

## GENERAL TECHNICAL PROGRAMME

<b>Wednesday 9 April 2003</b>									
	<b>ROOM A</b> "SCHNEIDER Electric"			<b>ROOM B</b> "Unión FENOSA"			<b>ROOM C</b> "PSA Peugeot CITROËN"		
	<i>Oral sessions</i>			<i>Oral sessions</i>			<i>Poster sessions</i>		
8:00 – 9:00	Registration								
9:00 – 9:45	Opening ceremony								
9:45 – 11:00	<b>A1</b> 351 358 360 362 424			<b>B1</b> 317 326 344 364 401					
	EXTRA TIME FOR DISCUSSION								
11:00 – 11:45	Posters Session at Room C (1° floor) ( <b>Session C1</b> ) Coffee Break						304	307	309
							322	327	334
						346	352	355	
						365	366	367	
						379	384	389	
						397	400	407	
						436			
11:45 – 13:00	<b>A2</b> 306 363 392 393			<b>B2</b> 301 312 347 385 388					
	EXTRA TIME FOR DISCUSSION								
13:00 – 15:30	<b>Lunch in the Bahía de Vigo Hotel</b>								
15:30 – 16:45	<b>A3</b> 369 378 398 404 419			<b>B3</b> 376 394 396 411 440					
	EXTRA TIME FOR DISCUSSION								
16:45 – 17:30	Poster Session at Room C (1° floor) ( <b>Session C2</b> ) Coffee Break						311	328	349
							356	368	377
						380	382	387	
						403	409	415	
						417	418	423	
						429	431	434	
						442			
17:30 – 18:45	<b>A4</b> 313 321 383 406 399			<b>B4</b> 390 395 402 408 430					
	EXTRA TIME FOR DISCUSSION								
18:45 – 21:00	FREE TIME								
21:00 -	<b>CIVIC RECEPTION with one aperitif at "Pazo de Castrelos" (Palace of Castrelos)</b>								

<b>Thursday 10 April 2003</b>					
	<b>ROOM B</b> “Unión FENOSA”		<b>ROOM C</b> “PSA Peugeot CITROËN”		
	<i>Plenary sessions P1 and P2</i>		<i>Poster sessions</i>		
9:30 – 10:45	PL1	<b>Experiences of ENDESA Group in Generation of Electricity with Biomass.</b> Rafael Guínea and Xavier Noguer. Endesa Cogeneración y Renovables.			
	PL2	<b>Co-firing of Low Rank Coal and Biomass: A Chance for Biomass Penetration in the Renewables.</b> Antonio Valero and the Biomass Group of CIRCE.			
<b>EXTRA TIME FOR DISCUSSION</b>					
10:45 – 11:30	Posters Session at Room C (1° floor) <b>(Session C3)</b> Coffee Break		308 336 371 375 426 435 445	329 359 372 381 432 439	332 370 373 416 433 444
11:30 – 12:45	PL3	<b>Outlook of the Solar Photovaltaic Energy in Spain.</b> Manuel Vázquez. University of Vigo.			
	PL4	<b>Power Quality Problems and New Solutions.</b> A. de Almeida, L. Moreira, J. Delgado. University of Coimbra.			
<b>EXTRA TIME FOR DISCUSSION</b>					
12:45 – 13:30	Aperitif				
13:30 – 16:00	<b>Lunch in the Bahia de Vigo Hotel</b>				
16:00 – 21:00	FREE TIME				
21:00 -	<b>Conference Banquet at the Restaurant “El Castillo”</b>				

