## **2013 International Conference on New Concepts in Smart Cities: Fostering Public** and Private Alliances

(SmartMILE 2013)

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2013 International Conference on New Concepts in Smart Cities: Fostering Public and Private Alliances (SmartMILE)

53 Papers with peer review and all IEEE steps done (IEEE pdf eXpress conversion and IEEE copyright)

Special Session (SS)	1 paper
Oral Sessions (OS1, OS2, OS3, OS4, OS5)	34 papers
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#### **DETAILS**

Special Session SS (1 paper) Topic: Lighting Smart Grids / Intelligent Building Technology

Paper SS: (Submission 02)

Enerlight project: Walking from Electronic Lighting Systems to Lighting Smart

Grids " Authors:

(NORMALUX – Spain)
(EPI-GIJON-SPAIN)
(EPI-GIJON-SPAIN)
(EPI-GIJON-SPAIN)
(EPI-GIJON-SPAIN)

Oral Session OS1 (6 papers) Topic OS1: EVs and Batteries

Paper OS1-01: (Submission 73)

*Electrically Rechargeable Aluminum-air Batteries to Power Smart Cities. " Authors:* 

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Joaquín Chacón(Albufera Energy Storage- Spain)Paloma Rodríguez(Albufera Energy Storage- Spain)

#### Paper OS1-02: (Submission 17)

#### A proposed mathematical model for discharge curves of Li-Ion batteries " Authors:

Eva Aneiros	(Nebrija University – Spain)
David Lobo	(Nebrija University – Spain)
Alberto Lopez	(Nebrija University – Spain)
Roberto Alvarez Fernandez	(Nebrija University – Spain)

#### Paper OS1-03 (Submission 37)

#### Evaluation of the Utilization of Electric Vehicles for Building Energy Management in Hotels.

Authors:

Jesus Fraile-Ardanuy	(UPM – Spain)
Roberto Alvaro Hermana	(UPM – Spain)
Carlos Gamallo Chicano	(UPM – Spain)
Jairo Gonzalez Perdomo	(UPM – Spain)
Manuel Fuentes Gomariz	(CIEMAT – Spain)

#### Paper OS1-04: (Submission 62)

#### Evaluation of LFP batteries for EV applications.

Authors:	
David	Anseán

David Anseán	(PhD Student-EPI– Spain)
Manuela González	(University of Oviedo – Spain)
Juan Carlos Viera	(University of Oviedo – Spain)
Víctor Manuel García	(University of Oviedo – Spain)
Cecilio Blanco	(University of Oviedo – Spain)
Juan Carlos Álvarez	(University of Oviedo – Spain)

#### Paper OS1-05: (Submission 61)

#### Road Motion Control Electric Vehicle with Speed and Torque Observer.

Authors:	
Daniel Foito	(ESTSetubal/IPS- Portugal)
ManuelGuerreiro	(ESTSetubal/IPS- Portugal)
Vitor Fernao Pires	(ESTSetubal/IPS- Portugal)

Paper OS1-06: (Submission 09)





#### Improved composite for tires of urban Electric Vehicles

#### Authors:

Angel Sancho-Turrado Julio Antonio Riba López Antonio Javier Calleja (Student-WRE – Spain) (University of Oviedo – Spain) (University of Oviedo – Spain)

#### Oral Session OS2 (7 papers) Topic OS2: Smart Cities, Open data and ICTs

#### Paper OS2-01 (Submission 30)

#### AVIUE - Artificial Vision to Improve the User Experience.

Authors:

Daniel González Losada	(SINERCO – Spain)
Gustavo Adolfo Rosal López	(SINERCO – Spain)
RodrigoGarcía Acevedo	(CTIC-SPAIN)
Alberto Fernández Villan	(CTIC-SPAIN)

#### Paper OS2-02: (Submission 13)

#### A Full service for urban-environmental-monitoring and eco-driving on

professional fleets. <sup>…</sup> Authors:	
Abel Rionda	(ADN Mobile Solutions – Spain)
Alejandro Alija	(Ingenieros Asesores S.A. – Spain)
Ignacio Marín	(ADN Mobile Solutions – Spain)
David Martinez	(ADN Mobile Solutions – Spain)
Adrian García Allende	(Ingenieros Asesores S.A. – Spain)
Manuel Miñambres	(Ingenieros Asesores S.A. – Spain)
Fernando Aparicio	(ADN Mobile Solutions – Spain)
Xabiel G. Pañeda	(University of Oviedo – Spain)
David Martinez Adrian García Allende Manuel Miñambres Fernando Aparicio	(ADN Mobile Solutions – Spain (Ingenieros Asesores S.A. – Spa (Ingenieros Asesores S.A. – Spa (ADN Mobile Solutions – Spain

