ecological purification technology of ash–disposal TTP areas for further usage**

5. Zelinskaya E.V., Tolmacheva N.A., Suturina E.O., Barakhtenko V.V., Burdonov A.E., Pronin S.A., Golovnina A.V., Samorokov V.E., Vlasova K.I., Garashchenko A.A. (Irkutsk National Research Technical University)

**The study of the influence of the properties and the structure of waste and waste-based construction materials**

6. Tarasenko I.A.<sup>1,2</sup>, Zinkov A.V.<sup>2</sup>, Ovodova E.V.<sup>2</sup>, Petukhov V.I.<sup>2</sup> (<sup>1</sup>Far East Geological Institute FEB RAS, Vladivostok, <sup>2</sup>FEFU)

**Technogenic effect of liquidation of coal mines on the earth's entrails: hydrogeochemical aspect**

#### Roundtable discussion of panel 1 “Waste management”

Moderators: Prof., D.tech.sci. **Valeriy Petukhov** (FEFU), **Alexandr Korshenko** (head of Department of Natural Resources and Environmental Protection of Primorsky Region)

**17 September, 10-00 – 11-30 (E519)**

The first training course “Integrated sustainable waste management in the sphere of municipal economy” (TIWaSiC project within European Union TEMPUS programme)

**14-17 September, (E519)**

See separate program for details



## PANEL 2 “GEOLOGY AND MINING”

### Plenary session

**15 September, 12-00 – 13-30**

Moderator: Prof. Lushpei V.P. (FEFU)

Welcome word:

- Korolev D.G. Leica Geosystems

1. Okhotin A.L., Vice-president of International Society for Mine Surveying (Irkutsk National Research Technical University)

**The role of universities in providing human resources for BIM technologies**

2. Zarovnyaev B.N., Director of the Institute of Mining (North-Eastern Federal University, Yakutsk)

**Forming innovative infrastructure in the Institute of Mining at North-Eastern Federal University**

3. Sholomytsky A.A., Lagutina E.K. (Siberian State University Geosystems and Technology, Novosibirsk)

**Peculiar mine surveying works**

4. Gusev V.N.<sup>1</sup>, Zhuravlyov A.E.<sup>2</sup> (<sup>1</sup>National Mineral Resources University, <sup>2</sup>Jet Technology & Construction Company, St. Petersburg)

**Assessing the effects of underground mining activities on high-voltage overhead power lines**

5. Usoltseva L.A., Lushpei V.P., Vasyanovich Yu.A., Murzin V.A. (FEFU)

**Modern methods of observation surveying of open cast mining in complex hydrogeological conditions**

**Subpanel “Geology and mining”**

Moderator: Assoc. Prof. Andreev A.V. (FEFU)

**15 September, 14-30 – 16-00 (E319)**

1. Volokhov E.M., Novozhenin S.Yu., Kireeva V.I. (The National Mineral Resources University, St. Petersburg)

**Modeling of strata movement when mining with tunnel boring mechanized complex in mining and geological conditions of Saint-Petersburg**

3. Stolov B.L. (FEFU)

**Unique electric field anomalies in the Far East and their implications for subsurface geological studies**

4. Vakh E.A.<sup>1,2</sup>, Vakh A.S.<sup>1,2</sup>, Petukhov V.I.<sup>1</sup>, Kharitonova N.A.<sup>2,3</sup>, Melnik E.V.<sup>1</sup> (<sup>1</sup>FEFU, Far East Geological Institute FEB RAS, Vladivostok)



**Study on rare-earth elements distribution in the surface waters of Primorsky Region**

5. **O.G. Tokarenko** (National Research Tomsk Polytechnic University)

**Research of the interaction of the system nitrogenous thermal springs - aluminosilicate rocks in Baikal rift zone**

6. **Imetkhenov A.B.**<sup>1</sup>, **Ganbat D.**<sup>2</sup>, **Imetkhenov O.A.**<sup>1</sup> (<sup>1</sup>East Siberian State University of Technology and Management, Ulan-Ude, Russia, <sup>2</sup>Mongolian State University of Science and Technology, Ulaanbaatar, Mongolia)

**Experience of self-propelled equipment use for extraction of peripheral zinc reserves (Tumurtiyn Ovoo deposit)**

15 September, 16.30-18.00(E319)

1. **Makarov V.V.** (FEFU)