<b>Friday 11 April 2003</b>	
	<b>ROOM B</b> “Unión FENOSA”
	<b>PLENARY SESSION P3 ABOUT RENEWABLES ENERGIES BY A GROUP OF EXPERTS</b>
9:00 – 11:00	PE1 <b>Renewable Energies. Preliminary Issues.</b> INEGA (Institute Energetic of Galicia) Mr. Antonio Valladares Gil. Dean of the Association of Industrial Engineers in Galicia.
	PE2 <b>Opportunities for the Development of Renewable Energy in the EU.</b> Mr. Juan Fraga. General Secretariat EUFORES (European Forum for Renewable Energy Sources). General Manager of Hidronorte, S.A.
	PE3 <b>Medium Term Development of Renewable Energy.</b> Mr. Emilio Menéndez Pérez. Honorary Proffessor in UPM and UAM.
	PE4 <b>Environmental Impacts Caused by Eolic Energy.</b> F. Macías, C. Nieto and A. García. Environment Technology Laboratory. University of Santiago de Compostela.
	PE5 <b>The Role of Electricity Companies in the Development of Renewable Energy.</b> Mr. Pedro Hormigos Corral. Manager of Renewable Energy in Union FENOSA Special Energies.
	PE6 <b>Renewable Energy: Technological Issues.</b> José Vidal Rodríguez. Technical Director of Explotation of ENDESA. Cogeneración y Renovables, S.A. (CYR).
	PE7 <b>Renewable and Public Opinion.</b> Mr. Sergio de Otto Soler. Communication Manager of APPA (Association of Renewable Energy Producers).
	<b>EXTRA TIME FOR DISCUSSION</b>
11:00 – 11:15	<b>Conclusions</b>
11:15 – 11:45	Coffee Break
11:45 – 12:15	Trip from Vigo to Baiona
13:00 – 15:30	<b>Lunch in the Parador of Baiona</b>
15:30--16:00	<b>OFFICIAL CLOSING SESSION</b> We will deliver gold emblems and diplomas to those companies that collaborate with the Organising Committee and with the Conference
16:00 – 18:00	Free time (If you want you can attend to one plenary session at the “Parador of Baiona”, ROOM D “Soluziona”, by a Group of Experts of “Soluziona calidad y medio ambiente, S.L”. The company will provide the information written in English)
18:00 – 18:30	1º Bus for the trip from Baiona to Vigo
19:45 – 20:15	2º Bus for the trip from Baiona to Vigo

**ACCEPTED PAPERS FOR THE INTERNATIONAL CONFERENCE ON  
RENEWABLE ENERGIES AND POWER QUALITY (ICREPQ'03)**

- Series Compensation for Hydro-Quebec Long Distribution Lines.**  
301 R. Wamkeue, N. Kandil, J. East, Y. Boicclair. UQAT, Dept. des Sciences Appliquées. Canada.
- Voltage and Speed Domains for an Electric Vehicle Optimum  
Designed Three-phase Induction Motor.**  
302 Jawad Faiz, M. Ghaneei. University of Tehran. Iran.
- Design of Switched Reluctance Machine for Starter/Alternator of  
Hybrid Electric Vehicle with Finite Element Verification.**  
303 Jawad Faiz, K. Moayed-Zadeh. University of Tehran. Iran.
- Energy Conversion with Doubly Fed Machines.**  
304 J. Bendl., M. Chomát., L. Schreier. Institute of Electrical Engineering. Czech Republic
- Comparison of Variable Speed Wind Turbine Control Strategies.**  
306 Santiago Arnaltes Gómez. Universidad Carlos III de Madrid. Spain.
- Heat Transfer Modelling in a Circulating Fluidised Bed Biomass  
Boiler.**  
307 Alexandre Aibéo, Carlos P. INEGI. Portugal.
- Robust Power System Stabiliser Design Based on  $\mu$  – Synthesis.**  
308 M. Bouhamida, M. A. Denaï. University of Science and Technology of Oran. Algeria.
- Modelling and Simulation of a Grid Connected Variable Speed Wind  
Energy Conversion System with Low Cost Power Converters.**  
309 A.B. Raju, K. Chatterjee. India.
- Mechanical Stress Behavior Inside Slots of Large Hydro Generators.**  
313 Christian Grabner. Graz University of Technology. Austria.
- Voltage Wave Quality in Low Voltage Power Systems.**  
317 José M. R. Baptista, Manuel R. Cordeiro, A. Machado e Moura. Universidade de Trás-os-Montes e Alto Douro. Portugal.
- Electromagnetic Finite Element Calculations of Permanent Magnet  
Generators for ECObulb and HYDROMATRIX Applications.**  
321 Erwin Schlemmer, Franz Müller. VA TECH GmbH&Co. Austria.
- Fractal Classification of Solar Irradiances Into Typical Days Using a  
Cumulative Distribution Function.**  
322 S. Harrouni, A. Guessoum. Solar Instrumentation & Modeling Group/LINS. Algeria.

