RE&PQJ'17 INDEX

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

RE&PQJ'17

RENEWABLE ENERGIES AND POWER QUALITY JOURNAL

Volume No. 17, July 2019

ISSN: 2172-038X

RE&PQJ-17 EDITORIAL BOARD

RE&PQJ'17 SCIENTIFIC COMMITTEE

The following papers have been included in the
Renewable Energy and Power Quality Journal (RE&PQJ17)

Nº	*Titles/Authors/Institution/Country*
	PP:1-7
200	**Fast-Field Cycling Nuclear Magnetic Resonance relaxometer's electromagnet with optimized homogeneity and reduced volume** **P. Videira(1), P. Sebastião(1), A. Roque(2),4, D. M. Sousa(3,4), E. Margato(4,5)** 1. Department of Physics & CeFEMA, Instituto Superior Técnico, Universidade de Lisboa. Portugal 2. Department of Electrical Engineering ESTSetúbal/Instituto Politécnico de Setúbal. Portugal 3. DEEC AC-Energia, Instituto Superior Técnico, Universidade de Lisboa. Portugal 4. INESC-ID Lisboa. Portugal 5. CEI, ISEL-Instituo Superior de Engenharia de Lisboa, Instituto Politécnico de Lisboa, and INESC-ID. Portugal
	PP:8-13
202	**Advances in Compression of Power Quality Signals** **L. C. M. Andrade(1), T. Nanjundaswamy(3), M. Oleskovicz(1), R. A. S. Fernandes(2), K. Rose(3)** 1. Department of Electrical and Computer Engineering, São Carlos School of Engineering, University of São Paulo, São Carlos. Brazil 2. Department of Electrical Engineering, Federal University of São Carlos, São Carlos. Brazil 3. Department of Electrical and Computer Engineering, University of California, Santa Barbara, CA. USA
	PP:14-18
203	**Capacity Sizing of a Small Hydropower Plant using Assured Energy Analysis** **J.H.I. Ferreira(1), J.R. Camacho(2)** 1. Instituto Federal do Triângulo Mineiro. Brazil 2. School of Electrical Engineering, Universidade Federal de Uberlândia. Brazil
	PP:15-19
205	**Faulty Readings of Static Energy Meters Caused by Conducted Electromagnetic Interference from a Water Pump** **Bas ten Have(1), Tom Hartman(1), Niek Moonen(1), Cees Keyer(1,2), Frank Leferink(1,3)** 1. University of Twente. The Netherlands 2. University of Applied Sciences, Amsterdam.The Netherlands 3. Thales Nederland B.V., Hengelo.The Netherlands
	PP:20-25
207	**Analysis of Bearing Faulty Cage using Non-Intrusive Condition Monitoring Techniques** **Muhammad Irfan(1), Alwadie. A(1), Nordin Saad(2), Muhammad Aman Sheikh(2)** 1. College of Engineering, Electrical Engineering Department, Najran University

	King Abdulaziz Road, Najran. Saudi Arabia 2. Electrical and Electronic Engineering Department, Universiti Teknologi PETRONAS Bandar Seri Iskandar, Tronoh. Malaysia
	PP:26-30
208	**PQD classifier based on higher-order statistics and total harmonic distortion** **Jesús-Manuel González-Bueno, José-Carlos Palomares-Salas, Juan-José González-de-la-Rosa, Olivia Florencias-Oliveros, José-María Sierra-Fernández, Manuel-Jesús Espinosa-Gavira, Agustín Agüera-Pérez** University of Cádiz. Research Group PAIDI-TIC 168 – Computational Instrumentation and Industrial Electronics Dept. of Automation Engineering, Electronics, Architecture and Computer Networks Engineering School of Algeciras. Spain
	PP:31-36
210	**Optimal Design Method for Lightweight Buildings to minimize the Cooling Load with Phase Change Materials using Orthogonal Experimental Design** **Akbar Halimov, Moritz Lauster, Dirk Müller** Institute for Energy Efficient Buildings and Indoor Climate, E.ON Energy Research Center, RWTH Aachen University. Germany
	PP:37-42
212	**FEA Analysis and Optimization of Rotor Models in Permanent-Magnet Synchronous Motors fitted with Bonded Rare-Earth Magnets** **V. Abad, J. Sagredo, J. Gonzalez** Electromechanical Department, Polytechnical School of Burgos University. Spain
	PP:43-48
215	**A novel voltage sag approach during unintentional islanding scenarios: A survey from real recorded events** **Alexandre Serrano Fontova(1,2), P. Casals Torrens(1), R. Bosch(1)** 1. Department of Electrical Engineering.E.T.S.E.I.B, Polytechnic University of Catalonia , Barcelona. Spain 2. Electrica Serosense Distribuidora,Torres de Segre. Spain
	PP:49-55
216	**Analysis of a lift augmented hydrofoil for hydrokinetic turbines** **Chica E(1)., Aguilar J.(1) Rubio Clemente A.(2)** 1. Departamento de Ingeniería Mecánica, Facultad de Ingeniería, Universidad de Antioquia, Medellín. Colombia. 2. Facultad de Ingeniería, Tecnológico de Antioquia–Institución Universitaria TdeA, Medellín. Colombia
	PP:56-61
218	**Sustainable Energies as an Educational Challenge: Regarding Engineering Studies at the University of Girona** **J.R. González, L. Pacheco, N. Luo, T. Pujol, I. Ferrer**