**High-stressed rock mass conditions and periodical zonal character of damage near the openings**

2. **Ksendzenko L.S.** (FEFU)

**"Source" stage modeling of the rock samples deformational fields in high stressed conditions**

3. **Golosoov A.M., Makarov V.V.** (FEFU)

**Complex method of detection reliable precursors of stressed rock samples failure**

4. **Opanasiuk N.A., Makarov V.V.** (FEFU)

**The study of formation of zonal meso-fractures in arrays of highly compressed rock around underground workings**

5. **Chistyakov V.K.** (The National Mineral Resources University, St. Petersburg)

**The method of obtaining high-quality core from hydrate-containing masses**

**Subpanel "Mine surveying"**

Moderators: Prof. **Okhotin A.L.** (Irkutsk National Research Technical University), Assoc. Prof. **Usoltseva L.A.** (FEFU)

15 September, 14-30 – 18-00 (E615)

**Master-class "High-precision surveying works"**

**Sholomytsky A.A.** (Siberian State University Geosystems and Technology, Novosibirsk)

16 September, 10-00 – 11-30 (E319)

1. **Kiselev V.A.**<sup>1</sup>, **Guseva N.V.**<sup>2</sup>, **Karl-Otto Zeiler**<sup>2</sup>, **Silke Noack**<sup>2</sup> (<sup>1</sup>The National Mineral Resources University, St. Petersburg, <sup>2</sup>Beak Consultants GmbH, Freiberg, Germany)



**Integrated GIS and artificial neural networks technology for detection of hazards geodynamic zones of pipelines**

2. **Badenko V.L., Garmanov V.V., Bogdanov V.L., Terleev V.V.** (Saint Petersburg State University)

**Modern technologies of monitoring of disturbed land in the polytechnic education with specialization "Mine Surveying"**

3. **Levkin Yu.M., Levkina S.Yu.** (The National University of Science and Technology MISiS, Moscow)

**Application of automated information system in mine surveying inspection of secondary use underground workings**

4. **Lagutina E.K., Sholomytsky A.A.**, (Siberian State University of Geosystems and Technologies, Novosibirsk)

**Peculiar mine surveying works**

5. **Valdman V.V., Gridnev S.O.** (Irkutsk National Research Technical University)

**Development of the computerized stocktaking system in mine surveying for ore mineral volume calculation in covered storehouses**

6. **Guzeev S.V., Grigoryev A.A., Popov E.V.** (FEFU)

**Surveying geodetic control on the open-cast "Pavlovsky-2" of the Pavlovsky brown-coal field**

16 September, 12-00 – 13-30 (E319)

1. **Sholomytskyi A.A.**<sup>1</sup>, **Seredovich A.V.**<sup>1</sup>, **Mogilny S.G.**<sup>2</sup>, **Lunev A.A.**<sup>2</sup> (<sup>1</sup>Siberian State University of Geosystems and Technologies, Novosibirsk, <sup>2</sup>Prydneprovsky State Academy of Civil Engineering and Architecture, Ukraine)

**Precision analysis of geometric parameters for rotating machines during cold alignment**

2. **Nechaev G.V., Shestakov N.V., Gerasimenko M.D.** (FEFU)

**Calculation of co- and post-seismic displacements of GPS / GLONASS observation station "Terney" caused by Tohoku Mega earthquake on March 11th, 2011**

3. **Sysoev D.V., Shestakov N.V., Nechaev G.V., Gerasimenko M.D., Kolomiets A.G., Gerasimov N.G.** (FEFU)

**Study of contemporary crustal movements the Eugenie Archipelago islands (Popov, Reyneke, and Rikord islands) based on GPS-observation**

4. **Sayyidkosimov S.S.** (Tashkent State Technical University, Tashkent, Uzbekistan)

**Higher surveying education in Uzbekistan**

5. **Zarovnyayev B.N.**<sup>1</sup>, **Shubin G.V.**<sup>1</sup>, **Vasilyev I.V.**<sup>1</sup>, **Kurilko A.S.**<sup>2</sup> (<sup>1</sup>Ammosov-North-Eastern Federal University, Yakutsk, <sup>2</sup>Chersky Institute of Mining of the North, Siberian Branch of RAS, Yakutsk)