#### Paper OS2-03: (Submission 18)

Using GIS technologies for evaluating urban sprawl in Asturias and Spain.Authors:Victor ManuelGonzalez Marroquin(RegionLab – Spain)FernandoRubiera MorollónJosé LuisPérez Rivero(RegionLab – Spain)

Paper OS2-04: (Submission 36)





### Visual supervision of a waste water biological reactor using artificial intelligence algorithms. " Authors:

Mario J. Crespo-Ramos Ivan Machón-González Hilario López-García Jose Luis Calvo Rolle

(University of Oviedo – Spain) (University of Oviedo – Spain) (University of Oviedo – Spain) (University of A Corunha– Spain)

#### Paper OS2-05: (Submission 40)

# Automatic calculation of bicycle routes by combining metaheuristics and GIStechniques within the framework of smart cities.Authors:Carlos Loucera Muñecas(PhD Student – Spain)Oscar J. Cosido Cobos(University of Cantabria – Spain)Andres Iglesias Prieto(University of Cantabria – Spain)

#### Paper OS2-06: (Submission 04)

## MOBISEC: An European experience directed towards improving cities through citizen participation.

#### Authors:

Rafael Melendreras Ruiz Angel J. Garcia-Collado

(Univ. Católica San Antonio– Spain) (Univ. Católica San Antonio – Spain)

#### Paper OS2-07: (Submission 47)

#### The use of bamboo as a sustainable material for several city uses. " Authors:

Marian Garcia Prieto	(University of Oviedo – Spain)
Jose Eduardo Torres Rojas	(Evidally – Colombia/Spain)
Nuria Jove Vidal	(University of Oviedo – Spain)

#### Oral Session OS3 (7 papers)

Topic OS3: Renewable Energy for sustainable urban development

#### Paper OS3-02(Submission 23)

#### CFD analysis of wind potential in a district of Gijón.

#### Authors:

María J	osé Suárez López	(CTIC – Spain)
Saray	González Suárez	(CTIC – Spain)
Rodrigo	García Acevedo	(CTIC – Spain)





Eduardo Blanco Marigorta

(University of Oviedo - Spain)

#### Paper OS3-02: (Submission 76)

## *PV self-consumption in cities: Solarfighter Experience. Authors:*

Rafael García-Valverde Jose Alfonso Teruel Jose Antonio Villarejo (Soltec Energias Renovables – Spain) (Soltec Energias Renovables – Spain) (UPCT – Spain)

#### Paper OS3-03: (Submission 41)

#### Study of the effect of a geothermal heat exchanger over the ground. " Authors:

José Luis Casteleiro-Roca	(PhD-student – Spain)
José Luis Calvo Rolle	(University of a Coruna – Spain)
Iván Machón-González	(University of Oviedo – Spain)
Mario J. Crespo-Ramos	(University of Oviedo – Spain)
Hilario López-García	(University of Oviedo – Spain)

#### Paper OS3-04: (Submission 24)

#### Development of a micro-wind generating system. " Authors: Carlos Lumbreras (Master EECPS – S

Carlos Lumbreras	(Master EECPS – Spain)
Juan M.Guerrero	(University of Oviedo – Spain)
Pablo García	(University of Oviedo – Spain)
Fernando Briz	(University of Oviedo – Spain)
David Diaz	(University of Oviedo – Spain)

#### Paper OS3-05: (Submission 15)

Obtaining renewable energy from tidal currents in the Aviles port: New services for citizens " Authors:

Eduardo Alvarez Alvarez	(UNIOVI – Spain)
Antonio Navarro-Manso	(UNIOVI – Spain)
Antonio J. Gutiérrez-Trashorras	(UNIOVI – Spain)
Joaquín Fernández Francos	(UNIOVI – Spain)
Manuel Rico-Secades	(UNIOVI – Spain)

#### Paper OS3-06: (Submission 80)

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#### Trends in Redox Flow Battery Technology and project REDOX2015 " Authors:

Luis Santos

(EDP – Spain)

Paper OS3-07: (Submission 20)

A study of air leakage in residential buildings.

*Authors:* Alberto Jiménez Tiberio Pablo Branchi

(ACR group – Spain) (PhD-student – Spain)

#### Oral Session OS4 (7 papers) Topic OS4: Lighting Smart Grids

#### Paper OS4-01: (Submission 38)

A set of software tools for management and simulation of a Lighting Smart " Grid. Authors: Nelo Huerta-Medina (University of Oviedo – Spain) Emilio López Corominas (University of Oviedo – Spain)

#### Paper OS4-02: (Submission 78)

#### Hybrid systems of distributed power generation and street lighting based on

LEDs. " Authors:	
Maicol Melo	(UFSM – Brasil)
William Vizzotto	(UFSM – Brasil)
Marco Dalla Costa	(UFSM – Brasil)
Andre Kirsten	(UFSM – Brasil)
Jorge García	(University of Oviedo – Spain)

