

**INTERNATIONAL CONFERENCE
ON RENEWABLE ENERGY AND
POWER QUALITY
(ICREPQ'09)**

WELCOME TO ICREPQ'09

On behalf of the Steering Committee and the Local Organizing Committee we want to give you a very warm welcome to ICREPQ'09 and to Valencia.

Our International Programme Committee has selected a high quality 201 papers (among 332 proposals) from which 170 will be presented at the Conference, 40 at oral sessions and 130 at poster sessions (dialogue), along the three days of the ICREPQ'09. All of these papers are included in the final programme. Also four special papers will be presented in plenary sessions.

ICREPQ'09 covers the whole range of problems and solutions especially concerning with renewable energies and power quality and all the papers have direct relation with these two fields of research and practical work.

We would like to thank all the authors, session chairmen, participants without papers and the International Program Committee members who have made important contributions by reviewing the proposals.

In addition to the technical sessions, a number of social events have been arranged. On Wednesday evening (15th April, 19:00 H) we will hold a Civic Reception with aperitif in "Salón de Cristal. Ajuntament de Valencia" and on Thursday (16th April, 20:30 H) the Conference Banquet at "Sorolla Palace" where we will deliver presents to those companies/institutions that collaborate with the organisation of the Conference and on Friday (17th of April from 15:00 H to 19:00 H) we have arranged a Cultural Excursion in two Tourist Buses along Valencia and finally a visit to the City of Arts and Sciences.

We hope that you will find the conference intellectually stimulating, that you will make many fruitful personal contacts here and that you will thoroughly enjoy your visit to Valencia and the surrounding area.

Best regards,

Prof. Manuel Pérez-Donsión
Chairman of the Steering Committee

Prof. Francisco Cavallé Sesé
Chairman of the Local Committee

ORGANISED BY:

- European Association for the Development of Renewable Energies, Environment and Power Quality (EA4EPQ)
- Polytechnical University of Valencia (UPV)
- University of Vigo
- Institute of Electrical Technology



CONFERENCE LANGUAGE

The Conference language is English. All papers and presentations should be made in English.

OBJECTIVES AND TOPICS

The intention of the organisers is to give an opportunity to academics, scientists, engineers, manufacturers and users from all over the world to come together in a pleasant location to discuss recent development in the areas of Renewable Energy and Power Quality.

The International Conference on Renewable Energy and Power Quality (ICREPQ'09) will be structured in:

- **Plenary Sessions:** speech of 45 minutes in one room for all the participants
- **Oral Sessions:** speech of about 15 minutes for each paper (12 minutes for the presentation and 3 minutes for questions) . Renewable Energy and Power Quality sessions simultaneously in two rooms or with an invited session.
- **Posters Sessions:** In 45-minute periods during the coffee breaks.

1. RENEWABLE ENERGY:

Topics include, but are not limited to:

- Wind Energy, Small Hydro Energy, Solar Energy, Photovoltaic Energy, Ocean Energy, Geothermal, Biomass,...
- Classical and special electrical generators: Theory, design, analysis, losses, efficiency, heating and cooling, vibration and noise, modelling and simulation, control strategies, protection systems, maintenance, mechanical behaviour, new methods of testing, parallel operation, stability,...
- Power plants. Distributed generation. Fuel cells. Co-generation. Hybrid Systems. Original solutions,...
- Energy conversion, conservation and energy efficiency.
- Energy saving policy. Energy storage. Batteries,...
- Energy and the environment. Ecological balance. Ecosystem,...
- Application of the renewable energy. Best practice projects.
- Legislation in the area of renewable energies.
- Biomass combustion techniques. The energy use of agricultural and forest residues. Production and energy exploitation of bio-gas. Environment. Social importance...

- Interconnection and transport problems.
- Planning and control of the power system take into account the renewable energy. Stability. Protection...
- Economic analysis of the power system taking into account the renewable energy.
- Regulation/des-regulation of the power market. Influence of the renewable energy.
- Models and simulation of the power systems. Models and estimation of loads. Software tools.
- Application of the telecommunications, internet, artificial intelligence for the renewable energy.
- Security assessment and risk analysis in renewable energy.
- Electric vehicles.
- Power electronics. Control strategies.
- Sensors and actuators.
- Renewable Energies Teaching.

2. POWER QUALITY:

Topics include, but are not limited to:

- Electromagnetic compatibility (EMC).
- Power Quality in Transport and Distribution.
- Economic Studies of the Power Quality.
- Low-frequency conducted disturbances: Voltage deviations, voltage fluctuations/flicker, voltage dips and short interruptions, harmonics and inter-harmonics, transient over-voltages, voltage unbalance (imbalance), temporary power-frequency variations.
- Sources, effects and mitigation methods of the disturbances.
- Measurements of the power quality in networks, industrial installations and Laboratories. Equipment, procedures and measurement methods. Standards.
- Modelling and simulation of the power quality. Software tools.
- Transmission of the disturbances.
- Filtering techniques.
- Power factor compensation. Capacitor switching techniques.
- Optimization techniques.
- Telecommunication, internet and artificial intelligence.
- Permanent monitoring techniques and online diagnosis.
- Intelligent energy delivery systems. Uninterrupted power supplies.
- Expert systems applications.
- Devices, equipment and power systems. Control centres.
- Specific problems and studies cases.
- Power quality influence in deregulated markets.
- High frequency disturbances (radiated).
- Data security and electromagnetic pulses.
- Protection against natural and intentional EMI.

INTERNATIONAL PROGRAM COMMITTEE

Alexandru, Catalin (Romania)	Kádár Péter (Hungary)
Andrada Gascón, P. (Spain)	Kladas, A. (Greece)
András, Dán (Hungary)	Klima, Jiri (Czech Republic)
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Arnaltes Gómez, S. (Spain)	Levi, Emil (U.K.)
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Bendl, Jiri (Czech Republic)	Martinez, André (France)
Bitzer, Berthold (Germany)	Narsimhulu, Sanke (India)
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Cortez, Liliana (México)	Ribeiro, Hugo (Portugal)
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Donsion, M. (Spain)	Roger Folch, J. (Spain)
Duran, Mario (Spain)	Rusek, Jan (Czech Republic)
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Fernández Cabanas, M. (Spain)	Sanz Badía, M. (Spain)
Figueiredo, J.M.G. (Portugal)	Shibli Murad (Arab Emirats)
Flores, Antonio (Portugal)	Schlemmer, Erwing (Germany)
Fraile Mora, Jesús (Spain)	Stenzel, Jürgen (Germany)
Funabashi, Toshihisa (Japan)	Stumberger, Gorazd (Slovenia)
Gair, Sinclair (UK)	Tegopoulos, J.A. (Greece)
Gharehpetian, G.B. (Iran)	Traça de Almeida, A. (Portugal)
Ghita, Constantin (Romania)	Tudorache, Tiberiu (Romania)
Göl, Ozdemir (Australia)	Valouch, V. (Czech Republic)
Güemes Alonso, J.A. (Spain)	Vitale, Gianpaolo (Italy)
Hermoso Alameda, B. (Spain)	Wiak, Slawomir (Poland)
Iwazkiewicz, J. (Poland)	Zamora Belver, I. (Spain)
Jokinen, T. (Finland)	

HONOUR COMMITTEE

Juan Juliá Igual. Rector of the Polytechnical University of Valencia

STEERING COMMITTEE

Manuel Pérez Donsión (Chairman)
Ramón Bargalló Perpiña
Mariano Sanz-Badía
Debora Coll-Mallor

LOCAL ORGANISING COMMITTEE

Francisco Cavallé Sese (Chairman)
Alfredo Quijano López
Cesar Santiago Cañas Peñuelas
Saturnino Catalá Izquierdo
Marta García Pellicer
Vicente Fuster Roig
José Manuel Bueno Barrachina

SPONSORSHIP

Sincere thanks are expressed to the organisations listed below who have given valuable support to ICREPQ'09:

- EA4EPQ (European Association for the Development of Renewable Energies, Environment and Power Quality)
- Politechnical University of Valencia (UPV)
- Institute of Electrical Technology (ITE)
- Iberdrola
- ABB
- Circutor
- Ministerio de Ciencia e Innovación
- Colegio Oficial de Ingenieros Superiores Industriales de la Comunidad Valenciana
- Valencian Energy Agency (AVEN)
- Ayuntamiento de Valencia
- AEDIE (Asociación Española para el Desarrollo de la Ingeniería Eléctrica)



AJUNTAMENT DE VALENCIA



SOCIAL EVENTS

- **Civic Reception and Aperitif:** 15th April at 19:00 H
- **Conference Banquet:** 16th April at 20:30 H at “Sorolla Palace”

SCHEDULE

Tuesday 14 th April 2009	
17:00 – 19:00	Registration “ICREPQ'09 Secretariat”

Wednesday 15th April 2009							
9:00 – 10:45	Registration “ICREPQ’09 Secretariat”						
10:45 – 11:30	Opening Ceremony ROOM A “Iberdrola”						
11:30-12:15	PL1	Renewable Energy: part of the solution Carlos Gascó Travesedo. Head of the Prospective Unit. Iberdrola Renewable Energies. Spain					
		EXTRA TIME FOR DISCUSSION					
12:15 – 13:00	Posters Session at Room C “ABB” (Session C1) Coffee Break			<i>Poster Session C1</i>			
				203	207	208	211
				212	217	220	222
				223	232	239	243
				249	250	252	254
				257	262	264	265
				266	273	275	280
				282	286	287	295
297	298	303	436				
13:00 – 15:00	Welcome Lunch “la Vella Restaurant”						
15:00 – 16:15	ROOM A “Iberdrola”			ROOM B “Circutor”			
	<i>Oral Session A1</i>			<i>Oral Session B1</i>			
	206	260	473	247	259	270	
	475	531		283	495		
	EXTRA TIME FOR DISCUSSION						
16:15 – 17:00	Poster Session at Room C “ABB” (Session C2) Coffee Break			<i>Poster Session C2</i>			
				292	300	301	314
				317	319	322	326
				334	336	337	338
				340	341	344	346
				347	355	359	367
				369	370	372	373
				375	378	379	380
382	386	397					
17:00 – 18:15	ROOM A “Iberdrola”			ROOM B “Circutor”			
	<i>Oral Session A2</i>			<i>Oral Session B2</i>			
	268	290	312	308	324	421	
	315	481		519	529		
	EXTRA TIME FOR DISCUSSION						
19:30 – 21:00	Welcome Civic Reception Salón de Cristal. Ajuntament de Valencia						