**Monitoring of the local area of the edge of the Nyurbinsky open-pit mine**



### using a laser scanning device

6. Grigoryev A.A., Lushpey V.P. Kostylev Yu.V. (FEFU)

The results of observations of the stability of face slopes of coal mines in the difficult mining and geological conditions

### 16 September, 14-30 – 16-00 (E319)

1. **Zagibalov A.V., Okhotin A.L., Volokhov A.V.** (Irkutsk National Research Technical University)

**Resilience analysis of face slopes and internal dumps and the causes of their instability at Mugunsky opencast coal mine**

2. **Belyaev E.N.** (Irkutsk National Research Technical University)

**Extended investigation into the continuous laser scanning of underground mine workings by means of the LANDIS inertial navigation system**

3. **Grigoryev A.A., Kostylev Yu.V.** (FEFU)

**Taking out coal from security pillars of industrial buildings and structures**

4. **Grigoryev A.A., Muratov N.A.** (FEFU)

**Researches of barrier cramp stability on the Partizansky coal field**

5. **Poltorak L.I., Muratov N.A.** (FEFU)

**Instrumental studies of deformations in underworked mass of basalt deposits at Shkotovsky brown coal deposit**

6. **Tokin A.A.** (Baigeo Limited Liability Company, Irkutsk)

**Interpreting technogenic and natural objects basing on the earth remote sensing**

### 16 September, 16-30 – 18-00 (E319)

**Roundtable discussion “Geospatial information as a basis for creating models of the full life cycle”**

Moderator: Prof. **Okhotin A.L.**, Vice-president of International Society for Mine Surveying, (Irkutsk National Research Technical University)

### International seminar

**“Technologies of development of fuel and energy resources”**

Moderator: Dr. **N. Kinaev** (UQ Energy Initiative, The University of Queensland, Brisbane, Australia), Assoc. Prof. **Belov A.V.** (FEFU)



### 16 September, 10-00 – 11-30 (E320)

1. **Obzhirov A.I.** (Pacific Oceanological Institute FEBRAS, Vladivostok)

**Gas Hydrate on the Sakhalin slope of the Okhotsk Sea**

2. **Y.H. Sun** (Key Laboratory of Drilling and Exploitation Technology in Complex Conditions, Ministry of Land and Resources, Changchun, People's Republic of China)

**Conceptual design of methane production from nature gas hydrates by CO<sub>2</sub>/N<sub>2</sub> – CH<sub>4</sub> exchange in the Qilian Mountain, Qinghai, Northwest China**

3. **N. Kinaev** (The University of Queensland, Brisbane, Australia)

**Status and potential impact of the coal gasification technologies in the fossil fuel based power generation mix- an Australian perspective.**

4. **Chen Chen** (Jilin University, Changchun, People's Republic of China)

**Simulation experimental study on flow and block of the mixed flow of water and sand through the broken zone of rocks**

### 16 September, 12-00 – 13-30 (E320)

1. **Belov A.V.** (FEFU)

**Catalytic Fixed Bed Gasification for Remote Sites Power Generation and Industrial/Municipal Waste Utilization**

2. **Andreev A.V.** (FEFU)

**Technologies of liquid hydrocarbons extraction from oil shale**

3. **Yujiao Wang** (Jilin University, Changchun, People's Republic of China)

**The Test and Improvement of Experimental Device of Hydrate Coating with Drilling Fluid Ice**

4. **Opanasiuk A.A.** (FEFU)

**The use of ecological purification technology of polluted wastes from utilizable ash-disposal TTP areas for the needs of construction sector**

5. **Grebeniuk I.V.** (FEFU)

**Gasification of Municipal Solid Waste in Underground Gasifiers**

### 16 September, 14-30 – 16-00 (E320)



1. **Kai Su** (Jilin University, Changchun, People's Republic of China)  
**Experiment Study of Phase Equilibrium of Fractured CH<sub>4</sub> and CO<sub>2</sub> Hydrates**

2. **Andreev A.V.** (FEFU)  
**Development of biological preparations based on humic acids obtained from Primorye peat and coal**

3. **P.F. Jiang** (Jilin University, Changchun, People's Republic of China)  
**Test on dielectric properties of oil shale under different temperature and different frequency**

