conect

Conference of Environmental and Climate technologies

14-16 October 2015

Riga, Latvia

Conference Programme

Conference Topics

Advanced Energy Technologies
Renewable Energy
Energy Efficiency Improvement
Heat and Power Generation & Systems
Energy Management, Policy and Economics
System Approach Integration in Energy Sector

Organized and supported by:

RTU VASSI LATENERGI coolsweep

About CONECT

CONECT – International Scientific Conference of Environmental and Climate Technologies – is organized 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**.

Sponsors

Venue

The conference will take place in Riga, Latvia, at the Faculty of Power and Electrical Engineering of the Riga Technical University, from 14-16 October 2015.

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

Conference language

The official conference language is English.

Conference Hours

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

Wednesday, 14 October from 13:30-16:00
Thursday, 15 October from 8:30-17:00
Friday, 16 October from 8:30-11:00

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 Thursday, 15 October from **13:10** till **14:00**
- SESSION II – on Thursday, 15 October from **16:25** 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.

Conference Secretariat and Contacts

Alise Ozarska, e-mail: alise.ozarska@rtu.lv
Ieva Karklina, e-mail: ieva.karklina@rtu.lv

Scientific Programme at a Glance

Wednesday, 14 October	9:30-12:00	**Conference Opening** (Faculty of Architecture and Urban Planning, Ķīpsalas iela 6)
	14:00-15:50	**Session I – *Exploring the role of LCA perspectives in the context of circular economy*** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 607)
	16:30-19:30	**Lecture & Discussions** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 116)
Thursday, 15 October	9:00-12:10	**Plenary Session** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)
	13:10-14:00	**Poster session I** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)
	14:00-16:25	**Session II - *Energy prosumers*** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)
	16:25-18:00	**Poster session II** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)
	19:00	**Social dinner** (Restaurant "Klīversala", Mūkusalas iela 3, Riga)
Friday, 16 October	9:00-11:40	**Session III - *District Heating*** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)
	11:40-12:00	**Closing ceremony**
	13:00-15:00	**Study tour to biomass CHP in Riga**
	16:30-20:00	**Lecture** (Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115)

Social Events

Several Social events will be organised within the conference

Thursday, 15 October	**19:00**	**Social dinner** We kindly ask the participants to apply for the social dinner **till 7 October**.
Friday, 16 October	**13:00**	**Study tour to biomass CHP in Riga** We kindly ask the participants to apply for the study tour **till 7 October**.

Information about Riga

Riga is a modern European capital with more than 800 years of history and rich cultural life, a city with its own distinctive aura, charm and style. The city is well known for its architectural and cultural values, skilful labour and developed infrastructure. Riga is Latvia's largest centre of education and science. This is confirmed by a large number of cultural events, international exhibitions, scientific conferences and corporate events that every year takes place in Riga.

For more info visit: https://www.liveriga.com/en/
http://www.riga.com/
http://www.virtualriga.com/

DETAILED SCIENTIFIC PROGRAMME

Wednesday, 14 October

Faculty of Architecture and Urban Planning, Ķīpsalas iela 6

9:00-9:30 *Coffee*

9:30-12:00 **RTU Conference Opening – Plenary Session**

Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 607

Session I ***Exploring the role of LCA perspectives in the context of circular economy***
Chair: Francesco Romagnoli, Riga Technical University, Latvia
Co-chair: Arunachala Nadar Mada Kannan, Arizona State University, USA

14:00-14:20 *Keynote speaker*
HISTORICAL AND FUTURE ANALYSIS OF WASTE FLOW
Kaspars Klavenieks, Dagnija Blumberga, Riga Technical University, Latvia

14:20-14:35
A COMPARATIVE LIFE CYCLE ASSESSMENT OF ENERGY RECOVERY FROM END-OF-LIFE TIRES AND SELECTED SOLID WASTE
Malijonyte V., Kliopova I., Kaunas University of Technology, Lithuania
Dace E., Romagnoli F., Gedrovics M., Riga Technical University, Latvia

14:35-14:50
WASTE-TO-BIOMETHANE CONCEPT APPLICATION: A CASE STUDY OF VALMIERA CITY IN LATVIA
Barisa A., Dzene I., Rosa M., Dobraja K., Riga Technical University, Latvia

