



**conect**

Conference of Environmental  
and Climate technologies

**16-18 May 2018**

**Riga, Latvia**

# Conference Programme

## Conference Topics

**Renewable Energy**  
**Green Transport Systems**  
**Biofuels and Alternative Fuels**  
**Smart Energy and Zero Carbon Technologies**  
**Pollution Prevention**  
**Resilience**  
**Heat and Power Generation, incl. District Heating and/or Cooling**  
**Energy and Carbon Markets**

**Energy Management, Policy and Economics**  
**Bioeconomy and Low Carbon Development**  
**Energy and Environmental Modelling**  
**System Approach Integration in Energy Sector**  
**Energy Efficiency Improvement**  
**Resource Efficiency, Circular Economy and Ecodesign**

Organised by:



## About CONECT

CONECT – International Scientific Conference of Environmental and Climate Technologies – is organised by the Institute of Energy Systems and Environment, Riga Technical University.

Its main aim is to acquaint researchers with achievements in the area of energy systems and environmental engineering and to give the scientists, PhD students and professionals an opportunity to present and publish the results of their research.

The conference proceedings will be published at **Energy Procedia** and indexed by **SCOPUS**. Selected papers will also be recommended for publication in a scientific journals indexed by **SCOPUS**.

## Venue

The conference will take place in Riga, Latvia, at the Faculty of Power and Electrical Engineering of the Riga Technical University, from 16-18 May 2018.



Free Wi-fi Access is provided  
in all conference rooms.

**Wi-Fi: Eduroam**  
**Identif. data: viesis.viesis**  
**Password: Viesis2018MAI**

## Conference language

The official conference language is English.

## Conference Registration

Registration at the lobby of the Faculty of Power and Electrical Engineering of the Riga Technical University, Azenes iela 12/1.

**Wednesday, 16 May from 9:00–10:00**  
**Thursday, 17 May from 8:30–9:00**

## Guidelines

### Oral presentations

All presenters are kindly asked to come to the Conference Rooms 10 minutes before the sessions in order to upload and check their presentations. A Technical Assistant and a Session Chair will be available at the Rooms to provide the assistance.

Duration of each oral presentation in plenary session is 15 minutes and 5 minutes for questions and discussions. Duration of each oral presentation in other sessions is 12 minutes and 3 minutes for questions and discussions.

### Poster presentations

There are two poster sessions scheduled:

- SESSION I – on Wednesday, 16 May from **16:15** till **18:00**
- SESSION II – on Thursday, 17 May from **16:15** till **18:00**

Suggested size of the posters is A1 (594 mm × 841 mm). Authors are requested to put their posters to the panels at least 2 hours before the poster sessions. Authors need to participate in the poster session to present their poster and answer questions.

Each poster presenter has 3 minutes to present the research (using micro). The presentation is followed by several public questions.

**Scientific Committee / Editorial Board of the CONECT 2018:**

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- Z. Khabdullina, Rudny Industrial Institute, Kazakhstan
- F. Romagnoli, Riga Technical University, Latvia
- D. Baranenko, ITMO University, Russia
- J. Gusca, Riga Technical University, Latvia
- S. N. Kalnins, Riga Technical University, Latvia

**WEDNESDAY, 16 MAY** Faculty of Power and Electrical engineering, Azenes iela 12/1

- 9.00–10.00 Registration  
10.00–10.10 Conference opening

**Plenary Session I**

**Moderator: Gatis Bazbauers, Riga Technical University, Latvia**

- 10.10–10.30 Problems with feed-in tariffs. Energy sector sustainability. Case in Latvia  
**Dagnija Blumberga**, Riga Technical University, Latvia
- 10.30–10.50 Production of insulating panel from pruning remains: an Economic and Environmental Analysis  
**Lucia Rocchi**, Luisa Paolotti, Filippo F. Fagioli, Antonio Boggia, University of Perugia, Italy
- 10.50–11.10 System dynamics modelling of energy production flexibility. Integration of innovative energy technologies  
**Gatis Bazbauers**, Riga Technical University, Latvia

