

Plenary Lectures:

Thursday, 7.07.2005, 9:30 – 11:30

PL1. “The Sustainable Energy of Incineration of Waste”

B. ten Bruggencate

European Commission, DG Environment, The Netherlands

PL2. “Sustainable Energy For Mobility: From Sunpowered Electric Propulsion To Hybrid Vehicles With Regenerative Fuels”

C. Stan*, J. Koerner**

*FTZ - Research and Technology Association at the West Saxon University of Zwickau, Germany,

**West Saxon University of Zwickau, Germany

PL3. “Nano-structured Composites for Sustainable Energy Conversion and Storage”

J. Schoonmann

Laboratory for Inorganic Chemistry, Delft Institute for Sustainable Energy, Delft University of Technology, The Netherlands

PL4. “Platform of Excellence in Energy and Environment“

K. Brüssermann

ACUAS – Aachen University of Applied Sciences, Dep. Jülich, Germany

Thursday, 7.07.2005, 11:50 – 13:20

PL5. “National Research and Development Programme – New Materials, Micro and Nanotechnologies - MATNANTECH”

E. Andronescu, C. Trisca – Rusu

“Politehnica” University of Bucharest, Romania

PL6. “Access to Advanced Technologies”

D. Dascalu

National Institute for Research and Development in Microtechnologies, Bucharest, Romania

PL7. “From Material to Prototype – A Concept Integrating Research and Technology Transfer”

I. Visa, A. Duta

Transilvania University of Brasov, Romania

Section 1

Traditional Energy Production System Towards Sustainability: CHP Systems, Innovative solutions for fossil fuel use, centralized/decentralized energy production systems

Oral Presentations:

Friday, 8.07.2005, 9:00 – 11:30

Chairman: Klaus Brüssermann

O.1.1. “Temperature Measurement To Optimize The Burning Process”

K. Brüssermann*, M. Deuster**

*ACUAS – Aachen University of Applied Sciences, Dep. Jülich, Germany,

**Bonnenberg and Drescher Projektentwicklung GmbH, Germany

O.1.2. „The Microturbines (MGT)“

K. P. Dielmann

FH Aachen, Germany

O.1.3. “External Costs Induced By Energy Production: Applying Externe Methodology In The New Member States And In Countries In Accession – Romanian Case”

J. Melichar*, M. Havránek*, C. Cremenescu**

*Charles University Environment Center, Prague, Czech Republic

**Romanian Energy Regulatory Authority, Romania

O.1.4. „Refurbishment and Modernization of the Cogeneration Unit No.1 From CET Brasov”

I. Gulacsi; A. Bunescu; D. Cuibar

S.C. CET Brasov S.A., Romania

O.1.5. “Nuclear Power and Sustainability”

E.Micu*, D.C.Peter**

* Transilvania University of Brasov, Romania; ** North University Baia Mare, Romania

O.1.6. “Energy Storage Using Supercapacitors”

C. Lungoci, E. Helerea

Transilvania University of Brasov, Romania

Section 2

Renewable Energy Systems: Solar thermal systems, solar PV systems, biomass, hydrogen technology, hybrid systems;

Oral Presentations:

Thursday, 07.07.2005, 14:30 – 16:00

Chairman: Didier Klein

O.2.1. “Development of “Clean Processes” to Elaborate New Materials to Use Renewable Energy for Sustainable Development (Fuel cells, Photo Solar Panels)”

D. Klein, G. Bertrand, F. Lapostolle, F. L. Toma, D. Sokolov, A. Benyoucef; A. Benyoucef, Ch. Coddet

Laboratoire d’Etudes et de Recherches sur les Matériaux, les Procédés et les Surfaces (LERMPS), Université de Technologie de Belfort-Montbéliard, France

O.2.2. “Improving The Nanostructured Materials By Spray Pyrolysis Deposition

R. G. Calin, I. Visa, M. Comsit, A. Duta

Transilvania University of Brasov, Romania

O.2.3. “Investigation of WO₃ Thin Film Obtained by SPD Technique”

A. Enesca*, A. Duta*, J. Schoonman*

*Transilvania University of Brasov,

** Delft Institute for Sustainable Energy, Delft University of Technology

O.2.4. “The Limitation Given by the n-Type Semiconductor TiO₂ in the Choice of the Absorber Material Used for Solid State Solar Cells”

S.A. Manolache*, A. Duță*, M. Nanu*, **, A. Goossens**, J. Schoonman*, **

*Transilvania University of Brasov, Romania

**Delft University of Technology, The Netherlands

O.2.5. “Solar Energy Potential Assessment for Brasov Area”