4. **Taskin A.V.** (FEFU)  
**Chemical and technological aspects of forming of noble metal reserves in technogenic waste of heat-and-power engineering enterprises**

16 September, 16-30 – 18-00 (E320)

Wrap-up of the seminar

17 September, 10-00 – 11-30 (E319)

Wrap-up of Panel 2 “Geology and mining”

### PANEL 3

#### «MECHATRONICS AND INDUSTRIAL ROBOTICS»

Moderators: Prof. **Bidyadhar Subudhi** (VSS University of Technology, Burla, Odisha, India), Prof. **Filaretov V.F.** (FEFU)

15 September, 12-00 – 14-15 (E320)

1. **Zhirabok A.N., Pavlov S.V.** (FEFU)  
**Fault isolation in mechatronic systems: data-driven method**
2. **Zhirabok A.N., Shumsky A.E.** (FEFU)  
**Redundancy relations for fault diagnosis in hybrid systems**
3. **Gubankov A.S., Filaretov V.F.** (FEFU)  
**Synthesis of adaptive speed control system for mechatronic complex**
4. **Gubankov A.S., Filaretov V.F.** (FEFU)  
**Adaptive speed control system for end-effectors of multilink manipulators**
5. **Gornostaev I.V., Gubankov A.S.** (FEFU)  
**Developing of speed control laws for mechatronic objects**
6. **Katsurin A.V., Filaretov V.F.**<sup>1,2</sup> (1FEFU, 2Institute of Automation and Control Processes, FEB RAS, Vladivostok)

**Semiautomatic telecontrol by multi-link manipulators using mobile telecameras**

7. **Bidyadhar Subudhi**<sup>1</sup>, **Bibhuti Bhusan Pati**<sup>1</sup>, **Bikramaditya Das**<sup>2</sup>, **Zuev A.V.**<sup>3</sup>, **Filaretov V.F.**<sup>3</sup> (1VSS University of Technology, Burla, Odisha, India, 2National Institute of Technology, Rourkela, India, 3FEFU)

**Formation Control of multiple AUVs with Robust Compensation of variable added Mass**

8. **Nevmerzhitkiy M.N., Zmeu K.V., Notkin B.S., Kovalev V.A., Vara A.V.** (FEFU)

**Load torque and position observer for flexible experimental mechanism**

9. **Golikov S.Yu.**<sup>1</sup>, **Dulepov V.I.**<sup>1,2</sup>, **Mayorov I.S.**<sup>1</sup> (1FEFU, 2Institute of Marine Technology Problems, FEB RAS, Vladivostok)

**The use of underwater robots (ROVs) TSL for research of benthic ecosystems and quantification of stocks of benthic invertebrates**

### PANEL 4

#### «MATERIALS SCIENCE AND TECHNOLOGY OF MATERIALS»

Moderators: Prof. **Dostovalov V.A.** (FEFU), Prof. **Mansurov Yu.N.** (FEFU)

16 September, 10-00 – 11-30 (E321)

1. **Bratov V.A.**<sup>1,2</sup>, **Borodin I.N.**<sup>1</sup> (1Institute of Problems of Mechanical Engineering RAS, St. Petersburg, 2St. Petersburg State University)  
**Dynamic recrystallization and development of dislocation structure during ECAE processes**
2. **Kim L.V., Shaly E.E., Tsatsenko G.S., Dev Arpid, Melekhova E.A.** (FEFU)  
**Capillary-poral effects in concrete during ice abrasion**
3. **Shaly E.E., Kim L.V.** (FEFU)  
**Concrete corrosion in harsh conditions of arctic shelf**
4. **Gridasova E.A., Loktev L.V., Sycheva A.V.**<sup>1</sup>, (1FEFU, 2Moscow State University of Railway Engineering)  
**Simulation of dynamic contact of the wheel and railway including different rheological properties of materials and wave processes**
5. **Morkovin A.V., Lyubimova O.N.** (FEFU)  
**Glass-metal composite material for practical problem solving in building**
6. **Nadaraia K.V., Minaev A.N., Gnedenkov S.V., Sinebryukhov S.L.**<sup>1</sup>, **Mashtalyar D.V.**<sup>1,2</sup> (1Institute of Chemistry FEB RAS, Vladivostok, 2FEFU)  
**Use of a plasma electrolytic oxidation and fluorine-containing compounds for obtaining protective coatings**



