

26/27 MAY 2011  
**4TH  
INTERNATIONAL  
CONGRESS**

ON ENERGY AND  
ENVIRONMENT ENGINEERING  
AND MANAGEMENT  
MÉRIDA | SPAIN

# Scientific program

of the 4th International Congress

**Energy**

and Environment Engineering

and **Management**

## GENERAL PROGRAM OF THE 4th INTERNATIONAL CONGRESS ON ENERGY AND ENVIRONMENT ENGINEERING AND MANAGEMENT

HOUR	MAY 25 <sup>th</sup> – Auditorium 1	MAY 25 <sup>th</sup> – Auditorium 2
09,00 – 09,30	Welcome of Participants	
09,30 – 10,00	Opening Ceremony	
10,00 – 11,20 (Auditorium 1) 10,00 – 11,30 (Auditorium 2)	Energetic Instalations	Environment. Environmental Engineering
11,20 – 12,00	Posters session. COFFEE BREAK	Posters session. COFFEE BREAK
12,00-13,00 (Auditorium 1) 12,00 – 14,25 (Auditorium 2)	Energetic Instalations	Energetic and Environmental Project Engineering
13,00 – 14,00 (Auditorium 1)	Renewable Energies	
14,25 - 16,30	Spanish wine tasting. LUNCH	Spanish wine tasting. LUNCH
16,30 - 18,30	Renewable Energies	Materials for Energy. Clean Materials

HOUR	MAY 26 <sup>th</sup> – Auditorium 1	MAY 26 <sup>th</sup> – Auditorium 2
09,00 – 09,40	Plenary Conference: "Renewable Energy, Global warming and the Impact of Power Electronics", Prof. Ahmed Zobaa (Inderscience, UK)	
09,45 – 11,25 (Auditorium 1) 10,00 – 11,00 (Auditorium 2)	Environment. Environmental Engineering	Energetic Instalations
11,25 – 12,00	Posters session. COFFEE BREAK	Posters session. COFFEE BREAK
12,00 – 14,00 (Auditorium 1) 12,00 – 12,55 (Auditorium 2)	Environment. Environmental Engineering	Renewable Energies
13,00 – 13,55 (Auditorium 2)		Materials for energy. Clean Materials
14,00 – 15,30	LUNCH	LUNCH
15,30 – 16,50	Environment. Environmental Engineering	Environmental Education
17,00	TOURISTIC VISIT TO MERIDA	TOURISTIC VISIT TO MERIDA

<b>HOUR</b>	<b>MAY 27<sup>th</sup> - Auditorium 1</b>	<b>MAY 27<sup>th</sup> - Auditorium 2</b>
<b>09,20 – 09,40</b>	<b>Plenary Conference: "Environmental health and development in Brazil", Prof. Josino Moreira (Fundação Oswaldo Cruz, Brasil)</b>	
<b>09,45 - 11,25</b>	<b>Environment. Environmental Engineering</b>	
<b>11,25 - 11,50</b>	<b>Posters session. COFFEE BREAK</b>	
<b>11,50 - 14,10</b>	<b>Renewable Energies/Energetic Installations</b>	
<b>14,15</b>	<b>CLOSING CEREMONY</b>	
	<b>FREE TIME</b>	



**PROGRAM**  
auditorium

**1**

# WEDNESDAY

25/05/2011

09,00–09,30– Documentation delivery.  
ENTRANCE HALL.

09,30–10,00– Welcome of participants  
AUDITORIUM

10,00–11,20– Oral Communications  
ENERGETIC INSTALATIONS

10,00 – 10,15 - Cross flow turbines in micro, mini and small Brazilian hydroelectric power stations: present situation and future prospective, **Antonio Gonçalves de Mello Jr, Mackenzie Presbyterian University, Sao Paulo, Brazil**

10,20–10,35 - A comparative analysis of air and supercritical carbon dioxide flows through variable geometry ducts using Computational Fluid Dynamics, **Benjamín Monje, Sevilla University, Spain**

10,40–10,55 - Approach to on-line monitoring of creep-life consumption in high-pressure buckets of aero gas turbines, **Benjamin Monje, Sevilla University**

11,00 – 11,15 - Assessing the potential of modelling tools to analyse the performance of IGCC power plants: the ELCOGAS case, **J. M. Muñoz de Escalona, Sevilla University, Spain**

11,20–12,00– Coffee Break. Posters session.

