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7TH INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS ON ENERGY ISSUES
CYSENI 2010, on 27-28th May
May 27, 2010
Kaunas, Lithuania

Morning session

(Main Hall)

Chairman: D. Meilutytė-Barauskienė

8.30-9.00	Registration
9.00-9.20	Welcome
9.20-9.40	<u>I. Pertmann</u> (Tallinn University of Technology, Estonia). Wind measurements in Estonia. Official reviewer: M. Marčiukaitis (LEI)
9.40-10.00	<u>T. Kaliatka</u> (Lithuanian Energy Institute, Lithuania). Analysis of water hammer effect in W7-X facility. Official reviewer: E. Urbonavičius (LEI)
10.00-10.20	<u>L. Užšilaitytė</u> (Vilnius Gediminas Technical University, Lithuania). Optimal renovation periodicity of the school buildings in terms of their life cycle energy consumption and greenhouse gas emissions. Case study. Official reviewer: V. Kveselis (LEI)
10.20-10.40	A. Petruzzi, F. D'Auria, <u>N. Muellner</u> (University of Pisa, Italy). The BEPU (best estimate plus uncertainty) challenge in current licensing of nuclear reactors. Official reviewer: A. Kaliatka (LEI)
10.40-11.00	<u>O. Linkevics</u> (AS "Latvenergo"). AS "Latvenergo" contribution for sustainable development of power supply.

11.00-11.20 Coffee break

Section A

4. Energy efficiency and saving

Section A1 (Main hall)

Chairman: D. Meilutytė-Barauskienė

11.20-11.40	<u>R. Džiugaitė</u> (Vilnius Gediminas Technical University, Lithuania). Case study of a low energy building in Lithuania. Official reviewer: D. Tarvydas (LEI)
11.40-12.00	<u>S. M. Danilova-Tretiak</u> , V. L. Dragun, V.G. Leschenko (A. V. Luikov Heat & Mass Transfer Institute of NAS of Belarus). The efficiency of paint-type Heat-insulating coat estimation. Official reviewer: E. S. Juodis (VGTU)
12.00-12.20	<u>D. Pupeikis</u> , A. Burlingis, V. Stankevičius (Kaunas University of Technology, Lithuania). Effect of additional heating power of building to the intermitted heating.

12.20-13.20 Lunch

4. Energy efficiency and saving

5. Knowledges for energy policy making

Section A2 (Main hall)

Chairman: D. Meilutytė-Barauskienė

13.20-13.40	<u>R. Dagiliūtė</u> , G. Liobikienė (Department of Environmental Sciences, Vytautas Magnus University, Lithuania). Energy consumption in Lithuania from the household sector perspectives. Official reviewer: V. Martinaitis (VGTU)
13.40-14.00	<u>A. Krūmiņš</u> , E. Dzelzītis, R. Belinskis, M. Baduns, N. Bogdanovs (Institute of Heat, Gas and Water Technology, Riga Technical University, Latvia). Energy efficient building management system development for heating, ventilation and air conditioning equipment in buildings. Official reviewer: E. Jaraminienė (COWI Lithuania)
14.00-14.20	<u>R. Mikučionienė</u> , V. Martinaitis (Vilnius Gediminas Technical University, Lithuania). Building energy

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	consumption following energy certificate vis a vis of real energy consumption data. Official reviewer: J. Karbauskaitė (KTU ASI)
14.20-14.40	<u>K. Biekša</u> , A. Klevienė (Lithuanian Energy Institute, Lithuania). Strategic self management: comparison of energy accounting methods for energy price evaluation of Lithuanian energy economy. Official reviewer: V. Miškinis (LEI)