14:50-15:05
ENVIRONMENTAL ASSESSMENT OF CO-LOCATION ALTERNATIVES FOR A MICROALGAE CULTIVATION PLANT: A CASE STUDY IN THE CITY OF KINGSTON (CANADA)
Collotta M., Tomasoni G., Alberti M., Busi L., DIMI, Italy
Champagne P., Mabee W., Leite B. G., Queen's University, Canada

15:05-15:20
RESOURCE AND ENERGY EFFICIENCY IN SMALL AND MEDIUM BREWERIES
Kubule A., Zogla L., Rosa M., Riga Technical University, Latvia

15:20-15:35
ENVIRONMENTAL LIFE CYCLE ASSESSMENT FOR JATROPHA BIODIESEL IN EGYPT
Fawzy M. M., Romagnoli F., Riga Technical University, Latvia

15:35-16:20 *Coffee break & Discussions*

Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 116

16:30-19:30 **JOINT LECTURE**
Professor, Dr.sc.ing. Arunachala Nadar Mada Kannan, Arizona State University, USA and Professor, Dr.sc.ing. Gatis Bazbauers, Riga Technical University, Latvia.

DISCUSSIONS
with participation of Uldis Bariss, Member of the Board of AS "Latvenergo" and Professor, Dr.sc.ing. Andra Blumberga, Riga Technical University, Latvia.

Thursday, 15 October

Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115

Plenary Session
Chair: Gatis Bazbauers, Riga Technical University, Latvia
Co-chair: Arunachala Nadar Mada Kannan, Arizona State University, USA

9:00-9:20 *Conference Welcome*
WELCOME SPEECH
Professor, Dr.habil.sc.ing. Dagnija Blumberga, Director of the Institute of Energy Systems and Environment, Riga Technical University, Latvia

9:20-9:50 *Keynote speaker*
DEVELOPMENT OF A SOLAR ASSISTED ON-DEMAND RESIDENTIAL HOT WATER SYSTEM UTILIZING PHASE-CHANGE MATERIALS FOR ENERGY STORAGE
Professor, Dr.sc.ing. Arunachala Nadar Mada Kannan, Arizona State University, USA

9:50-10:10
ANALYSIS OF nonETS SECTOR GOALS USING CLIMATE CHANGE INDICATORS
Cilinskis E., Member of the Saeima (Latvian Parliament), Latvia
Blumberga A., Blumberga D., Riga Technical University, Latvia

10:10-10:30
CO_2 EMISSION TRADING EFFECT ON BALTIC ELECTRICITY MARKET
Bariss U., Member of the Board of AS "Latvenergo", Latvia
Blumberga D., Riga Technical University, Latvia

10:30-10:50
THE ROLE OF MEDIUM CITIES FOR GLOBAL OZONE LEVELS
Martins L. D., Vidotto H. B. L., De Almeida S. D., Squizatto R., Moreira A. B. C., Maurício Capucim N. M., Martins A. J., Federal University of Technology – Parana, Brazil

10:50-11:10 *Coffee break*

11:10-11:30
SYSTEM DYNAMICS FRAMEWORK FOR THE ENERGY DEMAND FULFILMENT IN INDIA: A PRELIMINARY STUDY
Sisodia G. S., Amrita University, India and Ghent University, Belgium
Sahay M., Amrita University, India
Singh P., self employed, India

11:30-11:50
IS INNOVATION DIFFUSION STUDIES THE BOTTLENECK IN ENVIRONMENTAL ENGINEERING?
Timma L., Blumberga D., Riga Technical University, Latvia

11:50-12:10
THE IMPACT OF RAINFALL AND LAND COVER CHANGES ON THE FLOW OF A MEDIUM-SIZED RIVER IN THE SOUTH OF BRAZIL
Martins A. J., Brand S. V., Capucim N. M., Machado B. C., Martins D. L., Federal Technological University of Paraná, Brazil
Allasia Piccilli G. D., Federal University of Santa Maria, Brazil

12:10-13:10 *Lunch* *"Expo Cafe", Kipsalas iela 8, Riga*

13:10-14:00 ***Poster session I***

Session II ***Energy prosumers***
Chair: Gatis Bazbauers, Riga Technical University, Latvia
Co-chair: Arunachala Nadar Mada Kannan, Arizona State University, USA