12,00–13h00– Oral Communications  
ENERGETIC INSTALATIONS

12,00 – 12,15 - Study on Rankine Cycle for Waste Heat Recovery from Vehicle Exhaust Gases, **Mário Costa, Lisbon Technical University**

12,20 – 12,35 - SPHERA: approaching the use of syngas fuels in gas turbines from a global perspective, **J. M. Muñoz de Escalona, Sevilla University**

12,40 – 12,55 - Optimization of a small-scale cogeneration system as a function of the thermal demand, **Ana Cristina Ferreira, Minho University**

13,00–14,00 Oral Communications  
RENEWABLE ENERGIES

13h00 – 13h15 – Emission benefits in application of alternative fuels on racing car compression ignition engines, **J. M Herreros, Cranfield University, United Kingdom**

13h20 – 13h35 - Cell Model Method Applied to the Modelling of Blue Energy Production by Capacitive Mixing, **Ángel V. Delgado, Granada University**

13,40 – 13,55 - Hydraulic power take-off prototype for a wave energy converter, **Pedro Beirão, Coimbra University, Portugal**

14H25 – 16H30 – Spanish wine tasting. LUNCH

16,30 – 18,30 – Oral Communications  
RENEWABLE ENERGIES

16,30 – 16,45 - Particle emissions from a domestic pellets-fired boiler, **Mário Costa, Lisbon Technical University**

16,50 – 17,05 - Heat loss by the Earth, geothermal energy and geothermal heat pumps, **Maria Rosa A: Duque, Évora University**

17,10 – 17,25 - Environmental and energetic assessment of the use of Italian maize cultivations for bioethanol production: an LCA case study, **Andrea Capelli, Roma University**

17,30 – 17,45 - Improvement of predictive maintenance by including automated fault diagnosis to be applied to wind turbines, **L. F. Blázquez Quintana, León University**

17,50 – 18,05 - Efficiency Study of Photovoltaic Systems, **Christopher S. A. Sá and Liliana A. M. Barbosa, CIETI, Institute of Engineering of Porto Polytechnic Institute**

18,10 – 18,25 - On-road performance comparison between two cars consuming petrodiesel and biodiesel, **Luis Serrano, Leiria Polytechnic Institute**

FREE TIME

# THURSDAY

## 26/05/2011

09,00 – 09,40 – **Plenary Conference:** "Renewable Energy, Global Warming, and the Impact of Power Electronics", **Prof. Ahmed Zobaa, Inderscience (UK)**

09,45 – 11,25 – Oral Communications  
ENVIRONMENT. ENVIRONMENTAL ENGINEERING

9,45 – 10,00 - Generation of electricity using Eucalyptus globulus as raw material – a life cycle assessment including indirect land use change, **Maria Gonçalves, Lisbon Technical University**

10,05 – 10,20 - Methodology for calculating the impact factors on the Ecological Footprint of the Construction of Buildings, **Jaime Solis, Sevilla University**

10,25 – 10,40 - Environmental Risk Management – A practical approach in REN, **Francisco Parada, REN (Portugal)**

10,45 – 11,00 - Methodology for calculating consumption of material resources in buildings construction, **Maria del Pilar Mercader Moyano, Sevilla University**

11,05 – 11,20 - Effect of temperature on water absorption by a superabsorbent polymer, **Miguel Casquilho, Lisbon Technical University**

11,25 – 12,00 – Coffee Break. Posters Session

12,00 – 14,00 - Oral Communications  
ENVIRONMENT. ENVIRONMENTAL ENGINEERING

12,00 – 12,15 - Direct Seed and Precision Agriculture Technologies – an environment contribute to improve efficiency and energy saving in cereal crops, **Luis Conceição, Agriculture Superior School / Portalegre Polytechnic Institute**

12,20 – 12,35 – Forecasting Spanish CO<sub>2</sub> emissions based on Kaya Identity, **Gonzalo Tudela, ETS of Industrial Engineers, Valladolid**

12,40 – 12,55 - The Performance of glyphosate and microbial biomass in soils degraded by sand extraction, **Maria Regina Aquino, Vale do Paraíba University, Brazil**

13,00 – 13,15 - Treatment of high strength wastewater from fruit juice industry using integrated aerobic biological and chemical processes, **Marco Lucas, Trás-os-Montes e Alto Douro University**

13,20 – 13,35 – Use of Synthetic water quality index (SWQI) for water pollution control in springs of Gijón Municipality in Northwester Spain, **Jorge Loredó, Oviedo University**

13,40-13,55 - Evaluation of the environmental feasibility of using Biogas for bus fleets supply, **Rocío Luiña, Oviedo University**

14,00 – 15,30 - Lunch

15,30 – 16,45 Oral Communications  
ENVIRONMENT. ENVIRONMENTAL ENGINEERING

15,30 – 15,45 - Reduction of landfilling of steelmaking slags through Data Mining process analysis, **Sara Andres, ArcelorMittal**


15,50– 16,05 –Anodization with organic acids in aeronautical materials, **JJ Galán, A Coruña University**

16,10 – 16,25 - Strengthening Venezuelan National Park's management through eco-efficiency, **D. Díaz-Martín, Metropolitan University, Venezuela**