- Development of an Experimental Tool to Measure Power Quantities.**  
 326 Cristina Gherasim, Jeroen Van den Keybus, Johan Driesen, Ronnie Belmans. K.U. Leuven – ESAT/ELECTA. Belgium.
- Remote Control System for Small Hydro Energy Power – Station.**  
 327 K. J. Sagastabeitia B., A. J. Mazón Sainz Maza, I. Zamora Belver, Z. Aginako Arri, J. R. Saenz Ruiz. Universidad del País Vasco. Spain.
- Power Quality Enhancement Using a Unified Compensator and Switched Filter.**  
 328 A. M. Sharaf, Pierre Kreidi. The University of New Brunswick. Canada.
- Neural Network and Daubechies Wavelet in Power System Protection.**  
 329 A. L. Orille, J. Iglesias Lorenzo. Spain.
- Dynamic and Steady State Modelling of the Doubly Fed Twin Stator Induction Generator With Core Loss.**  
 332 G. Boardman, J. G. Zhu, Q. P. Ha. University of Technology, Sydney. Australia.
- An Engineering Model for Polymer Electrolyte Membrane Fuel Cells.**  
 334 T. A. Suker, B. J. Holland, J. G. Zhu. University of Technology, Sydney. Australia.
- Electromagnetic Forces in Induction Motor With Nonsinusoidal Power Supply.**  
 336 M. Roytgarts. Electrosila Stock Company. Russia.
- Estimation of Possibilities of Using of a Wind Power for Autonomous Consumers in Climatic Conditions of Republic Moldova.**  
 339 Lumer Inna, Berzan Vladimir, Barladean Alexandru, Tirsu Mihai, Tirsu Valentina. Institute of Power Engineering of an Academy of Science of Moldova. Republic of Moldova
- Modeling a Multi-phase Excitation Switched Reluctance Motor with Artificial Neural Network.**  
 340 Guo Wei, Zhan Qionghua. Huazhong University of Science & Technology. China.
- Analysis of Harmonic Current Propagation in Industrial Sector in Function of the Load Level.**  
 344 Joao Pedro Trovao, Humberto Jorge. Instituto Superior de Engenharia de Coimbra. Portugal.
- Development and Test of a Kinetic Accumulator of Electric Energy for an Hybrid Electrical Vehicle.**  
 346 R. Garrigosa, E. Frias, R. Bosch. Universitat Politècnica de Catalunya (UPC). Spain.

**The Use of an Active Power Filter for Harmonic Elimination, and Power Quality Improvement in a Nonlinear Loaded Electrical Installation.**

347 António P. Martins. Faculdade de Engenharia da Universidade do Porto – DEEC – ISR. Portugal.

**Modelling and Simulation Tool for the Analysis of Electric Power Quality Issues.**

349 F. Magnago, C. Reineri, S. Lovera, R. Lima. Universidad Nacional de Río Cuarto. Argentina.

**Energetic Situation in the Basque Country.**

351 Idoia Manero Txintxetru. Escuela de Ingeniería Técnica de Vitoria – Gasteiz – UPV. Spain.

**A Optimization Technique of Hydrothermal Systems Using Calculus of Variations.**

352 Bayón, L., Grau, J. M., Ruiz, M. M., Suárez, P. M. Universidad de Oviedo. Spain.

**Voltage Sag Source Location in Distribution Networks.**

355 Claudio Reineri. Universidad Nacional de Río Cuarto. Argentina.  
Enrique Belenguer, Raul M. Universitat Jaume I. Spain.

