



July 1 - 12, 2012

Patra, Greece

The T.E.I of Patra and the partner

Universities

Organize

An Innovation Week on RES

***12 Days Intensive Learning
& Exhibition of Innovation***

on

***PV Systems Engineering
& other Renewable Energy Systems***

T.E.I. of Patras

Unit of Innovation & Enterpreunership



*This co-funded by the European Union (European Social Fund) and National Resources under the Act
"Unit Innovation and Entrepreneurship, TEI Patras 'Operational Programme Education and Lifelong Learning"*

A Draft Programme subject to changes in the presentation form the lectures

Patra 2012

Arrival Day: Sunday 1 July 2012 , Arrived at Patras and Hotel registration

Monday 2 July, 2012

08:30 Registration

09:00 Opening Address

- The Innovation RES Weed and the related events within a Summer School on PV Systems Engineering & the other Renewable Energy Systems

09:30 An Overview of R.E.S.

Prof. S. Kaplanis, Technological Institute of Patra, Greece

10:30 Solar Geometry and Solar Radiation aspects; Polar Charts

Prof. S. Kaplanis, Technological Institute of Patra, Greece

11:00 Break

11:30 Solar Radiation; Direct & Diffuse: Measurements, Determination of Solar Radiation on any Inclined Surface

Prof. S. Kaplanis, Technological Institute of Patra, Greece

12:15 Solar Converters & Devices to Gain Thermal Energy and Power: Principles, Design, Details and Examples

Prof. S. Kalogirou, Cyprus University of Technology, Cyprus

13:00 Lunch

14:00 Solar Cooling & Air-conditioning

Prof. S. Kalogirou, Cyprus University of Technology, Cyprus

14:30 Engineering Systems in Buildings, Agro-economy, Industry

Prof. S. Kalogirou, Cyprus University of Technology, Cyprus

15:00 End

Tuesday 3 July, 2012

09:00 Domotics related to Energy and RES Management

1. *Prof. P. Borza, Transilvania University in Brasov, Romania*

10:30 PV + Thermal Systems

Prof. Y. Tripanagnostopoulos, University of Patra, Greece

11:00 Break

11:30 Hybrid R.E.S. Systems: Design, Performance
Prof. Y. Tripanagnostopoulos, University of Patra, Greece

12:15 Applications of Solar Thermal Systems (Buildings and Industrial uses)
Prof. A. Argyriou, University of Patra, Greece

13:00 Lunch

14:00 Solar Cooling & Air-conditioning
Prof. A. Argyriou, University of Patra, Greece

14:30 Bioclimatic Buildings; Principles; Design; Performance; Parametres; Gain
Prof. A. Argyriou, University of Patra, Greece

15:00 End

Wednesday 4 July, 2012

09:00 PV cells: Physics of PV cells, fabrication; operation characteristics
Prof. V. Benda, Technical University Prague, Czech Republic

09:45 High efficient Dye sensitized and Organic solar cells: A new perspective to the solar energy conversion.
Prof. E. Stathatos, Electrical Engineering Dept., Technological Institute of Patras, Greece

11:00 Break

11:30 Experience from PV system performance including comparison of on roof and facade systems
Prof. V. Benda, Technical University of Prague, Czech Republic

13:00 Lunch

14:00 Biomass: Basics, Bio-conversion, crop and sewage treatment (Part I)
Dr. Sp. Alexopoulos, University of Applied Sciences, Aachen, Germany

14:30 Biomass: Basics, Bio-conversion, crop and sewage treatment (Part II)
Dr. Sp. Alexopoulos, University of Applied Sciences, Aachen, Germany

15:00 Exhibition Room 1st Poster Presentation (Student Initiative)

Thursday 5 July, 2012

09:00 The influence of the critical rare earth metals supply for wind mill constructions..
Prof. D. Declerck, KATHO University College, Belgium

09:45 1st Student oral presentation on RES Innovation & Intelligent Application

10:15 Stand – alone PV systems for outdoor living

Prof. M. Stoev, South – West University ‘Neophit Rilski’, Bulgaria

11:00 Break

11:30 High efficient Dye sensitized and Organic solar cells : A new perspective to the solar energy Conversion.

Prof. E. Stathatos, Electrical Engineering Dept., Technological Institute of Patras, Greece.