14.40-15.00 Coffee break

	5. Knowledges for energy policy making Section A3 (Main hall) Chairman: D. Meilutytė-Barauskienė
15.00-15.20	<u>L. Martišauskas</u> , J. Augutis (Lithuanian Energy Institute, Lithuania). Spread of energy supply disturbances in the network systems. Official reviewer: R. Alzbutas (LEI)
15.20-15.40	<u>M. Prantner</u> (Wuppertal Institute for Climate, Environment and Energy, Germany). Towards a sustainable energy transition? Renewable energy development in Hungary. Official reviewer: A. Jonaitis (KTU)
15.40-16.00	<u>M. Stankevičius</u> (Lithuanian Energy Institute, Lithuania). Development of sustainable energy policy of regions. Official reviewer: D. Štreimikienė (LEI)
16.00-16.20	<u>H. Ardawatia</u> (University of Bergen, Norway). Sustainability of biodiesel market – a systems case study of problem in Germany. Official reviewer: N. Striūgas (LEI)

16.20-16.40 Coffee break

	1. Hydrogen and fuel cells Section A4 (Main hall) Chairman: D. Meilutytė-Barauskienė
16.40-17.00	<u>A. Bačianskas</u> (Lithuanian Energy Institute, Lithuania), L.L. Pranevičius, D. Milčius (Vytautas Magnus University and Lithuanian Energy Institute, Lithuania). Hydrogenation of thin Mg films in hydrocarbon plasmas. Official reviewer: G. Laukaitis (KTU)
17.00-17.20	<u>J. Hodakovska</u> , G. Chikvaidze, J. Kleperis (Institute of Solid State Physics, University of Latvia, Latvia). Electron and proton conductive polymer membranes for fuel cells. Official reviewer: D. Milčius (LEI)
17.20-17.40	<u>S. Tuckutė</u> , M. Lelis (Vytautas Magnus University, Lithuania), D. Milčius, M. Lelis (Lithuanian Energy Institute, Lithuania). Hydrogen storage properties of Mg-Ti system produced by magnetron sputtering. Official reviewer: G. Laukaitis (KTU)
17.40-18.00	<u>M. Vanags</u> , J. Kleperis, G. Bajars (Institute of Solid State Physics of University of Latvia, Latvia). Water electrolyses powered with inductive spikes. Official reviewer: L. Pranevičius (VDU)
18.00-18.20	<u>N. V. Kolyago</u> (A.V. Lykov Institute of Heat and Mass Transfer, Belarus). The hydrogen permeation rate through the metal membrane at membrane separation of hydrogen from synthesis-gas. Official reviewer: G. Laukaitis (KTU)

18.20 Conference dinner (canteen)

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Section B

2. Renewable energy source and their use Section B1 (Room AK-202) Chairman: A. Slavickas	
11.20-11.40	<u>V. Tilvikienė</u> , <u>Ž. Kadžiulienė</u> , <u>L. Šarūnaitė</u> (Lithuanian Institute of Agriculture, Lithuania). Biomass of grasses and pastures for unusual use – biogas production. Official reviewer: J. Savickas (LEI)
11.40-12.00	<u>P. Shipkovs</u> , <u>A. Snegirjovs</u> , <u>M. Vanags</u> , <u>K. Lebedeva</u> , <u>J. Shipkovs</u> (Institute of Physical Energetics, Latvia), <u>L. Vasilevska</u> , <u>M. Pankars</u> (Riga Technical University, Latvia). Comparison of solar collectors operation methods. Official reviewer: V. Šuksteris (UAB “AF-TERMA”)
12.00-12.20	<u>L. Židonis</u> , <u>S. Šinkūnas</u> , <u>E. Puida</u> (Kaunas University of Technology, Lithuania). Technological peculiarities of straw conversion to energy. Official reviewer: A. Genutis (LŽŪU)

12.20-13.20 Lunch

2. Renewable energy source and their use Section B2 (Room AK-202) Chairman: T. Kaliačka	
13.20-13.40	<u>J. Blums</u> , <u>M. Vanags</u> , <u>J. Kleperis</u> (Institute of Solid State Physics of University of Latvia, Latvia). Effect of ambient temperature on commercial photovoltaic solar cells. Official reviewer: V. A. Katinas (LEI)
13.40-14.00	<u>T. Vonžodas</u> , <u>A. Grigula</u> (Lithuanian Energy Institute, Lithuania). Investigation of the performance of low capacity boilers (till 300 kW) fired with biofuel. Official reviewer: R. Savickas (VGTU)
14.00-14.20	<u>E. F. Dzenajavičienė</u> , <u>S. Masaitis</u> (Lithuanian Energy Institute, Lithuania). Difficulties, barriers and possibilities to define the demand and potential resources of wood biomass fuel on regional level. Official reviewer: N. Pedišius (LEI)
14.20-14.40	<u>M. Valantinavičius</u> , <u>V. Girdauskas</u> (Vytautas Magnus University, Lithuania). Simulation of a vertical u-type heat exchanger for geothermal systems. Official reviewer: V. Kveselis (LEI)

