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8TH INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS ON ENERGY ISSUES

CYSENI 2011, on 26-27th May

May 26, 2011

Kaunas, Lithuania

Morning session (Main Hall) Chairman: dr. D. Meilutytė-Barauskienė	
8.40-9.20	Registration
9.20-9.40	Welcome
9.40-10.00	U. Roßegger (Brunswick University of Technology, Germany). Lithuania's new strategy in energy policy. Official reviewer: V. Miškinis (LEI)
10.00-10.20	A. V. Epik, S. M. Chaplygin, E. N. Oleynik (Institute of Engineering Thermophysics of National Academy of Sciences of Ukraine, Ukraine). Economical and ecological aspects of bioenergy projects in Ukraine. Official reviewer: V. Kveselis (LEI)
10.20-10.40	M. Marčiukaitis (Lithuanian Energy Institute, Lithuania). Wind farms power prediction in Lithuania. Official reviewer: I. Kliopova (KTU)
10.40-11.00	V. V. Leschevich, O. G. Penayzkov (Heat and Mass Transfer Institute, Belarus), J. Ch. Rostaing (Centre de Recherche Claude-Delorme, France). Auto-ignition and combustion behavior of iron micro powders in heated oxygen. Official reviewer: V. Valinčius (LEI)

11.00-11.20 Coffee break

Section A

2. RENEWABLE ENERGY SOURCES AND THEIR USE Section A1 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė	
11.20-11.40	C. H. Lay, C. W. Lee, K. Gopalakrishnan C.Y. Lin, S. Y. Kuo (Feng Chia University, Taiwan), J. J. Chang (Academia Sinica, Taiwan), C. C. Chen (Chungchou Institute of Technology, Taiwan). Continuous biohydrogen production from sweet potato fermentation using mixed anaerobic bacteria. Official reviewer: J. Savickas (LEI)
11.40-12.00	D. Sankauskas (Lithuanian Energy Institute, Lithuania). Wind energy parameter variation regularities in Lithuanian coastal zone. Official reviewer: I. Kliopova (KTU)
12.00-12.20	S. Ofverstrom, I. Sapkaitė, R. Dauknyš (Vilnius Gediminas Technical University, Lithuania). Iron and aluminium as inhibitors of anaerobic digestion of primary-waste activated sludge mixture. Official reviewer: K. Venslauskas (LŽŪU)

12.20-13.20 Lunch

2. RENEWABLE ENERGY SOURCES AND THEIR USE Section A2 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė	
13.20-13.40	Y. C. Li, C. Y. Chu, S. Y. Wu, C. Y. Lin, C. C. Wu, S. R. Huang (Feng Chia University, Taiwan). Potential of Biological Hydrogen Production from Beverage Wastewater. Official reviewer: N. Striūgas (LEI)
13.40-14.00	P. Shipkovs, A. Snegirjovs, M. Vanags (Institute of Physical Energetics, Latvia), L. Migla (Riga Technical University, Latvia). Determination of cost-effective pipelines insulation of solar thermal system. Official reviewer: E. Perednis (LEI)
14.00-14.20	A. Grigula, T. Vonžodas (Lithuanian Energy Institute, Lithuania). Investigation of the effectiveness and pollution of low capacity boiler fired with biofuel. Official reviewer: N. Striūgas (LEI)
14.20-14.40	K. Zakarauskas, N. Striūgas, G. Stravinskis (Lithuanian Energy Institute, Lithuania). Thermal decomposition of biomass and analysis of resin destruction. Official reviewer: A. Jasinskas (LŽŪU)

14.40-15.00 Coffee break

3. SMART ENERGY NETWORKS Section A3 (Main hall)	
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Chairman: dr. D. Meilutytė-Barauskienė	
15.00-15.20	<u>B. Jokšas</u> , J. Augutis (Lithuanian Energy Institute, Lithuania). Mathematical modelling of the disturbance distribution in the network of energy.
15.20-15.40	<u>O. Kochukovs</u> , A. Mutule, Z. Krishans, I. Oleinikova (Institute of Physical Energetics, Latvia). Model for evaluation of large-scale power system interconnection costs and benefits. Official reviewer: V. Miškinis (LEI)
15.40-16.00	<u>A. Lvovs</u> , A. Mutule (Riga Technical University, Latvia). Optimal reliability level estimation for distribution network considering different types of load. Official reviewer: R. Alzbutas (LEI)
16.00-16.20	<u>T. Iešmantas</u> , R. Alzbutas (Lithuania Energy Institute, Lithuania). Age-dependent probabilistic analysis of failures in gas pipeline networks. Official reviewer: N. Listopadskis (KTU)