**Panel Session I: Energy Efficiency in Buildings**

**Moderator: Gatis Bazbauers, Riga Technical University, Latvia**

- 11.10–11.25 Energy efficiency in historic buildings: mathematical and experimental study of hygrothermal processes in external walls with internal insulation  
**Andra Blumberga**, Riga Technical University, Latvia
- 11.25–11.40 Energy simulation and optimization of a double ventilation chimney in a historical building in L'Aquila (Italy)  
**Eleonora Laurini**, Pierluigi De Berardinis, University of L'Aquila, Italy  
Mariangela De Vita, Construction Technologies Institute CNR, Italy
- 11.40–11.55 Experimental study of small-scale passive solar wall module with phase change material and Fresnel lens  
**Toms Mols**, Ritvars Freimanis, Kristiana P. Dzene, Ruta Vanaga, Andra Blumberga, Riga Technical University, Latvia
- 11.55–12.10 A thermal analysis of smart glazing under the weather conditions of Fez  
**El Mehdi El Khattabi**, Mohamed Mharzi, University Sidi Mohamed ben Abdellah, Morocco  
Kestutis Valancius, Vilnius Gediminas Technical University, Lithuania
- 12.10–12.25 Quality management for building performance  
**Agris Kamenders**, Kristaps Kass, Riga Technical University, Latvia

12.25-12.40 Penalty-cost-based design optimization of renewable energy system for net zero energy buildings  
**Yuehong Lu**, Zhijia Huang, Dong Wang, Anhui University of Technology, China  
Xiaoping Zhang, University of Birmingham, UK

12.40-12.55 Managing energy efficiency of buildings: Analysis of ESCO experience in Latvia  
**Dzintars Jaunzems**, Edgars Augustins, Claudio Rochas, Agris Kamenders, Riga Technical University, Latvia

12.55-14.00 Lunch

### **Panel Session II: Energy systems for sustainable future**

**Moderator: Edgars Vigants, Riga Technical University, Latvia**

14.00-14.15 Energy efficiency investments in households. Innovative financing scheme  
**Reinis Aboltins**, Dagnija Blumberga, Riga Technical University, Latvia

14.15-14.30 Performance evaluation of a high-temperature thermoelectric generator under different solar concentrations  
**Sajjad Mahmoudi Nezhad**, Alireza Rezania, Lasse A. Rosendahl, Aalborg University, Denmark  
Petru A. Cotfas, Daniel T. Cotfas, Transilvania University of Brasov, Romania

14.30-14.45 Potential emission reductions from India's transport sector: a view from the green transportation projects under CDM  
**Nallapaneni M. Kumar**, Malaysia, Universiti Malaysia Pahang, Malaysia  
Guduru R. Reddy, Kaunas University of Technology, Lithuania  
Anil Miriyam, University of Hartford, USA

14.45-15.00 A system dynamics model for CO<sub>2</sub> emission mitigation policy analysis in road transport sector  
**Aiga Barisa**, Marika Rosa, Riga Technical University, Latvia

15.00-15.30 Coffee break

### **Panel Session III: Energy systems for sustainable future (cont.)**

**Moderator: Anna Volkova, Tallinn University of Technology, Estonia**

15.30-15.45 Analysis of regulatory instruments promoting building energy efficiency  
**Einars Cilinskis**, Andra Blumberga, Armands Gravelsins, Amalija Svarckopfa, Dagnija Blumberga, Riga Technical University, Latvia

15.45-16.00 Evaluation of predictive capabilities of regression models and artificial neural networks for density and viscosity measurements of different biodiesel-diesel-vegetable oil ternary blends  
**Mert Gulum**, Atilla Bilgin, Karadeniz Technical University, Turkey  
Funda Kutlu Onay, Amasya University, Turkey

- 16.00-16.15      Ranking of renewable energy sources in energy sector. Changes of priorities through years  
**Edgars Vigants**, Riga Technical University, Latvia
- 16.15–18.00      **Poster session I**  
**Moderator: Agris Kamenders, Riga Technical University, Latvia**
- 19.00              **Welcome event / Park Inn Valdemars – Krogus iela 1**