	Polytechnic School, University of Girona, Spain.
	PP:62-67
220	**Optimization of a solar irradiation forecasting tool based on artificial intelligence** **F. Rodríguez(1,2), A. Galarza(1,2), L. Fontán(1,2)** 1. Ceit, Donostia/San Sebastián. Spain. 2. Universidad de Navarra, Tecnun, Donostia/San Sebastián. Spain
	PP:68-73
223	**Shape optimization of a multi-element hydrofoil for hydrokinetic turbines using response surface methodology** **Rubio Clemente A(1,2), Aguilar J(2), Chica E(2)** 1. Facultad de Ingeniería, Tecnológico de Antioquia–Institución Universitaria TdeA, Medellín. Colombia. 2. Departamento de Ingeniería Mecánica, Facultad de Ingeniería, Universidad de Antioquia UdeA, Medellín.Colombia
	PP:74-79
224	**Lithium-ion energy storage battery in PV-smart building application** **Mohamed A. H. El-Sayed** Department of Electrical Engineering, College of Engineering and Petroleum, Kuwait University (On leave from Electrical Power Engineering Department, Cairo University
	PP:80-84
226	**Islanding Detection Method for Inverter-Based Distributed Generation by Injecting Second Order Harmonic Current** **Byung-Moon Han** Dept. of Electrical Engineering Myongji University Yongin. Korea
	PP:85-90
229	**Optimal control for quadrotors during inspection of power utility assets** **A. Ailon** Department of Electrical and Computer Engineering Ben Gurion University of the Negev, Beer Sheva and School of Electrical Engineering Afeka Academic College of Engineering, Tel Aviv . Israel
	PP:91-96
230	**Application of PSO algorithms for VPP operation optimization** **D. Kaczorowska(1), J. Rezmer(1), T. Sikorski(1), P. Janik(2)** 1. Faculty of Electrical Engineering Wroclaw University of Science and Technology. Poland 2. Tauron Ekoenergia Obroncow Pokoju Jelenia Gora. Poland
	PP:97-102
232	**Is Objection to Wind Energy Justified?** **M. Alrefai(1), A. Pourmovahed(2)** 1. Mechanical Engineering 2. Mechanical Engineering. Kettering University Flint, Michigan. USA

	PP:103-108
233	**Modeling Three-Phase Transformers** **I. F. Novais, A. A. P. Junior, S. F. P. Silva** FEELT - College of Electrical Engineering UFU, Federal University of Uberlândia Brazil
	PP:109-113
236	**Evaluation of Energy Sources Capable of Drought/Famine Abatement in an African Village** **M. Alrefai(1), A. Pourmovahed(2)** 1. Mechanical Engineering Department 2. Mechanical Engineering, Kettering University Flint, Michigan, U.S.A.
	PP:114-117
237	**Phase Equilibrium for Clathrate Hydrates Formed with Difluoromethane and N-Methylpiperidine for Hydrate-Refrigeration System** **Y. Kondo(1, K. Murayama(1), A. Ruiz(1), S. Takeya(2), K. Nemoto(1), R. Ohmura(1)** 1. Department of Mechanical Engineering, Keio University Kohoku-ku, Yokohama. Japan 2. National Institute of Advanced Industrial Science and Technology (AIST). Tsukuba, Ibaraki. Japan
	PP:118-122
238	**Theoretical performance analysis of hydrate-based refrigeration system** **R. Matsuura, K. Watanabe, Y. Yamauchi, H. Sato, R. Ohmura** Department of Mechanical Engineering Keio University Kouhoku-ku,Yokohama. Japan
	PP:123-127
240	**A Distributed Power Sharing Approach for Islanded Microgrids** **Tuan V. Hoang, Hong-Hee Lee** School of Electrical Engineering University of Ulsan. Korea
	PP:128-132
242	**Operation of small isolated power system with large non-controllable RES penetration – System Operator's experience in El Hierro Island** **R. Corujo, P. Santos, R. Ascanio** Isolated System Department Red Eléctrica de España S.A.U. (REE) Alcobendas, Madrid. Spain
	PP:133-137
243	**Mediterranean – Dead Sea Channel for Preserving Dead Sea Level and Increasing Solar Energy Production** **S. Lineykin(1), A. Averbukh(2), M. Averbukh(3), A. Zinger(3)** 1. Department of Mechanical Engineering and Mechatronics Ariel University. Israel 2. Department of Public Relations Ariel University. Israel 3. Department of Electric/Electronic Engineering Ariel University. Israel