16,30 – 16,45 - Soil recovery in areas degraded by sand mining: alternative management proposal, **Maria Regina Aquino, Vale do Paraíba University, Brazil**

17,00– TOURISTIC VISIT TO MERIDA (only for the congresspeople who confirmed it)

21h30– CONGRESS DINNER (only for the congresspeople who confirmed it)

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# FRIDAY

27/05/2011

9,00–09,40 – Plenary Conference: "Environmental health and development in Brazil" Plenary conference by **Prof. Josino Moreira (Oswaldo Cruz Foundation, Brazil)**

9,45–11,25 – Oral Communications  
ENVIRONMENT. ENVIRONMENTAL ENGINEERING

9,45 – 10,00 - Indoor air quality analyses of ARFRISOL Buildings, **Antonio Garrido, CIEMAT, Spain**

10,05 – 10,20 - Use of Computational Fluid Dynamics (CFD) to improve the design of Wastewater Treatment Plants, **Joaquín Fernández Francos, Extremadura University**

10,25 – 10,40 - Reform Initiatives in Energy Sector under Climate Change Scenario: a Case study of Indian State, **N. K. More, Central University, India**

10,45 – 11,00 - Winery wastewater treatment using a Membrane Bioreactor, **Christopher Sá and Antonio M. P. Sampaio, CIETI, Institute of Engineering of Porto Polytechnic Institute**

11,05 – 11,20 - Producing microdrops with a more energetically efficient flow focusing device, **Conrado Ferrera, Extremadura University**

11,25 – 11,50 – Coffee Break. Posters session.

11,50 – 14,10 – Oral Communications  
Renewable Energies/Energetic Installations

11,50 – 12,05 – Estimation study for an optimum energy exploitation of a standalone photovoltaic pumping system (PVPS), **A Boutheligh, Applied Research Unit for Renewable Energies, Algeria**

12,10 – 12,25 – Biomass waste – An energy source, **Matjaz Kunaver, National Institute of Chemistry, Slovenia**

12,30 – 12,45 - A predictive control system sustainable supply of renewable energies applied to PV installations, **A. Rodriguez, Compostela University**

12,50 – 13,05 – Opportunities of the use of landfills for power generation: the Campinas city study case – Brazil, **Douglas X. Rezende, Anhanguera Faculty of Campinas, Brazil**

13,10 – 13,25 - Degree of users satisfaction expressed in terms of the environmental conditions, **Virginia Gómez García, Madrid Polytechnic University (Energetic Instalations)**

13,30 – 13,45 - Analysis of the energy performance of an air curtains heating system with solar thermal production in an ITV workshop rehabilitation, **Miguel Ángel Gálvez Huerta, Madrid Polytechnic University (Energetic Instalations)**

13,50 – 14,05 – Energy valorization of solid vines pruning by thermal gasification in a pilot plant, **Paulo Brito, Superior School of Technology and Management / Portalegre Polytechnic Institute**

14,15 – Closing Cerimony

FREE TIME



**PROGRAM**  
auditorium

**2**

# WEDNESDAY

25/05/2011

**10,00 – 11h30 – Oral Communications**

**ENVIRONMENT. ENVIRONMENTAL ENGINEERING**

10,00 – 10,15 - Photocatalytic decomposition of indigo carmine dye mediated by titanium dioxide, **Anabela Oliveira, Superior School of Technology and Management / Portalegre Polytechnic Institute; Molecular Chemical Physics Center/Technical University of Lisbon**

10,20 – 10,35 - Energy and environmental improvements in a cement factory by a statistical control system or Energy and environmental saving in a cement factory by a statistical control system, **A.M. Castañón, León University**

10,40 – 10,55 - Effect of Acid Conditions on the Structural Stability of Mine Waste Mud-based Geopolymeric Artificial Aggregates for Wastewater Treatment, **Isabel Castanheira e Silva, Beira Interior University**

11,00 – 11,15 - Modelling of the performance of filtering elements at high temperature and high pressure, **Mónica Rodríguez, Sevilla University**

11,20 – 11,25 - Harvesting Systems for Natural Woody Biomass from Conservation Areas, **Anna-Maria Engel, Georg-August University Göttingen, Germany**

11,30 – 12,00 – Coffee Break. Posters session.