V. D. Pacurar

Transilvania University of Brasov, Romania

O.2.6. “Regional Scale Analysis of Location-Renewable Energy Potential Relations in Mountain Areas”

V. D. Pacurar

Transilvania University Of Braşov, Romania

Thursday, 07.07.2005, 16:30 – 18:30

Chairman: Andreas Vlisidis

O.2.7. “A Wind Parks, Pumped Storage System and Diesel Engines Power Production Hybrid System For The Electric Power Production In Astypalaia”

D. Al. Katsaprakakis, Pr. Dimitris, G. Christakis

Wind Energy Laboratory, University of Applied Sciences of Crete, Greece

O.2.8. “A Simplified Method for the Prediction of the Produced Energy from Wind and Irradiation and Application of Results in a Hybrid Energy System”

A. Vlisidis

University of Applied Sciences of Crete, Heraklion, Greece

O.2.9. “Software Sun Traker Control for Romania”

D. Marinescu, C. Marinescu

Transilvania University of Brasov, Romania

O.2.10. “An Automated Pyranometer Design for Difuse Solar Radiation Measurements”

M. Comsit, I. Visa, R.G. Calin, A. Duta

Transilvania University of Brasov, Romania

O.2.11. “The Effect of Input Temperatures on The Performances of LiBr Solar Absorption Chillers”

I. Boian

Transilvania University of Brasov, Romania

O.2.12. “Small Parabolic Trough Collector”

D. Ciobanu*, I. Visa*, C. Jaliu*, J. Kötter**, C. Faber**

*”Transilvania” University of Brasov, Romania

**Solar Institut Jülich, Germany

Friday, 08.07.2005, 9:00 – 11:30

Chairman: Dan Teodoreanu

O.2.13. “The Externally Fired Gas Turbine (EFGT-Cycle) for Decentralized Use of Biomass”

M. Kautz, U. Hansen

University of Rostock, Chair of Energy Systems, Germany

O.2.14. “The Study of Integrating a Hydrogen Pressure Exchange Engine with a Sonic High Frequency Generator for Mobile Applications”

H. Abaitancei, D. Abaitencei

Transilvania University of Brasov, Romania

O.2.15. “An Optimal Sizing And Simulation Of The Stand- Alone Pv Applications”

I. Farkas**, D. I. Teodoreanu*, S. Bartha*, V. Ursu*

*I. C. P.E.-New Energy Sources Laboratory (NESL)

**Szent István University, Department Physics and Process Control, Hungary

O.2.16. “Integrated Management Solutions and the Increasing of the Energy Efficiency in the Intelligent Eco-House from Agigea”

P. Pencioiu, D. Teodoreanu, N. Ionescu, R. Trandafir

SC ICPE SA Bucharest, Romania

O.2.17. „Controlling a Variable Load Stand-Alone Induction Generator”

C. Ion, C. Marinescu, L. Clotea

Transilvania University Brasov, Romania

O.2.18. „Paralleling Synchronous Generator and Induction Generator in Island Grids”

I. Serban, C. Marinescu, L. Clotea

Transilvania University of Brasov, Romania

O.2.19. “Photovoltaic Systems - Characteristics, Opportunities and Economical Analysis”

C. Covrig

Transilvania University of Braşov, Romania

O.2.20. “The Usage of Vegetable Oil as Propulsion Source for Motor Vehicle – Energetical and Ecological Performances”

A. Chiru*, N. Ispas*, D. Dumitraşcu*, S. Calotă**

*Transilvania University, Brasov, Romania; **Tank and Driving Training School „Mihai Viteazul”, Pitesti, Romania

O.2.21. “Diesel Single Cylinder Multi Fuel Engine – Injection And Combustion Analyses Process”

V. Mardarescu, A. Chiru, D. Dumitrascu

Transilvania University of Brasov, Romania

Poster Session

Friday, 08.07.2005, 12:00 – 13:30

P.2.1. “Solar Collectros – An Overview”

R. Lates, I. Visa

Transilvania University of Brasov, Romania

P.2.2. „Installed Systems For The Development Of Wind Energy In The Canarian Archipelago”

J. González*, J. A. Carta**

*Electronics and Automatics Department, University of Las Palmas de Gran Canaria,