	PP:138-144
244	**Comparison of the performance of different mixing ventilation configurations in particle removal from indoor spaces** **C. Habchi(1), K. Ghali(2), N. Ghaddar(2)** 1. Mechanical Engineering Department, Faculty of Engineering, Lebanese University. Lebanon 2. Department of Mechanical Engineering American University of Beirut. Lebanon
	PP:145-150
246	**Wind power integration improvement in an island by installing battery energy storage systems. Case study of Lanzarote-Fuerteventura** **L. Mejías-García(1), J.F. Medina-Padrón(2), E.J. Medina-Domínguez(1)** 1. Renewable Energies Department, Research and Development Division, Canary Island Institute of Technology (ITC), Santa Lucía (Gran Canaria). Spain 2. University Institute of Intelligent Systems and Numeric Applications in Engineering (SIANI), University of Las Palmas de Gran Canaria (ULPGC). Spain
	PP:151-154
249	**Analysis of a lead-acid battery storage system connected to the DC bus of a four quadrants converter to a microgrid** **A. F. J. Rocha-Henríquez(1), B. J. M. Cabrera-Peña(2), C. R. Aguasca-Colomo(3), D. M. Méndez-Babey(3), E. P. Rivera-Rodríguez(2)** 1. Department of Renewable Energy Instituto Tecnológico de Canarias, (ITC S.A.) Las Palmas. Spain 2. Instituto Universitario de Microelectrónica Aplicada (IUMA), Universidad de Las Palmas de Gran Canaria (ULPGC). Spain 3. Instituto Universitario de Sistemas Inteligentes y Aplicaciones Numéricas en Ingeniería (IUSIANI), Universidad de Las Palmas de Gran Canaria (ULPGC). Spain
	PP:155-161
250	**Analysis of Electrical Microgrids and Associated Technologies** **J.I. San Martin(1), F.J. Asensio(1), I. Zamora(2), G. Saldaña(1), O. Oñederra(2), I.J. Oleagordía(2)** Department of Electrical Engineering - University of the Basque Country (UPV/EHU) 1. Engineering School of Gipuzkoa, Eibar. Spain 2. Engineering School of Bilbao. Spain
	PP:162-167
251	**Reliable Power Supply of Islanded Locations through Microgrids** **I. Zamora(1), J.I. San Martin(2), F.J. Asensio(2), G. Saldaña(2), O. Oñederra(1), U. Goitia(1)** Department of Electrical Engineering - University of the Basque Country (UPV/EHU) 1. Engineering School of Bilbao. Spain) 2. Engineering School of Gipuzkoa, Eibar. Spain

	PP:168-171
253	**Long Term Dynamic of Power System with renewable energy sources and energy storage systems** **K. Máslo(1), A. Kasembe(2)** 1. Department of Transmission System Analysis 2. Department of System Development ČEPS,a.s Prague. Czech Republic
	PP:172-176
254	**System Sizing for Solar Powered Sustainable Energy System Designed for Domestic Users** **Ewen Constant, Kary Thanapalan, Mark Bowkett** Faculty of Computing, Engineering & Science, University of South Wales. United Kingdom
	PP:177-182
256	**State estimation for large power distribution systems** **J. Besada-Juez(1), A. González-Bordagaray(2), J. Ferro-Vázquez(2), G. Plaza-González(1)** 1. Department of Software Engineering Qwi Tecnologías de la Información. Madrid. Spain 2. Operation Technical Services Iberdrola Distribución Eléctrica Complejo. Bilbao. Spain
	PP:183-187
257	**Energy harvesting approaches in IoT scenarios with very low ambient energy** **A. Lopez-Martin, J.M. Algueta, I.R. Matías** Institute of Smart Cities Public University of Navarra, Pamplona. Spain
	PP:188-193
258	**Laboratory for Analysis of Microgrid with Real Time Simulation** **A. B. Piardi(1), R. B. Otto(1), D. G. Sonoda(1), F. C. Santos(1), L.R.A Ferreira(1) R. A. Ramos(2)** 1. Itaipu Technological Park Foundation LASSE - FPTI Foz do Iguaçu –PR. Brazil 2. University of São Paulo. Brazil
	PP:194-197
260	**DC Microgrid for Robotic Manufacturing – field demonstration and laboratory experience** **Armands Senfelds, Ansis Avotins, Leonids Ribickis, Peteris Apse-Apsitis** Department of Industrial Electronics and Electrical Technologies Riga Technical University Riga. Latvia
	PP:198-207
261	**Comparative analysis of photovoltaic modules center and edge temperature using IoT embedded system** **Renata I. S. Pereira(1), Sandro C. S. Jucá(2), Paulo C. M. Carvalho(1), Luis M. Fernández-Ramírez(3)** 1. Department of Electrical Engineering Federal University of Ceará (UFC). Brazil 2. Academic Master's Program in Renewable Energy (PPGER) Federal Institute of Ceará (IFCE) . Brazil

	3. Research Group in Electrical Technologies for Sustainable and Renewable Energy (PAIDI-TEP-023) Department of Electrical Engineering, University of Cádiz. Escuela Politécnica Superior de Algeciras. Spain
	PP:208-213
263	**Harmonic Distortion Evaluation of CEA's FAB Feeder** **T. M. Soares(1), J. L. Tostes(1), L. C. dos Santos Junior(1), M. L. de Lima Tostes(1), U. H. Bezerra(1), D. C. Mendes(2)** 1. Centro de Excelência em Eficiência Energética da Amazônia Universidade Federal do Pará, Belém. Brazil 2. Departamento de Eficiência Energética Companhia de Eletricidade do Amapá. Brazil
	PP:214-219
268	**Analysis of Impact of One Unit of Distributed Photovoltaic Generation in Power Quality of a Rural Property** **Santos, E. A dos(1), Ferreira, L. R. A(2), Almeida, A. B(1), Otto, R. B(2), Vendrame, M. G(3)** 1. Centro de Engenharias e Ciências Exatas (CECE) UNIOESTE, State University of Western Paraná .Foz do Iguaçu – Paraná. Brazil 2. Automation and Simulation of Electrical Systems Laboratory (Lasse) Itaipu Technological Park (PTI). Foz do Iguaçu – Paraná. Brazil 3. Renewable Energy Advice Itaipu Binational (ITAIPU) Foz do Iguaçu – Paraná. Brazil
	PP:220-223
270	**Power Quality Survey in a State of the Art Microgrid** **H. Kirkeby(1), O. Johansson(2)** 1. PQA AS Skippergata, Oslo. Norway 2. Sivilingeniør Carl Christian Strømberg AS Stabburveien Fredrikstad. Norway
	PP:224-228
272	**Colombia towards an electricity generation matrix using renewable energies** **J. Pérez(1), C. Vargas(1), D. Riaño(2)** 1. Department of Electrical Engineering La Salle University. Spain 2. Department of Integral Energy Consulting Bacata Energy S.A.S. 3. DAR – Infraestructura y Energía
	PP:229-234
274	**PV power station – fire hotbeds and fire tolls** **M. Belik** Department of Power Engineering and Ecology University of West Bohemia Plzen. Czech Republic
	PP:235-239
275	**Passive solar systems enhanced efficiency** **M. Belik** Department of Power Engineering and Ecology University of West Bohemia Plzen. Czech Republic