12:15 Design, Simulation and Performance of Reflecting Parabolic Solar Collectors Student presentation
E. Petrakis Technological Institute of Patra, Greece

13:00 Lunch

14:00 2nd Student oral presentation on RES Innovation & Intelligent Application

15:00 **Exhibition of Innovation Design** (student Initiative)

Friday 6 July, 2012

09:00 Energy consumptions of traditional office buildings; Energy Audits

Prof. P. Kadar, Ábuda University, Budapest, Hungary

09:45 Wind Technologies; Estimation of Wind- Potential; software; Wind Turbine Technologies

Prof. P. Kadar, Ábuda University, Budapest, Hungary

10:30 Parts of a Wind turbine; construction; design data;

Prof. P. Kadar, Ábuda University, Budapest, Hungary

11:00 Break

11:30 Student Presentation no III
no IV

12:15 Size optimization of wind-photovoltaic systems

Dr. F. Hocaoglu, Afyon Kocatepe University, Turkey

Efficiency of Solar Collectors; Solar Thermal Gain

Prof. S. Kaplanis, Technological Institute of Patra, Greece

13:00 Lunch

13:30 Environmental Management & Sustainability

Prof. M. Dassisi, Politecnico di Bari

14:30

Lab work & case studies on PV i-V courses

Dr. E. Kaplani, Technological Institute of Patra, Greece

15:00 **Exhibition of Innovation Design**

Saturday 7 July, 2012

- 09:00 PV Systems: Data collection and processing, quality and project management, ICT support
Martin Molhanec, Technical University of Prague, Czech Republic
- 09:45 Integration of RES in AC Grid
Prof. R. Magureanu, University Politehnica, Bucharest, Romania
- 10:30 Power Quality in Micro Grids
Prof. R. Magureanu, University Politehnica, Bucharest, Romania
- 11:00 Break
- 11:30 PV Sizing Procedures; Simulation Studies and L.C.A.
Prof. S. Kaplanis, Technological Institute of Patra, Greece
Dr. E. Kaplani, Technological Institute of Patra, Greece
- 13:00 Lunch
- 14:00 Student Presentation no IV.
- 15:00 Exhibition, room : RES Innovations & Intelligent Application

Monday 9 July, 2012

- 09:00 Bio-technologies & Bio-fuel types
Dr. A. Majchrzycka, West Pomeranian University of Technology, Szczecin, Poland
- 09:45 Bio-buildings, Bio-communities and Bio-climate houses
Thermal comfort in buildings
Dr. A. Majchrzycka, West Pomeranian University of Technology, Szczecin, Poland
- 10:15 Student oral presentation
Prof. S. Kaplanis, Technological Institute of Patra, Greece
- 11:00 Break
- 11:30 Solar Technologies integrated into Buildings
Dr. A. Majchrzycka West Pomeranian University of Technology, Szczecin, Poland
- 12:15 Solar collectors installation in collaboration with a heat pump system in the University of Szczecin
Dr. A. Majchrzycka, West Pomeranian University of Technology, Szczecin, Poland
- 13:00 Lunch
- 14:00 Student Oral Presentation V
- 14:30 Support measures for RES

Dr. Koen Vandewalle, KATHO, University college, Belgium
- 15:00 Exhibition, room : RES Innovations & Intelligent Application

Tuesday 10 July, 2012

- 09:00 Alternative Fuels in the 21st century
Prof. Georgi Cholakov, University of Chemical Technology and Metallurgy Sofia, Bulgaria
- 09:45 Fossil Fuels in the 21st century
Prof. Georgi Cholakov, University of Chemical Technology and Metallurgy Sofia, Bulgaria
- 10:30 Sustainable Development. Integrated Renewable Energy Systems – Holistic Modelling & Control.
Dr. D. Cotfas, Transilvania University, Brasov, Romania
- 11:00 Break
- 11:30 Measurements of Solar Radiation; Calibration of PV cells
Dr. D. Cotfas, Transilvania University, Brasov, Romania
- 12:15 Determining the Parameters of the Solar Cells
Dr. D. Cotfas, Transilvania University, Brasov, Romania
- 13:00 Lunch
- 14:00 Exhibition Room & Posters
- 15:00 End

Wednesday 11 July, 2012

- 09:00 Data acquisition and Noise in Solar Cells
Prof. P. Cotfas, Transilvania University, Brasov, Romania
- 09:45 Ceramic materials for SOFC: Current status.
Prof. Vl. Kozhukharov, University of Chemical Technology and Metallurgy Sofia, Bulgaria
- 10:15 Solid Oxide Fuel Cells (SOFCs) : Physical-chemical Characterization Methods
Prof. Vl. Kozhukharov, University of Chemical Technology and Metallurgy Sofia, Bulgaria
- 11:00 Break
- 11:30 State-of-the-art in SOFCs Science and Technology
Prof. Vl. Kozhukharov, University of Chemical Technology and Metallurgy Sofia, Bulgaria
- 12:15 Photovoltaics in Buildings: Energy Considerations
Prof. Angel Antonio Bayod Rijula, University of Zaragoza, Spain
- 13:00 Lunch
- 14:00 FUNDAMENTALS OF SOLAR THERMOELECTRIC CONNECTED TO THE GRID.
Objectives, Regulation and Experiences in Spain
Prof. Amaya Martinez -Gracia, University of Zaragoza, Spain

15:00 End

Thursday 12 July, 2012

Presentations of Innovation on R.E.S. by Students

Friday 13 July, 2012

09:00 Students present and defend the projects assigned to them

- Certificates Award ceremony & Innovations Awards

Saturday 14 July, 2012

Farewell