14:00-14:15
EVALUATION OF ENERGY CONSUMPTION OF MUNICIPAL BUILDINGS BY HEAT ENERGY DEMAND MAPPING
Skujevska A., Rosa M., Kamenders A., Riga Technical University, Latvia

14:15-14:30
METHODS FOR A SMART THERMOSTAT TO ESTIMATE THE CHARACTERISTICS OF A HOUSE BASED ON SENSOR DATA
van der Ham W., Klein M., Tabatabaei S. A., Thilakarathne D. J., Treur J., VU University Amsterdam, The Neatherlands

14:30-14:45
VALIDATION OF UNGLAZED TRANSPIRED SOLAR COLLECTOR ASSISTED AIR SOURCE HEAT PUMP SIMULATION MODEL
Janusevicius K., Streckiene G., Bielskus J., Martinaitis V., Vilnius Gediminas Technical University, Lithuania

14:45-15:00
MODELING OF BUILDING ENVELOPE'S THERMAL PROPERTIES BY APPLYING PHASE CHANGE MATERIALS
Kancane L., Vanaga R., Blumberga A., Riga Technical University, Latvia

15:00-15:25 *Coffee break*

15:25-15:40
BIOMETHANE SUPPLY SUPPORT POLICY: SYSTEM DYNAMICS APPROACH
Repele M., Ramanis M., Bazbauers G., Riga Technical University, Latvia

15:40-15:55
PREDICTIVE CONTROL OF A BUILDING HEATING SYSTEM
Miezis M., Jaunzems Dz., Riga Technical University, Latvia

15:55-16:10
CHARCOAL PRODUCTION IN A CONTINUOUS OPERATION RETORT. EXPERIMENTAL DATA PROCESSING
Klavina K., Klavins J., Veidenbergs I., Blumberga D., Riga Technical University, Latvia

16:10-16:25
SURVEY ON LATVIAN HISTORICAL BUILDING STOCK WITH HEAVY WALLS
Blumberga A., Kass K., Kamendere E., Riga Technical University, Latvia

16:25-18:00 ***Poster session II***

19:00 *Social dinner* *Restaurant "Kliversala", Mukusalas iela 3, Riga*

Friday, 16 October

Faculty of Power and Electrical Engineering, 12/1 Āzenes iela, room 115

Session III ***District Heating***
Chair: Neven Duic, University of Zagreb, Croatia
Co-chair: Julija Gusca, Riga Technical University, Latvia

9:00-9:20 *Keynote speaker*
NEAR FUTURE TESTING REQUIREMENTS FOR JOINTS IN MODERN DISTRICT HEATING NETWORKS
Weidlich I., Fernwärme Forschungsinstitut in Hannover, Germany

9:20-9:35
ROLE OF DISTRICT HEATING IN SYSTEMS WITH A HIGH SHARE OF RENEWABLES: CASE STUDY FOR THE CITY OF OSIJEK
Novosel T., Puksec T., Krajacic G., Duic N., University of Zagreb, Croatia

9:35-9:50
THE EFFECT OF ENERGY EFFICIENCY IMPROVEMENTS ON THE DEVELOPMENT OF FOURTH GENERATION DISTRICT HEATING
Ziemele J., Gravelsins A., Blumberga A., Blumberga D., Riga Technical University, Latvia

9:50-10:05
PERFORMANCE OF AIR SOURCE HEAT PUMPS BASED ON REAL WORLD DATA
Tabatabaei S. A., Treur J., VU University Amsterdam, The Neatherlands
Waumans E., Thercon, Belgium

10:05-10:25 *Coffee break*

10:25-10:40
DISTRICT HEATING REGULATION: PARAMETERS FOR THE BENCHMARKING MODEL
Sarma U., Bazbauers G., Riga Technical University, Latvia

10:40-10:55
EVALUATION FACTOR FOR DISTRICT HEATING NETWORK HEAT LOSS WITH RESPECT TO NETWORK GEOMETRY
Masatin V., Latosev E., Volkova A., Tallinn University of Technology, Estonia

10:55-11:10
SUSTAINABLE DEVELOPMENT OF BIOMASS CHP IN LATVIA
Cimdina G., President of SIA “Fortum Latvia”, Latvia