16.20-16.40 Coffee break

3. SMART ENERGY NETWORKS 4. ENERGY EFFICIENCY AND SAVINGS Section A4 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė	
16.40-17.00	<u>M. Turcik</u> , I. Oleinikova, Z. Krishans (Institute of Physical Energetics, Latvia). Power Plants Sustainable Development Optimization in Liberalized Market Conditions. Official reviewer: R. Alzbutas (LEI)
17.00-17.20	<u>K. Biekša</u> , A. Klevienė (Lithuanian Energy Institute, Lithuania). Regional energy economy development scenarios in Lithuania from the ecological footprint perspective. Official reviewer: E. Jaraminienė (VGTU)
17.20-17.40	<u>A. Obusevs</u> , I. Oleinikova, Z. Krishans (Institute of Physical Energetics, Latvia). Analysis of methods of power flows calculation under optimization of power system development. Official reviewer: R. Alzbutas (LEI)

17.40 Conference dinner (canteen)

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Section B

8. INVESTIGATIONS OF COMBUSTION AND PLASMA PROCESSES Section B1 (Room AK-202) Chairman: Darius Justinavičius	
11.20-11.40	<u>M. Milieška</u> , R. Kėželis, V. Mėčius, V. Grigaitienė (Lithuanian Energy Institute, Lithuania). Flow velocity dependence on plasma-chemical reactor outlet nozzle design and effect on obtained mineral fiber. Official reviewer: G. Laukaitis (KTU)
11.40-12.00	<u>V. Abromaitis</u> , V. Ochmanaitė, G. Denafas, D. Martuzevičius (Kaunas University of Technology, Lithuania). LCA-based comparison of simultaneous SO ₂ and NO _x removal from flue gas by plasma and “conventional” end-of-pipe methods. Official reviewer: V. Grigaitienė (LEI)
12.00-12.20	<u>A. Tamošiūnas</u> , V. Grigaitienė, V. Valinčius (Lithuanian Energy Institute, Lithuania). Study of water vapour plasma composition by optical emission spectroscopy method. Official reviewer: D. Milčius (LEI)

12.20-13.20 Lunch

1. HYDROGEN AND FUEL CELLS Section B2 (Room AK-202) Chairman: Andrius Slavickas	
13.20-13.40	<u>M. Lelis</u> , D. Milčius, S. Tučkutė (Lithuanian Energy Institute, Lithuania), M. Lelis, S. Tučkutė (Vytautas Magnus University, Lithuania). Substrate effects on formation and hydrogenation of Mg-Ni films. Official reviewer: G. Laukaitis (KTU)
13.40-14.00	<u>D. G. Ignatenko</u> , V. N. Mironov, O. G. Penyazkov (A.V. Luikov Heat and Mass Transfer Institute, Belarus). Self-ignition of a high-pressure hydrogen jet outflowing into the encumbered space. Official reviewer: L. Pranevičius (VDU)
14.00-14.20	L. Pranevičius, <u>M. Urbonavičius</u> (Vytautas Magnus University, Lithuania). Experimental study of Ti films hydrogenation using magnetron water vapour plasma. Official reviewer: D. Milčius (LEI)
14.20-14.40	A. Švaikovskij, <u>M. Televičiūtė</u> (Vytautas Magnus University, Lithuania). Modeling of implantation of ionized water molecules. Official reviewer: G. Laukaitis (KTU)

14.40-15.00 Coffee break

7. NANOSCIENCES AND NANOTECHNOLOGIES, INVESTIGATIONS ON MULTIFUNCTION MATERIALS Section B3 (Room AK-202) Chairman: Agnė Bertašienė	
15.00-15.20	<u>I. Leinemann</u> , J. Raudoja, M. Altosaar, D. Meissner, R. Traksmaa, T. Kaljuvee (Tallinn University of Technology, Estonia). Comparison of CZTSe (Cu ₂ ZnSnSe ₄) formation in different flux materials. Official reviewer: L. Marcinauskas (LEI)
15.20-15.40	<u>P. Danilevičius</u> , E. Balčiūnas, M. Malinauskas (Vilnius University, Lithuania). Laser 3D fabrication of polymeric micro/nanostructures for biomedical applications. Official reviewer: V. Girdauskas (VDU)
15.40-16.00	<u>A. Zarins</u> , G. Kizane, B. Lescinskis, L. Avotina, A. Berzins (University of Latvia, Latvia), I. Steins (Riga Tehnical university, Latvia). Changes of stoichiometric and nonstoichiometric nanopowders of lithium orthosilicate under thermal treatment and action of moisture. Official reviewer: L. Pranevičius (LEI)
16.00-16.20	<u>A. Žukauskas</u> , M. Rutkauskas, M. Malinauskas (Vilnius University, Lithuania). Femtosecond laser direct writing of microoptical and photonic structures from novel hybrid photopolymers. Official reviewer: G. Račiukaitis (FTMC)