#### Paper OS4-03: (Submission 70)

Control of single-phase islanded PV/battery streetlight cluster based on

#### *Power-Line Signaling.* " *Authors:* Pablo Quintana

(PhD-EPI – Spain)

#### Paper OS4-04: (Submission 71)

Received Signal Strength-Based Indoor Location Method. " Authors:





Yuri Alvarez-Lopez Fernando Las-Heras (University of Oviedo – Spain) (University of Oviedo – Spain)

#### Paper OS4-05: (Submission 03)

#### Low cost intelligent LED driver for public lighting smart grids Authors:

Daniel García-Llera	(Student-EPI – Spain)
Jesús Cardesín	(University of Oviedo – Spain)
Emilio López Corominas	(University of Oviedo – Spain)
Antonio Javier Calleja Rodriguez	(University of Oviedo – Spain)
Javier Ribas	(University of Oviedo – Spain)
David Gacio	(NORMALUX – Spain)

#### Paper OS4-06: (Submission 45)

Multipurpose controlled three-phase inverter for motor driving and grid power injection applications. " Authors:

Juan	Morís Gómez	(Master EECPS – Spain)
Bassam	Mohammed	(Master EECPS – Egypt)
José M	aría Cuartas	(Master EECPS – Spain)
Ángel	Navarro	(Master EECPS – Spain)

#### Paper OS4-07: (Submission 51)

# Street Lighting System using Light Emitting Diode (LEDs) supplied by theMains and by Batteries....Authors:...Rafael Adaime Pinto(UFSM – Brazil)João Gilberto Roncalio(UFSM – Brazil)Ricardo Nederson Do Prado(UFSM – Brazil)

#### Oral Session OS5 (7 papers)

Topic OS5: Intelligent Building Technology

#### Paper OS5-01: (Submission 46)

#### An Improved Technique for Load Identification in Residential Buildings.

#### Authors:

Vinicius Pozzobon Borin Carlos Henrique Barriquello Rafael Adaime Pinto

(UFSM – Brasil) (UFSM – Brasil) (UFSM – Brasil)





#### Paper OS5-02: (Submission 14)

#### Energy Management System Proposal for Efficient Smart Homes.

Authors:	
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Juan Antonio Nazabal	(UPN – Spain)
Carlos Fernandez-Valdivielso	(UPN – Spain)
Francisco Falcone	(UPN – Spain)
Ignacio Matias	(UPN – Spain)

#### Paper OS5-03: (Submission 16)

#### Impact of Wireless Sensor Networks in the Advancement of Ambient Intelligence and Smart Cities

Authors:

Leire Azpilicueta	(UPN – Spain)
Juan Antonio Nazabal	(UPN – Spain)
Carlos Fernandez-Valdivielso	(UPN – Spain)
Ignacio Matias	(UPN – Spain)
Francisco Falcone	(UPN – Spain)

#### Paper OS5-04: (Submission 12)

### Certification of energy efficiency in new buildings. A comparative among the different climatic zones of Spain. " Authors:

Antonio J.Gutiérrez-Trashorras	(University of Oviedo – Spain)
Juan M.González-Caballín Sánchez	(University of Oviedo – Spain)
Eduardo Álvarez Álvarez	(University of Oviedo – Spain)
José P. Paredes Sánchez	(University of Oviedo – Spain)

#### Paper OS5-05: (Submission 60)

## Hurdles for an Ubiquitous Electric Vehicle: The Experiences of Project ELEVTRA.

#### Authors:

Marta Mendez-Fuente	(FUNDACION METAL – Spain)
Maria Jose Alvarez	(FUNDACION METAL – Spain)
Jorge Garcia	(University of Oviedo – Spain)
Pablo Arboleya	(University of Oviedo – Spain)
Pablo Garcia	(University of Oviedo – Spain)
Juan Manuel Guerrero	(University of Oviedo – Spain)
Cristina González-Morán	(University of Oviedo – Spain)





#### Paper OS5-06: (Submission 32)

#### Architectural envelopes that interact with their environment.

Authors: Marlen López Fernández Ramon Rubio Santiago Martin Gonzalez

(PhD Student – Spain) (University of Oviedo – Spain) (University of Oviedo – Spain)

#### Paper OS5-07: (Submission 42)

#### Self-Supply and Net Balance: The Spanish Scenario.

Authors:	
Pablo Arboleya	(University of Oviedo – Spain)
Cristina Gonzalez-Moran	(University of Oviedo – Spain)
Manuel Coto	(University of Oviedo – Spain)
Jorge García	(University of Oviedo – Spain)

#### Poster Session PS (18 papers)

**Topic PS: Smart Cities and Communities (All Conference topics)** 

#### Paper PS-01: (Submission 05)

RENDERING SERVICES USING PHOTOVOLTAIC PANELS	
Authors:	
Henar Fernández	(WRE-EPI – Spain)

