



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

RE&PQJ'13

RENEWABLE ENERGIES AND POWER QUALITY JOURNAL

Vol.1, No.13, April 2015
ISSN: 2172-038X



RE&PQJ'13 EDITORIAL BOARD

Chief Editor: Manuel Pérez Donsión. University of Vigo
 Ramón Bargalló Perpiña. Politechnical University of Catalonia (UPC)
 Manuel Burgos Payan. University of Seville
 Francisco Cavallé Sesé. Politechnical University of Valencia (UPV)
 Debora Coll Mayor. SMA Solar Technology AG (Germany)
 Antonio Espín Estrella. University of Granada
 Angeles López Agüera. U. of Santiago de Compostela
 Mario Mañana Canteli. University of Cantabria
 Miguel Martínez Melgarejo. U. of Las Palmas de Gran Canaria
 Javier Mazón Sain-Maza. U. of the Vasque Country
 Mariano Sanz Badía. University of Zaragoza

RE&PQJ'13 SCIENTIFIC COMMITTEE

Abbas Fardoun (Arab Emirates)	Kiss, Péter (Hungary)
Ahmed, Noor E. Alam(Australia)	Kouzou Abdellah (Algeria)
Alexandru, Catalin (Romania)	Lee, Poh Seng (Singapore)
Ali, Muhammad (Arab Emirates)	Lemos Antunes, C. (Portugal)
Andrada Gascón, P. (Spain)	Levi, Emil (U.K.)
Andras, Dan (Hungary)	Llombart Estopiñan, A. (Spain)
Antunes, Fernando LM (Brasil)	Machado e Moura, A. (Portugal)
Apetrei, Dan (Romania)	Mañana Canteli, M. (Spain)
Arcega Solsona, F. (Spain)	Martinez, André (France)
Arnaltes Gómez, S. (Spain)	Meyer, Jan (Germany)
Azeddine Draou (Argeria)	Mlangeni, Melusi (South Africa)
Bargalló Perpiña, R. (Spain)	Narsimhulu, Sanke (India)
Basma El Zein (Saudi Arabia)	Niemenmaa, Asko (Finland)
Bendl, Jiri (Czech Republic)	Nocera, Francesco (Italy)
Betini, Roberto Cesar (Brasil)	Oraee, Hashem (Iran)
Birick, Samet (Cyprus)	Ozdemir, Engin (Turkey)
Bitzer, Berthold (Germany)	Pathan, Habit M. (India)
Boudghene Stambouli, A.(Algeria)	Petkovska, L. (Macedonia)
Bracale, Antonio (Italy)	Pourmovahed, Ahmad (USA)
Brslica, Vit (Czech Republic)	Pratomo, Hariyo PS (Indonesia)
Burgos Payan, Manuel (Spain)	Predescu, Mihai (Romania)
Buzdugan, Mircea (Romania)	Raisz David (Hungary)
Catalão, João (Portugal)	Redondo Gil, C. (Spain)
Chaib, Ahmed (Algeria)	Ribeiro, Hugo (Portugal)
Cirricione, Maurizio (France)	Saadate, S. (France)
Driesen, Johan (Belgium)	Salay Naderi, M. (Australia)
Donsión, M.P. (Spain)	Salmerón-Revuelta, P. (Spain)
Duran, M. (Spain)	Sashi, Paul (UK)
El Qarnia, Hamid (Morocco)	Sekhar Dash, S. (India)
El-Sayed, Mohamed (Kuwait)	Shibli, Murad (Arab Emirates)
Ertan, H.B. (Turkey)	Shipkovs, Peteris (Latvia)
Faias, Sérgio (Portugal)	Schlemmer, Erwin (Austria)
Fathollahi Fard, Ali A.(Malaysia)	Souto, José A. (Spain)
Figueiredo, J.M.G. (Portugal)	Stan, Sergiu-Dan (Romania)
Flores, Antonio (Portugal)	Stenzel, Jürgen (Germany)
Fraile Mora, Jesús (Spain)	Stumberger, Gorazd (Slovenia)
Funabashi, Toshihisa (Japan)	Subramanian, Chandraekaran (India)
Gagliano, Antonio (Italy)	Tahir Çein Akinci (Turquia)
Gharehpetian, G.B. (Iran)	Tlusty, Josef (Czech Republic)
Ghita, Constantin (Romania)	Torrente Lujan, E. (Spain)
Göl, Ozdemir (Australia)	Tudorache, Tiberiu (Romania)
Güemes Alonso, J.A. (Spain)	Turschner, Dirk (Germany)
Hojae Shim (Macao, China)	Ubong, Etim (USA)
Iwaszkiewicz, J. (Poland)	Vaccaro, Alfredo (Italy)
Janilk, Przemyslaw (Poland)	Valouch, V. (Czech Republic)
Jeong Se Suh (Rep. of Corea)	Vergura, Silvano (Italy)
Jokinen, T. (Finland)	Vinnikov, Dmitri (Estonia)
Jigeng Li (China)	Vitale, Gianpaolo (Italy)
Jimoh, Adisa (South Africa)	Youssef Errami (Morocco)
Jyotirmoy Roy (UK)	Zamora Belver, I (Spain)
Kádár Péter (Hungary)	Zobaa Ahmed (UK)