	PP:240-244
276	**Hydrothermal simulations in Brazil using batteries - First Results** **C. Dall'Orto(1), B. Bezerra(1), R. Novaes(1), F. Nazaré(1), P. Rosas(2), P. Furlanetto(3), W. Teixeira(4), J. Tuo(5), C. Xinjian(5), Chai Jiyong(5)** 1. PSR Botafogo – Rio de Janeiro. Brazil 2. Universidade Federal de Pernambuco (UFPE) Brazil 3. Instituto de Tecnologia Edson Mororo Moura – ITEMM. Brazil 4. CPFL Energia (CPFL) Campinas – SP. Brazil 5. State Grid international Development Co. Campinas – SP. Brazil
	PP:245-250
278	**Conservative Power Theory (CPT): A New Approach to the Tuned Passive Filter Design** **G.J. Schäffer(1), F. A. M. Moura(1), M. V. B. Mendonça(1), A. J. P. R. Júnior(1), M. R. M. C. Albertini(1), J. R. Camacho(2)** (IEEE-SM) Electrical Engineering Department 1. Universidade Federal do Triângulo Mineiro, Uberaba - Minas Gerais, Brazil Electrical Engineering Faculty. Brazil 2. Universidade Federal de Uberlândia, Uberlândia - Minas Gerais. Brazil
	PP:251-256
279	**Reduction of Electrical Losses' Analysis on Distribution Systems with Distributed Generation and Energy Storage Systems** **N.M. Neto(1), M. R. C. Albertini(1), W. B. De Melo(1), M. V. B. Mendonça(1), A. J. P. R. Júnior(1), F. A. M. Moura(1), J. R. Camacho(2)** Electrical Engineering Department 1. Universidade Federal do Triângulo Mineiro, Uberaba - Minas Gerais. Brazil Electrical Engineering Faculty. Brazil 2. Universidade Federal de Uberlândia, Uberlândia - Minas Gerais. Brazil
	PP:257-261
280	**Wind Energy in Brazil: Current Overview and Projections on Power Generation** **Fernando de Lima Camargo(1,2), Nilcéia Cristina dos Santos(1), Reinaldo Gomes da Silva(1,2)** 1. Faculdade de Tecnologia de Piracicaba "Dep. Roque Trevisan" (FATEC PIRACICABA) CEETPS, Centro Estadual de Educação Tecnológica Paula Souza. Brazil 2. Escola de Engenharia de Piracicaba (EEP) FUMEP, Fundação Municipal de Ensino de Piracicaba. Brazil
	PP:262-267
283	**Evaluation of a Local Fault Detection Algorithm for HVDC Systems** **M.J. Perez Molina(1), P. Eguia Lopez(1), M. Larruskain Eskobal(1), M. Santos Mugica(2), R. Rodriguez Sanchez(2)** 1. Department of Electrical Engineering, Faculty of Engineering of Bilbao, Universidad del País Vasco UPV/EHU. Spain 2. Energy Unit, Tecnalia Parque Tecnológico de Vizcaya. Spain

	PP:268-274
285	**Metrological characterization of new infrared sensors for robot navigation** **Mazierli D., Zanobini A.** University of Florence, Information Engineering Department, Florence.Italy
	PP:275-279
286	**Performance of 1.4 kW Grid connected desert type PV A** **H. Al-Badi** Department of Electrical & Computer Engineering College of Engineering, Sultan Qaboos University. Oman
	PP:280-287
288	**Radial Basis Function for Solar Irradiance Forecasting in Equatorial Areas** **Marcello Anderson F. B. Lima(1), Paulo C. M. Carvalho(1), Arthur P. S. Braga(1), Renata I. S. Pereira(1), Sandro C. S. Jucá(2), Luis M. Fernández-Ramírez(3), Josileudo R. Leite(4)** 1. Department of Electrical Engineering Federal University of Ceará (UFC). Brazil 2. Academic Master's Program in Renewable Energy (PPGER) Federal Institute of Ceará (IFCE). Brazil 3. Research Group in Electrical Technologies for Sustainable and Renewable Energy (PAIDI-TEP-023) Department of Electrical Engineering, University of Cádiz (UCA) Escuela Politécnica Superior de Algeciras. Spain 4. Department of Industrial Mechatronics Federal Institute of Ceará (IFCE). Brazil
	PP:288-293
290	**Forecasting of the Photovoltaic Electricity Production on a Sail Ship by Taking Account Shadow Effects** **B. Genet(1) , V. Boitier(1) , Y. Briere(2), F. Defaÿ(2)** 1. CNRS, LAAS, Toulouse. France 2. ISAE-SUPAERO,Toulouse. France.
	PP:294-299
292	**About some Effects of Voltage Harmonics on End User´s Equipment** **M. Buzdugan** Technical University of Cluj-Napoca. Romania
	PP:300-304
293	**Impact of Short-Circuit Impedance Model for Variable-Speed Wind Turbine Generators on Operation of Overcurrent Relays** L. Somi, B. Polajžer, G. Štumberger University of Maribor Faculty of Electrical Engineering and Computer Science, Maribor. Slovenia
	PP:305-313
295	**A Double Stage DC/DC Converter for LED Lighting Automotive Systems** Marco Failla(1), Gianpaolo Vitale(2)