**A Study of Product Quality in the Electricity Network in the Province of Burgos.**

356 Jesús Sagredo González, Victoria Abad San Martín, Javier González de la Viuda. Universidad de Burgos. Spain.

**Small-Scale Renewable Energy in the Next Century Market Hydro Plants – State of the Art and Applications.**

358 Catalin Serban Dragu, Ronnie Belmans. K.U. Leuven, ELECTA, Energy Institute. Belgium.

**Contribution to the Determination of the Elements of Photovoltaic Panel (PV) Equivalent Electric Model. Application in the Maximal Power Point (MPP) Available Analytical Expression.**

359 V. Autier, V. Molcrette, H. Roisse. Université d' Artois. France.

**Adjustable Speed Hydro Generation.**

360 J. R. Wilhelmi, J. Fraile Ardanuy, J. Fraile Mora, L. Íñigo. Universidad Politécnica de Madrid. Spain.

**New Design of Hydrogenerator Poles.**

362 Kuchinskaia Z. M. Electrosila. Russia.

**Implementation of a Methodology to Define the Optimum Capacity of a Wind Farm.**

363

- Paulo Pinto, Miguel Ferreira, Álvaro Rodrigues. IPB, INEGI, Faculty of Engineering of University of Porto. Portugal.
- Adjustable Speed Drives and Power Quality.**
- 364 Sudrià A., Rull, J., Sumper, A., Sanchez, J., Casas, J. Universitat Politècnica de Catalunya (UPC). Spain.
- A Motor Facility Energy Program in a Chemical Industry.**
- 365 L. F. Mantilla Peñalba, M. A. Rodríguez Pozueta, R. Diego García. Universidad de Cantabria. Spain.
- Competitive Power Market Analysis – Evaluation of Market Power Due to Congestion Effects on Transmission System.**
- 366 Manuel Joao D. Gonçalves, Zita A. Vale. Polytechnic Institute of Porto (IPP)/Institute of Engineering (ISEP)/Departement of Electrical Engineering (DEE). Portugal.
- Sequence Components Obtained by Current Spectral Analysis in DC Motor Drives Working Under Abnormal Conditions.**
- 367 G. Alonso Orcajo, J. M. Cano R., C. H. Rojas G., M. G. Melero, M. F. Cabanas. University of Oviedo. Spain.
- Analysis of the AC-DC Harmonic Interaction Between the Power Network and Uncontrolled 6 Pulse Rectifiers Working in the Discontinuous Conduction Mode Using Newton's Method.**
- 368 J. M. Cano, M. F. Cabanas, G. A. Orcajo, C. H. Rojas, M. G. Melero. University of Oviedo. Spain.
- A Control Procedure for Permanent Magnet Variable-Speed Wind Turbine.**
- 369 A. Haniotis, A. Kladas, J. Tegopoulos. National Technical University. Greece.
- 3D Vibration and Stress Analysis of Insulators.**
- 370 Damian Mazur, Mariusz Trojnar. Rzeszow University of Technology. Poland.
- Modelling of Electrical and Mechanical Phenomena in Induction Motors with Air-Gap Eccentricity.**
- 371 Damian Mazur, Mariusz Trojnar. Rzeszow University of Technology. Poland.
- A Space Vector Control Algorithm for VSI Multi – Level Converters.**
- 372 A. Cataliotti, F. Genduso, G. Ricco Galluzzo. Università Degli Studi di Palermo. Italy.
- Switched Reluctance Drives for Electric Vehicle Applications.**
- 373 Pere Andrada. EUPVG-UPC. Spain.
- 375 **Stray Load Losses in Induction Machines A Review of Experimental**