14.40-15.00 Coffee break

3. Smart energy networks 8. Investigation of combustion and plasma processes Section B3 (Room AK-202) Chairman: T. Kaliačka	
15.00-15.20	<u>A. Tamošiūnas</u> , <u>P. Valatkevičius</u> (Lithuanian Energy Institute, Lithuania). Conversion of biomass waste into alternative fuels using water vapor plasma. Official reviewer: V. Grigaitienė (LEI)
15.20-15.40	<u>L. Jasiukevičius</u> (Kaunas University of Technology, Lithuania), <u>N. Radziukynienė</u> (Lithuanian Energy Institute, Lithuania). Modern performance measurement systems: theoretical opportunity of application in the electricity manufacturing companies. Official reviewer: E. Norvaiša (LEI)
15.40-16.00	<u>A. Lvovs</u> , <u>A. Mutule</u> (Riga Technical University, Latvia). Estimation of outage probability of schemes of switchgears for 110kV substations. Official reviewer: A. Klementavičius (LEI)
16.00-16.20	<u>I. Krupenski</u> , <u>A. Kartushinsky</u> , <u>A. Siirde</u> (Tallinn University of Technology, Estonia). Numerical simulation of uprising gas-solid particle (oil-shale ash) turbulent flow in CFB by different mathematical models.

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	Official reviewer: A. Džiugys (LEI)
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16.20-16.40 Coffee break

16.40-18.20	1. Hydrogen and fuel cells Section A4 (Main hall) Chairman: D. Meilutytė-Barauskienė
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18.20 Conference dinner (canteen)

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Section C

7. Nanosciences and nanotechnologies, investigations on multifunction materials Section C1 (Library) Chairman: M. Povilaitis	
11.20-11.40	<u>A. Shutka</u> , G. Mezinskis, A. Pludons, S. Lagzdina (Institute of Silicate Materials, Latvia). Structural and electric properties of nanostructured spinel ferrites obtained by auto-combustion method. Official reviewer: V. Valinčius (LEI)
11.40-12.00	<u>M. Gabalis</u> , V. Girdauskas (Department of Physics, Vytautas Magnus University, Lithuania). Simulation of temperature distribution in thin disk active laser medium. Official reviewer: S. Tamulevičius (KTU FEI)
12.00-12.20	<u>A. Junolainen</u> , I. Oja Acik, M. Danilson, A. Mere, M. Krunks (Department of Materials Science, Tallinn University of Technology, Estonia), V. Mikli (Centre for Materials Research, Tallinn University of Technology, Estonia). Growth of ultra-thin TiO_2 films by spray pyrolysis on different substrates. Official reviewer: L. Marcinauskas (KTU)