	1. Dipartimento di Energia, Ingegneria dell'Informazione e Modelli Matematici, Università degli Studi di Palermo. Italy 2. ICAR, Institute for high performance computing and networking, National Research Council (CNR), Palermo. Italy
	PP:314-319
296	**Impact of OLTC equipped transformer operation on PV installation in urban distribution network** **N. Srećković, N. Lukač, G. Štumberger** University of Maribor Faculty of Electrical Engineering and Computer Science. Slovenia
	PP:320-326
299	**Thin-film PV modules early degradation analysis: a case study on CIGS** **A.M. Diez-Suárez(1), D. de la Calzada-Lorenzo(1), A. González-Martínez(1), L. Álvarez-de Prado(2), A. de la Puente-Gil(1), J.J. Blanes-Peiró(1), M. de Simón-Martín(1)** 1. Area of Electrical Engineering Energy Resources' Smart Management (ERESMA) Research Group School of Energy and Mining Engineering, Universidad de León. Spain 2. Area of Cartographic, Geodesic and Photogrammetric Engineering Energy Resources' Smart Management (ERESMA) Research Group School of Energy and Mining Engineering, Universidad de León. Spain
	PP:327-332
300	**GIS-based model for determining the optimal potential of co-digestion mixtures in the Spanish Iberian Peninsula** **A. González-Martínez(1), M. de Simón-Martín(1), A.M. Diez Suárez(1), Á. de la Puente-Gil(1), M.Á. Ramos-Malmierca(1), L. Álvarez-de Prado(2)** 1. Area of Electrical Engineering Energy Resources' Smart Management (ERESMA). Research Group School of Energy and Mining Engineering, Universidad de León. Spain 2. Area of Cartographic, Geodesic and Photogrammetric Engineering Energy Resources' Smart Management (ERESMA) Research Group School of Energy and Mining Engineering, Universidad de León. Spain
	PP:333-336
302	**Study and Implementation of a Computational Platform to Drive a Switched Reluctance Motor 8x6 for Electric Vehicles Applications** **M.B.S.Pinto, G.P.Viajante, M.E.Oliveira, E.N.Chaves, M.A.A.Freitas** Federal Institute of Education, Science and Technology of Goiás. Brazil
	PP:337-342
304	**Efficiency improvement with intelligent control of induction motor drives** **R. Mecke** Department of Automation and Computer Sciences Harz University of Applied Sciences Wernigerode. Germany

	PP:343-348
307	**Viability of Distributed Generation with Biogas and Photovoltaic in an Isolated System** **Effrain Roney Bernardes, José Roberto Camacho** School of Electrical Engineering Universidade Federal de Uberlândia. Brazil
	PP:349-353
309	**Design and Analysis of Solar/Wind Micro Grid Converters** **Akram A. Abu-aisheh** Department of Electrical and Computer Engineering University of Hartford, West Hartford, CT. USA
	PP:354-359
310	**Intensive Agriculture Production in Low Consumption Energy Environment** **J. Galvão(1,2), A. Nabais(3), H. Correia(1), P. Amaro(1), A. Negrão(1,4), V. Ribeiro(5,6)** 1. Department of Electrical Engineering, ESTG - Leiria Polytechnic Institute. Portugal 2. R&D Unit, Institute for Systems Engineering and Computers /INESC Coimbra. Portugal 3. ECOBIE - Engenharia Lda, Leiria. Portugal 4. Instituto de Astrofísica e Ciências do Espaço, Lisboa. Portugal 5. ciTechCare - School of Health Sciences, Leiria Polytechnic Institute. Portugal 6. GeoBioTec - Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa Caparica. Portugal
	PP:360-365
312	**A New Software Tool to Highlight Money Savings from a Demand-Side Management System for Home Appliances** **Sébastien Bissey(1), Sébastien Jacques(1), Jean-Charles Le Bunetel(1), Cédric Reymond(1), Yves Raingeaud(1), Philippe Ravier(2), Guy Lamarque(2)** 1. University of Tours ,GREMAN CNRS. France 2. University of Orléans PRISME UPRES. France
	PP:366-370
313	**Damage diagnosis for offshore fixed wind turbines** **D. Agis, Y. Vidal, F. Pozo** Mathematics Department, Control, Modeling, Identification and Applications, Escola d'Enginyeria de Barcelona. Spain
	PP:371-376
314	**Preliminary study of a concept of wind-tidal turbine coupling using functional similarities of real time emulation** **Cristian Nichita(1), Mohmed Ashglaf(1) , Yacine Amara(1), Chul H. Jo(2)** 1. University of Le Havre - Normandy Research Group in Electrical Engineering and Automatics GREAH, Le Havre Cedex. France 2. Inha University, Ocean Engineering Laboratory, Inchoen. Korea