- Measuring Methods and a Critical Performance Evaluation.**  
Hansjörg Köfler. Technische Universität Graz. Austria.
- 376 **Influence on Power Quality Measurement of the Simultaneous Presence of Different Disturbances.**  
Eguíluz, L. I., Mañana, M., Lavandero, J. C., Diez, G. University of Cantabria. Spain.
- 377 **Problems Derived from the Simultaneous Utilisation of Different Flickermeters in Large Electric Networks.**  
Eguíluz, L. I., Mañana, M., Lavandero, J. C., Ortiz, A. University of Cantabria. Spain.
- 378 **Modelling, Testing and Economic Analysis of a Small – Scale Hybrid Wind-PV-Battery System Installation.**  
Athanasios D. Karlis, Demetrios P. Papadopoulos. University of Thrace. Greece.
- 379 **A New MatLab Model for Wind Speed Simulation in Wind Induction Generator Units.**  
José Coto Aladro, Javier Gómez, Aleixandre Fernández, Gúzman Díaz, María Isabel García Alvarez. Universidad de Oviedo. Spain.
- 380 **Uncertainty in Measurements of Power and Energy on Power Networks.**  
Emil Manov, Nikolay Kolev. Technical University Sofia. Bulgaria.
- 381 **A Methodology Based on an Expert Fuzzy System for the Selection of the Architecture, Technology and Characteristics of a Domotics System.**  
R. Mayo Bayón, F. Mateos Martín, L. Reina Ortega, B. Fanjul Viña, A. Robles Álvarez, A. M. López Rodríguez. Universidad de Oviedo. Spain.
- 382 **Determination of the Ground Resistance and Distribution of Potentials in Grounding Grids Using Solid Models.**  
J. A. Güemes., F. Rodríguez, J. M. Ruiz, F. E. Hernando. E.U. Ingeniería Técnica Industrial. Spain.
- 384 **An Electricity Day-Ahead Market Simulation Model.**  
T. Nogueira, Z. Vale, A. Almeida do Vale. Institute of Engineering, Polytechnique Institute of Porto. Portugal.
- 385 **Low-Cost Digital System for Power Quality Monitoring.**  
José Batista, Júlio S. Martins, Joao L. Afonso. Instituto Politécnico de Bragança/Univesidade do Minho. Portugal.
- 387 **Feasibility Study of Using Super Capacitors as Storage Devices in PV Systems.**  
T. Zouaghi. ENIT. Tunisia.



A. Schmitt, M. LeBitoux. EDF/DRD. France.

**Influence of the Network Reconfiguration in the Performance of Harmonic Filters Located in an Electric Power System.**

388 M. F. Coelho Monteiro, J. A. Dias Pinto, A. C. S. Machado e Moura. Instituto Superior de Engenharia de Coimbra/Faculdade de Engenharia da Universidade do Porto. Portugal.

**A Comprehensive Model of a Doubly Fed Induction Generator for Dynamic Simulations and Power System Studies.**

389 Joris Soens. ELECTA – ESAT. Belgium.

**Cost of Transmission Transactions: Comparison and Discussion of Used Methods.**

390 Judite Ferreira, Zita Vale, A. Almeida Vale, R. Puga. University of Porto. Portugal.

**Study of Wind Power Limit for a Network Bus.**

392 D. García García, M. P. Comech, M. Sanz, J. B. Arroyo, M. García Gracia. University of Zaragoza. Spain.

**Recycling of Small Electrical Machines and its Applications for Low Cost Wind Turbines.**

393 A. Gálvez, M. Lejárraga, J. S. Artal, A. Usón, F. J. Arcega. University of Zaragoza. Spain.

**Shunt Active Power Filter Controlled by p-q Theory for Three-Phase Systems with Neutral Wire.**

394 Emílio Ferreira do Couto, Júlio S. Martins, Joao L. Afonso. Universidade do Minho. Portugal.

**Abstraction of Significant Temporal Features of Voltage Sags Recorded in a 25kV Substation.**

395 Llanos David, Joaquin Meléndez, Xavier Corbella, Jorge Losada. University of Girona – UdG/FECSA – Endesa. Spain.

**A Series Active Filter Controlled by Personal Computer.**

396 M. Joao Sepúlveda Freitas, Joao L. Afonso, Júlio S. Martins. Universidade do Minho. Portugal.

**Dynamic Modelling of Wind Farms: a Comparative Study Between Two Modelling Approaches.**

398 I. Zubia, X. Ostolaza, G. Tapia, A. Tapia. University of the Basque Country. Spain.  
S. K. Salman. The Robert Gordon University. U.K.