11:10-11:25
GRID CONNECTED SOLAR PV SYSTEM: MODELING, SIMULATION AND EXPERIMENTAL TESTS
Kesraoui M., Lazizi A., Chaib A., University M’hamed Bougara, Algeria

11:25-11:40
IMPROVEMENT OF DIAGNOSTIC SYSTEMS FOR ENSURING HYDRO FUEL CELLS ROBUSTNESS: THE CASE OF PROTON EXCHANGE MEMBRANE FUEL CELLS

Shindor O., Svirina A., Kazan National Research Technical University named after A.N. Tupolev, Russia

11:40-12:00 **Closing ceremony**

12:00-13:00 *Lunch* *"Expo Cafe", Kipsalas iela 8, Riga*

13:00-15:00 **Study tour to biomass CHP in Riga**

16:30-20:00 **LECTURE**
Professor, Dr.sc.ing. Arunachala Nadar Mada Kannan, Arizona State University, USA

POSTER SESSION I:		
P1.1	Dobraja K., Barisa A. , Rosa M., Riga Technical University, Latvia	Cost-Benefit Analysis of Integrated Approach of Waste and Energy Management
P1.2	Tilla I., Dace E., Riga Technical University, Latvia	Simulating the methanation process for biogas and syngas upgrading
P1.3	Haine K., Blumberga D., Riga Technical University, Latvia	Towards solar urban planning. Case study in IbenBadis
P1.4	Kuznetsova L., Zabodalova L., Yakovchenko N., ITMO University, Russia Domoroshchenkova M., All-Russia Scientific Research Institute of Fats, Russia	The study of process of alternative fuel production from renewable raw materials
P1.5	Toseroni F., Marincioni F., Universita Politecnica delle Marche, Italy Romagnoli F., Riga Technical University, Latvia	Adapting and reacting to measure an extreme event: a methodology to measure disaster community resilience
P1.6	Pastare L., Aleksandrovs I., Lauka D., Romagnoli F., Riga Technical University, Latvia	Mechanical pre-treatment effect on biological methane potential from marine macro algae: results from batch tests of Fucus vesiculosus
P1.7	Gavelyte S., Vilnius Gediminas Technical University, Lithuania and Riga Technical University, Latvia Baziene K., Vilnius Gediminas Technical University, Lithuania Dace E., Riga Technical University, Latvia	The effect of particle size distribution on hydraulic permeability in a waste mass
P1.8	Gusca J., Siirde A., Eldermann M., Tallinn University of Technology, Estonia	S-LCA of chemicals production from oil shale processing byproducts
P1.9	Dzene I., Barisa A., Rosa M., Dobraja K., Riga Technical University, Latvia	A conceptual methodology for waste-to-biomethane implementation in an urban environment
P1.10	Ongar B., Zhusupovich T. D., Almaty University of Power Engineering and Telecommunications, Kazakhstan	Computational research level of formation of nitrogen oxides during the combustion of fossil fuels
P1.11	Sisodia G. S., Singh P., Amrita University, India and Ghent University, Belgium	The status of renewable energy research on India
P1.12	Bolonina A., Kunickis M., Riga Technical University, Latvia Askling O., Calles O., Karlstad University,	Telemetry study for reintroducing wild Atlantic salmon (Salmo salar L.) in the Daugava and Ogre Rivers, Latvia