16.20-16.40 Coffee break

16.40-17.40	3. SMART ENERGY NETWORKS/4. ENERGY EFFICIENCY AND SAVINGS Section A4 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė
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17.40 Conference dinner (canteen)

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Section C

10. FUSION ENERGY Section C1 (Library) Chairman: Tadas Kaliatka	
11.20-11.40	<u>M. Halitovs</u> , G. Kizane, A. Vitins, E. Pajuste, L. Avotina (University of Latvia, Latvia). Depth profiles of tritium accumulated in carbon fibre composite divertor materials of JET fusion. Official reviewer: E. Urbonavičius (LEI)
11.40-12.00	<u>T. Kačegavičius</u> , T. Kaliatka (Lithuanian Energy Institute, Lithuania). Integral analysis of the W7-X fusion experiment with ASTEC and RELAP5 codes. Official reviewer: M. Vaišnoras (LEI)
12.00-12.20	<u>A. Kadenko</u> , I. Kadenko (Taras Shevchenko National University of Kyiv, Ukraine), N. Dzysiuk (Legnaro National Laboratory (INFN), Italy). Measurement and analysis of (n, x) nuclear reaction cross sections with d-t neutrons on rare earth elements. Official reviewer: D. Adlienė (KTU)

12.20-13.20 Lunch

9. GLOBAL CHANGE AND ECOSYSTEMS Section C2 (Library) Chairman: Darius Justinavičius	
13.20-13.40	<u>A. Babarskaitė</u> , I. Stasiulaitienė (Kaunas University of Technology, Lithuania). Inventory analysis for life cycle assessment of CO ₂ binding by mineral carbonation. Official reviewer: S. Šliaupa (GTC GGI)
13.40-14.00	D. Laurinavičienė, <u>A. Dėdelė</u> (Vytautas Magnus University, Lithuania). Distribution of nitrogen dioxide concentration in Kaunas and Kaunas region. Official reviewer: J. Dvarionienė (KTU)
14.00-14.20	<u>V. Česnulytė</u> (Kaunas University of Technology, Lithuania), R. Alzbutas (Lithuanian Energy Institute, Lithuania). Extreme value distributions for probabilistic analysis of extreme snowfall. Official reviewer: D. Šarauskienė (LEI)
14.20-14.40	<u>M. Uibu</u> , O. Velts, R. Kuusik (Tallinn University of Technology, Estonia). Aqueous carbonation of oil shale wastes from Estonian power production for CO ₂ fixation and PCC production. Official reviewer: D. Jankūnaitė (KTU)

14.40-15.00 Coffee break

9. GLOBAL CHANGE AND ECOSYSTEMS Section C3 (Library) Chairman: Neringa Radziukynienė	
15.00-15.20	E. Kasiulis (Lithuanian University of Agriculture, Lithuania). Statistical analysis of the Baltic sea wave height data for evaluating energy potential. Official reviewer: J. Kriaučiūnienė (LEI)
15.20-15.40	D. Jakimavičius (Lithuanian Energy Institute, Lithuania). Influence of the Klaipėda seaport development on the water balance of the Curonian Lagoon.
15.40-16.00	<u>J. Žaltauskaitė</u> , G. Sujetovienė, D. Laurinavičienė, I. Šliumpaitė, R. Juknys (Vytautas Magnus University, Lithuania). Evaluation of NO ₂ and NH ₃ concentration levels in Kaunas using two different passive sampling methods. Official reviewer: I. Konstantinavičiūtė (LEI)
16.00-16.20	A. Jurgelėnaitė (Lithuanian Energy Institute, Lithuania). The alternation of Lithuania rivers water temperature.