**Classification of Sags Measured in a Distribution Substation Using a Fuzzy Tool.**

399 Mora Juan. University of Girona. Spain.

- Computer Science Tool for the Calculation of Technical-Economical Viability for the Integration of Renewable Energies in Pumping Stations (H.I.I.E.R & C.I.B.E.R).**  
400 Diego Botero, Marcos Navarro, José Fco. Sanz Osorio, Mariano Sanz Badía. University of Zaragoza. Spain.
- Harmonic Distortion in an Steel Plant with Induction Furnaces.**  
401 I. Zamora, I. Albizu, A. J. Mazon, K. J. Sagastabeitia, E. Fernandez. University of the Basque Country. Spain.
- Using Active Filters to Reduce THD in Traction Systems.**  
402 I. Zamora, P. Eguia, A. J. Mazón, E. Torres, K. J. Sagastabeitia. University of the Basque Country. Spain.
- Continuous Harmonic Analysis and Power Quality Measurements in Three-Phase Systems.**  
403 J. C. Montaña, M. Castilla, A. López, D. Borrás, J. C. Bravo, J. Gutierrez. University of Sevilla. Spain.
- Statistical Distribution of Voltages in Grids with a Number of Wind Farms.**  
404 Joaquín Mur Amada, Ángel Antonio Bayod, Jesús Sallán, José Antonio Domínguez, José María Yusta. University of Zaragoza. Spain.
- Renewable Energy in Portugal - Legislation, Incentives and Suggestions.**  
406 M. Fernanda T. Moreira, Júlio S. Martins, Joao L. Afonso. Universidade do Minho. Portugal.
- Hedging Using Futures and Options Contracts in the Electricity Market.**  
407 Filipe Azevedo, Zita A. Vale, António A. Vale. Polytechnic Institute of Porto. Portugal.
- Power Quality and Air Emission Tests in a Micro Gas Turbine Cogeneration Plant.**  
408 J. C. Bruno, A. Coronas, Ll. Massagués. CREVER – Universitat Rovira i Virgili. Spain.
- Increase of Voltage Stability and Power Limits Using a Static Var Compensator.**  
409 Roberto Alves, Miguel Montilla, Ernesto Mora. University Simón Bolívar. Venezuela.
- Harmonic Detection By Using Different Artificial Neural Network Topologies.**  
411 Juan Luis Flores Garrido, Patricio Salmerón Revuelta. University of Huelva. Spain.