Thursday 16th April 2009

	ROOM A “Iberdrola” Plenary Sessions PL2 and PL3					
9:30 – 10:15	PL2	New Technologies for Small Scale Solar Power Plants Fernando Nuño European Copper Institute (ECI). Leonardo ENERGY Community				
EXTRA TIME FOR DISCUSSION						
10:15 – 11:00	PL3	Efficiency in power transformers: Aspects influencing the specifications and design Miguel Oliva Navarrete. ABB. Spain				
EXTRA TIME FOR DISCUSSION						
11:00 – 11:45	Poster Session at Room C “ABB” (Session C3)	<i>Poster Session C3</i>				
		388	389	390	392	
		398	402	406	408	
		410	413	416	419	
		423	426	430	432	
		433	438	448	450	
		451	452	455	456	
		458	459	465	466	
		467	468	469	472	
476	477	534				
11:45 – 13:00	ROOM A “Iberdrola”			ROOM B “Circutor”		
	<i>Oral Session A3</i>			<i>Oral Session B3</i>		
	332	333	350	327	343	353
	503	508		356	359	
EXTRA TIME FOR DISCUSSION						
13:00 – 15:00	Lunch “la Vella Restaurant”					
	UPV “Sala de Juntas”					
15:00-16:30	Mesa Redonda : Espacio Europeo de Educación Superior (EEES) XIXRGIIE (In Spanish)					
16:30-17:00	Café					
17:00-18:30	Mesa Redonda : La investigación en Europa. Caso de España XIXRGIIE (In Spanish)					
20:30 -24:00	Conference Banquet at “Sorolla Palace” (Optional)					

Friday 17th April 2009

9:30-10:45	ROOM A “Iberdrola”			ROOM B “CIRCUTOR”			
	<i>Oral Session A4</i>			<i>Oral Session B4</i>			
	357	368	376	385	391	444	
	399	403		462	530		
EXTRA TIME FOR DISCUSSION							
10:45 – 11:30	Posters Session at Room C “ABB” (Session C4) Coffee Break			<i>Poster Session C4</i>			
				225	256	446	478
				480	482	483	485
				487	488	490	491
				492	493	496	497
				501	502	504	505
				506	510	511	518
				520	523	524	525
		527	528	532	533		
	ROOM A “Iberdrola” Plenary Session PL4						
11:30 – 12:15	PL4	Future Perspectives for Nuclear Energy Antonio González Jiménez. Mining Engineer. Director of Studies and Technical Support of the Forum of the Spanish Nuclear Industry					
		EXTRA TIME FOR DISCUSSION					
12:15 – 13:00	CLOSING SESSION						
	Conclusions and time for the next conference (ICREPQ'10) Awards for the three best posters						
13:00 – 15:00	Farewell Lunch at “la Vella Restaurant”						
15:00 – 18:00	CULTURAL EXCURSION FOR ALL THE PARTICIPANTS Excursion in two Tourist Buses for to see the most interesting places of Valencia and finally a visit to the City of Arts and Sciences						

AUTHORS

Oral Presentations

Each speaker of an oral presentation has an available time of 15 minutes (12 minutes for the presentation and 3 minutes for questions) and must be in the session room 10 minutes before of the beginning of the session for to test the audiovisual equipment and for to exchange opinions with the Session Chairman.

Poster Presentations

The poster must be put on the pin board that you previously can chose about 15 minutes before of the beginning of the session and it must be take off 15 minutes after of the end of the session. The author(s) must be stay near the poster along the 45 minutes of the session duration for to answer all the questions that the audience or the chairmen could formulate. The maximum available surface for each poster will be 1200 mm x 1800 mm (width x high).

SESSION CHAIRMEN

On behalf of the International Program Committee, Steering Committee and the Organising Committee of the ICREPQ'09 and take into account their eminent position in the world of science we have selected 32 session chairmen. It is an honour for us their collaboration for to chair the sessions of ICREPQ'09 and their contribution would be greatly appreciated. We wish to express our warmest thanks.

Traditionally the Chairmen of each Session are independent in organising the Session. Nevertheless it is of special importance that the different session chairmen prepare some questions about the papers of their session in order to get a more dynamic one. Furthermore we expect of the session chairmen the following:

Plenary sessions

Each plenary session should not exceed 45 minutes including presentation and discussion, (35 minutes for presentation and 10 minutes for questions).

Oral sessions

Each oral paper presentation should not exceed 15 minutes including presentation and discussion, (12 minutes for presentation and 3 minutes for questions).

Poster sessions

The author(s) of a poster presentation must be stay near the poster during the 45 minutes of the session duration and in order to get a more dynamic session it is important that along this period of time each of the chairmen of the poster

sessions formulate questions to the authors and check that all is OK. The chairmen also file up a sheet with puntuactions for each presented poster and then take into account these evaluations the Organizers will deliver during the Closing Session a present to the three best posters

TABLE I. Chairmen Session distribution

Wednesday 15th April, 2009		
11:30-12:15	PLENARY SESSION PL1	Carlos Redondo Gil
12:15-13:00	POSTER SESSION C1	Bostjan Polajzer
		Antonio J.Pina Martins
		Carlos Hiran Rojas García
		Gabriel Aguirre Zamalloa
		Antonio Marqués Cardoso
15:00-16:15	ORAL SESSION A1	Gevork B. Gharehpetian
	ORAL SESSION B1	Tiberiu Tudorache
16:15-17:00	POSTER SESSION C2	Eduardo Manzano
		Lidia Kovernikova
		Marcus Vinicius Mendonça
		Johan Bacher
		Adel Elgammal
17:00-18:15	ORAL SESSION A2	Gianpaolo Vitale
	ORAL SESSION B2	Jan Iwaszkiewicz
Thursday 16th April, 2009		
9:30 -10:15	PLENARY SESSION PL2	Catalin Alexandru
10:15-11:00	PLENARY SESSION PL3	Viktor Valouch
11:00-11:45	POSTER SESSION C3	Debora Coll Mayor
		Manuel E. García Melero
		Salvador Pérez Litrán
		Berthold Bitzer
		Semaan Georges
11:45-13:00	ORAL SESSION A3	Lieven Vandeveldde
	ORAL SESSION B3	Miguel Martínez Melgarejo
Friday 17th April, 2009		
9:30-10:45	ORAL SESSION A4	Ghita Constantin
	ORAL SESSION B4	José A. Güemes Alonso
10:45-11:30	POSTER SESSION C4	Hector Beltrán San Segundo
		Dirk Turschner
		Gorazd Stumberger
		Buzdugan Mircea-Ion
		Stanieslaw Kulas
11:30-12:15	PLENARY SESSION PL4	Mihail Predescu

Wednesday 15th April 2009

10:45-11:30 OPENING CEREMONY

ROOM A "Iberdrola"

- Juan Juliá Igual. Rector of Polytechnical University of Valencia (UPV)
- Rita Barberá. Mayor of Valencia
- Antonio Cejalvo. Manager of the Valencian Energy Agency (AVEN)
- Alfredo Quijano. Manager of the Institute of Electrical Technology (ITE)
- Manuel Pérez Donsión. Chairman of the ICREPQ Steering Committee
- Francisco Cavallé Sesé. Chairman of the ICREPQ Local Organizing Committee

11:30-12:15 Plenary Session PL1

ROOM A "Iberdrola"

Chairman: Carlos Redondo Gil

Renewable Energy: part of the solution.

Carlos Gascó Travesedo. Head of the Prospective Unit. Iberdrola Renewable Energies. Spain.

Wednesday 15th April 2009

12:15-13:00 Poster Session C1 – Coffee Break

ROOM C "ABB"

Chairmen: Bostjan Polajzer, Antonio J. Pina Martins, Carlos Hiran Rojas García, Gabriel Aguirre Zamalloa, Antonio Marqués Cardoso

Modelling and simulation of the microturbine generation system for on-grid and off-grid operation modes

Noroozian R.¹, Abedi M.², Gharehpetian G.B.¹, Hosseini S.H.³

203 ¹ Department of Electrical Engineering, Faculty of Engineering, University of Zanjan, Iran

² Department of Electrical Engineering, Amirkabir University of Technology, Tehran, Iran

³ Department of Electrical and Computer Engineering, Tabriz University, Iran

Analysis, calculation and reduction of shaft voltage in induction generators

207 Jafar Adabi, Firuz Zare

School of Electrical Engineering. Queensland University of Technology. Australia

A novel configuration for voltage sharing in DC-DC converters

208 Alireza Nami¹, Arash.A.Boora¹, Firuz Zare¹, A. Ghosh¹, F.Blaabjerg²

¹ School of Engineering Systems, Queensland University of Technology, Brisbane. Australia

² Aalborg University, Institute of Energy Technology, Denmark

Dynamic performances of solar thermal central receiver integrated with natural gas combined cycle plant

211 David Sarussi^{1,2}, N.Ifergan¹, Chaim Kornfeld¹

¹ Electrical and Control Engineer. Nuclear Research Center Negev. Israel

² Ben Gurion University of the Negev. Department of Electrical and Computer Engineering, Beer-Sheva, Israel