16.20-16.40 Coffee break

16.40-17.40	Section A4 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė
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17.40 Conference dinner (canteen)

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8TH INTERNATIONAL CONFERENCE OF YOUNG SCIENTISTS ON ENERGY ISSUES

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Section A

11. NUCLEAR FISSION AND RADIATION PROTECTION Section A1 (Main Hall) Chairman: dr. Diana Meilutytė-Barauskienė	
9.00-9.20	A. Slavickas (Lithuanian Energy Institute, Lithuania). Void reactivity variation in innovative BWR assembly. Official reviewer: A. Adomavičius (KTU)
9.20-9.40	D. Justinavičius (Lithuanian Energy Institute, Lithuania). Thermal analysis of the engineered barriers of geological repository for RBMK-1500 spent nuclear fuel disposal in crystalline rocks. Official reviewer: D. Adlienė (KTU)
9.40-10.00	R. Voronov (Lithuanian Energy Institute, Lithuania). Probabilistic analysis of multiple room area event considering spurious operation of Ignalina NPP fire extinguishing system. Official reviewer: J. Gylys (KTU)
10.00-10.20	G. Zakrzewska-Trznadel, K. Frąckiewicz, I. Herdzyk-Koniecko, B. Zielińska, A. Miśkiewicz, K. Szczygłó, P. Bieluszka, Ł. Steczek, E. Chajduk (Institute of Nuclear Chemistry and Technology, Poland), S. Wołkowicz (Polish Geological Institute, Poland). Separation of Uranium from post-leaching solutions by solvent extraction. Official reviewer: V. Vaitkevičienė (LEI)
10.20-10.40	T. Kaliačka, M. Trepulis (Lithuanian Energy Institute, Lithuania). Analysis of processes in RBMK-1000 fuel rods during reactivity initiated accident using FEMAXI-6 code. Official reviewer: A. Adomavičius (KTU)

10.40-11.00 Coffee break

11. NUCLEAR FISSION AND RADIATION PROTECTION Section A2 (Main Hall) Chairman: dr. Diana Meilutytė-Barauskienė	
11.00-11.20	V. Zubkova, E. Pajuste, G. Kizane, A. Vitins, A. Matiss (University of Latvia, Latvia). Tritium localization in the bulk of neutron irradiated beryllium pebbles. Official reviewer: R. Pabarčius (LEI)
11.20-11.40	A. Kontautas (Lithuanian Energy Institute, Lithuania). Uncertainty and sensitivity analysis of aerosol behaviour in PHEBUS containment during FPT2 test. Official reviewer: R. Urbonas (LEI)
11.40-12.00	A. Narkūnienė (Lithuanian Energy Institute, Lithuania). Uncertainty and sensitivity analysis of ¹²⁹ I release from the engineered barriers of the geologic repository for RBMK-1500 spent nuclear fuel disposal. Official reviewer: L. Juodis (FTMC FI)
12.00-12.20	M. Povilaitis (Lithuanian Energy Institute, Lithuania). Numerical analysis of experiments performed in the frame of SARNET2 project hydrogen deflagration benchmark. Official reviewer: Ž. Rutkūnienė (KTU)
12.20-12.40	G. Zakrzewska-Trznadel, K. Frąckiewicz, I. Herdzyk-Koniecko, B. Zielińska, A. Miśkiewicz, K. Szczygłó, P. Bieluszka, Ł. Steczek, E. Chajduk (Institute of Nuclear Chemistry and Technology, Poland), S. Wołkowicz (Polish Geological Institute, Poland). Solid-liquid extraction of Uranium from polish ores. Official reviewer: V. Vaitkevičienė (LEI)

12.40-13.00 Coffee break

Section A3 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė Final discussion and closure	
13.00-14.00	