- Algorithm Optimization for PWM Signal Generation with Selective Harmonic Elimination Using the Walsh Transform.**  
 415 Jesús Vicente Rodrigo, Rafael Pindado, Inmaculada Martínez Teixidor. Universitat Politècnica de Catalunya (UPC). Spain.
- Home Automation - A Step Towards Better Energy Management.**  
 416 Renato Jorge Caleira Nunes. Instituto Superior Técnico/INESC-ID. Portugal.
- Power Quality Analysis of Wind Turbines. Part I - Static Analysis.**  
 417 Joaquín Mur Amada, Ángel Antonio Bayod, Samuel Ortiz, Roberto Zapata. University of Zaragoza. Spain.
- Power Quality Analysis of Wind Turbines. Part II - Dynamic Analysis**  
 418 Joaquín Mur Amada, Ángel Antonio Bayod, Samuel Ortiz, Roberto Zapata, Jesús Sallán. University of Zaragoza. Spain.
- Characterization of Wind Farm Energy Production in a Zone by Artificial Neuronal Networks.**  
 419 Joaquín Mur Amada, Ángel Antonio Bayod, Juan Bautista Arroyo, Miguel García, José Antonio Domínguez. University of Zaragoza. Spain.
- State-Space Averaged Model of Three-Phase Four-Wire Shunt Active Power Filter Based on Current-Controlled VSI.**  
 423 P. Rodríguez, J. Bergas, R. Pindado. Universitat Politècnica de Catalunya (UPC). Spain.
- Investigation of a Hybrid Energy System Including Wind Generator.**  
 424 Evangelos C. Tsimplotsephanakis, Athanassios N. Safacas. University of Patras. Greece.
- Wind Turbines Equipped with Self-Excited Induction Machine in Autonomous Mode: Analytical and Numerical Starting Studies.**  
 426 G. Peset. Groupe Eolien de l'Université du Québec à Rimouski. Canada.  
 H. Roisse, V. Autier, J. F. Brudny. Laboratoire Systèmes Electrotechniques et Environnement (L.S.E.E.). France.
- An Advanced Approach Control for a Shunt Active Power Filter.**  
 429 M. C. Ben Habib, S. Saadate. Groupe de Recherche en Electrotechnique et Electronique de Nancy. France.
- Topology Optimizatón of Active Power Filters**  
 430 Raul Monteiro, Beatriz Borges, Victor Anunciada, Lisboa, Portugal
- Switching Signals Generation Technique for Minimizing the RMS Tracking Error in Active Filters.**  
 431 Fermín Barrero González, M<sup>a</sup> Isabel Milanés Montero, Enrique Romero Cadaval, José Miguel Montero Milanés. University of Extremadura. Spain.

- Influence of the Monthly Consumption Behaviour in Long Term Electric Demand Forecasting.**  
432 M. A. Jaramillo, E. González, J. A. Álvarez, D. Carmona. University of Extremadura. Spain.
- Multipurpose Synchronised PQ Meters for Isolated Environments.**  
433 R. Zapata, S. Ortiz, A. Llombart, J. J. Melero, M. Sanz. University of Zaragoza and Foundation C.I.R.C.E. Spain.
- A Stochastic-Deterministic Optimization Method For Eliminating the Environmental Impact Produced By a Grounding System.**  
434 M. Sylos Labini, A. Covitti, G. Delvecchio, N. Medoro. Polytechnic of Bari. Italy.
- Renewable Energies, Option of Future.**  
435 Ramon Mujal, Luía Humet, Joaquim Lloberas. Universidad Politécnica de Cataluña (UPC). Spain.
- A Method for Estimating the Environmental Impact of a Wind Farm by Fuzzy Logic Techniques.**  
436 G. Delvecchio. University of Bari. Italy.
- Magnetic Fields in Multiconductor Systems with Harmonic Currents.**  
439 M. Pineda Sánchez, L. Serrano Iribarnegary. E.T.S.I.I., Polytechnic University of Valencia. Spain.
- Simulation of Power Quality in Residencial Electricity Networks.**  
440 D. McQueen, S. Watson. Centre for Renewable Energy Systems Technology Loughborough University. United Kingdom.  
M. McQueen, P. Hyland. School of Information Technology and Electrotechnology Otago Polytechnic. AuStral Engineering Associates Limited. New Zealand.
- Technical Methods for the Prevention and Correction of Voltage Sags and Short Interruptions Inside the Industrial Plants and in the Distribution Networks.**  
442 Nicolás Louzán Pérez, Manuel Pérez Donsión. E.T.S.I.I. Vigo University. Spain.
- Reability of the Forecasting of the Monthly Demand of Electric Energy with Neural Networks.**  
443 M. A. Jaramillo, J. Carmona, E. González and J. A. Álvarez. University of Extremadura. Spain.
- Preheating In Pellet Stoves: Efec in Energy Balance and Emissions.**  
444 J.C. Moran, E. Granda, J.Porteiro, J.L. Miguez. University of Vigo. Spain.
- Pellet Combustion in Stove: Perfomance and Emissions Statistical Approach**  
445 J.C. Moran, E. Granda, J.Porteiro, J.L. Miguez. University of Vigo. Spain.