- New 13-space vector diagram for the three-phase six-switches voltage source inverter***
 212 Mohamed H. Saied¹, M.Z. Mostafa², T.M. Abdel-Moneim², H.A. Yousef²
¹ Electrical Engineering Dept. I. Abu-Qir Fertilizers & Chemical Industries Co. Alexandria, Egypt
² Electrical Engineering Dept. Faculty of Engineering. Alexandria University, Egypt
- Considerations regarding testing of low voltage equipment endowed with contacts from composite materials type CMC***
 217 George Curcanu, Ilie Sboru
 R&D National Institute ICMET- Craiova, Romania
- Effect of concentration of KOH, H₂O, temp in in-situ transesterification reaction of Sesbania sesban, capparid seed***
 220 S.N. Dalvi¹, P.E. Funde², R.D. Pokharkar², K.C. Mohite³
¹ Department of Physics, S.N. Arts, D.J.M. Commerce & B.N.S. Science College Sagamner, India
² Department of Chemistry, S.N. Arts, D.J.M. Commerce & B.N.S. Science College Sagamner, India
³ OSD, BCUD, University of Pune. India
- Quality of power energy from wind power plant***
 222 F. Rajský¹, M.P. Donsión²
¹ Faculty of Electrical Engineering, The University of West Bohemia in Pilsen. Czech Republic
² Department of Electrical Engineering, University of Vigo. Spain
- Finite element analysis of electrical machines used in two-frequency indirect temperature rise tests***
 223 Erwin Schlemmer
 ELIN EBG Motoren GmbH. Austria
- Modeling, control and simulation of a high-current DC-DC converter for fuel cell applications***
 232 Hadi Y. Kanaan¹, Semaan Georges², Imad Mougharbel³, Nassar Mendalek², Tony Nicolas¹
¹ Department of Electricity and Mechanics. Saint-Joseph University, Faculty of Engineering-ESIB. Beirut, Lebanon
² Department of Electrical Engineering. Notre-Dame University (NDU). Zouk Mosbeh. Lebanon
³ Department of Electrical Engineering, Lebanese University, Faculty of Engineering. Hadath. Lebanon
- Analytical model and investigation of a four-switch space-vector modulated hybrid power filter with six-fold switching symmetry***
 239 Jiri Klima¹, Josef Tlustý², Jiri Skramlík³, Viktor Valouch³
¹ Department of Electrical Engineering and Automation, Technical Faculty of CZU in Prague. Czech Republic
² Department of Power Engineering, Faculty of Electrical Engineering, CTU, Prague. Czech Republic
³ Institute of Thermomechanics, Academy of Sciences of the Czech Republic
- System studies of DC reactor type fault current limiter in distribution grid***
 243 M. Firouzi¹, M. Pishvaie¹, G. Gharehpetian², F. Razavi¹
¹ Department of Electrical Engineering. Faculty of Electrical Engineering. University of Tafresh, Iran
² Department of Electrical Engineering. Faculty of Electrical Engineering. Amirkabir University of Technology, Teheran. Iran

- 249 **Investigation of solar energy applications with design and implementation of photovoltaic traffic light signal system for Qatar**
Hassan Moghbelli¹, Khaled Ellithy², Zohreh Eslami¹, R. Vartanian³, D. Wannous¹, O.Basha¹, A.El Ghamrawy¹, A. Fayad¹, M.Qaraqe¹, S. Nicola¹
¹ Texas A&M University at Qatar, Doha, Qatar
² Qatar University, Doha, Qatar
³ Texas A&M University, College Station, Texas, USA
- 250 **Economic and environmental impact of geothermal production electricity in São Miguel, Açores**
José Manuel Rosa Nunes
Departament Economics and Management. Azores University. Portugal
- 252 **DG integration limits in distribution networks**
T.Yebra, V. Fuster, A. Quijano, P. Llovera
Instituto de Tecnología Eléctrica. Universidad Politécnica de Valencia. Spain
- 254 **Economic analysis and application of small micro/hydro power plants**
Sarala P. Adhau
Department of Electrical Engineering, Yeshwantrao Chavan College of Engineering. Nagpur University, India
- 257 **Artificial intelligence techniques for controlling PV-wind powered rural zone in Egypt**
Hanaa M.Fargli¹, Faten H. Fahmy¹, Mohamed A. H.EL- Sayed²
¹ Electronics Research Institute, National Research Center building, Cairo, Egypt
² Center of Energy Studies, University of Trinidad and Tobago
- 262 **Voltage measurement errors as a result of multiple VT groundings**
F. Uriondo¹, G. Aguirre¹, J.R. Hernández¹, J.M. García²
¹ Department of Electrical Engineering. E.S.I. Bilbao. University of the Basque Country. Spain
² INGETEAM T&D. Pol. Ind. Artunduaga. Basauri. Spain
- 264 **High power fuel cell simulator using an unity active power factor rectifier**
J.C. Alfonso-Gil¹, J.J. Vague Cardona¹, F.J. Gimeno Sales¹, S. Seguí-Chilet¹, S. Orts Grau¹, N. Muñoz- Galeano²
¹ Department of Electronic Engineering. Universidad Politécnica de Valencia. Spain
² Department of Electrical Engineering. University of Antioquia, Medellin. Colombia
- 265 **Improved control of current controlled grid connected inverters in adjustable speed power energies**
J.J. Vague Cardona¹, J.C.Alfonso Gil¹, F.J. Gimeno Sales¹, S. Segui-Chilet¹, S. Orts Grau¹, N. Muñoz Galeano²
¹ Department of Electronics Engineering. Universidad Politécnica de Valencia. Spain
² Department of Electrical Engineering. University of Antioquia. Medellín, Colombia
- 266 **Estimation of wasted energy by light pollution in urban and rural areas**
Alberto J. Cabello, Carlos F. Kirschbaum
Department of Lighting, Light and Vision. Institute of Research on Light, Environment and Vision, National University of Tucuman. Argentina
- 273 **Measurement and calculation of harmonics in distribution power system with connected small co-generation facility Etan**
Ana Tomasović¹, Mate Lasić¹, Božidar Filipović-Grčić²
¹ Končar Electrical Engineering Institute. Zagreb. Croatia
² Faculty of Electrical Engineering and Computing. Zagreb. Croatia

- 275 **Predicting daily distribution of solar irradiation by neural networks**
Sebastijan Seme, Gorazd Štumberger, Jože Pihler
University of Maribor. Faculty of Electrical Engineering and Computer Science.
Maribor, Slovenia
- 280 **Calculation of excessive losses in low voltage line caused by computers**
Klemen Deželak, Gorazd Štumberger
University of Maribor. Faculty of Electrical Engineering and Computer Science.
Maribor, Slovenia
- 282 **Permanent switchboard monitoring using embedded web server**
F. Fioretti, S. Pasqualini, A. Andreoli, P. Pierleoni
Dipartimento di Ingegneria Biomedica, Elettronica e Telecomunicazioni. Università
Politecnica delle Marche. Ancona, Italy
- 286 **Low distortion boost rectifier discontinuous conduction mode with peak
current mode control for wind power systems**
O. Carranza¹, E. Figueres², G. Garcerá², L.G. González³
¹ Escuela Superior de Cómputo- Instituto Politécnico Nacional. México
² Departamento de Ingeniería Electrónica- Universidad Politécnica de Valencia.
Spain
³ Departamento de Electrónica y Comunicaciones. Universidad de los Andes,
Mérida. Venezuela
- 287 **Nonlinear regression applied for power quality disturbances characterization in
grids with wind generators**
P. Janik, T. Lobos, J. Rezmer, Z. Waclawek
Department of Electrical Engineering. Wrocław University of Technology. Poland.
- 295 **Dynamic control of fuel cell powered water pumping station**
Adel M. Sharaf, Mohamed A.H.El-Sayed
Center of Energy Studies. University of Trinidad and Tobago
- 297 **Instruments for on-line monitoring of transformers**
V. Mentlík¹, P. Prosr¹, R. Polanský¹, J. Michalík², M. Brandt²
¹ University of West Bohemia in Pilsen. Faculty of Electrical Engineering, Department
of Technologies and Measurement
² Research Centre of Mechatronics Systems. Faculty of Electrical Engineering ŽU in
ŽILINA. Slovakia
- 298 **Synthetic ester-based oils and their application in power industry**
V. Mentlík, R. Polanský, P. Prosr, J. Pihera, P. Trnka
Department of Technologies and Measurement. University of West Bohemia in
Pilsen. Faculty of Electrical Engineering, Czech Republic.
- 303 **Power quality in wind power systems**
Z. Leonowicz
Department of Electrical Engineering. Wrocław University of Technology. Poland
- 436 **Comparison of R744 and R134a heat transfer coefficients during flow boiling in
a horizontal circular smooth tube**
R. Mastrullo¹, A.W. Mauro¹, A. Rosato¹, G.P. Vanoli²
¹ D.E.TE.C. Facoltà di Ingegneria, Università degli Studi di Napoli Federico II. Napoli.
Italy
² Dipartimento di Ingegneria, Università degli Studi del Sannio. Benevento. Italy

Chairman: Gevork B. Gharehpetian

- 206 ***Analysis of shaft voltage in a doubly-fed induction generator***
 Jafar Adabi¹, Firuz Zare¹, Arindam Ghosh¹, Robert D. Lorenz²
¹ School of Electrical Engineering. Queensland University of Technology. Australia
² University of Wisconsin-Madison, Depts. of ME and ECE, Madison
- 260 ***Analysis and NN-based control of doubly fed induction generator in wind power generation***
 Orlando Manuel Soares¹, Henrique Nuno Gonçalves², António Pina Martins², Adriano da Silva Carvalho²
¹ Escola Superior de Tecnologia e de Gestão. Instituto Politécnico de Bragança. Portugal
² Faculdade de Engenharia da Universidade do Porto. Portugal
- 473 ***Monitoring results of the 30 kWp PV grid-connected power system installed at University Politehnica of Bucharest, Romania***
 Aurelian Crăciunescu¹, Mihai Predescu², Matthias Grottke³, Mihai Otavian Popescu¹, Claudia Laurenta Popescu¹, Gloria Ștefania Ciumbulea¹, Adrian Nedelcu², Octavian Mitroi², Andrei Bejinariu²
¹ Electrical Engineering Faculty, University Politehnica of Bucharest, Romania
² SC ICPE SA, SICE Center, Bucharest, Romania
³ WIP – Renewable Energy Division, München. Germany
- 475 ***A kriging-based partial shading analysis in a large photovoltaic field for energy forecast***
 Annalisa Di Piazza¹, Maria Carmela Di Piazza², Gianpaolo Vitale²
¹ Dipartimento di Ingegneria Idraulica e Applicazioni Ambientali (DIIAA). Università degli Studi di Palermo. Italy
² Consiglio Nazionale delle Ricerche. Istituto di Studi sui Sistemi Intelligenti per L'Automazione (ISSIA-CNR) Palermo, Italy
- 531 ***Pumped storage hydro plant model for educational purpose***
 Péter Kádar
 Budapest Tech, Dept. of Power Systems. Budapest, Hungary