12.20-13.20 Lunch

7. Nanosciences and nanotechnologies, investigations on multifunction materials Section C2 (Library) Chairman: A. Bertašienė	
13.20-13.40	<u>K. Annert</u> , M. Vent, E. Kärber, I. Oja Acik, O. Volobujeva, A. Mere, M. Krunks (Tallinn University of Technology, Estonia). Impacts of different solvents and substrates on properties of Zinc oxide nanorod Layers prepared by chemical spray pyrolysis. Official reviewer: V. Grigaitienė (LEI)
13.40-14.00	<u>M. Malinauskas</u> , A. Žukauskas, G. Bičkauskaitė, M. Rutkauskas, P. Danilevičius, H. Gilbergs, K. Belazaras, V. Purlys, D. Paipulas, R. Gadonas and A. Piskarskas (Vilnius University, Lithuania), D. Baltrikienė, V. Bukelskienė (Institute of Biochemistry, Lithuania), R. Širmenis, V. Sirvydis (Vilnius University, Faculty of Medicine, Heart Surgery Center, Lithuania). A. Gaidukevičiūtė (Foundation for Research and Technology Hellas (FORTH), Division Institute of Electronic Structure and Laser (IESL), Greece). Fabrication of three-dimensional micro/nanostructures by FEMTOSECOND laser polymerization technique. Official reviewer: V. Girdauskas (VDU)
14.00-14.20	<u>I. Klavina</u> , K. Timmo, J. Raudoja, J. Krustok, M. Altosaar, E. Mellikov, D. Meissner, T. Kaljuvee (Tallinn University of Technology, Estonia). CZTS ($\text{Cu}_2\text{ZnSnSe}_4$) crystal growth and use in monograin membrane solar cells. Official reviewer: D. Milčius (LEI)
14.20-14.40	<u>J. Zavickis</u> , A. Linarts, M. Knite (Riga Technical University, Latvia). The electrical percolation shift in polyisoprene – nanostructured carbon composite. Official reviewer: L. Marcinauskas (LEI)

14.40-15.00 Coffee break

7. Nanosciences and nanotechnologies, investigations on multifunction materials 6. Investigations in the fields of thermal physics, fluid mechanics and metrology Section C3 (Room AK-202) Chairman: A. Bertašienė	
15.00-15.20	<u>M. Vent</u> , K. Annert, E. Kärber, O. Volobujeva, M. Krunks (Tallinn University of Technology, Estonia). ZnO thin films as transparent conductive oxides by chemical spray pyrolysis. Official reviewer: V. Snapkauskienė (LEI)
15.20-15.40	<u>O. S. Filatova</u> (A.V. Lykov Institute of the Heat and Mass Transfer, Belarus). Flat heat pipes with sintered porous structure for thermal management systems of fuel cells.

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	Official reviewer: B. Čėsna (LEI)
15.40-16.00	<u>E. Maslauskas</u> , A. Bončkus (Lithuanian Energy Institute, Lithuania). Evaluation of water volume and flow rate measurement capabilities by reference facility. Official reviewer: V. Janušas (LEI)
16.00-16.20	<u>I. N. Shatan</u> (A.V. Lykov Institute of the Heat and Mass Transfer, Belarus). Measurements of methane concentration fluctuations in a turbulent shear flow using an averaged Talbot-image. Official reviewer: R. Pabarčius (LEI)

16.20-16.40 Coffee break

16.40-18.20	1. Hydrogen and fuel cells Section A4 (Main hall) Chairman: D. Meilutytė-Barauskienė
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18.20 Conference dinner (canteen)

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7TH INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS ON ENERGY ISSUES

CYSENI 2010, on 27-28th May

May 28, 2010

Kaunas

Lithuania

Section A

11. Nuclear fission and radiation protection

Section A1 (Main Hall)

Chairman: D. Meilutytė-Barauskienė

9.00-9.20	<u>D. Justinavičius</u> (Lithuanian Energy Institute, Lithuania). Thermo-hydro-mechanical simulation of reference repository for RBMK-1500 spent nuclear fuel disposed in crystalline rocks. Official reviewer: Ž. Rutkūnienė (KTU)
9.20-9.40	<u>T. Iešmantas</u> (Kaunas University of Technology, Lithuania), <u>R. Alzbutas</u> (Lithuanian Energy Institute, Lithuania). Application of Bayesian methods to analyze time-dependent reliability dynamics. Official reviewer: R. Krikštolaitis (VDU)
9.40-10.00	<u>A. Kontautas</u> , <u>E. Urbonavičius</u> (Lithuanian Energy Institute, Lithuania). Aerosol deposition in PHEBUS containment during FPT2 test. Official reviewer: A. Adomavičius (KTU)
10.00-10.20	<u>M. Povilaitis</u> (Lithuanian Energy Institute, Lithuania). Numerical analysis of experiments performed in the frame of ISP49. Official reviewer: R. Urbonas (LEI)
10.20-10.40	<u>A. Šimonis</u> (Lithuanian Energy Institute, Lithuania). Radiation doses modelling during dismantling a maintenance reservoir of RBMK-1500 reactor main circulation circuit system. Official reviewer: N. Listopadskis (KTU)