**THURSDAY, 17 MAY** *Faculty of Power and Electrical engineering, Azenes iela 12/1*

- 8.30–9.00        Registration
- 9.00–9.10        Conclusions about 1<sup>st</sup> day sessions

**Plenary Session II**

**Moderator: Andra Blumberga, Riga Technical University, Latvia**

- 9.10-9.30        Use of multi-criteria decision analysis to define social resilience to disaster: the case of the EU LIFE PRIMES project  
**Maria Teresa Carone**, Fausto Marincioni, Marche Polytechnic University, Italy  
Francesco Romagnoli, Riga Technical University, Latvia
- 9.30-9.50        Towards the pathway for enhancing climate change resilience of urban Infrastructure: overview on the state-of-art and implementation  
**Francesco Romagnoli**, Riga Technical University, Latvia

**Panel Session IV: Energy Systems. Generation. End user**

**Moderator: Dagnija Blumberga, Riga Technical University, Latvia**

- 9.50-10.05      Third party financing of energy efficiency in dwelling buildings. Involvement of municipalities  
**Claudio Rochas**, Riga Technical University, Latvia
- 10.05–10.20    Technical and economical analysis of a PV/wind/diesel hybrid power system for a remote area  
**Spiru Paraschiv**, Lizica-Simona Paraschiv, “Dunarea de Jos” University of Galati, Romania
- 10.20-10.35    Energy efficiency in large industrial plants. Legislative aspects  
**Kristaps Locmelis**, Dagnija Blumberga, Riga Technical University, Latvia
- 10.35-10.50    Reserves in axial shear strength of district heating pipes  
**Gersena Banushi**, Ingo Weidlich, Marcus Illguth, HafenCity University, Germany

- 10.50-11.05      Monitoring IAQ and thermal comfort in a conservation area low energy retrofit  
**Carlos Jimenez-Bescos**, Anglia Ruskin University, United Kingdom  
Robert Prewett, Prewett Bizley Architects, United Kingdom
- 11.05-11.20      Sensitivity assessment of a district energy assessment characterisation model based on cadastral data  
**Xabat Oregi**, Nekane Hermoso, Eneko Arrizabalaga, Lara Mabe, Inigo Munoz, Tecnalia Research & Innovation, Spain
- 11.20-11.35      Fuel poverty in Latvia: Where do we stand?  
**Kristaps Zvaigznitis**, Claudio Rochas, Agris Kamenders, Riga Technical University, Latvia
- 11.35-11.50      The effect of parallel energy consumption on the district heating system  
**Eduard Latosov**, Andres Siirde, Anna Volkova, Martin Thalfeldt, Jarek Kurnitski, Tallinn University of Technology, Estonia
- 11.50-13.00      Lunch

#### **Panel Session IV: Bioeconomy**

**Moderator: Francesco Romagnoli, Riga Technical University, Latvia**

- 13.00-13.15      The role of forest biotechnology industry in the macroeconomic development model of the national economy of Latvia – an in-depth insight and results  
**Reinis Azis**, Andra Blumberga, Gatis Bazbauers, Riga Technical University, Latvia
- 13.15-13.30      Effects of various transesterification parameters on the some fuel properties of hazelnut oil methyl ester  
**Atilla Bilgin**, Mert Gulum, Karadeniz Technical University, Turkey
- 13.30-13.45      Multi criteria analysis for products derived from agro industrial by-products  
**Lauma Zihare**, Kriss Spalvins, Dagnija Blumberga, Riga Technical University, Latvia
- 13.45-14.00      Optimizing municipal biodegradable waste management system to increase biogas output and nutrient recovery: a case study in Lithuania  
**Edgaras Stunzenas**, Irina Kliopova, Kaunas University of Technology, Lithuania
- 14.00-14.15      Bio-based construction panels for low carbon development  
**Maris Sinka**, Aleksandrs Korjakins, Diana Bajare, Zinta Zimele, Genadijs Sahmenko, Riga Technical University, Latvia