**Mechanical Engineering Department, University of Las Palmas de Gran Canaria,

P.2.3. “Wind-Powered Pumped Hydrostorage Systems: A Way to Optimise the Use of the High Wind Potential Available in the Canarian Archipelago”

C. Bueno*, J. A. Carta**

*Department of Renewable Energy and Water, Technological Institute of the Canary Islands, Spain; **Department of Mechanical Engineering, University of Las Palmas de Gran Canaria, Spain

P.2.4. “Sustainable Energy by Converting Biomass to Bioethanol”

L. Dumitrescu, I. Manciulea

Transilvania University of Brasov, Romania

P.2.5. “Command and Control of DC Motors Used in Mechatronics Systems”

M. Fărcaş

Transilvania University of Brasov, Romania

P.2.6. “Hydrogen – the Future Fuels for Automotives”

A. Chiru, B. Benea

Transilvania University of Brasov, Romania

P.2.7. “Synthesis And Characterization Of p-Hydroxy and p-Methoxy-Phenyl Substituted Porphyrins as Alternative to Inorganic Photovoltaics”

E. Făgădar-Cosma*, A. Fuliş*, Gh. Făgădar-Cosma**, R. Tudose*, O. Costişor*, S. Fărcaş***

*Institute of Chemistry –Timişoara of Romanian Academy, Romania; ** "Politehnica" University, Timisoara, Romania; *** Research and Development National Institute for Izotopic and Molecular Technology, Romania

P.2.8. “3D Nanocomposite CuInS₂/TiO₂ Solar Cells”

M. Nanu, A. Goossens, J. Schoonman

Laboratory for Inorganic Chemistry, Delft Institute for Sustainable Energy, Delft University of Technology, The Netherlands

P.2.9. "The Defect Chemistry of Solar Cells Material CuInS₂"
D. Perniu^{*}, S. Vouwzee^{**}, M. Nanu^{**}, A. Duta^{*}, J. Schoonman^{**}
^{*} Transilvania University of Brasov, Romania;
^{**} Delft University of Technology, The Netherlands

P.2.10. "On the Conceptual Design Modelling of Technical Products"
D. Diaconescu, C. Jaliu, R. Saulescu
Transilvania University of Brasov, Romania

P.2.11. "Performance Monitoring System for PV's Used in Street Lighting"
M. Voinea^{*}, A. Vlisidis^{**}
^{*}Transilvania University of Braşov, Romania; ^{**} University of Applied Sciences of Crete, Heraklion, Greece

P.2.12. "Virtual Prototyping of Mechanical Systems Used to the Renewable Energy Sources"
C. Alexandru
Transilvania University of Brasov, Romania

P.2.13 "Aspects Regarding the Small Power Type Windmills Implementation in Romania"
M.T. Lates
Transilvania University of Brasov, Romania

P.2.14. "Solar Energy - A Future Solution in Product Design"
L. Barsan, A. Barsan
Transilvania University of Brasov, Romania

P.2.15. "Nanostructures Materials Based on TiO₂ Aerogels Applied to Wastewater Decontamination"
V. Danciu^{*}, V. Cosoveanu^{*}, A. Peter^{**}, P. Marginean^{***}, Z. Moldovan^{***}, E. Indrea^{***}
^{*} Babes Bolyai University Cluj Napoca, Romania
^{**} North University of Baia Mare, Romania; ^{***}National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj Napoca, Romania

P.2.16. "Structural and Transport properties of Hg_{1-x}Cd_xTe /CdTe Semiconductor Heterostructures"
E. Indrea^{*}, S. Dreve^{*}, D. T. Silipas^{*}, V. Danciu^{**}, V. Cosoveanu^{**}, H. I. Nascu^{***}
^{*} National Institute for Research and Development of Isotopic and Molecular Technologies, Cluj Napoca, Romania; ^{**} Babes Bolyai University Cluj Napoca, Romania
^{***} Technical University of Cluj Napoca, Romania

Section 3: Energy Efficiency & Energy Saving: Sustainable Processes, Eco-Buildings, Energy saving in buildings;

Oral Presentations:

Thursday, 8.07.2005, 14:30 – 16:00

Chairman: Angelos Tzachanis

O.3.1. A Numerical Model for Estimating Specific Energy Requirements of Multi-Layer Building Elements

A. Tzachanis*, I. Boian**

* University of Applied Sciences of Larissa, Greece,

**Civil Engineering and Building Services Dept. Transilvania University of Brasov, Romania

O.3.2. Prediction and Measurement of Heating Energy Consumption in Buildings Using Degree Days Concepts