10.40-11.00 Coffee break

11. Nuclear fission and radiation protection

10. Fusion energy

Section A2 (Main hall)

Chairman: D. Meilutytė-Barauskienė

11.00-11.20	<u>A. Slavickas</u> (Lithuanian Energy Institute, Lithuania). Last modifications in LWR cores. Official reviewer: A. Tonkūnas (LEI)
11.20-11.40	<u>O. Kochukovs</u> , <u>A. Mutule</u> (Institute of Physical Energetic, Latvia). Phasor measurement units application in frame of interconnection of large-scale power systems. Official reviewer: J. Tonkonogij (LEI)
11.40-12.00	<u>T. Kačegavičius</u> (Lithuanian Energy Institute, Lithuania). The analysis of 40 mm diameter pipe rupture in Fusion facility W7-X with ASTEC code. Official reviewer: J. E. Adomaitis (LEI)

12.00-13.00 Lunch

7. Nanosciences and nanotechnologies, investigations on multifunction materials

Section A3 (Main hall)

Chairman: D. Meilutytė-Barauskienė

13.00-13.20	<u>E. Navickas</u> (Vienna University of Technology, Austria and Kaunas University of Technology, Lithuania), <u>M. Gerstl</u> , <u>J. Fleig</u> (Vienna University of Technology, Austria). In – and across – plane conductivity measurements on YSZ thin films. Official reviewer: L. Pranevičius (VDU)
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13.20-13.40	J. Banytė, <u>V. Venckutė</u> (Vilnius University, Faculty of physics, Lithuania). Preparation and characterization of $Li_{1.4}Ti_{1.9}P_3O_{12}$ substituted by NB solid state electrolyte ceramics. Official reviewer: D. Milčius (LEI)
13.40-14.00	<u>R. Zhang</u> , J. Iliyina, L. Kaupmees, J. Raudoja, M. Altosaar, O. Volobujeva, E. Mellikov, T. Varema, H. Dikov, M. Ganchev (Tallinn University of Technology, Estonia). Formation of $Cu_2ZnSnSe_4$ thin films by selenization of electrodeposited stacked binary alloy layers. Official reviewer: K. Brinkienė (LEI)
14.00-14.20	<u>E. Kärber</u> , T. Dedova, I. Oja Acik, M. Krunks, A. Mere (Department of Materials Science, Tallinn University of Technology, Estonia), V. Mikli (Centre for Materials Research, Tallinn University of Technology, Estonia). Determination of charge carrier density in zinc oxide nanorods prepared by chemical spray. Official reviewer: V. Grigaitienė (LEI)

14.20-15.20 Final discussion and closure (Main hall)

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Section B

7. Nanosciences and nanotechnologies, investigations on multifunction materials 8. Investigation of combustion and plasma processes Section B1 (Room AK-202) Chairman: A. Bertašienė	
9.00-9.20	<u>Y. A. Baranyshyn</u> , O. G. Penyazkov (A. V. Lykov Heat and Mass Transfer Institute, Belarus), K. N. Kasparov, L. I. Belaziorava (B. I. Stepanov Institute of Physics, Belarus). Soot particles characterizations at pyrolysis of ethylene in shock tube. Official reviewer: N. Striūgas (LEI)
9.20-9.40	<u>D. Maželis</u> (Vytautas Magnus University, Lithuania). Nonlinear model of high-dose, low-energy ion implantation at elevated temperatures. Official reviewer: R. Navakas (LEI)
9.40-10.00	<u>A. A. Brin</u> , S. P. Fisenko (A. V. Lykov Heat and Mass Transfer Institute, Belarus). Heterogeneous droplets growth in a diffusion chamber. Official reviewer: A. Šlančiauskas (LEI)
10.00-10.20	<u>Z. Kavaliauskas</u> , L. Marcinauskas (Lithuanian Energy Institute, Lithuania). Electrical characteristics of double-layer supercapacitors. Official reviewer: L. L. Pranevičius (VDU)
10.20-10.40	<u>U.M. Hryshchanka</u> (A.V. Lykov Heat and Mass Transfer Institute, Belarus). Interaction parameters of erosion plasma counter-flows in a confined area. Official reviewer: V. Valinčius (LEI)