## **Panel Session V: Environmental problems. Solutions**

**Moderator: Ingo Weidlich, HafenCity University, Germany**

- 14.15-14.30 Indicator analysis of integrated waste management system. Case study of Latvia  
**Julija Gusca**, Edgars Kavals, Kaspars Klavenieks, Dagnija Blumberga, Riga Technical University, Latvia
- 14.30-14.45 Experimental investigation of gasoline fumigation for different compression ratios in a diesel engine  
**Zehra Sahin**, Karadeniz Technical University, Turkey  
Mustafa Kurt, KOSGEB Trabzon SME Development Center, Turkey  
Orhan Durgun, Avrasya University, Turkey
- 14.45-15.00 Digestate management practices in Latvia from nutrient perspective  
**Ilze Kalnina**, Kristine Rugele, Janis Rubulis, Riga Technical University, Latvia
- 15.00-15.15 Emissions analysis of an SI engine with humidified air induction  
**Abdulvahap Cakmak**, Murat Kapusuz, Hakan Ozcan, Ondokuz Mayıs University, Turkey
- 15.15-15.30 Technological properties of phosphogypsum binder obtained from fertilizer production waste  
**Girts Bumanis**, Jelizaveta Zorica, Diana Bajare, Aleksandrs Korjakins, Riga Technical University, Latvia
- 15.30-15.45 Evaluation of the impact of fuelwood tree planting programmes in Tanzania  
**Erik O. Ahlgren**, Chalmers University of Technology, Sweden  
Yusuph J. Kulindwa, Moshi Co-operative University, Tanzania
- 15.45-16.15 Coffee break
- 16.15–18.00 **Poster session II**  
**Moderator: Dzintars Jaunzems, Riga Technical University, Latvia**
- 19.00 **Social dinner / Astor Riga Restaurant – Zigfrīda Annas Meierovica bulvāris 10**

**FRIDAY, 18 MAY** *Faculty of Power and Electrical engineering, Azenes iela 12/1*

- 08:00–13.00 **Social Programme / Technical tour to Biomass boiler house “Jūrmalas siltums” and Social tour around Jūrmala and seaside. Additional registration is required.**
- 13.00–14.00 Lunch