16 September, 12-00 – 13-30 (E321)

1. **Jean-Bernard Vogt** (Université Lille Nord de France)  
**Damage and reliability of materials: why and what do we need to educate engineer**
2. **Pozhidaev D.A., Gulyaev V.T., Nikiforov P.A.** (FEFU)  
**Study of zeolite-based glazing for bricks**
3. **Zaykov V.I.<sup>1</sup>, Bashkov O.V.<sup>1</sup>, Romashko R.V.<sup>2</sup>** (<sup>1</sup>Komsomolsk-on-Amur State Technical University, <sup>2</sup>Institute of Automation and Control Processes, FEB RAS, Vladivostok)  
**Application of fiber optic interference converters for the study of stress-strain state of objects**
4. **Bashkov O.V.<sup>1</sup>, Popkova A.A.<sup>1</sup>, Sharkeev Yu.P.<sup>2</sup>, Kim V.A.<sup>1</sup>, Belykh S.V.<sup>1</sup>** (<sup>1</sup>Komsomolsk-on-Amur State Technical University, <sup>2</sup>Institute of Strength Physics and Materials Science, Tomsk)  
**Kinetics of structural deterioration in structured titanium VT1-0 (Grade 2)**
5. **Pashina E.V.<sup>1</sup>, Dostovalov V.A.<sup>2</sup>, Gordienko P.S.<sup>1</sup>** (<sup>1</sup>Institute of Chemistry FEB RAS, Vladivostok, <sup>2</sup>FEFU)  
**Hydrofluoride method of complex processing of titanium-containing raw materials**
6. **Shabalin I.A.<sup>1</sup>, Dostovalov V.A.<sup>2</sup>, Suponina A.P.<sup>1</sup>, Yarusova S.B.<sup>1</sup>, Gordienko P.S.<sup>1</sup>** (<sup>1</sup>Institute of Chemistry FEB RAS, Vladivostok, <sup>2</sup>FEFU)  
**Sorption properties of nanostructured calcium aluminosilicate with respect to cesium ions**

**PANEL 5**  
**«POWER ENGINEERING»**

Subpanel “Heat power engineering”  
Moderator: Prof. Minaev A.N. (FEFU)

15 September, 14-30 – 16-00 (E320)

1. **Vereshchagin I.M., Piralishvili Sh.A.** (Rybinsk State Aviation Technical University named after P.A. Solovyov)  
**Pulsation burner for heat and power industry and aviation**
2. **Sokolov A.A.<sup>1,2</sup>, Opra D.P.<sup>1</sup>, Gnedenkov S.V.<sup>1</sup>, Sinebryukhov S.L.<sup>1</sup>, Zheleznov V.V.<sup>1</sup>, Voit E.I.<sup>1</sup>, Minaev A.N.<sup>2</sup>** (<sup>1</sup>Institute of Chemistry FEB RAS, Vladivostok, <sup>2</sup>FEFU)  
**Electrochemical performance of nanostructured TiO<sub>2</sub> (anatase) doped with Zr, as anode material for li-ion batteries**

3. **Sokolov A.A.<sup>1,2</sup>, Opra D.P.<sup>1</sup>, Gnedenkov S.V.<sup>1</sup>, Sinebryukhov S.L.<sup>1</sup>, Minaev A.N.<sup>2</sup>, Laptash N.M.<sup>1</sup>** (<sup>1</sup>Institute of Chemistry FEB RAS, Vladivostok, <sup>2</sup>FEFU)  
**Molybdenum oxyfluoride - a cathode material for li-ion battery**
4. **Zhurmilova I.A., Shtym A.S.** (FEFU)  
**Thermophysical properties of hole fillers of low-potential geothermal energy system**
5. **Shtym A.S., Zhurmilova I.A.** (FEFU)  
**Ground heat exchangers of geothermal heat pumps and analysis of their constructive features and types**
6. **Zaika S.V., Dostovalova S.S., Uglanov D.A.** (Samara State Aerospace University)  
**CFD simulation of a Stirling cryocooler**