A. Tzachanis

University of Applied Sciences of Larissa, Greece,

O.3.3. Improving Energy Efficiency Practices in Romania

M. Preda, G. Nica

Romanian Agency for Energy Conservation (ARCE), Romania

O.3.4. “Theoretical Evaluation of the Performances for an Air-Gas Dynamic Exhauster”

V. Benche, A. Huminic, G. Huminic

Transilvania University of Brasov, Romania

O.3.5. “The Analysis of Vehicle Running Conditions for Hydrostatic Energy Recovery in Vehicle Shock Absorbers”

G.A., Radu, H. Abaitancei

Transilvania University of Brasov, Romania

O.3.6. “Numerical and Experimental Study of Sonic Circuits under Resonance Conditions Integrated With Sonic Propulsion Systems”

S. Radu, A. Dumitrovici, C. Supuran

Transilvania University Brasov, Department of Automotive Engineering, Romania

O.3.7. “Possible Solution for Energy Saving in Apartment Blocks”

G. Băcanu

Transilvania University of Brasov, Romania

Poster Session

Friday, 08.07.2005, 12:00 – 13:30

P.3.1. “Energetic Effects of Demand – Controlled Ventilation Retrofitting in a Biochemical Laboratory Building”

J. Götttsche*, A. Mircea**, K. Gabrysch*, K. Schwarzer*

* Fachhochschule Aachen, Solar-Institut Jülich, Germany;

** Transilvania University of Brasov, Romania

P.3.2. “Steps of Embodiment Design for the Mechanical Devices for Solar Energy Collectors”

Gh. Moldovean, R. Velicu, C.C. Gavrilă

Transilvania University of Brasov, Romania

P.3.3. “Using the Criteria-Based Analyses Methodology (A.C.F.T) in Order to Determine the Price/Quality Index of Industrial Goods and Activities”

V. Bejan*, R. Bejan**

Transilvania University of Brasov, S.C. BERGIA S.R.L. Brasov, Romania

P.3.4. “Development of an Intelligent Indoor Environment and Energy Management System for Greenhouses”

G. Saridakis*, D. Kolokotsa**, M. Irving**

*Brunel University School of Electrical and Computer Eng. Uxbridge, West London, UK, **

University of Applied Sciences, Dept. of Natural Resources and Environment Chania, Greece

P.3.5. “Considerations concerning the making of the best envelope and installations for building the “Research Labs with High Energetic Autonomy”, from thermo-energetic point of view”

S. Fota, G. Muntean, C. Nastac

Transilvania University of Brasov, Romania

Section 4: Environmental Impact: water, air and waste management;

Oral Presentations:

Friday, 8.07.2005, 9:00 – 11:30

Chairman: Raed Kouta

O.4.1. “Reliability Approach For The Modeling Of The Durability”

R. Kouta

Universite de Technologie de Belfort – Montbeliard, Cedex, France

O.4.2. “Elaboration of the Reactive Surfaces for Environmental Applications by Suspension Plasma Spraying Process”

F.L. Toma*, G. Bertrand*, D. Klein*, Ch. Coddet*

* Laboratoire d’Etudes et de Recherches sur les Matériaux, les Procédés et les Surfaces (LERMPS),
Université de Technologie de Belfort-Montbéliard, Cedex, France

O.4.3. “Potential Ways Analyses to Improved the Waste Management Resulted From Specific Activities Of FDFEE Electrica Transilvania Sud”

C. Moldoveanu

FDFEE Electrica SUD, Romania

O.4.4. “Waste Management by Composting”

L. Dumitrescu, I. Manciulea, L. Isac, R. Tica

Transilvania University of Brasov, Romania

O.4.5. “Young’s Modulus of Random and Layered Pet-Rubber Composites”

C. Vladuta, A. Duta, E. B. Fazakas, I. Visa, V. Pop

Transilvania University of Brasov, Romania

O.4.6. “Removal of Azo-dyes from Wastewater by Semi-conductor Photocatalysis”

L. Andronic, A. Duta

Transilvania University of Brasov, Romania

O.4.7. “Environmental Monitoring in the Decommissioning Activities of the Nuclear Research Reactor VVR-S from Bucharest-Magurele”

S.L. Badea, V. Stefan, I. Iorga

National Institute of R&D for Physics and Nuclear Engineering “Horia Hulubei” Bucharest, Romania

Poster Session

Friday, 08.07.2005, 12:00 – 13:30

P.4.1. “The Environmental Impact of The Systems of HFC and Alkylbenzenes Used in the Refrigeration Industry”