	PP:377-382
318	**Business Model to the LASSE performance at Microgrid environment** **W. Polini(2), R. C. Lotero(2), R. B. Otto(1)** 1. LASSE – Automation and Electrical Systems Simulation Laboratory Parque Tecnológico Itaipu – Foz do Iguaçu, Paraná. Brazil 2. UNIOESTE – Paraná West State University Região Norte, Foz do Iguaçu, Paraná. Brazil
	PP:383-389
319	**Thermal and Exergy Efficiency Analysis of a Solar-driven Closed Brayton Power Plant with Helium & s-CO2 as Working Fluids** **C. Arnaiz del Pozo, S. Sanchez-Orgaz, J. Rodríguez Martín, A. Jiménez Álvaro, I. López Paniagua, C. González Fernández, R. Nieto Carlier** ETSI Industriales-Universidad Politécnica de Madrid. Spain
	PP:390-393
320	**Methods for the verification of protective measures for safety of DC charging stations for electric vehicles** Daniel Herbst , Robert Schuerhuber, Ernst Schmautzer Institute of Electrical Power Systems Graz University of Technology. Austria
	PP:394-398
322	**Technical and Economic analysis of a Regulatory Call for PV Plants with Energy Storage in French Islands** **A. Chagnard, B. Francois** Univ. Lille, Arts et Metiers Paristech, Centrale. Laboratoire d'Electrotechnique et d'Electronique de Puissance. France
	PP:399-404
323	**Study of the requirements of an autonomous system for surface water quality monitoring** **M. Barros(1), P. Granchinho(1), C. Ferreira(1), P. Neves(1), H. Magalhães, L. Santos(1), B. Lopes(1), J. Marques (1), H. Pinho(1), S. Mourato(2), A. Martins(3)** 1. Departmental engineering unit E.S.T.T., Institute Polytechnic of Tomar (IPT). Portugal 2. Institute Polytechnic of Leiria (IPL). Portugal 3. Intermunicipal Community of Médio Tejo (CIMT). Portugal
	PP:405-410
325	**Effectiveness of Chilled ceiling assisted by intermittent personalized ventilation for active contaminants' confinement and energy savings** **D. Al Assaad K. Ghali, N. Ghaddar** Department of Mechanical Engineering American University of Beirut. Lebanon
	PP:411-416
326	**Use of FACTS for Improving Voltage Stability in Mining Applications**

	J. L. Olabarrieta Rubio(1), P. Eguia Lopez(2), E. Torres Iglesias(2), A. Etxegarai Madina(2) 1. ABB Ring Motors. Spain 2. Department of Electrical Engineering, Faculty of Engineering of Bilbao, Universidad del País Vasco UPV/EHU. Spain
	PP:417-422
329	**Harmonics and Flicker in an Iron and Steel Industry with AC arc furnaces** **M. Pérez-Donsión(1), S. Jar Pereira(2), F.T. Soares Oliveira(3)** 1. Electrical Engineering Department. Vigo University. Vigo. Spain 2. Industrias Jar. Lalin. Pontevedra. Spain 3. Department of Electrical Engineering, E.S.T.G., Polytechnic Institute of Leiria. Portugal
	PP:423-428
332	**Monitoring Systems Parameters, Sensors and Technologies for Renewable Energies: Biogas Case Study** **F.P. Silva, R.B. Otto, A.A. Braggio, D.S. Kitamura** Laboratory of Automation and Simulation of Power Systems Itaipu Technological Park (PTI). Foz do Iguaçu – Paraná. Brazil
	PP:429-434
336	**ROCOV scheme for Fault Detection and Location in HVDC sytems** **J. Díaz(1), O. Abarrategi(1), D.M. Larruskain(1), A. Perez-Basante(2), A. Rubio(2)** 1. Department of Electrical Engineering University of the Basque Country UPV/EHU, Bilbao. Spain 2. Energy Unit, Tecnalia. Derio. Spain
	PP:435-440
337	**Assessment of the Performance of Frequency Domain Models Based on Different Reference Points for Linearization** **E. Tavukcu, S. Müller, J. Meyer** Technische Universitaet Dresden Institute of Electrical Power Systems and High Voltage Engineering Dresden. Germany
	PP:441-446
338	**Is there any example of an isolated system in nature? What is the applicability of the second law of thermodynamics?** **Oliveira, L. E.** Department of Conservation and Biodiversity AI, Abepoli Institute Center I Branca, São Paulo. Brasil
	PP:447-452
341	**Characterization of Production under feed-in tariffs in Portugal Mainland** **M. Margalho, P. Lourenço** EDP Serviço Universal, SA Direção Compra de Energia ,Coimbra. Portugal

	PP: 453-458
343	**Modelling of Charging Demand for Electric Vehicle based on Person-trip Survey Data** **T. Kato(1), T. Matsuki(2), M. Imanaka(1), M. Kurimoto(1), S. Sugimoto(1)** 1. Institute of Materials and Systems for Sustainability 2. Department of Electrical Engineering, School of Engineering Nagoya University Japan
	PP:459-465
344	**Numerical Experimental Validation of a Proposed MPPT Algorithm with Dynamic Hysteresis for PV Systems** **Nubia Ilia Ponce de León Puig, Leonardo Acho, José Rodellar** Universitat Politècnica de Catalunya, Department of Mathematics, Escola d'Enginyeria Est-EEBE, Barcelona. Spain
	PP:466-469
345	**Study of biocarbon supported Fe_2P particles for HER with energy applications** **E. Leal da Silva(1), G.R. Gonçalves(3), Miguel A. Schettino Jr(.3), Jair C. C. Freitas(3), C.F. Malfatti(2), A. Cuña(1)** 1. Area Fisicoquímica, DETEMA, Facultad de Química, Universidad de la República, Montevideo. Uruguay 2. LAPEC/PPGE3M, Universidade Federal do Rio Grande do Sul, Porto Alegre/RS. Brazil 3. Laboratory of Carbon and Ceramic Materials, Department of Physics, Federal University of Espírito Santo, Vitória, ES. Brazil
	PP:470-474
347	**Photovoltaic charging multi-station with modular architecture for Light Electric Vehicles** **Guillén-Arenas, Francisco Jesús(1), Fernández-Ramos, José(1), Gago-Calderón, Alfonso(2)** 1. Departamento de Electrónica Escuela de Ingenierías Industriales, Universidad de Málaga. Spain 2. Departamento de Expresión Gráfica, Diseño y Proyectos Escuela de Ingenierías Industriales, Universidad de Málaga. Spain
	PP:475-479
348	**Estimation of required power and energy for bicycle electrification using global positioning system** **D. Penić(1), M. Štambuk(2), N. Raičević(3), M. Vražić(1)** 1. Department of Electric Machines, Drives and Automation, University of Zagreb Faculty of Electrical Engineering and Computing, Zagreb. Croatia 2. Vertiv Croatia d.o.o, Selska cesta ,Zagreb. Croatia 3. Department of Theoretical Electrical Engineering, University of Nis Faculty of Electronic Engineering, Niš. Serbia