	Sweden Comoglio C., Politecnico di Torino, Italy Zagars M., Roze A., Institute for Environmental Solutions, Latvia	
P1.13	Dandens A., Blumberga D., Riga Technical University, Latvia	Analysis of Smart metering pilot project results
P1.14	Skudritis R., Blumberga D., Timma L., Cilinskis E., Vitolins V., Riga Technical University, Latvia Borisova I., ITMO University, Russia	Development of energy management systems in supermarkets
P1.15	Kirsanovs V., Blumberga D., Dzikevics M., Riga Technical University, Latvia Kovals A., JSC Komforts	Design of experimental investigations on the effect of equivalence ratio, fuel moisture content and fuel consumption on gasification process
P1.16	Dzikevics M., Ansone A., Blumberga D., Riga Technical University, Latvia	Modelling of phase change in spheres for applications in solar thermal heat storage systems
P1.17	Slotina L., Dace E., Riga Technical University, Latvia	Decision support tool for implementation of remanufacturing in an enterprise
P1.18	Ansone A., Dzikevics M., Zandeckis A., Riga Technical University, Latvia	Energy accumulation using encapsulated phase change materials with recycled material components
P1.19	Stoyak V., Kumyzbayeva S., Apsemetov A., Ibragimova M., Almaty University of Power Engineering and Telecommunications, Kazakhstan	Combined power supply of autonomous objects in conditions of extreme continental climate
P1.20	Krawczyk D. A., Bialystok University of Technology, Poland	The analyze of energy consumption for heating in a residential house in Poland
P1.21	Francmanis E., Gusca J., Riga Technical University, Latvia Khabdullin A., Khabdullin A., Khabdullina Z., Khabdullina G., Rudny Industrial Institute, Kazakhstan	Comparative environmental analysis of microbial cells
P1.22	Blumberga D., Muizniece I., Blumberga A., Riga Technical University, Latvia Baranenko D., ITMO University, Russia	Biotechonomy framework for bioenergy use
P1.23	Blumberga D., Vigants H., Riga Technical University, Latvia Khabdullin A., Khabdullin A., Khabdullina Z., Khabdullina G., Rudny Industrial Institute, Kazakhstan	Energy efficiency and energy management nexus
P1.24	Cirule D., Turiba University, Latvia Blumberga D., Veidenbergs I., Riga Technical University, Latvia	Legislative aspects of DH. Case study of Riga city
P1.25	Renda R., Gigli E., Cappelli A., La Sapienza - University of Rome, Italy Romagnoli F., Riga Technical University, Latvia	Feasibility study of a two-stage small-scale biogas production plant implementing innovative fixed biofilm for enhancing methanation process

POSTER SESSION II:		
P2.1	Turan O., Anadolu University, Turkey Aydin H., TUSAS Engine Industries, Turkey	Exergy-based Sustainability Analysis of a Low-Bypass Turbofan Engine: A case study for JT8D
P2.2	Meric O. S., Turan O., Anadolu University, Turkey	Evaluation of Aircraft Descent Profiles
P2.3	Barisa A., Rosa M., Kisele A., Riga Technical University, Latvia	Introducing electric mobility in Latvian municipalities: results of a survey
P2.4	Muizniece I., Klavina K., Riga Technical University, Latvia	Logging residue fuel characteristic ash melting temperatures
P2.5	Muizniece I., Klavina K., Blumberga D., Riga Technical University, Latvia	The impact of torrefaction on coniferous forest residue fuel
P2.6	Muizniece I., Blumberga D., Riga Technical University, Latvia	Thermal conductivity of heat insulation material made from coniferous needles with potato starch binder
P2.7	Purina D., Pakere I., Blumberga D., Bolonina A., Riga Technical University, Latvia	Evaluation of thermal energy storage capacity by heat load analyses
P2.8	Sisodia G. S., Amrita University, India and Ghent University, Belgium	A preliminary proposal for the development of methodology for electricity price forecasting in the long run
P2.9	Sisodia G. S., Amrita University, India and Ghent University, Belgium	Application of Markowitz Portfolio Theory for energy project evaluation: Preliminary thoughts in Danish perspective
P2.10	Beihmanis K., Rosa M., Riga Technical University, Latvia	Energy management system implementation in Latvian municipalities: from theory to practice
P2.11	Gicevskis K., Romagnoli F., Riga Technical University, Latvia	Resilience analysis for municipal infrastructure
P2.12	Terehovics E., Veidenbergs I., Blumberga D., Riga Technical University, Latvia Salami M., ITMO University, Russia	Exergy Analysis for District Heating Network
P2.13	Eldermann M., Siirde A., Gusca J., Tallinn University of Technology, Estonia	Prospects for Hydrogen Production in Estonia
P2.14	Eldermann M., Siirde A., Gusca J., Tallinn University of Technology, Estonia	Analysis of Sustainable Transition of Shale Oil Industries to Added Value Products
P2.15	Kalnins S. N., Gusca J., Pubule J., Blumberga D., Riga Technical University, Latvia Borisov A., ITMO University, Russia	Application of Combined Project Evaluation Methodology to EIA projects
P2.16	Labanovska A., Vigants H., Blumberga D., Riga Technical University, Latvia	Energy management in wood pellets' production
P2.17	Vaivare A., Muizniece I., Blumberga D., Riga Technical University Pranskevicius M., Vilnius Gediminas Technical University, Lithuania Glazkova O., ITMO University, Russia	Assessment of the thermo-physical properties of leaves
P2.18	Gładyszewska-Fiedoruk K., Białystok University of Technology, Poland Nieciecki M., The corporation of ventilation, gas and chimneys technical inspection, Poland	The Indoor Air Quality in a Multi-garage
P2.19	Chaib A., Achour D., Kesraoui M., University M'hamed Bougara, Algeria	Control of a Solar PV/Wind Hybrid Energy System