C. Bogatu*, A. Duta*, R. Vilcu**, W.Poot***, T.de Loos***

*Transilvania University of Brasov, Romania, **University of Bucharest- Romania;

***Delft University of Technology, The Netherlands

P.4.2.. “Purification of Wastewaters Using Different Types Clays”

D. Humelnicu, K. Popa, E. Popovici, A. Cecal

“Al. I. Cuza” University, Iasi, Romania

P.4.3. “Contamination Effects of Concrete Deterioration in Las Palmas de Gran Canaria Structures”

J.C. Mirza Rosca*, A. Santana López*, L.S. Baltes**, M.H. Tierean**

*Las Palmas de Gran Canaria University, Mechanical Eng. Dep., Spain

** Transilvania University of Brasov, Materials Sci. and Eng. Faculty, Romania

P.4.4. “Air Contamination Effects on Industrial Metallic Structures in Determined Meteorological and Pollution Conditions”

J.C. Mirza Rosca*, A. Santana López*, L.S. Baltes**, M.H. Tierean**

*Las Palmas de Gran Canaria University, Mechanical Eng. Dep., Spain

** Transilvania University of Brasov, Materials Sci. and Eng. Faculty, Romania

P.4.5. “R23-Alkylbenzene Systems – Applications and Environmental Impact”

C. Bogatu*, A. Duta*, R. Valcu**, T. de Loos***

*Transilvania University of Brasov, Romania; ** University of Bucharest, Romania

***Delft University of Technology, The Netherlands

P.4.6. “Wastewater Treatment for Cadmium Removal by Using Flying Ashes”

M. Visa*, A. Duta**

*National College “C.D. Nenitescu”, Brasov, Romania;

**Transilvania University of Brasov, Romania

P.4.7. “Sulfide Quantitaion in Wastewaters. Validation Method.”

M. Luchian*, C. Vrabie**, C. Draghici*, M. Sica*

* Transilvania University of Brasov, Romania; ** R.A. Apele Romane, Brasov, Romania

Section 5: Policies, Strategies and Education on Sustainable Energy

Oral Presentations:

Thursday, 07.07.2005, 14:30 – 16:00

Chairman: Elena Helerea

O.5.1. “The Social Costs of Renewable Energies and the Perspectives of Their Development-The Case Study of Crete”

E. Kaliakatsou^{*}, M. Vogiatzaki^{**}, I. Kaliakatos^{***}

^{*}Imperial College, London, UK;

^{**}Brunel University, London, UK; ^{***}Technological Education Institute of Crete, Greece.

O.5.2. “Developing Projects As A Creative Way in Education”

E. Helerea, I. Visa, A. Duta, L. Sofonea, M. Popescu, C. Draghici, L. Rogozea, D. Florea, S. Lache
Transilvania University of Brasov, Romania

O.5.3. “The Leonardo da Vinci Projects on Sustainable Energy in the Transilvania University”

A. Duta, I. Visa,
Transilvania University of Brasov, Romania

O.5.4. “Curricula Development at High Education Level in the European Context”

C. Draghici, D. Perniu, Gh. Coman, M. Badea
Transilvania University of Brasov, Romania

O.5.5. “WBT WORLD – An Open Virtual Resource Centre for Web Based Trainers”

M. Neagoe^{*}, I. Visa^{*}, A. Duta^{*}, T. Porojan^{**}

^{*}Transilvania University of Brasov, Romania

^{**} Elite Training and Development, Bucharest, Romania

O.5.6. “Sustainable Development at Highschool Level, the Comenius Projects”

M. Visa
National College “C.D. Nenitescu”, Brasov, Romania

Thursday, 07.07.2005, 16:30 – 18:30

O.5.7. “Maxim Priority - The Renewable Energy Sources”

M. Preda
Romanian Agency for Energy Conservation, Romania

O.5.8. “Policies and Measures for GHG Emission Reduction in the Energy Sector

L. Andrei^{*}, M. Dupleac^{*}, Z. Karaczun^{**}, M. Sobolewski^{**}

^{*}Foundation TERRA Mileniul III – Bucharest, Romania,

^{**}Polish Ecological Club – Warsaw, Poland

Poster Session

Friday, 08.07.2005, 12:00 – 13:30

P.5.1. “e-Learning Tool on Efficient Use of Energy”

Gh. Scutaru, D. Sorea
Universitatea “Transilvania” of Braşov, Romania