Chairman: Tiberiu Tudorache

- 247 ***A multi objective multi-stage particle swarm optimization MOPSO search scheme for power quality and loss reduction on radial distribution system***
 Adel M. Sharaf, Adel A.A. El- Gammal
 Centre for Energy Systems, University of Trinidad and Tobago UTT
- 259 ***Centralized normalization of harmonic voltages in the supply network for traction substations***
 L.I. Kovernikova
 The Siberia Branch of the Russian Academy of Sciences. Energy Systems Institute. Russia

- 270 ***Evaluation of different methods for voltage sag source detection based on positive-sequence components***
Boštjan Polajžer, Gorazd Štumberger, Drago Dolinar
University of Maribor. Faculty of Electrical Engineering and Computer Science. Maribor, Slovenia
- 283 ***Electromagnetic compatibility at the mains ports for medical equipments***
Mircea Ion Buzdugan¹, Emil Simion¹, Horia Bălan¹, Eugen Baru²
¹ Department of Electrical Engineering. Technical University from Cluj- Napoca. Romania
² Datronix Computer Ltd. Cluj-Napoca. Romania
- 495 ***Equalizing voltage levels in MV distribution network of Elektra Zagreb***
I. Sagovac, G. Sagovac
HEP- Distribucija d.o.o. DP Elektra Zagreb. Croatia

Wednesday 15th April 2009	
16:15-17:00 Poster Session C2 – Coffee Break	ROOM C “ABB”

Chairmen: Eduardo Manzano, Lidia Kovernikova, Marcus Vinicius Mendoza, Johan Bacher, Adel Elgammal

- 292 ***Dynamic simulation of a photovoltaic installation***
Ramos Hernanz JA¹, Campayo Martín J.J¹, Zamora Belver, I.², Puelles Pérez, E¹, Motrico Gogeoascoechea, JA¹, Sancho Sáiz, J³
¹ Department of Electrical Engineering. E.U.I.Vitoria.Gasteiz University of the Basque Country. Spain
² Department of Electrical Engineering E.T.S.I. Bilbao. University of the Basque Country. Spain.
³ Department of Nuclear Engineering and Mechanical of Fluids. E.U.I.Vitoria – Gasteiz. Spain
- 300 ***Power frequency overvoltages generated by solar plant inverters***
Francisco J. Pazos¹, Amaya Barona², Javier Amantegui,¹ Eduardo Azcona¹, Sonia Fernández²
¹ Iberdrola Distribución Eléctrica S.A.U. Bilbao. Spain
² Iberdrola Distribución Eléctrica. Valencia. Spain
- 301 ***Experimental comparison of carrier and space vector PWM control methods for three-phase NPC converters***
Ivo Pereira, António Martins
Department of Electrical and Computer Engineering. Faculty of Engineering of the University of Porto. Portugal
- 314 ***A quantitative global index for power quality evaluation in competitive electricity market based on artificial neural networks***
Ali Salarvand¹, Behzad Mirzaeian Dehkordi¹, Mehdi Moallem²
¹ Department of Electrical Engineering, Faculty of Engineering, University of Isfahan, Iran
² Faculty of Electrical and Computer Engineering, Isfahan University of Technology, Iran

- 317 ***Improved Kalman filter based inverter control for reduction of low order current harmonics due to isolation transformers in renewable energy sources***
H. Beltrán¹, J. Zabalza¹, C. Ariño², E. Belenguer¹, E. Pérez¹, N. Aparicio¹
¹ Electrical Engineering Area. Department of Industrial Systems Engineering and Design. ESTCE, University Jaume I de Castelló. Spain
² Systems Engineering and Automatic Area. Department of Industrial Systems Engineering and Design. ESTCE, University Jaume I de Castelló. Spain
- 319 ***Comparison of environmental and life cycle impact of switched reluctance motor drive and inverter-fed induction motor drives***
P. Andrada, B. Blanqué, E. Martínez, J.I. Perat, J.A. Sánchez, M. Torrent
Grup d'Accionaments Elèctrics amb Commutació Electrònica (GAECE). EPS d'Enginyeria de Vilanova i la Geltrú, Department d'Enginyeria Elèctrica. Universitat Politècnica de Catalunya (UPC). Barcelona. Spain
- 322 ***Millman's theorem revisited***
G. Aguirre-Zamalloa, F. Uriondo, J.R. Hernández
Department of Electrical Engineering, Faculty of Engineering University of the Basque Country. Bilbao, Spain
- 326 ***Two-speed synchronous generator for special purposes***
K. Čelic¹, M. Pužar², S. Berberovic³
¹ Ministry of Economy, Labour and Entrepreneurship, Energy and Mining Directorate. Zagreb, Croatia
² Faculty of Electrical Engineering in Osijek. Croatia
³ Faculty of Electrical Engineering and Computing. Zagreb, Croatia
- 334 ***Fault locations in transmission systems by evolutionary algorithms***
Wilingthon Guerra, Nelson Kagan
Department of Energy and Automation Engineering. Centro de Estudos em Regulação e Energia Elétrica (Enerq-ct). Universidade de São Paulo (USP). Escola Politecnica. Brazil
- 336 ***A novel multi-loop PID controller for photovoltaic-grid interface DC energy utilization farm***
A.M. Sharaf¹, I.H Altas², E. Ozkop²
¹ Energy Research Goup-UTT, University of Trinidad and Tobago, Trinidad
² Department of Electrical and Electronics Engineering, Karadeniz Technical University, Turkey
- 337 ***A novel multi-loop fuzzy logic dynamic controller for wind/photovoltaic-grid interface DC energy utilization farm***
A.M. Sharaf¹, I.H Altas², E. Ozkop²
¹ Energy Research Goup-UTT, University of Trinidad and Tobago, Trinidad
² Department of Electrical and Electronics Engineering, Karadeniz Technical University, Turkey
- 338 ***Control strategy of the 'MRG' wave energy converter (WEC)***
Juan Luis Osa Amilibia¹, Ekaitz Zulueta Guerrero²
¹ Mechanical Engineering Department, University Collage of Engineering, University of Basque Country, Vitoria- Spain
² Automatics and Electronics Department, University College of Engineering, University of Basque Country, Vitoria- Spain
- 340 ***Micro hydro power plants in Andean Bolivian communities: impacts on development and environment***
Andrés Hueso González, Alejandra Boni Aristizábal, Rafael Monterde Díaz
Group of Studies on Development, Cooperation and Ethics. Department of Projects Engineering. Politehcnical University of Valencia. Spain

- 341 **Lab model for a low power wind turbine system**
Constantin Ghită, Dragoș Ioan Deaconu, Aurel Ionuț Chirilă, Valentin Năvrăpescu,
Daniel Iliina
Electrical Machines and Drives Department, Electrical Engineering Faculty,
Universitatea Politehnica București, Romania
- 344 **Design of a fuzzy power system stabilizer based on technique LMI**
Carlos Andrés Torres¹, Alfonso Alzate², Andrés Escobar², Carlos Restrepo¹
¹ Departments of Electronics, Electrical and Automatic Engineering (D.E.E.A).
Universidad Rovira i Virgili. Tarragona, Spain
² Program of Electrical Engineering (P.I.E.). Technological University. Pereira,
Colombia
- 346 **State of the art of the induction machines wind turbines models**
A.J. Pujante¹, E. Gómez¹, A. Viguera¹, J.A. Fuentes², A. Molina², S. Martín¹
¹ Research Institute of Renewable Energies. Universidad de Castilla- La Mancha,
Spain
² Universidad Politécnica Cartagena, Campus Muralla del Mar. Spain
- 347 **Automatic management of energy flows of a stand-alone renewable energy
with support of hydrogen**
M. Calderón¹, A.J. Calderón¹, A. Ramiro², J.F. González²
¹ Department of Electrical Engineering. E.I.I. Extremadura University Spain
² Department of Applied Physics. E.I.I. Extremadura University. Spain
- 355 **ATP-MODELS language to represent domestic refrigerators performance with
power quality disturbances**
I.A. Bacca, M.V.B. Mendonça, C.E. Tavares, I.N. Gondim, J.C. Oliveira
Faculty of Electrical Engineering. UFU. Federal University of Uberlândia. Brazil
- 359 **Efficiency optimization of the high-power isolated DC/DC converters through
THD and losses reduction in isolation transformers**
Dmitri Vinnikov¹, Victor Bolgov²
¹ Tallinn University of Technology, Department of Electrical Drives and Power
Electronics. Tallinn. Estonia
² Tallinn University of Technology, Department of Fundamentals of Electrical
Engineering and Electrical Machines. Tallinn. Estonia
- 367 **Modelling and comparative performance analysis of special six-phase and
conventional synchronous generators for wind farm application**
P.H.B. Naves, J.C. Oliveira, A.F. Bonelli, M.V.B. Mendonça
Faculty of Electrical Engineering. UFU, Federal University of Uberlândia. Brazil
- 369 **A computational tool focusing the optimization of 34.5 and 138 kV overhead
lines transmissible power**
A.P. Marsicano¹, I. Nord², C.E. Tavares¹, J.C. Oliveira¹, J.W. Resende¹
¹ Faculty of Electrical Engineering. Federal University of Uberlândia. Brazil
² CEMAT-Grupo Rede. Brazil
- 370 **Hierarchical cluster classification of half cycle measurements in low voltage
distribution network for events discrimination**
D. Apetrei¹, P. Postolache², N. Golovanov², M. Albu², G. Chicco³
¹ SC Electrica SA. Romania
² "Politécnica" University of Bucarest. UPB . Romania
³ Politecnico di Torino, Dipartimento di Ingegneria Elettrica. Torino. Italy
- 372 **Comparison of different voltage dip detection techniques**
M.A. Alonso, J.F. Sanz, J. Sallán, J.L. Villa
CIRCE Foundation. University of Zaragoza. Electrical Engineering Department.
Spain