10.40-11.00 Coffee break

6. Investigations in the fields of thermal physics, fluid mechanics and metrology Section B2 (Room AK-202) Chairman: M. Povilaitis	
11.00-11.20	<u>A. Bertašienė</u> (Lithuanian Energy Institute, Lithuania). Air velocity measurements using ultrasonic anemometer: errors and discrepancies. Official reviewer: M. Šeporaitis (LEI)
11.20-11.40	<u>G. Drumstas</u> (Lithuanian Energy Institute, Lithuania). Modelling of mixed convection heat transfer in an inclined flat channel using turbulence transition models. Official reviewer: G. Miliauskas (KTU)
11.40-12.00	<u>R. Jonynas</u> (Kaunas University of Technology, Department of Thermal and Nuclear Energy, Lithuania), J. Gylys, T. Ždankus, M. Gylys, A. Ingilertas (Kaunas University of Technology, Energy Technology Institute, Lithuania). Heat transfer between non-standard in-line tube bundle and vertically upward aqueous foam flow. Official reviewer: A. Džiugys (LEI)

12.00-13.00 Lunch

7. Nanosciences and nanotechnologies, investigations on multifunction materials Section A3 (Main hall) Chairman: D. Meilutytė-Barauskienė	
13.00-14.00	

14.20-15.20 Final discussion and closure (Main hall)

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Section C

	9. Global change and ecosystems Section C1 (Library) Chairman: T. Kaliatka
9.00-9.20	<u>A. Pavlovas</u> (Lithuanian University of Agriculture, Lithuania). Analysis of water flow energy output on Rusne river's in two same river models with different hydrological parameters varied to maximize flow velocity. Official reviewer: J. Dvarionienė (KTU APINI)
9.20-9.40	<u>D. Jakimavičius</u> (Lithuanian Energy Institute, Lithuania). Change of water balance of the Curonian Lagoon.
9.40-10.00	<u>D. Laurinavičienė, I. Januškaitienė</u> (Vytautas Magnus University, Lithuania). Pollution of nitrogen dioxide in Kaunas in 2008. Official reviewer: I. Konstantinavičiūtė (LEI)
10.00-10.20	<u>V. Česulytė</u> (Kaunas University of Technology, Lithuania), <u>R. Alzbutas</u> (Lithuanian Energy Institute, Lithuania). Probabilistic assesment and uncertainty analysis of extreme precipitation. Official reviewer: J. Kriaučiūnienė (LEI)
10.20-10.40	<u>I. Stasiulaitienė, G. Denafas</u> (Kaunas University of Technology, Lithuania), <u>R. Zevenhoven</u> (Abo Academy University, Finland). Simulation of thermodynamic properties of Lithuanian minerals for CO ₂ sequestration. Official reviewer: V. Vaitkevičienė (LEI)

10.40-11.00 Coffee break

	8. Investigation of combustion and plasma processes Section C2 (Library) Chairman: T. Kaliatka
11.00-11.20	<u>M. Miliėška, R. Kėželis</u> (Lithuanian Energy Institute, Lithuania). Influence of gas flow rate to the thermal characteristics of plasma-chemical reactor. Official reviewer: S. Tamulevičius (KTU FEI)
11.20-11.40	<u>A. Garbaras, R. Barisevičiūtė, T. Šneideris, V. Remeikis</u> (Institute of Physics, Lithuania). Stable carbon isotope ratio measurements in aerosol particles, generated from various internal combustion engines. Official reviewer: A. Šlančiauskas (LEI)

12.00-13.00 Lunch

	7. Nanosciences and nanotechnologies, investigations on multifunction materials Section A3 (Main hall) Chairman: D. Meilutytė-Barauskienė
13.00-14.00	

14.20-15.20 Final discussion and closure (Main hall)