	PP:480-482
349	**Use of commercial TiO_2 as direct ethanol fuel cell electrocatalyst support** **L. M. M. Brasil(1), C. F. Malfatti(1), Andrés Cuña(2), M. Cadorin(1), L.A.S. Ries(3)** 1. LAPEC/PPGE3M, UFRGS, Porto Alegre/RS. Brazil 2. UDELAR Facultad de Química, Universidad de la República, Montevideo, Uruguay 3. UERGS, Novo Hamburgo/RS. Brazil
	PP:483-488
352	**Transient Analysis of Electric Energy Distribution Systems with Distributed Generators during Contingencies** **Wandry Rodrigues Faria(1), Marcelo Escobar de Oliveira(2), Jonas Villela de Souza(1), Luis Gustavo Wesz da Silva(2), Ghunter Paulo Viajante(2)** 1. Department of Electrical Engineering São Carlos School of Engineering, University of São Paulo. Brazil 2. Núcleo de Pesquisas em Sistemas de Energia - NuPSE Federal Institute of Education, Science and Technology of Goiás - IFG Itumbiara – Goiás. Brazil
	PP:489-494
353	**Performance analysis of hybrid hydroelectric Gorona del Viento and the basic directions of its perfection** **Oleksandr Novykh(1), Juan Albino Méndez Pérez (1), Benjamín González-Díaz (1), Igor Sviridenko (2)** 1. Department of Computing and Systems, Higher School of Engineering and Technology, University of La Laguna, Escuela Superior de Ingeniería y Tecnología. San Cristóbal de La Laguna. Spain 2. Department of Energy Facilities of Ships and Marine Structures, Maritime Institute, State University of Sevastopol. Russia
	PP:495-499
355	**Integration of Thermoelectric generators (TEG) in Solar PVT panels** **Ángel A. Bayod-Rújula(1), Amaya Martínez-Gracia(2), Alejandro Del Amo(3), Marta Cañada(3), Sergio Usón(2), Javier Uche(2), Juan A. Tejero(1)** 1. CIRCE Institute - Department of Electrical Engineering, University of Zaragoza. Spain 2. CIRCE Institute - Department of Mechanical Engineering, University of Zaragoza. Spain 3. Abora Solar S.L. Advanced solar energy. La Muela, Zaragoza. Spain
	PP:500-505
357	**The Residual Load Duration Curve (rLDC) to model an energy system** **W.-G. Früh** Institute of Mechanical, Process and Energy Engineering, School of Engineering and Physical Sciences, Heriot-Watt University Riccarton, Edinburgh, Scotland. United Kingdom

	PP:506-510
359	**Heat treatment of iron/carbon composites for energy storage: effect on physicochemcial and electrochemical properties** **J. R. F. Gonçalves(1), C.F. Malfatti(1), E. Leal da Silva(1,2), G.R. Gonçalves(3), Miguel A. Schettino Jr.(3), Jair C. C. Freitas(3), A. Cuña(2)** 1. LAPEC/PPGE3M, Universidade Federal do Rio Grande do Sul, Porto Alegre/RS Brazil 2. Area Fisicoquímica, DETEMA, Facultad de Química, Universidad de la República, Montevideo. Uruguay 3. Laboratory of Carbon and Ceramic Materials, Department of Physics, Federal University of Espírito Santo, Vitória, ES. Brazil
	PP:511-515
360	**Evaluation of the potential utilization of conventional and unconventional biomass wastes resources for energy production** **M.Torres(1), P. Portugau(1), J. Castiglioni(1), L. Yermán(2), A. Cuña(1)** 1. Area Fisicoquímica, DETEMA, Facultad de Química – Universidad de la República, Montevideo. Uruguay 2. School of Civil Engineering, The University of Queensland, Brisbane. Australia
	PP:516-521
362	**Automatic classification of circuit topologies of appliances based on higher order statistic** **Olivia Florencias Oliveros (1), Ana María Blanco(2), Jan Meyer(2), Juan José González de la Rosa(1), Agustín Agüera Pérez(1)** 1. Research Group PAIDI-TIC-168: Computational Instrumentation and Industrial Electronics. Higher Polytechnic School of Algeciras. University of Cádiz. Spain 2. Institute for Electrical Power Systems and High Voltage Engineering Technische Universität Dresden. Germany
	PP:522-529
363	**Global Solar Energy availability model and use in relationship to Ecological Human imprint: Economic Sustainability Impact and Assessment** **Safwat H. Shakir Hanna(1), Pamela Obiomon(1), Irvine W. Osborne-Lee(1), Gian Paolo Cesaretti(2), Rosa Misso(3)** 1. Texas Gulf Coast Environmental Data (TEXGED), College of Engineering Prairie View A&M University, Texas. USA 2. Simone Cesaretti Foundation, Somma Vesuviana (Na). Italy 3. University of Naples Parthenope – Department of Economic and Legal Studies. Italy
	PP:530-535
366	**Proposal of Novel Single-Phase Power Quality Indicators considering subsynchronous frequency perturbations in Voltage and Current under non-sinusoidal conditions** **J. El Mariachet(1), J. Matas(1), H. Martin(1), G. Tinoco(2), S. Abdalinejad(1)** 1. Department of Electrical Engineering, Universidad Politécnica de Cataluña (UPC), Barcelona. Spain