- 373 ***Fitting regression model and experimental validation for high pressure PEM electrolyzer***
M. Santarelli, P. Medina, M. Cali
Dipartimento di Energetica. Politecnico di Torino. Italy
- 375 ***Fuel consumption optimization of a multimachines microgrid by secant method combined with IPPD table***
Firas Alkhalil¹, Philippe Degobert¹, Frédéric Colas¹, Benoit Robyns²
Laboratoire d'Electrotechnique et d'Electronique de Puissance de Lille.
¹ Ecole Nacional Supérieure des Arts et Métiers Paris Tech, L2EP, Lille. France
² Ecole des Hautes Etudes d'Ingénieurs, L2EP, Lille. France
- 378 ***Dynamic response analysis of small wind energy conversion systems (WECS) operating with torque control versus speed control***
L.G. González¹, E. Figueres², G. Garcerá², O. Carranza³
¹ Departamento de Electrónica y Comunicaciones, Universidad de los Andes, Mérida, Venezuela
² Departamento de Ingeniería Electrónica-UPV. Spain
³ Escuela Superior de Cómputo- Instituto Politécnico Nacional. México
- 379 ***Synchronization techniques comparison for sensorless control applied to PMSG***
L.G. González¹, E. Figueres², G. Garcerá², O. Carranza³
¹ Departamento de Electrónica y Comunicaciones, Universidad de los Andes, Mérida, Venezuela
² Departamento de Ingeniería Electrónica-UPV. Spain
³ Escuela Superior de Cómputo- Instituto Politécnico Nacional. México
- 380 ***A control circuit small wind turbines with low harmonic distortion and improved power factor***
O. Carranza¹, E. Figueres², G. Garcerá², L.G. González³
¹ Escuela Superior de Cómputo- Instituto Politécnico Nacional. México
² Departamento de Ingeniería Electrónica-UPV. Spain
³ Departamento de Electrónica y Comunicaciones, Universidad de los Andes, Mérida, Venezuela
- 382 ***Spectrum of induction machine stator currents, affected by clutch wobbling and mixed eccentricity***
Saleh S. Hamad Elawgali
Department of Electrical and Electronics Engineering. Al Tahadi University. Faculty of Engineering. Sirte-Libya
- 386 ***Online efficiency diagnostic of three phase asynchronous machines from Start up data***
Johann Peter Bacher, F. Waldhart
Institute of Drive Technology and Electrical Machines.E.A.M, University of Technology Graz, Austria
- 397 ***PWM AC chopper voltage quality improvement using particle swarm optimisation***
Kouzou A¹, Saadi S², Mahmoudi M.O³, Boucherit M.S.³
¹ University of Djelfa/Electrical Department, Algeria
² CRN Birine, Djelfa, Algeria
³ National Polytechnic School/Electrical Department, Algeria

Wednesday 15th April 2009

17:00-18:15 Oral Session A2

ROOM A "Iberdrola"

Chairman: Gianpaolo Vitale

Identification of photovoltaic array model parameters by robust linear regression methods

268 Maria Carmela Di Piazza, Antonella Ragusa, Gianpaolo Vitale
Consiglio Nazionale della Ricerche. Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA). Palermo. Italy

Simple electrical circuit for large signal modeling of DC microgrids

290 Mishel Mahmoodi¹, Gevorg B. Gharehpetian²
¹ Research Development Deputy, Iran Power Plant Projects Management Co. (MAPNA). Teheran. Iran.
² Electrical Engineering Department, Amirkabir University of Technology. Iran

The optimization of the tracking mechanism used for a group of PV panels

312 C. Alexandru, C. Pozna
Product Design and Robotics Department. University "Transilvania" of Braşov. Romania

Vehicle-to-grid power in Danish electric power systems

315 Jayakrishnan R. Pillai, Brigitte Bak-Jensen
Department of Energy Technology, Aalborg University. Denmark

A multicriteria evaluation model to optimally place grid-connected photovoltaic power plants

481 J. Arán-Carrión, A.F. Ramos-Ridao, F. Aznar-Dols, E. Alameda Hernández, A. Espín-Estrella
Department of Civil Engineering. School of Civil Engineering, University of Granada, Spain

19:30 – 21:00

Welcome Civic Reception
Salón de Cristal. Ajuntament de Valencia

Wednesday 15th April 2009
17:00-18:15 Oral Session B2
ROOM B “Circutor”

Chairman: Jan Iwaszkiewicz

- High efficiency squirrel cage induction machines**
 308 T. Tudorache, L. Melscescu, V. Petre
 Electrical Engineering Faculty, Electrical Machines, Materials and Drives Dept.
 University Politehnica of Bucarest. Romania
- An estimation and synchronization method based on a new modeling approach of power electrical signals**
 324 G. Fedele, C. Picardi, D. Sgrò
 Department of Electronics, Computer and System Science. University of Calabria. Italy
- Rotating speed stability and mechanical vibration analysis of one-stage inertia flexible rotor driven by variable speed drives**
 421 F. Oliveira^{1,2}, M. P. Donsión³, G. Peláez⁴
¹ Departamento de Electrical Engineering, School of Technology and Management, Polytechnic Institute of Leiria, Portugal
² Institute for Systems and Computer Engineering at Coimbra, Portugal.
³ Department of Electrical Engineering, University of Vigo. Spain
⁴ Department of Mechanical Engineering, University of Vigo. Spain
- Influence of the number of blades on the mechanical power curve of wind turbines**
 519 M. Predescu, A. Bejinariu, O. Mitroi, A. Nedelcu
 ICPE SA-SICE Centre, Bucharest, Romania
- Fault detection in the manufacturing process of form-wound coils by means of dissipation factor and hipot tests**
 529 M.G. Meleró, M.F. Cabanas, C.H. Rojas, J. Norniella, F. Pedrayes, J.M. Barrera
 Department of Electric Engineering. University of Oviedo, Spain

Welcome Civic Reception
Salón de Cristal. Ajuntament de Valencia
19:30 – 21:00

Thursday 16th April 2009

9:30-10:15 Plenary Session PL2

ROOM A “Iberdrola”

Chairman: Catalin Alexandru

New Technologies for Small Scale Solar Power Plants

Fernando Nuño

European Copper Institute (ECI). Leonardo ENERGY Community

Thursday 16th April 2009

10:15-11:00 Plenary Session PL3

ROOM A “Iberdrola”

Chairman: Viktor Valouch

Efficiency in power transformers: Aspects influencing the specifications and design

Miguel Oliva Navarrete. ABB. Spain

Thursday 16th April 2009

11:00-11:45 Poster Session C3 – Coffee Break

ROOM C “ABB”

Chairmen: Debora Coll Mayor, Manuel E. García Melero, Salvador Pérez Litrán, Bethold Bitzer, Seemaan Georges

Performance analysis of three-phase PWM rectifiers for high power quality applications

388 J.A.A. Caseiro, A.M.S. Mendes
University of Coimbra, FCTUC/IT. Department of Electrical and Computer Engineering. Portugal

Simplified control method for unified power quality conditioner (UPQC)

389 Metin Kesler, Engin Ozdemir
Kocaeli University Technical Education Faculty, Turkey

Unit cube capacity calculation by means of finite element analysis

390 César.S. Cañas Peñuelas, S. Catalán Izquierdo, J.M. Bueno Borrachina, Francisco Cavallé Sesé
Institute of Electrical Technology. Paterna. Valencia, Spain

EMC issues for wind turbines

392 M.C. Esteban¹, F. Arteché¹, M. Iglesias¹, F.J. Arcega²
¹ Instituto Tecnológico de Aragón (ITA), Zaragoza. Spain
² Department of Electrical Engineering, University of Zaragoza. Spain

Hydrogeothermal cascade heat pump - Economic and ecologic apropiacy

398 Darko Goričanec¹, Aleksandar Saljnikov², Dragi Antonijević³, Jurij Krope¹, Mirko Komatina²
¹ University of Maribor, Faculty of Chemistry and Chemical Technology. Slovenia
² University of Belgrade, Faculty of Mechanical Engineering. Serbia
³ Singidunum University, Faculty of Applied Ecology, Belgrade. Serbia

- Heat transfer in spherical micro solar cell modules**
 402 Andrei P. Negoias¹, Alexandru M. Morega^{1,2}, Mihaela Morega¹
¹ Faculty of Electrical Engineering. University Politechnica of Bucharest. Romania
² Institute of Statistical Mathematics and Applied Mathematics "Gh. Mihoc-C.Iacob",
 Romanian Academy, Bucharest. Romania.
- On-line detection of voltage transient disturbances using ANNs**
 406 F.J. Alcántara, J.R. Vázquez, P. Salmerón, S.P. Litrán, M.I. Arteaga Orozco
 Departamento de Ingeniería Eléctrica y Térmica. Escuela Politécnica Superior.
 Universidad de Huelva. Spain
- Maximun power point tracker of a photovoltaic system using sliding mode control**
 408 M.I. Arteaga Orozco, J.R. Vázquez, P. Salmerón, S.P. Litrán, F.J. Alcántara
 Departamento de Ingeniería Eléctrica y Térmica. Escuela Politécnica Superior.
 Universidad de Huelva. Spain
- Analysis by state equation of a control strategy for hybrid filter**
 410 S.P. Litrán, P. Salmerón, J.R. Vázquez
 Departamento de Ingeniería Eléctrica y Térmica. Escuela Politécnica Superior.
 Universidad de Huelva. Spain
- Case study : flicker transfer coefficient and frequency components**
 413 A. Lazkano¹, J.J. Gutiérrez¹, L.A. Leturiondo¹, F. Pazos², J. Ruiz¹
¹ Department of Electronic and Telecommunication. Faculty of Engineering,
 University of The Basque Country. Bilbao, Spain
² Iberdrola Distribucion S.A. Bilbao, Spain
- Advantages of the public water supply use for micro power generation**
 416 Sergio Ramos, A. António Gomes, Marílio Cardoso, Luís Castanheira
 Department of Electrical Engineering, Polytechnic Institute of Oporto. GECAD.
 Portugal
- Solar mixed thermal and photovoltaic installation for an infantile educational-sanitary lodging in Senkata-El Alto (BOLIVIA)**
 419 A. Daniel Rey Rey², B. Manuel Alejandro Miguez Ruanova², C. Francisco Manuel
 León Mayo², Iago Fernández Otero², Vicente Gándara Villadoniga², A. López
 Agüera²
¹ Department of Particle Physic & Galician Institute of High Energy Physics
² Master in Renewable Energies. South Campus. Santiago de Compostela, Spain
- Novel concept-high performance revenue meter combined with advanced power quality analyzer, transient, and fault recorder**
 423 Dmitry Shur, Alexander Kadyshkevitch
 SATEC Ltd. Jerusalem, Israel
- Robust control of STATCOM based on sliding mode technique**
 426 Mohammadali Abbasian
 Department of Engineering, Islamic Azad University – Khorasgan Branch, Isfahan,
 Iran
- Aspects of the quality of electricity on over head lines at very high voltage, high voltage, medium voltage and low voltage from Romania**
 430 Daniel Nicolae Fita¹, Lucian Diodiu², I. Calota¹
¹ SC Abil Electric SRL Bucuresti, Romania
² SC Enel Energie SA. Romania