Poster session I – 16 MAY		
P1.1	<b>Ketevan Tskhakaia</b> , Demur Chomakhidze, Lali Zivzivazde, Tamar Moseshvili, David Shamaevi	Electricity balance of Georgia: trends and prospects
P1.2	<b>Aiga Barisa</b> , Marika Rosa	Scenario analysis of CO <sub>2</sub> emission reduction potential in road transport sector in Latvia
P1.3	<b>Sajjad Mahmoudi Nezhad</b> , Alireza Rezania, Ali A. Ranjbar, Lasse A. Rosendahl	Transient behavior of the thermoelectric generators to the load change; an experimental investigation
P1.4	<b>Zehra Sahin</b> , Mustafa Kurt, Orhan Durgun	Heat release analysis of gasoline fumigation in a diesel engine
P1.5	<b>Arturs Gruduls</b> , Rihards Maurers, Francesco Romagnoli	Baltic Sea seaweed biomass pretreatment: effect of low pressure CO <sub>2</sub> thermo-chemical approach on Biomethane Potential
P1.6	<b>Indra Muizniece</b> , Anna Kubule, Dagnija Blumberga	Towards understanding the transdisciplinary approach of the bioeconomy nexus
P1.7	<b>Mariusz Rogulski</b>	Indoor air quality measurements using low-cost PM monitors in selected locations in Warsaw
P1.8	<b>Lauma Zihare</b> , Indra Muizniece, Kriss Spalvins, Dagnija Blumberga	Analytical framework for commercialization of the innovation case of thermal packaging material
P1.9	<b>Abdulvahap Cakmak</b> , Murat Kapusuz, Orkhan Ganiyev, Hakan Ozcan	Effects of methyl acetate as oxygenated fuel blending on performance and emissions of SI engine
P1.10	<b>Aiga Barisa</b> , Dace Lauka, Dagnija Blumberga	Assessment of the availability and utilization potential of low-quality biomass in Latvia
P1.11	<b>Valters Kazulis</b> , Ivars Veidenbergs, Dagnija Blumberga	Biomass and natural gas co-firing emission reduction theoretical evaluation
P1.12	<b>Janis Krumins</b> , Maris Klavins, Laimdota Kalnina	Fen peat in environmentally friendly technologies
P1.13	<b>Inga Kuznecova</b> , Arina Rovneiko, Julija Gusca	Indicators analysis of fossil-based ethylen production pathways
P1.14	<b>Vaidotas Danila</b> , Saulius Vasarevicius, Vaidotas Valskys	Batch removal of Cd(II), Cu(II), Ni(II), and Pb(II) ions using stabilized zero-valent iron nanoparticles
P1.15	<b>Maksims Feofilovs</b> , Francesco Romagnoli, Andrea Jonathan Pagano	Market development and promoting schemes for biomethane: SWOT analysis in context of Latvia
P1.16	<b>Dmitry Porshnov</b> , Viesturs Ozols, Linda Ansone-Bertina, Juris Burlakovs, Maris Klavins	Thermal decomposition study of major refuse derived fuel components
P1.17	<b>Laura Pastare</b> , Francesco Romagnoli, Dagnija Blumberga	Comparison of biomethane potential lab tests for Latvian locally available algae
P1.18	<b>Inga Kuznecova</b> , Viktorija Babica, Viesturs Melecis, Julija Gusca	Environmental indicators analysis of bioethylen production pathways
P1.19	<b>Evgenija Chernenok</b> , Semjon Kundas, Aleh Rodzkin, Boris Kroustalev, Wendelin Wichtmann	The assessment of cost of biomass from post-mining peaty lands for pellet fabrication

P1.20	<b>Davis Freidenfelds</b> , Indra Petersone, Julija Gusca	Sustainability analysis framework for universities
P1.21	<b>Julija Gusca</b> , Silvija N. Kalnins, Anna Volkova, Meelis Eldermann, Andres Siirde, Juri Liiv, Zaneta Statiskiene	Quantitative analysis on potential of ash recovery in Baltic countries
P1.22	<b>Francesco Romagnoli</b> , Dorella Massimiliano, Arturs Gruduls, Massimo Colotta, Giuseppe Tomasoni	Design of a biogas plant feeded with <i>Cladophora</i> Sp. algae and wheat straw
P1.23	<b>Karina Balina</b> , Francesco Romagnoli	Increase of <i>Fucus vesiculosus</i> fertilization success: testing of different receptacle drying methods to increase spore release
P1.24	<b>Kaspars Ivanovs</b> , Kriss Spalvins, Dagnija Blumberga	Approach for modelling anaerobic digestion processes of fish waste
P1.25	<b>Zane Indzere</b> , Zauresh Khabdullina, Asset Khabdullin, Dagnija Blumberga	The benchmarking of coffee substitute's production
P1.26	<b>Denis Baranenko</b> , Kristina Stern, Irina Borisova, Weihong Lu, Aleksandr Borisov	Study of Phthalate Compounds Migration from Food Packaging Materials Sold in Russia
P1.27	<b>Linda Dambeniece-Migliniece</b> , Artūrs Veinbergs, Ainis Lagzdiņš	The impacts of agricultural land use on water quality in the Mellupite catchment
P1.28	<b>Maira Melvere</b> , Jelena Pubule, Dagnija Blumberga	Application of circular economy for development of ecoefficient agroindustry
P1.29	<b>Liudmila Nadtochii</b> , Denis Baranenko, Orazov Ayan, Muradova Mariam, Bozymov Kazybay, Assel Japarova	Energy efficiency comparison of camel's and cow's milk resources production
P1.30	<b>Meelis Eldermann</b> , Andres Siirde, Julija Gusca	Circular economy approach for decarbonisation of oil shale processing industry
P1.31	<b>Indra Muizniece</b> , Laine Lupkina, Kaspars Ivanovs, Valters Kazulis, Lauma Zihare, Maris Ozarskis, Julija Gusca	Is reed a potential resource for high added value products?
P1.32	<b>Kriss Spalvins</b> , Lauma Zihare, Dagnija Blumberga	Single cell protein production from waste biomass: comparison of various industrial by-products
P1.33	<b>Liga Rozentale</b> , Dace Lauka, Dagnija Blumberga	Accelerating power generation with solar panels. Case in Latvia
Poster session II – 17 MAY		
P2.1	<b>Aiman Albatayneh</b> , Dariusz Alterman, Adrian Page, Behdad Moghtaderi	The influence of different climate zones on the thermal performance of buildings
P2.2	<b>Aiman Albatayneh</b> , Dariusz Alterman, Adrian Page, Behdad Moghtaderi	The significance of building design for the climate
P2.3	<b>Karima El Azhary</b> , Saad Raefat, Yassine Chihab, Najma Laaroussi, Mohamed Garoum	Energy performance and thermal properties of three types of unfired clay bricks