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Section B

6. INVESTIGATIONS IN THE FIELDS OF THERMAL PHYSICS, FLUID MECHANICS AND METROLOGY Section B1 (Room AK-202) Chairman: Anton Brin	
9.00-9.20	<u>M. Kulokas</u> , E. Maslauskas (Lithuanian Energy Institute, Lithuania). Research of viscosity influence on the density measurements. Official reviewer: B. Čėsna (LEI)
9.20-9.40	<u>K. Norvaišienė</u> , G. Miliuskas (Kaunas University of Technology, Lithuania). Influence of radiative source to thermal state and phase transformations of water droplets. Official reviewer: J. Tonkonogij (LEI)
9.40-10.00	D. Laurinavičius (Lithuanian Energy Institute, Lithuania). Methodology for measurement of water temperature profiles. Official reviewer: S. Šinkūnas (KTU)
10.00-10.20	I. N. Shatan (A. V. Luikov Heat and Mass Transfer Institute of National Academy of Sciences of Belarus, Belarus). Measurements of methane concentration in an axially symmetrical turbulent methane flow using a Talbot interferometer method. Official reviewer: M. Šeporaitis (LEI)
10.20-10.40	<u>A. Tonkonogovas</u> , A. Stankevičius (Lithuanian Energy Institute, Lithuania). The influence of gas flow pulsing on performance of thermal power plant. Official reviewer: B. Čėsna (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: Darius Laurinavičius	
11.00-11.20	<u>A. Bertašienė</u> , A. Tonkonogovas (Lithuanian Energy Institute, Lithuania). Inertial properties of the tachometric air velocity meter and their influence on meter's dynamic error in pulsing flow. Official reviewer: S. Šinkūnas (KTU)
11.20-11.40	<u>A. A. Brin</u> , A. I. Petruchik (A. V. Luikov Heat and Mass Transfer Institute, Belarus). Thermal efficiency of forced draft cooling tower with full cone nozzles. Official reviewer: J. Gudzinskas (KTU)
11.40-12.00	R. Jonynas (Kaunas University of Technology, Lithuania). Heat exchange between plane surface and two phase foam flow investigation. Official reviewer: V. Janušas (LEI)

12.40-13.00 Coffee break

13.00-14.00	Section A3 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė Final discussion and closure
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Section C

5. KNOWLEDGES FOR ENERGY POLICY MAKING Section C1 (Library) Chairman: Svetlana Danilova-Tretiak	
9.00-9.20	<u>L. Martišauskas</u> , J. Augutis (Lithuanian Energy Institute, Lithuania), J. Augutis (Vytautas Magnus University, Lithuania). The influence of energy supply disturbances to energy system. Official reviewer: E. Norvaiša (LEI)
9.20-9.40	E. F. Dzenajavičienė, <u>A. LISAUSKAS</u> (Lithuanian Energy Institute, Lithuania), D. Dzenajavičius (Kaunas University of Technology, Lithuania). Modelling of regional sustainable energy development opportunities: Kaunas region case. Official reviewer: I. Konstantinavičiūtė (LEI)
9.40-10.00	<u>J. Pubule</u> , D. Blumberga (Riga Technical University, Latvia). Analysis of Environmental impact assessment of energy projects in Latvia. Official reviewer: V. A. Katinas (LEI)
10.00-10.20	<u>N. Radziukynienė</u> , V. Radziukynas, A. Klementavičius (Lithuanian Energy Institute, Lithuania). Support systems of wind power generation.
10.20-10.40	V. Lekavičius (Lithuanian Energy Institute, Lithuania). Input-output analysis of relationships between energy and other branches of Lithuanian economy. Official reviewer: E. Vaiginienė (VU)

10.40-11.00 Coffee break

4. ENERGY EFFICIENCY AND SAVINGS Section C2 (Library) Chairman: Andrius Slavickas	
11.00-11.20	<u>S. M. Danilova-Tretiak</u> , V. L. Dragun, V. G. Leschenko, T. E. Schelak (A. V. Luikov Heat&Mass Transfer Institute of NAS of Belarus, Belarus). Active thermal nondestructive testing of building energy efficiency. Official reviewer: V. Kveselis (LEI)
11.20-11.40	<u>V. V. Lypnytskyy</u> (Tallinn University of Technology, Estonia), T. V. Kushnir, Y. V. Lypnytskyy (Ternopil Ivan Pul'uy National Technical University, Ukraine). Linearization performance of optical transducers. Official reviewer: Ž. Nakutis (KTU)
11.40-12.00	<u>G. Stankevica</u> , A. Lesinskis (Riga Technical University, Latvia). Effect of facade insulation on heating energy consumption, indoor air quality and thermal comfort: case study in selected Latvian daycare centers. Official reviewer: R. Škēma (LEI)
12.00-12.20	<u>A. Brahmanis</u> , U. Pelīte, A. Lešinskis, D. Kona, T. Bui Kon (Riga Technical University, Latvia). Extract air energy utilization using heat pump in buildings with indoor swimming pools. Official reviewer: J. Karbauskaitė (KTU)

12.40-13.00 Coffee break

13.00-14.00	Section A3 (Main hall) Chairman: dr. D. Meilutytė-Barauskienė Final discussion and closure
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