- 432 ***Cross-docking project: a case study***
C. Paciarotti, F.E. Ciarapica, G. Giacchetta
Dipartimento di Energetica, Università Politecnica delle Marche, Ancona, Italy
- 433 ***Design blades of a wind turbine using flexible multibody modelling***
Maria Augusta Neto¹, Wenbin Yu², Jorge A.C. Ambrósio³, Rogério Pereira Leal¹
¹ Departamento de Engenharia Mecânica. Faculdade de Ciência e Tecnologia da Universidade de Coimbra. Portugal
² Department of Mechanical and Aerospace Engineering. Utah State University, Logan, USA
³ Instituto de Engenharia Mecânica. Instituto Superior Técnico. Lisboa, Portugal
- 438 ***Process of desalination of low energy consumption and high compatibility with the use of renewable energies***
Pedro Peñas Ballester, Francisco Javier Abad Garrido
Prointec, Spain
- 448 ***Synthesis and characterisation of new polymer liquid crystals for externally regulated direct methanol fuel cells***
A. Martinez¹, P. Henderson², E. Ballester¹, C. Imrie², A. Ribes¹
¹ Scholl of Industrial Design Engineering. Univ. Politècnica de Valencia, Spain
² Department of Chemistry, Meston Walk University of Aberdeen, Scotland. UK
- 450 ***Genetic algorithm approach in FACTS devices location for the improvement of energy efficiency in distribution networks***
Paola Pezzini¹, Oriol Gomis Bellmunt¹, Carlos González de Miguel¹, Adrià Junyent Ferré¹, Antoni Sudrià Andreu^{1,2}
¹ Centre d'Innovació Tecnològica en Convertidors Estàtics i Accionaments (CITCEA UPC). Departament d'Enginyeria Elèctrica, Universitat Politècnica de Catalunya. Spain
² IREC Catalanian Institute for Energy Research. Barcelona. Spain
- 451 ***Capacitance evaluation on parallel-plate capacitors by means of finite element analysis***
S. Catalán Izquierdo, José M. Bueno Barrachina César S. Cañas Peñuelas, Franciso Cavallé Sesé
Institute of Electrical Technology. Paterna. Valencia, Spain
- 452 ***Capacitance evaluation on perpendicular plate capacitors by means of finite element analysis***
José M. Bueno Barrachina, César S. Cañas Peñuelas, S. Catalán Izquierdo, Franciso Cavallé Sesé
Institute of Electrical Technology. Paterna. Valencia, Spain
- 455 ***Comparison of european interconnection and operation requirements for wind farms***
Marcela Martinez Rojas, Andreas Sumper, Oriol Gomis Bellmunt, Roberto Villafáfila Robles, Eduard Valsera Naranjo
Centre d'Innovació Tecnològica en Convertidors Estàtics i Accionaments (CITCEA-UPC). E.U. d' Enginyeria Tècnica Industrial de Barcelona-Departamento de Ingeniería Eléctrica. Spain
- 456 ***Photovoltaic power conversion system based on cascaded inverters with synchronized space-vector modulation***
Valentin Oleschuk¹, Josef Tlustý², Viktor Valouch³
¹ Insitute of Power Engineering of the Academy of Sc., Kishinau, Moldova, and Politecnico di Torino, Turin, Italy
² Department of Power Engineering, Faculty of Electrical Engineering, CTU, Prague, Czech Republic
³ Institute of Termomechanics, Academy of Sc. of Czech Republic, Prague.

- 458 ***High voltage circuit breakers: SF6 vs. Vacuum***
A. Iturregi, E. Torres, I. Zamora, O. Abarategui
Department of Electrical Engineering. UPV-EHU. Barakaldo. Spain
- 459 ***Optimization of SnO₂- Si heterostructure elaborated by APCVD for solar energy conversion***
D. Hocine, Ms. Belkaid, K. Lagha
Faculty of Electrical and Computer Engineering. The University Mouloud Mammeri. Tizi-Ouzou. Algeria
- 465 ***Supply security and the reliability of the Spanish generator system in the next two decades based on the costs of fossil fuels and nuclear option***
F. Delgado, A. Ortíz, C.J. Renedo, S. Pérez, M. Mañana
Department of Electrical and Energy Engineering. E.T.S.I.I., Cantabria University, Spain
- 466 ***Eucalyptus globulus waste as fuel in a power plant***
S. Pérez, C.J. Renedo, A. Ortíz, M. Mañana, C. Tejedor, N. Sanke, F. Delgado
Department of Electrical and Energy Engineering. E.T.S.I. Industrial and Telecommunication, University of Cantabria, Spain
- 467 ***Environmental/economic power dispatch of microgrid using multiobjective optimization***
Faisal A. Mohamed¹, Heikki N. Koivo²
¹ Department of Electrical Engineering. Omar Al-Mukhtar University. Libya
² Department of Automation and Systems Technology. Helsinki University of Technology. Finland
- 468 ***Asynchronized turbogenerators and compensators for improving the electric power quality***
N.D. Pinchuk, O.V. Antoniuk, M.B. Roytgarts
Branch ELECTROSILA of the JSC Power Machines, St. Petersburgo. Russia
- 469 ***Effects of flow direction and thermal short-circuiting on the performance of coaxial ground heat exchangers***
Enzo Zanchini, Stefano Lazzari, Antonia Priarone
Dipartimento di Ingegneria Energetica, Nucleare e del Controllo Ambientale, Università di Bologna, Bologna. Italy
- 472 ***Micro grid stabilization using the virtual synchronous machine (VISMA)***
Ralf Hesse, Dirk Turschner, Hans-Peter Beck
Institute of Electrical Power Engineering. Clausthal-Zellerfeld. Germany
- 476 ***Velocity-controlled piezoelectric switching energy harvesting device***
Yuan-Ping Liu^{1,2}, Dejan Vasic¹, François Costa^{1,3}, Wen-Jong Wu², C.K. Lee^{2,4,5}
¹ Système et Application des Technologies de l'Information et de l'Energie, Universud, Ecole Normale Supérieure de Cachan, France
² Department of Engineering Science and Ocean Engineering, National Taiwan University, Taipei, Taiwan
³ IUFM de Créteil, Université Paris 12, St Denis, France
⁴ Institute of Applied Mechanics, National Taiwan University. Taiwan
⁵ Industrial Technology Research Institute of Taiwan
- 477 ***Development of switchable transformer research at University of South Australia***
H.A. Dharmawan, A.M. Ali
School of Electrical and Information Engineering, University of South Australia, Adelaide, South Australia

Predictable impact of lighting control on the energy consumption of a building through computational simulation

H. Bernardo^{1,3}, S. Leitão², L. Neves^{1,3}, P. Amaral^{1,3}

534 ¹ Departamento of Electrical Engineering, School of Technology and Management, Polytechnic Institute of Leiria, Portugal

² Department of Engineering, University of Trás-os-Montes and Alto Douro. Portugal

³ Institute for Systems and Computer Engineering at Coimbra, Portugal.

Thursday 16th April 2009

11:45-13:00 Oral Session A3

ROOM A “Iberdrola”

Chairman: Lieven Valdevelde

Stand-alone wind power system operating with a specific storage structure

M. Druga¹, C. Nichita¹, G. Barakat¹, E. Ceanga²

332 ¹ Department of Electrical Engineering. GREAH-Groupe de Recherche en Electrotechnique et Automatique du Havre, University of Le Havre, France

² Department of Electrical Energy Conversion Systems, Faculty of Electrical Engineering, “Dunarea de Jos” University of Galati, Romania

DC-bus voltage controllers for a three-phase voltage-source inverter for distributed generation

333 Bart Meersman, Bert Renders, Lieven Degroote, Tine Vandoorn, Lieven Vandevelde
Electrical Energy Laboratory (EELAB). Department of Electrical Energy, Systems and Automation (EESA), Ghent University, Belgium

Uninterruptible energy production in standalone power systems for telecommunications

350 E.F.F. Ribeiro¹, A.J. Marques Cardoso¹, C. Boccaletti²

¹ University of Coimbra, FCTUC/IT. Department of Electrical and Computer Engineering. Portugal

² Sapienza University of Rome. Department of Electrical Engineering. Italy

Modeling and simulation of a supervision and management system of hybrid energy systems for the pantanal region

503 Daniela Luiza Catelan Carneiro, João Onofre Pereira Pinto, Ruben Barros Godoy, Alexandra Maria A.C. Pinto

Department of Electrical Engineering. DEL. Federal University of Mato Grosso de Sul. BATLAB- Laboratory of Artificial Intelligence, Digital Systems and Power Electronics. Brasil

Fuel consumption minimization of a cogeneration system multi machines associated with a photovoltaic

508 MéliSSa Dondas¹, Firas Alkhalil¹, Philippe Degobert¹, Frédéric Colas¹, Benoit Robyns²

¹ Laboratoire d'Electrotechnique et d'Electronique de Puissance de Lille (L2EP). Ecole Nationale Supérieure des Arts et Metiers (ENSAM) Lille.