15 September, 16-30 – 18-15 (E320)

1. **Zaika S.V., Dostovalova S.S., Uglanov D.A.** (Samara State Aerospace University)  
**Applying exergy analysis to the selection of onboard cryogenic cooling system**
2. **Bogdanovich G.A., Shtym A.S., Karyagin A.V.** (FEFU)  
**Solar energy for hot water supply in university campus on Russky Island**
3. **Makarov D.A., Chernenkov V.P., Likhachev I.D., Revenko D.O.** (FEFU)  
**The hydraulic control method for heating systems of high-rise buildings**
4. **Gribinichenko M.V., Minaev A.N., Kurenkiy A.V., Kutcenko N.V., Iurchenko L.B.** (FEFU)  
**Methods of upgrading operating efficiency of gas-lubricated supports**
5. **Gribinichenko M.V., Kurenkiy A.V., Gladkova N.A., Chabanov A.A., Chizhikov R.G.** (FEFU)  
**Numerical and physical experiment during investigation of properties of the axle hybrid gas-lubricated bearings**
6. **Chupina K.V., Kuvshinov G.E.** (FEFU)  
**The automatic control system for power supply of underwater autonomous vehicles**
7. **Slesarenko I.V., Slesarenko V.V., Gulkov A.N.** (FEFU)  
**Research of vacuum solar collectors in heating systems**
8. **Fershalov A.Yu.<sup>1</sup>, Fershalov Yu.Ya.<sup>1</sup>, Fershalov M.Yu.<sup>2</sup>, Tsygankova L.P.<sup>1</sup>, Korshunov V.N.<sup>1</sup>** (<sup>1</sup>FEFU, <sup>2</sup>Pacific Oceanological Institute, Vladivostok)  
**Influence of constructive and regime factors on the characteristics of nozzle apparatus with small output angles of nozzles**
9. **Fershalov Yu.Ya.<sup>1</sup>, Fershalov A.Yu.<sup>1</sup>, Fershalov M.Yu.<sup>2</sup>, Tsygankova L.P.<sup>1</sup>, Korshunov V.N.<sup>1</sup>** (<sup>1</sup>FEFU, <sup>2</sup>Pacific Oceanological Institute, Vladivostok)  
**Influence of design and operational factors on the efficiency of the microturbine stages with small angles of nozzle**

## Subpanel “Electric power engineering”

Moderator: Prof. Silin N.V. (FEFU)

16 September, 10-00 – 11-30 (E323)

1. Ignatev N.I.<sup>1</sup>, Silin N.V.<sup>1</sup>, Losev V.L.<sup>2</sup>, Kalmykov D.V.<sup>1</sup> (FEFU, <sup>2</sup>Far Eastern Institute of Communications, Vladivostok)  
**Developing methods of diagnostics of transformer equipment**
2. Gerasimenko A.V., Silin N.V., Khazanov A.A. (FEFU)  
**Improving the efficiency of spectral methods of assessment of the condition of dielectrics**
3. Turkin D.G., Silin N.V., Shvartsburg A.B. (FEFU)  
**Improving the efficiency of isolation assessment methods**
4. Zhukov V.A. (FEFU)  
**Combined accumulator of electrical energy in active-adaptive local electrical network**

16 September, 12-00 – 13-30 (E323)

1. Grobovoy A.A.<sup>2</sup>, Prankevich G.A.<sup>1</sup>, Kiryanova N.G.<sup>1</sup>, Kataev D.E.<sup>3</sup>, Iskakov A.B.<sup>3</sup>, Yadykin I.B.<sup>3</sup> (Novosibirsk State Technical University, <sup>2</sup> Skolkovo Institute of Science and Technology, Moscow <sup>3</sup> Institute of Control Sciences RAS, Moscow)  
**Comparison of two method assessing the power systems stability degree**
2. Doroshev Yu.S.<sup>1</sup>, Sidorov A.I.<sup>1</sup>, Dodkhudoev M.D.<sup>2</sup> (FEFU, <sup>2</sup>South Ural State University (National Research University), Chelyabinsk, <sup>3</sup>Tajik Technical University named after Academician M.S. Osimi, Dushanbe, Republic of Tajikistan)  
**Rating principles and methods and rates of maximum allowable levels of touch voltage and of industrial frequency and higher-frequency currents**
3. Doroshev Yu.S., Doroshev A.Yu., Yatsenko S.N., Nikolaichuk D.N. (FEFU)  
**Load capacity of high-voltage flexible cables**
4. Yu.S. Doroshev, A.Yu. Doroshev, A.N. Nikolaychuk (FEFU)  
**Methods for non-destructive testing of bearing assemblies and their restoration**