P2.4	<b>Liva Asere</b> , Andra Blumberga	Energy efficiency-indoor air quality dilemma in public buildings
P2.5	<b>Seyed Mojtaba Mir Hosseini</b> , Aliakbar Babajani, Mohammad Jafari, Parinaz Hafezisefat	Parametric study of a wave energy converter (Searaser) for Caspian Sea
P2.6	<b>Monika Aleknaite</b> , Raimondas Grubliauskas	Assessment and evaluation of railway noise spread dependence on different types of sleepers
P2.7	<b>Seyed Mojtaba Mir Hosseini</b> , Mohammad Jafari, Parinaz Hafezisefat, Aliakbar Babajani	Numerical simulation of a novel ocean wave energy converter
P2.8	<b>Egle Anuzyte</b> , Vaidotas Vaisis	Natural oil sorbents modification methods for hydrophobicity improvement
P2.9	<b>Inese Tilla</b> , Dagnija Blumberga	Indicator analysis of a sustainable remediation
P2.10	<b>Eduard Latosov</b> , Birgit Maaten, Andres Siirde, Alar Konist	The influence of O <sub>2</sub> and CO <sub>2</sub> on the possible corrosion on steel transmission lines of natural gas
P2.11	<b>Gerda Vitkauskaitė</b> , Raimondas Grubliauskas	Perforated sound-absorbing constructions acoustic performance test and noise modeling
P2.12	<b>Larissa Bozhko</b>	Development scenarios of regional cooperation through clustering in the Republic of Kazakhstan
P2.13	<b>Larissa Bozhko</b> , Naizabekov Abdrakhman	Perspectives for cluster initiatives in the Republic of Kazakhstan
P2.14	<b>Maksims Feofilovs</b> , Francesco Romagnoli, Armands Gravelsins	System dynamics model for natural gas infrastructure with storage facility
P2.15	<b>Marina Mola</b> , Maksims Feofilovs, Francesco Romagnoli	Energy resilience: research trends at urban, municipal and country levels
P2.16	<b>Dorota A. Krawczyk</b> , Bernadetta Wadolowska	Analysis of indoor air parameters in an education building
P2.17	<b>Olga Kadnikova</b> , Gulnara Altynbayeva, Sergey Kuzmin, Arman Aidarkhanov, Bagit Shaldykova	Processing of industrial waste for better environmental quality
P2.18	<b>Vivita Priedniece</b> , Ivars Veidenbergs, Dagnija Blumberga	Mathematical model of the fog unit
P2.19	<b>Nallapaneni Manoj Kumar</b> , Srikar Dasari, Bhagwan J. Reddy	Availability factor of a PV power plant: evaluation based on generation and inverter running periods
P2.20	<b>Francesco Romagnoli</b> , Luigi Assacuta, Andrea Cappelli, Carlotta Ciocci	Algae-based biorefinery concept: an LCI analysis for a theoretical plant
P2.21	<b>Atilla Bilgin</b> , Mert Gulum	Measurement and prediction of density and viscosity of different diesel-vegetable oil binary blends
P2.22	<b>Janis Ratnieks</b> , Andris Jakovics	Wall assemblies U-value calculation in test buildings using constant power heating
P2.23	<b>Alisher Mukashev</b> , Stanislav Abramchuk, Inabat Kuan	Investigation of the influence of the heating device operating conditions on its energy characteristics
P2.24	<b>Mert Gulum</b> , Atilla Bilgin	An experimental optimization research of methyl and ethyl ester production