² Ecole des Hautes Etudes d'Ingénieurs (HEI), L2EP Lille, France

13:00 – 15:00 Lunch

“la Vella Restaurant”

Thursday 16th April 2009

11:45-13:00 Oral Session B3

ROOM B “Circutor”

Chairman: Miguel Martínez Melgarejo

A case study of sharing the harmonic voltage distortion responsibility between the utility and the consumer

- 327 F.H. Costa, I.N. Santos, S.F.P. Silva, J.C. de Oliveira
Group of Power Quality. Faculty of Electrical Engineering, Federal University of Uberlandia. Brazil

A control strategy for combined series-parallel active filter system under non-periodic conditions

- 343 M. Ucar, S. Ozdemir, E. Ozdemir
Electrical Education Department, Technical Education Faculty, Kocaeli University, Turkey

A case study of transient and dynamic performance of saturated core reactor static Var compensator

- 353 J.A.F. Barbosa Jr¹, J.C. Oliveira¹, A.B. Vasconcellos², J.M. Pacheco²
¹ Faculty of Electrical Engineering. UFU, Federal University of Uberlândia. Brazil
² Department of Electrical Engineering, Federal University of Mato Grosso. Brazil

Design issues of redundant protection and supervision system for the special purpose power converters

- 356 Dmitri Vinnikov, Indrek Roasto, Valery Vodovozov
Department of Electrical Drives and Power Electronics Tallinn University of Technology. Tallinn. Estonia

Efficiency optimization of the high-power isolated DC/DC converters through THD and losses reduction in isolation transformers

- 359 Dmitri Vinnikov¹, Victor Bolgov²
¹ Tallinn University of Technology, Department of Electrical Drives and Power Electronics. Tallinn. Estonia
² Tallinn University of Technology, Department of Fundamentals of Electrical Engineering and Electrical Machines. Tallinn. Estonia

13:00 – 15:00 Lunch

“la Vella Restaurant”

Thursday 16th April 2009
15:00-16:30 Mesa Redonda MR1 **ROOM UPV “Sala de Juntas”**

Mesa Redonda MR1
Espacio Europeo de Educación Superior (EEES)
XIXRGIE (In Spanish)

- **Moderador:** D. Javier Rodríguez Zunzarren. Decano del Colegio de Ingenieros Industriales de Valencia.
- D. Miguel Andrés Martínez Iranzo. Director de la Escuela Técnica Superior de Ingenieros Industriales.
- D. Carlos Redondo Gil. Catedrático de Universidad de la Universidad de León.
- D. Miguel Angel Fernández Prada. Vicerrector de Estudios y Convergencia Europea.
- D. Enrique Ballester Sarrias. Director de la Escuela Técnica Superior de Ingeniería del Diseño.

16:30-17:00

Café

Thursday 16th April 2009
17:00-18:30 Mesa Redonda MR2 **ROOM UPV “Sala de Juntas”**

Mesa Redonda :
La investigación en Europa. Caso de España
XIXRGIE (In Spanish)

- **Moderador:** D. Antonio Cejalvo. Director de la Agencia Valenciana de la Energía.
- D. Pedro Fito Mauopey. Director del Instituto universitario de Ingeniería de Alimentos para el Desarrollo
- D. Francisco José Mora Más. Vicerrector de Planificación e Innovación.
- D. José Francisco Duato Marín. Catedrático de Universidad.
- D. José Ganau. Colegio Oficial de Ingenieros Industriales de la Comunidad Valenciana.

20:30 -24:00

Conference Banquet at “Sorolla Palace”
(Optional)

Friday 17th April 2009

9:30-10:45 Oral Session A4

ROOM A "Iberdrola"

Chairman: Ghita Constantin

The impact of transportation costs on the profitability of heat and power generation with wood products

357 J. Parrilla¹, W. Fichtner²

¹ Chair of Energy Economics. Brandenburg Technical University of Cottbus. Germany

² Chair of Energy Economics. Institute for Industrial Production. Karlsruhe. Germany

Simulation of the aerodynamic behaviour of a micro wind turbine

368 J.M.M. Monteiro¹, J.C. Páscoa¹, F.M.R.P. Brójo²

¹ Department of Electromechanical Engineering. University Of Beira Interior. Portugal

² Department of Aerospace Sciences and Technology. University of Beira Interior. Portugal

Concept for optimization and simulation of renewable energy parks with desalination

376

D. Buschert, B. Bitzer

South Westphalia University of Applied Sciences, Campus Soest, Germany

A voltage-source inverter for microgrid applications with an inner current control loop and an outer voltage control loop

399

Tine Vandoorn, Bert Renders, Frederik De Belie, Bart Meersman, Lieven Vandevelde
Electrical Energy Laboratory (EELAB), Department of Electrical Energy, Systems and Automation (EESA). Ghent University, Belgium

European strategic energy technology plan

403

C. Redondo Gil, L.A. Esquibel, A.M. Alonso Sánchez

Electrical Engineering & Systems Engineering and Automatic Control Department. Faculty of Industrial and Computer Engineering, University of Leon, Spain

Friday 17th April 2009

9:30-10:45 Oral Session B4

ROOM B "Circutor"

Chairman: José A. Güemes Alonso

Design procedures for small synchronous generators with interior permanent magnet rotors

385

Johann Peter Bacher

Institute of Drive Technology and Electrical Machines.E.A.M, University of Technology Graz, Austria

Impact of compact fluorescent lamps on energy transmission losses and power quality

391

Gorazd Štumberger¹, Klemen Deželak¹, Sebastijan Seme¹. Mirán Rošer², Viktor Tajnšek²

¹ University of Maribor. Faculty of Electrical Engineering and Computer Science. Slovenia

² Elektro Celje d.d., Celje, Slovenia

- 444 ***A practical approach to the cogeneration system for rural appliances***
 Jan Iwaszkiewicz¹, Jacek Perz¹, C. Jaroslaw Mikielewicz²
¹ The Electrotechnical Institute, Gdansk Branch, Poland
² The Szewalski Institute of Fluid-flow Machinery. Poland
- 462 ***Performance and measurement of power quality due to harmonics from street lighting networks***
 E. R. Manzano¹, M. Carlorosi², M. Tapia Garzón³
¹ Dpto Luminotecnia, Luz y Visión, FACET, Universidad Nacional de Tucumán, Argentina
² Dpto Ingeniería Eléctrica, FACET, Universidad Nacional de Tucumán, Argentina
³ Electro Civil S.A. San Miguel de Tucumán, Argentina
- 530 ***Analysis of methodologies for the economical evaluation of power quality***
 D. Coll-Mayor¹, J. Pardo², M. Pérez Donsión³
¹ Department of Physics, University of Balearic Islands, Palma de Mallorca
² Department of Industrial Organization, ETSII, Vigo University. Spain
³ Department of Electrical Engineering, ETSII, Vigo University. Spain

Friday 17th April 2009	
10:45-11:30 Poster Session C4 – Coffee Break	ROOM C “ABB”

Chairmen: Hector Beltrán San Segundo, Dirk Turschner, Gorazd Stumberger, Buzdugan Mircea-Ion, Stanislaw Kulas

- 225 ***FPGA Implementation of a multiphase space vector modulation for asymmetrical dual three-phase AC machines***
 J. Prieto¹, F. Barrero¹, S. Toral¹, M.R.Arahal¹, M.J. Durán²
¹ Electronic & System and Automation Engineering Departments. E.S.I. University of Sevilla. Spain
² Electrical Engineering Department. E.S.I. University of Málaga. Spain
- 256 ***Restrained search predictive control of dual three-phase induction motor drives***
 M.J Durán¹, M.R.Arahal², F.J. Barrero², S.L.Toral², R. Gregor²
¹ Department of Electrical Engineering. University of Málaga. Spain
² Department of Electronic and Automatic Engineering. University of Sevilla. Spain
- 446 ***Simulation of power quality disturbances effects on an induction motor with ATP/EMTP. Comparison with laboratory measurements***
 José Gonçalves¹, José Baptista¹, Luís Neves^{2,3}, Filipe Tadeu Oliveira^{2,3}
¹ University of Trás-os Montes e Alto Douro. Portugal
² School of Technology and Management. Polytechnic Institute of Leiria, Portugal
³ INESC Coimbra, Portugal
- 478 ***Design and operation of a local cogeneration plant supplying a multi-family house (9,5 kW electrical/ 35 kW thermic power) - a field report***
 Thomas Schuster
 Department of Electrical Drives and Machines, Graz, University of Technology, Austria
- 480 ***Capacitor switching techniques***
 S.J. Kulas
 Faculty of Electrical Engineering, Warsaw University of Technology, Poland