**12,00 – 13h55 – Oral Communications**

**ENERGETIC AND ENVIRONMENTAL PROJECT MANAGEMENT**

12,00 – 12,15 - Municipal and business energy management in public buildings and services buildings. Case study of Cascais Municipality, **J. Wang de Abreu, New University of Lisbon**

12,20 – 12,35 - Improving energy efficiency in new trawlers fishing gear in Alicante, **Antonio Martinez Sanz, Valencia Polytechnic University**

12,35 – 12,50 - Guideline for the possible standardization of ideal fishing conditions for Mediterranean trawlers, **Samuel Sánchez Caballero, Valencia Polytechnic University**

12,55 – 13,10 - Methodology for environmental adaptation by design in spontaneous settlements cells: the case of Agüita de la Perdiz, Concepción. Chile, **Leonardo Agurto, Zaragoza University**

13,25 – 13,40 - Design of an electromechanical propulsion system for mobile robots and future vehicles, **José A. Nunes Loureiro, Guarda Polytechnic Institute**

13,45 – 14,00 - Research on sustainable acclimatization of entertainment rooms, **José Gaspar, Technical University of Lisbon**

14,05 – 14,20 - Quantification of GHG Emissions in Road Projects, **Gonzalo Fernández, Madrid Complutense University**

**14H25 – 16H30 – Spanish Wine Tasting. LUNCH**

**16,30 – 18h30 – Oral Communications**

**MATERIALS FOR ENERGY. CLEAN MATERIALS**

16,30 – 16,45 - Active Glass with circulating water chamber for energy management in buildings, **F. del Ama Gonzalo, EPS University CEU San Pablo**

16,50 – 17,05 - Thermal Mass in hot dry Mediterranean climates: the case study of Hispano-Islamic architecture, **Benito Jimenez Alcalá, University San Pablo-CEU**

17,10 – 17,25 - Remediation of soils polluted by heavy metal using organic acids, **Zahra Arabi, Islamic Azad University, Iran**

17,30 – 17,45 - High-temperature mechanical behavior of nickel oxide/zirconia composites, **M. Oliva-Ramírez, Sevilla University**

17,50 – 18,05 - Modification and Optimization of Activated Carbons for Phenolic Compounds Removal, **Paulo Mourão, Évora University**

18,10 – 18,25 - Bran of beer as source of energy, **Yolanda Pliego, Orizaba Technologic Institute, México**

**FREE TIME**



# THURSDAY

26/05/2011

## 10,00 – 11,00 - Oral Communications ENERGETIC INSTALATIONS

10,00 – 10,15 - Optimization of the micro-hydro energy recovery plant “La Contraparada” using Pumps as Turbines (PaTs), **José Perez, Cartagena Polytechnic University**

10,20 – 10,35 - Operating conditions of a Portuguese wood stove, **Ana Calvo, Aveiro University**

10,40 – 10,55 - SIMPLIFIED CO<sub>2</sub> ASSESSMENT TOOL FOR DWELLING EVALUATION, **José Carlos Claro Ponce, Sevilla University**

11,20– 12,00 – Coffee Break. Posters Session

## 12,00 – 12,55 - Oral Communications RENEWABLE ENERGIES

12,00 – 12,15 - Effect of operating conditions on the activity and stability of a NiSiO<sub>2</sub> catalyst in ethanol steam reforming, **Jorge Vicente, University of Basque Country**

12,20 – 12,35 – Daylight as a form generator for skylights, **Ignacio Acosta, Sevilla University**

12,40 – 12,55 - Experimental analysis of Low Temperature combustion mode with diesel, biodiesel and gasoline fuels: a method for reducing NO<sub>x</sub> and soot emissions, **Miguel Torres García, Sevilla University**

## 13,00 – 13,55 - Oral Communications MATERIALS FOR ENERGY. CLEAN MATERIALS

13,00 – 13,15 - Enhanced accumulation of Pb in Raphanus sativus L. by soil-applied chelating agents, **Zahra Arabi, Islamic Azad University, Iran**

13,20 – 13,35 - Surface Photochemistry: p-Hydroxystilbazol within nanochannels of Na<sup>+</sup> and H<sup>+</sup> ZSM-5 Zeolites, **Luis Filipe Vieira Ferreira, Technical University of Lisbon**

13,40 – 13,55 - The Spanish Heritage. Designs and Rehabilitations in Composites of prototypical models as “Las Aguzaderas” Castle, **José Ignacio Pérez Calero, Sevilla University**

14,00 – 15,30 - Lunch

## 15,30 – 17,00 - Oral Communications ENVIRONMENTAL EDUCATION

15,30 – 15,45 - Environmental Education: Reflections and Attitudes in Schools, **Margarida Ribeiro Oliveira, Coimbra University**

15,50 – 16,05 - Engineering Equation Solver; a new teaching and design tool to environmental and thermal engineering, **A. de Miguel Catoira, A Coruña University**

16,10 – 16,25 – Assessment of International initiatives aimed to promote energy saving in buildings, **Jaime Solis, Sevilla University**

16,30 – 16,45 – Process Energy and Intrinsic Complexity, **Magda Pereira Pinto, Brasilia University, Brazil**

17,00 – TOURISTIC VISIT TO MERIDA (only for the congresspeople who confirmed it)

21h30 – CONGRESS DINNER (only for the congresspeople who confirmed it)