#### Paper PS-02: (Submission 11)

#### Bio-smartcity: Biomass supply to a Smartcity. A case study " Authors:

Antonio J. Gutiérrez-Trashorras(University of Oviedo – Spain)Jose P. Paredes-Sánchez(University of Oviedo – Spain)Juan M.González-Caballín Sánchez(University of Oviedo – Spain)

#### Paper PS-03: (Submission 19)

#### ACITY & TECHNOLOGY: an analysis matrix to serve citizens

#### Authors:

Pablo Bra	anchi	(UPNA – Spain)
Ignacio Ma	atías Maestro	(UPNA – Spain)
Carlos Fer	rnández Valdivielso	(UPNA – Spain)

Paper PS-04: (Submission 22)





#### ACORDE: Adaptable residential buildings for a new social framework.

#### Authors:

Ana	Iraizoz	(ACORDE – Spain)
Pablo	Branchi	(ACORDE – Spain)

#### Paper PS-05: (Submission 25)

#### Grid-connected wind microinverter for a PMG based Savonious-Gorlov

turbine. "

Authors:	
Manuel Rubio	(WRE-EPI – Spain)
Carlos Otero	(WRE-EPI – Spain)
Alejandro Garcia	(WRE-EPI – Spain)
Hector Del Arco	(WRE-EPI – Spain)

#### Paper PS-06: (Submission 26)

Illuminated shelf to charge devices through a solar panel. $$		
Authors:		
Sergio Arce García	(WRE-EPI – Spain)	

#### Paper PS-07: (Submission 28)

Home charge system for EVs with peak power smoothing based on renewable energy. " Authors: Javier Escandón (WRE-EPI – Spain)

#### Paper PS-08: (Submission 29)

Life Cycle Analysis and Recycling Techniques of Batteries used in Renewable

Energy Applications. " Authors: Devraj Dutt

(Master STEPS – India)

#### Paper PS-09: (Submission 34)

Zero Energy Grid Injection Strategies using Commercial Inverters in SolarEnergy Power Generation Systems.Authors:Antonio Mateo-ArocaJose Antonio VillarejoJacinto Jimenez(UPCT – Spain)Jacinto Jimenez





Esther de Jodar

(UPCT - Spain)

#### Paper PS-10: (Submission 35)

## *Eco-design workshop: Delivering new concepts for future designs. "Authors:*

Ramon Rubio(University of Oviedo – Spain)Santiago Martin Gonzalez(University of Oviedo – Spain)LauraMelendez(University of Oviedo – Spain)

#### Paper PS-11: (Submission 39)

## Multiagent System for Intelligent Water Demand Management.Authors:BorjaPonte Blanco(PhD-student – Spain)Davidde La Fuente(University of Oviedo – Spain)RaúlPino(University of Oviedo – Spain)

#### Paper PS-12: (Submission 44)

## Feasible design of future electrical transportation by integration of small cellsand mass transportation systems."Authors:"Phunjasit Chokesomritpol(Master STEPS – Thailand)

#### Paper PS-13: (Submission 49)

Study on Passive Self-equalization of Parallel-connected LED Strings.

	· · · · · · · · · · · · · · · · · · ·
Authors:	
David Gacio	(Normalux – Spain)
Marcos Alonso	(University of Oviedo – Spain)
Jorge Garcia	(University of Oviedo – Spain)
Daniel G. Llera	(University of Oviedo – Spain)
Jesus Cardesin	(University of Oviedo – Spain)

#### Paper PS-14: (Submission 55)

An application of intelligent control access management in urban areasframed in the Smart City of the future.Authors:David Ortal Acosta(WRE-EPI – Spain)

Paper PS-15: (Submission 56)

Using Wireless Technologies in Lighting Smart Grids (LSG).



#### Authors:

Marta	Martin-Arias	(WRE-EPI – Spain)
Nelo	Huerta-Medina	(University of Oviedo – Spain)
Manuel Rico-Secades		(University of Oviedo – Spain)

#### Paper PS-16: (Submission 57)

#### Reactive Power Management for Distributed Generation - Motivation and

Solution. """ Authors:	
Therese Okeke	(Master STEPS – Spain)
Ramy Georgiuszaher	(Master STEPS - Egypt)

#### Paper PS-17: (Submission 58)

## Flexible AC Transmission Systems (FACTS). "Authors:Therese Okeke(Master STEPS – Spain)Ramy Georgiuszaher(Master STEPS - Egypt)

#### Paper PS-18: (Submission 63)

Antonio Javier Calleja

#### Workroom on Renewable Energy: A new way to learn and develop the imagination creating concepts. " Authors: Manuel Rico-Secades (University of Oviedo – Spain)

(University of Oviedo – Spain) (University of Oviedo – Spain)