	2. Department of Electrical Engineering, Universidad Michoacana. de San Nicolás de Hidalgo, Morelia. Mexico
	PP:536-545
368	**IoT Monitoring systems applied to photovoltaic generation: The relevance for increasing decentralized plants** **João L. F. Victor(1), Sandro C. S. Jucá(1), Renata I. S. Pereira(2), Paulo C. M. Carvalho(2), Luis M. Fernández-Ramírez(3)** 1. Academic Master's Program in Renewable Energy (PPGER) Federal Institute of Technology of Ceará (IFCE). Brazil 2. Department of Electrical Engineering Federal University of Ceará (UFC). Brazil 3. Research Group in Electrical Technologies for Sustainable and Renewable Energy (PAIDI-TEP-023) Department of Electrical Engineering, University of Cádiz (UCA) Escuela Politécnica Superior de Algeciras. Spain
	PP:546-549
370	**Red Macroalgae *Kappaphycus alvarezii* as feedstock for nutraceuticals, pharmaceuticals and fourth generation biofuel production** **Oliveira, L.E.(1), Cedeno, R. F.(2), Chavez, E. G.(2), Gelli, V. C.(3), Masarin, F.(2)** 1. Department of Biodiversity and Conservation A.I., Abepoli Institute Center I – Santa Branca, São Paulo. Brazil 2. Department of Bioprocesses and Biotechnology UNESP, Paulista State University Faculty of Pharmaceutical Science –São Paulo. Brazil 3. Paulista Agricultural Research Agency I.P., Fisheries Institute Secretariat of Agriculture and Supply of the State of São Paulo - São Paulo. Brazil
	PP:550-554
372	**An intelligent strategy for hybrid energy system management** **I. Riverón(1), J.F. Gómez(2), B. González(2), J. Albino Méndez(1)** 1. Department of Computer Science and Systems Engineering, Universidad de La Laguna Tenerife. Spain 2. Department of Industrial Engineering Universidad de La Laguna Tenerife. Spain
	PP:555-560
375	**Design Strategy of Conventional Electronic for Wireless Sensor Node Powered by Vibration Energy Harvester** **F. Huet, V. Boitier** LAAS-CNRS, Université de Toulouse. France
	PP:561-566
376	**FACTS Family for Voltage Sag Alleviation: Performance Study and Analysis** **Shazly A.Mohamed(1), N. Luo(2), J.R. González(2), T. Pujol(2), L. González (2)** 1. Department of Electrical Engineering, Faculty of Engineering, South Valley University, Qena. Egypt 2. Polytechnic School, University of Girona. Spain

	PP:567-572
377	**Voltage Sags in the network and inside the Industrial Plants. Case of PSA-Vigo** **M. Pérez-Donsión(1), F.T. Oliveira(2)** 1. Electrical Engineering Department. Vigo University. Vigo. Spain 2. Department of Electrical Engineering, E.S.T.G., Polytechnic Institute of Leiria. Portugal
	PP:573-577
379	**Development and test of distributed ledger technologies applications in a microgrid distributed control** **D. Coll-Mayor, A. Notholt** School of Engineering. Reutlingen University. Reutlingen. Germany
	PP:578-582
380	**Solar-assisted heat pump coupled to solar hybrid panels** **A. Martínez-Gracia(1), A. Del Amo(2), S. Torné(3), A. Bayod-Rújula(4), J. Uche(1), S. Usón(1)** 1. Department of Mechanical Engineering. CIRCE Institute., University of Zaragoza Zaragoza. Spain 2. Abora Solar S.L. Advanced solar energy. Spain. La Muela, Zaragoza. Spain 3. Ingeniería Torné. Zaragoza. Spain 4. Department of Electrical Engineering. CIRCE Institute., University of Zaragoza Zaragoza. Spain
	PP:583-588
381	**Reactive power management to enhance solar energy penetration in small grids: technical and framework approaches** **B. González Díaz(1), J.F. Gómez González(1), D. Cañadillas Ramallo(2), J.A. Méndez Pérez(3), R. Guerrero Lemus(2)** 1. Departamento de Ingeniería Industrial, Escuela Superior de Ingeniería y Tecnología, Universidad de La Laguna, Tenerife. Spain 2. Departamento de Física, Facultad de Ciencias, Universidad de La Laguna, Tenerife. Spain 3. Departamento de Ingeniería Informática y de Sistemas, Escuela Superior de Ingeniería y Tecnología, Universidad de La Laguna, Tenerife. Spain
	PP:589-592
382	**A 12-pulse rectifier using coupled reactors for supplying three-inverters** **J. Iwaszkiewicz, A. Muc, P. Mysiak** Department of Electrical Engineering Gdynia Maritime University. Poland
	PP:593-597
383	**18-pulse rectifier in arrangement with coupled three-phase reactor** **J. Iwaszkiewicz, A. Muc, P. Mysiak** Department of Electrical Engineering Gdynia Maritime University. Poland