P2.20	Nita I., Osman S., University of Constanta, Romania Iulian O., Geacai E., Politechnica University of Bucharest, Romania	Physico-chemical properties of the pseudo-binary mixture gasoline + 1-butanol
P2.21	Prodanuks T., Cimdina G., Veidenbergs I., Blumberga D., Karklina K., Riga Technical University, Latvia Baranenko D., ITMO University, Russia	Emergy Analysis of Biomass CHP. Case study
P2.22	Zoss T., Blumberga D., Riga Technical University, Latvia	Comparison of two types wind electricity accumulation in Latvia
P2.23	Lauka D., Blumberga D., Riga Technical University, Latvia Grabaak I., Amundsen J. S., SINTEF, Norway	Results of Investment Analysis in Power Transmission in Latvia and Lithuania
P2.24	Lieplapa L., Veidenbergs I., Blumberga D., Riga Technical University, Latvia	An empirical study of analysis of indicators for roads impact assessment
P2.25	Balina K., Romagnoli F., Blumberga D., Riga Technical University, Latvia	Chemical composition and potential use of Fucus vesiculosus from Gulf of Riga
P2.26	Kovals A., Blumberga D., Kirsanovs V., Riga Technical University, Latvia	Laboratory set for experimental research of gasification
P2.27	Mehta J. R., Prasad S. M., Khatri I. S., The Maharaja Sayajirao University of Baroda, India	Investigations on a porous rotating media liquid-air contacting device suitable for various alternative cooling technologies
P2.28	Abdelaziz R., TU Bergakademie Freiberg and TU Dresden, Germany Komori F. S., Carreno M. N. P., University of Sao Paulo, Brazil	Multiphase thermal-fluid flow through geothermal reservoirs
P2.29	Kamendere E., Grava L., Zvaigznitis K., Kamenders A., Blumberga A., Riga Technical University, Latvia	Properties of bricks and masonry of historical buildings as a background for safe renovation measures
P2.30	Petrova N., Abramchuk S., Pugovkin A., Tomsk State University of Control Systems and Radioelectronics, Russia	Automation of monitoring the thermal conditions in a room
P2.31	Khabdullin A., Khabdullin A., Khabdullina Z., Khabdullina G., Rudny Industrial Institute, Kazakhstan Blumberga D., Riga Technical University, Latvia	Mathematical analysis of asynchronous motors based on statistical data of power losses
P2.32	Gusca J., Dandens A., Blumberga D., Riga Technical University, Latvia	Introducing the Principles of Remanufacturing
P2.33	Ismaili M'Hamdi A., Indrissi Kandri N., Zerouale A. A., Sidi Mohamed Ben Abdellah University, Morocco Gusca J., Blumberga D., Riga Technical University, Latvia	Treatment and physicochemical characterization of red wood sawdust
P2.34	Timma L., Muizniece I., Blumberga A., Blumberga D., Riga Technical University, Latvia	Analysis of Bioeconomy efficiency of Latvia
P2.35	Mathew S., Lim C.M., Noorfathin M., Manuel S.M., Veena R., Universiti Brunei Darussalam, Brunei Philip G.S., Kerala Agricultural University, India	Matching the Characteristics of Low Speed Wind Turbines with Candidate Wind Regimes
P2.36	Femin V., Petra M.I., Mathew S., Ismail H., Universiti Brunei Darussalam, Brunei	Modeling the Temporal Variations in the Output of Large Solar PV Power Plants

	Hazra J., IBM India Research Lab, India	