P2.25	<b>Anrijs Tukulis</b> , Ieva Pakere, Armands Gravelins, Dagnija Blumberga	Methodology of system dynamic approach for solar energy integration in district heating
P2.26	<b>Henrik Pieper</b> , Torben Ommen, Fabian Buhler, Bjarke Lava Paaske, Brian Elmegaard, Wiebke Brix Markussen	Allocation of investment costs for large-scale heat pumps supplying district heating
P2.27	<b>Aivars Rubenis</b> , Leslie R. Adrian	Determination of energy storage amount for development of novel microgrid energy flow optimization system with photovoltaic energy generation
P2.28	<b>Maris Sinka</b> , Diana Bajare, Stanislavs Gendelis, Andris Jakovis	In-situ measurements of hemp-lime insulation materials for energy efficiency improvement
P2.29	<b>Andrea Jonathan Pagano</b> , Maksims Feofilovs, Francesco Romagnoli	The relationship between insurance companies and natural disaster risk reduction: overview of the key characteristics and mechanisms dealing with climate change
P2.30	<b>Alexey Tatarinov</b> , Vladimir Nikulenkov, Paulis Kikusts, Anton Kochubey	Intellectual control system for electrical heating based on optical precipitation sensors
P2.31	<b>Janis Latvels</b> , Raitis Grzibovskis, Dagnija Blumberga	Photovoltaic effect in bulk heterojunction system with glass forming indandione derivative DMABI-6Ph
P2.32	<b>Vjaceslavs Lapkovskis</b> , Viktors Mironovs, Dmitri Goljandin	Suitability of devulcanised crumb rubber for oil spills remediation
P2.33	<b>Edvins Terehovics</b> , Raimonda Soloha, Ivars Veidenbergs, Dagnija Blumberga	Analysis of fish refrigeration electricity consumption
P2.34	<b>Vladimirs Kirsanovs</b> , Girts Vigants, Valdis Vitolins, Laine Lupkina, Ivars Veidenbergs, Dagnija Blumberga	Concept for the environmentally friendly stack
P2.35	<b>Toms Prodanuks</b> , Marika Rosa	Methodology of municipal energy plans. Priorities for sustainability
P2.36	<b>Jelena Ziemele</b> , Roberts Kalnins, Girts Vigants, Edgars Vigants, Ivars Veidenbergs	Evaluation of the industrial waste heat potential for its recovery and integration into 4th generation district heating system
P2.37	<b>Armands Gravelins</b> , Andra Blumberga	Two energy sector modelling approaches. BALMOREL and system dynamic model
P2.38	<b>Dace Lauka</b> , Dagnija Blumberga	First solar power plant in Latvia. Analysis of operational data
P2.39	<b>Raimonda Soloha</b> , Ivars Veidenbergs, Dagnija Blumberga	Cleaner production nodes in fish processing. Case in Latvia
P2.40	<b>Mikelis Dzikevics</b> , Dace Jansone, Ivars Veidenbergs	Determination of thermophysical properties of phase change materials using T – History method
P2.41	<b>Abderrazzak Elamim</b> , Bouchaib Hartiti, Amine Haibaoui, Abderrazak Lfakir, Philippe Thevenin	Performance evaluation and economical analysis of three photovoltaic systems installed in an institutional building in Errachidia, Morocco
P2.42	<b>Stanislav Chicherin</b>	Low-temperature district heating after a transmission-distribution junction point: energy and environmental modelling