16 September, 14-30 – 16-00 (E323)

1. Avdienko I.M., Zakaryukin V.P., Krukov A.V. (Irkutsk State University of Railway Transport)  
**Modeling of traction energy systems with balancing transformers**
2. Sidorov A.I., Okrainskaya I.S. (South Ural State University (National Research

University), Chelyabinsk)

**Risk assessment of negative influence of industrial frequency electric field on the personnel operating several 500 kV substations**

3. Antropova A.A., Silin N.V. (FEFU)

**Aspects of operation of electrical equipment under volcanic activity conditions**

4. Kislyukov V.A., Vasilenko D.E. (FEFU)

**Use of asynchronized generator for dynamic stability of stations**

5. Kislyukov V.A. (FEFU, JSC Dalenergosetproekt, Vladivostok)

**Emergency control equipment of electric power system of Russky Island**

16 September, 16-30 – 18-00 (E323)

1. Lu G.P., Turkin D.G., Gerasimenko A.V. (FEFU)

**Intelligent technologies for control of modes of power network of industrial enterprises**

2. Korovkin N.V.<sup>1</sup>, Boronin V.N.<sup>1</sup>, Minevich T.G.<sup>1</sup>, Silin N.V.<sup>2</sup> (<sup>1</sup>Peter the Great St.Petersburg Polytechnic University, <sup>2</sup>FEFU)

**Modeling of grounding systems for lightning protection of electric power objects**

3. Korovkin N.V.<sup>1</sup>, Goncharov V.O.<sup>1</sup>, Silin N.V.<sup>2</sup> (<sup>1</sup>Peter the Great St.Petersburg Polytechnic University, <sup>2</sup>FEFU)

**Modeling of ice-melting circuit under influence of EMF induced by power transmission lines**

4. Korovkin N.V.<sup>1</sup>, Greshnyakov G.V.<sup>2</sup>, Silin N.V.<sup>3</sup> (<sup>1</sup>Peter the Great St.Petersburg Polytechnic University, <sup>2</sup>Research, development and engineering Cable institute "Sevkabel", St.Petersburg, <sup>3</sup>FEFU)

**Magnetic shields special design for power cables**

5. Kinsht N.V., Petrunko N.N. (Institute of Automation and Control Processes, FEB RAS, Vladivostok, FEFU)

**Interpretation of integrated partial discharges picture as a set interrelated processes**

6. Kinsht N.V., Petrunko N.N. (Institute of Automation and Control Processes, FEB RAS, Vladivostok, FEFU)

**Certain aspects of diagnostics of parameters of mathematical model of the grounding system**

**International seminar “Energy and Combustion”**

Moderators: Prof. Kaoru Maruta (Tohoku University, Sendai, Japan, FEFU), Prof. Minaev S.S. (FEFU)

**15 September, 12-00 – 13-00 (E323)**

Welcome word: Prof. **Shtym A.N.** (FEFU)

1. **M. Liberman** (Nordita, KTH Royal Institute of Technology and Stockholm University, Sweden)

**Mechanism of Deflagration-Detonation Transition**

2. **Minaev S.S.**<sup>1</sup>, **Fursenko R.V.**<sup>1,2</sup>, **K. Maruta**<sup>1,3</sup> (<sup>1</sup>FEFU, <sup>2</sup>ITAM SB RAS, Novosibirsk, <sup>3</sup>Tohoku University, Sendai, Japan)

**Flammability Limits of Low-Lewis-number Premixed Flames**

3. **M. D. Malushte** (Department of Aerospace Engineering, Institute of Technology Bombay, India)

**Flameless combustion of gaseous fuels**

4. **Sirotkin F. V.**<sup>1</sup>, **Maznoy A.S.**<sup>1,2</sup>, **Kirzyashkin A.I.**<sup>1,2</sup>, **Odintsov E.S.**<sup>1</sup> (<sup>1</sup>FEFU, <sup>2</sup>Department of structural microkinetics, Tomsk)

**Flame anchoring in porous media**

**15 September, 14-30 – 16-00 (E323)**

1. **Amit Katoch** (Department of Aerospace Engineering, Institute of Technology Bombay, India)