- 482 **Germany's new code for generation plants connected to medium-voltage networks and its repercussion on inverter control**
Antonio Notholt
Institut für Solare Energieversorgungstechnik. División Engineering and Power Electronics. Kassel, Germany
- 483 **On the evaluation of power quality indices in distribution systems with dispersed generation**
A. Bracale¹, G. Carpinelli², A. Di Fazio³, D. Potro²
¹ Department for Technologies, University of Naples Parthenope, Italy
² Department of Electrical Engineering, University of Naples Federico II, Italy
³ Department of Industrial Engineering, University of Cassino, Italy
- 485 **Improved method for detection and classification of transients and waveform distortions using sine fitting algorithms**
T. Radil¹, P.M. Ramos^{1,2}, A.C. Serra^{1,2}
¹ Instituto de Telecomunicações, Lisbon, Portugal
² Department of Electrical and Computer Engineering, Instituto Superior Técnico, Technical University of Lisbon, Portugal
- 487 **Energy saving policy in water distribution networks**
M. Giugni¹, N. Fontana², D. Portolano³
¹ Department of Hydraulic, Geotechnical and Environmental Engineering, University of Naples Federico II. Italy
² Department of Engineering, University of Sannio, Benevento, Italy
³ Centre of Environmental Research C.I.R.AM. University of Naples Federico II, Naples. Italy
- 488 **Benefits of distributed energy storage working in parallel to distributed energy resources**
A. Goikoetxea¹, J.A. Barrena¹, M.A. Rodríguez², G. Abad¹
¹ Faculty of Engineering, University of Mondragón, Spain
² Ingeteam Transmission & Distribution S.A. Protección y Control de Redes Eléctricas. Basauri. Spain
- 490 **Integral management system for the energy efficiency improvement in commercial facilities: application to the Polytechnic University of Valencia**
G. Escrivá, M. Alcázar, C. Alvarez
Instituto de Ingeniería Energética. Universidad Politécnica de Valencia, Spain
- 491 **Stabilisation of the electricity production of a wind park using a biomass gasification plant**
A. Pérez Navarro, D. Alfonso, C. Alvarez, F. Ibañez, J. Safont, C. Sánchez, I. Segura
Instituto de Ingeniería Energética. Universidad Politécnica de Valencia, Spain
- 492 **GIS based advanced biomass integral optimization model for energy applications**
D. Alfonso, C. Perpiñá, A. Pérez Navarro, E. Peñalvo
Instituto de Ingeniería Energética (IIE). Universidad Politécnica de Valencia. Spain
- 493 **Tools for assessing the robustness variation of power system against voltage dips**
P. Caramia², C. di Perna¹, P. Varilone¹, P. Verde¹,
¹ Dipartimento di Ingegneria Industriale. University of Cassino, Italy
² Dipartimenti per le Tecnologie. University of Napoli Parthenope, Italy

- 496 ***Detection of nacelle anemometers faults in a wind farm***
Francisco Javier Beltrán Martínez¹, Andrés LLombart^{1,2}, J.J. Guerrero³
¹ Fundacion CIRCE. Centro Politécnico Superior. Universidad de Zaragoza. Spain
² Department of Electrical Engineering. Universidad de Zaragoza. Spain
³ I3A and Dept Informática e Ingeniería de Sistemas. Universidad de Zaragoza, Spain
- 497 ***Analysis of Electrical field in a 6 kV form-wound coil with flat shape void***
C.H. Rojas, M.G. Melero, M.F. Cabanas, J.M. Cano, G.A. Orcajo, J.F. Pedrayes
Department of Electrical Engineering, University of Oviedo, Spain
- 501 ***Kalman filter and wavelets transform based three-phase power quality disturbances detection, classification and diagnosis tool implementation-hardware and software***
Alexandre A. Carniato, Ruben B. Godoy, João Onofre P. Pinto
Department of Electrical Engineering DEL, Federal University of Mato Grosso do Sul. BATLAB- Lab. of Artificial Intelligence, Digital Systems and Power Electronics. Brasil
- 502 ***A high-efficient micro-controlled buck converter with maximum power point tracking for photovoltaic systems***
P.C.M. Bernardo¹, Z.M.A. Peixoto¹, L.V.B. Machado Neto²
¹ Graduate Program in Electrical Engineering
² Group of Studies in Energy – GREEN Solar
PPGEE. Pontifical Catholic University of Minas Gerais-PUCMINAS. Brasil
- 504 ***Effect of air intake pressure drop on performance and emissions of a diesel engine operating with biodiesel and ultra low sulphur diesel (ULSD)***
Rizalman Mamat, Nick Rosli Abdullah, Hongming Xu, Mirosław L. Wyszynski, Athanasios Tsolakis
School of Mechanical Engineering. The University of Birmingham, United Kingdom
- 505 ***Study of control methods for series FACTS devices and their effects on a wind farm***
R. Rezaeipour¹, M. Kalantar²
¹ Department of Sama Technical and Vocational Junior College of Mamagan, East Azarbayjan, Iran
² Center of Excellence for Power System Automation and Operation. Department of Electrical Engineering, Iran University of Science and Technology Narmak, Tehran, Iran
- 506 ***Features of a cycloid speed increaser with double satellite gear for small mechatronic wind and hydro systems***
C. Jaliu, D.V. Diaconescu, M. Neagoe, R. Săulescu
Product Design and Robotics Department, Transilvania University of Brasov, Romania
- 510 ***Study for the installation of offshore wind farms in the Canary Islands***
M. Martínez, A. Pulido, J. Romero, N. Angulo, F. Díaz, F. Déniz
Department of Electrical Engineering. E.T.S.I.I. Las Palmas de Gran Canaria. Spain
- 511 ***Technical and economical performance of parabolic trough collector power plant under Algerian climate***
M.L. Yousfi¹, N. Said³, A. Zaaoui², S. Elmetenani¹
¹ Unit of Development of Solar Equipments (UDES), Bouismail, Tipasa, Algeria
² Development Center of Renewable Energies (CDER), Bouzareah, Algiers, Algeria
³ University Center of Khemis Miliana, Algeria

- Neural network based model for a PEM fuel cell system**
518 I. Zamora¹, J.I. San Martín², J.J. San Martín², V. Aperrribay², P. Eguía¹
¹ Department of Electrical Engineering. University of the Basque Country. Escuela
Técnica Superior de Ingeniería de Bilbao. Spain
² Escuela Universitaria de Ingeniería Técnica Industrial de Eibar. Spain
- Prediction of photovoltaic generation for distribution network planning**
520 Miguel Ramón Marín¹, Andreas Sumper², Roberto Villafáfila Robles², Carlos
González de Miguel²,
¹ Endesa Distribucion Eléctrica D.L. Planificación y Calidad de la Red. Barcelona,
Spain
² E.U.d' Enginyeria Tècnica Industrial de Barcelona, Dpto. de Ingeniería Eléctrica,
Barcelona. Spain
- The review and analysis the destructive effects of harmonics on a sample
MV/LV transformers**
523 Saeed Mousavi, Bahman Tavan, Homayoun Bakhtiari
Lorestan Electric Power Distribution Company, LEPDC. Iran
- Wind energy potential assessment in Republic of Macedonia**
524 V. Dimcev, K. Najdenkoski, V. Stoikov, Z. Zokolanski
Faculty of Electrical Engineering and Information Technologies. Skopje. Republic of
Macedonia
- Virtual instrument as a tool for teaching power quality**
525 Vladimir Dimcev, Zivko Kokolanski, Cvetan Gavrovski, Mare Srbnovska
Faculty of Electrical Engineering and Information Technologies, Dept. of Electrical
Measurements. Skopje. Republic of Macedonia
- Dispatch merit order-the place of renewable energy**
527 Nuno Domingues
ISEL, Instituto Superior de Engenharia de Lisboa, Portugal
- The fundamental particle and energy quanta of dark matter and dark energy:
Boltzmann particles and utilization its energy**
528 Murad Shibli
Mechanical Engineering Department. College of Engineering, United Arab Emirates
University, Al- Ain, United Arab Emirates
- Influence of slot opening width and rotor pole radius on the torque of PMSM**
532 J.A. Güemes¹, P.M. García², A.M. Iraolagoitia¹, J.J. Ugartemendia²
¹ Department of Electrical Engineering. E.U.I.T.I. University of the Basque Country.
Bilbao. Spain
² Department of Electrical Engineering. Escuela Universitaria Politécnica. University
of the Basque Country. San Sebastián. Spain
- Harmonic elimination in a single phase inverter output voltage with bipolar
notches in a half cycle by the HGA**
533 N. Tutkun, Y. Türkkán, M. Ibrahimbas
Department of Electrical & Electronic Engineering. Zonguldak Karaelmas University.
Zonguldak. Turkey

Friday 17th April 2009
11:30-12:15 Plenary Session PL4
ROOM A “Iberdrola”

Chairman: Mihai Predescu

Future Perspectives for Nuclear Energy

Antonio González Jiménez. Mining Engineer. Director of Studies and Technical Support of the Forum of the Spanish Nuclear Industry

Friday 17th April 2009
12:15-13:00 Closing Session
ROOM A “Iberdrola”

CLOSING SESSION
<ul style="list-style-type: none"> ▪ Juan Juliá Igual. Rector of Polytechnical University of Valencia (UPV) ▪ Alfredo Quijano. Manager of the Institute of Electrical Technology (ITE) ▪ Manuel Pérez Donsión. Chairman of the ICREPQ Steering Committee ▪ Francisco Cavallé Sesé. Chairman of the ICREPQ Local Organizing Committee
Conclusions and time for the next conference (ICREPQ’10) Awards for the three best posters

13:00 – 15:00	Farewell Lunch at “la Vella Restaurant”
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15:00 – 18:00	CULTURAL EXCURSION FOR ALL THE PARTICIPANTS Excursion in two Tourist Buses for to see the most interesting places of Valencia and finally a visit to the City of Arts and Sciences
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AFTER THE ICREPQ’09 CONFERENCE

In order to contribute to your paper diffusion around the world, after the ICREPQ’09 conference all the presented papers will be included in “.pdf” format on the website of the ICREPQ conferences: <http://www.icrepq.com> and also in the “Renewable Energy & Power Quality Electronic Journal” where some one interested can download free of charge some paper.

On the other hand, sometimes technical journals and magazines are interested in some of the papers and in this case we deliver the authors addresses in order to facilitate a more direct and fruitful contact.

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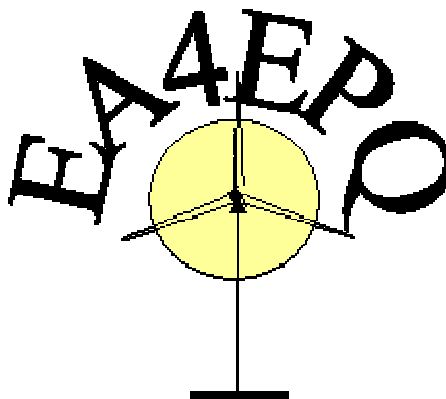
36310 VIGO (Spain)

Phone number /Fax . +34 986812685

E-mail: donsion@uvigo.es

icrepq@icrepq.com

Web page: <http://www.icrepq.com>



European Association for the
Development of Renewable Energies,
Environment and Power Quality

Fiscal Address: **C/ Ramón Aller, 83 ; Entreplanta C, 36500 Lalín, Pontevedra (España)**
RNA Nº. 169206 C.I.F.: G36415636