**Measurement of laminar burning velocity at high temperatures**

2. **Mokrin S.N.**<sup>1</sup>, **Fursenko R.V.**<sup>1,2</sup>, **Minaev S.S.**<sup>1</sup> (<sup>1</sup>FEFU)

**Stabilization of Stretched Counterflow Flames in a Planar Microchannel with Heat Conductive Walls**

3. **Belyakov N.S.**, **Minaev S.S.** (FEFU)

**Flame Propagation Instability in Gas Mixture with Fuel Drops**

4. **Miroshnichenko T. P.**<sup>1</sup>, **Gubernov V.V.**<sup>2</sup> (<sup>1</sup>FEFU, <sup>2</sup>Physical Institute RAS, Moscow)

**Modeling of flame dynamics in microchannel**

5. **Shtym A.N.**, **Shtym K.A.** (FEFU)

**Specific features of cyclone-vortex chamber aerodynamics**

6. **Shtym K.A.**, **Solovieva T.A.** (FEFU)

**Influence of gas combustion regime conditions upon swirled flow parameters**

**15 September, 16-30 – 18-00 (E323)**

1. **Dorogov E.Yu.** (FEFU)

**Statement of the problem of aerodynamics and heat transfer in boilers with cyclone pre-furnaces**



2. **Goncharenko Y.B.** (FEFU)

**Experience of Adjustment Works on Shell Type Hot Water Boiler**

3. **Upsky M.V.**, **Shtym K.A.** (FEFU)

**Experience of Multinozzle Swirl-Type Injectors Study and Application**

4. **Shtym K.A.** (FEFU)

**Features of energy industry of Far East**

5. **Anisimova A. A.** (FEFU)

**Social sciences research agenda in energy studies**

**PANEL 6**

**«DEVELOPMENT OF POLYTECHNIC EDUCATION»**

Moderator: Assoc. Prof. **Golikov S.Yu.** (FEFU)

**16 September, 14-30 – 16-00 (E321)**

1. **Fatkulin A.A.** (FEFU)

**Ways to improve quality of engineering education: issues and proposals in the wide context**

2. **Mashukova A.E.**, **Siminchuk S.A.** (Siberian Federal University, Krasnoyarsk)

**Physics course for specialist programme in e-Learning system**

3. **Cheylyakh A.P.**, **Voloshin V.S.**, **Cheylyakh Ya.A.** (Pryazovskyi State Technical University, Mariupol, Ukraine)

**Polyvariety of individualization of engineering education in achieving objectives of MMATENG project**

4. **Surov O.E.**, **Kompanets V.A.** (FEFU)

**Experience of using infographics for training engineers**

5. **Aladyshkin I.V.**, **Kulik S.V.** (Peter the Great St.Petersburg Polytechnic University)

**Contradictions and prospects for the synthesis of technical sciences and humanities in polytechnic education**

6. **Dmitrieva T.V.**, **Shepeleva R.P.** (FEFU)

**Advanced training of teachers in the context of domestic and international standards: problem statement**

**16 September, 16-30 – 18-00 (E321)**

1. **Koptseva N.V.**, **Korchunov A.G.**, **Polyakova M.A.** (Magnitogorsk State Technical University)

**Modern education technologies in a technical university**

2. **Dmitrieva T.V.** (FEFU)

**Advanced training of teachers: synergetic approach to psychical and pedagogical expertise**



3. **Kuzlyakina V.V.** (FEFU, Admiral Nevelskoy Maritime State University, Vladivostok)

**Modernization of engineering education in the light of up-to-date production means and technologies**

4. **Mayorov I.S., Golikov S.Yu.** (FEFU)

**The role of ecological cultural synthesis in increasing the demand for and competitiveness of polytechnic education in the south of Russian Far East**

Master-class “The new model of the third level of education according to the Bologna process in Belarus, Russia and Ukraine” (NETCENG project, TEMPUS program of the European Commission)

**14 September (E322)**

See separate program

Master-class “Modernization of curricula of two-level program of study (bachelors / masters) of engineering materials based competency approach and best practices for the implementation of the Bologna process” (MMATENG project, TEMPUS program of the European Commission)

**15-17 September (E322)**

See separate program

Closing of the conference

**17 September, 12-00 – 13-30 (E319)**

Обратная сторона  
титульного листа