The following papers have been included in the
Renewable Energy and Power Quality Journal

- | Nº | <i>Titles/Authors/Institution/Country</i> |
|-----|--|
| 205 | <p>pp:1-6
Distributed Collector System: Modelling, Control and Optimal Performance
A. Alsharkawi, J.A. Rossiter
Department of Automatic Control and Systems Engineering, University of Sheffield
United Kingdom</p> |
| 214 | <p>pp:7-12
On meteorological forecasts for energy management and large historical data: A first look
Cyril Voyant(1,2), Cédric Join(3,5,6), Michel Fliess(4,5), Marie-Laure Nivet(2), Marc Muselli(2), Christophe Paoli(7)
1. Hôpital de Castelluccio, Unité de Radiothérapie. Ajaccio. France
2. SPE (CNRS, UMR 6134), Università di Corsica Pasquale Paoli. France
3. CRAN (CNRS, UMR 7039), Université de Lorraine, Vandoeuvre-lès-Nancy. France
4. LIX (CNRS, UMR 7161), École polytechnique, Palaiseau. France
5. AL.I.E.N. (ALgèbre pour Identification & Estimation Numériques) Nancy. France
6. Projet NON-A, INRIA Lille – Nord-Europe. France
7. Département de Génie Informatique, Université Galatasaray, Istanbul. Turkey</p> |
| 220 | <p>pp:13-18
Fuzzy Logic Based Maximum Power Point Tracking Using Boost Converter for Solar Photovoltaic System in Kuwait
Mohamed A. El-Sayed(1), Steven Leeb(2)
1. Department of Electrical Engineering. College of Engineering and Petroleum, Kuwait University. Kuwait
2. Department of Electrical and Computer Engineering . MIT, Cambridge, MA.USA</p> |
| 221 | <p>pp:19-24
Proposed improvements in wave energy converter of oscillating water column (WEC-OWC)
R. Borrás-Formoso(1), R. Ferreira-García(1), A. De Miguel-Catoira(2), F. Miguélez-Pose(3)
1. Department of Industrial Engineering, E.T.S.N.y M., A Coruña University. Spain
2. Department of Energy and Propulsion, E.T.S.N.y M., A Coruña University. Spain
3. Department of Physics, E.T.S.N.y M., A Coruña University. Spain Spain</p> |
| 223 | <p>pp:25-28
Development of 8 MVA class Power Stack for Offshore Wind Power Conversion
Jin-Hong Kim(1,2), Joon Sung Park(1), Chung-Yuen Won(2)
1. Intelligent Mechatronics Research Center. Korea Electronics Technology Institut</p> |

2. University of Sungkyunkwan. Korea

224 pp:29-36

Modeling and Analysis of Wave Power Generation using Permanent Magnet Linear Synchronous Generator

Joon Sung Park(1,3), Jun-Hyuk Choi(1), Gyung-Sun Ham(1), Jong-Su Choi(2), Junbo Yun(3), Ju Lee(3)

1. Intelligent Mechatronics Research Center. Korea Electronics Technology Institute (KETI). Korea
2. Offshore Plant Research Division. Korea Research Institute of Ships & Ocean Engineering (KRISO). Korea
3. Department of Electrical Engineering, Hanyang University, Seoul. Korea

227 pp:33-36

VSC- based HVDC System Capability to Ride Through Faults

O. Abarategui, D.M. Larruskain, I. Zamora, V. Valverde, G. Buigues, A. Iturregi
Department of Electrical Engineering, EUITMOP, UPV/EHU. Bilbao. Spain

229 pp:37-41

Fast Method to the Unit Scheduling of Power Systems with Renewable Power Sources

G. J. Osório(1), J. M. Lujano-Rojas(1), J. C. O. Matias(1), J. P. S. Catalão(1,2,3)

1. University of Beira Interior. Covilhã. Portugal,
2. INESC-ID, Lisbon. Portugal,
3. IST, University of Lisbon. Portugal

230 pp:42-45

Contribution of the Losses in the Conductors of an Installation in the Use of Electronic Ballasts in Fluorescent Illumination

J.A. Lobão(1), T. Devezas(2), J.P.S. Catalão(2,3,4)

- 1 Polytechnic of Guarda. Portugal
2. University of Beira Interior. Covilhã. Portugal
3. INESC-ID, Lisbon. Portugal
4. IST, University of Lisbon. Portugal

232 pp:46-51

Sustainable Energy System of El Hierro Island

R. Godina (1), E. M. G. Rodrigues (1), J. C. O. Matias(1), J. P. S. Catalão(1,2,3)

1. University of Beira Interior. Covilhã. Portugal,
2. INESC-ID, Lisbon. Portugal,
3. IST, University of Lisbon. Portugal

233 pp:52-57

Utilization of Smart Grid and Renewable Energy toward a Sustainable Future in Saudi Arabia

Alghanim M.H.(1), Mallick P.K.(2)

1. Energy Systems Engineering, University of Michigan-Dearborn. USA.
2. Mechanical Engineering , University of Michigan-Dearborn. USA

- 235 pp:58-61**
Use of fractals to improve a proton exchange membrane fuel cell performance
P. Barbieri(1), G. Benetti(1), E. Mathias(1), M. Klein(1), J. Bottin(1), M. M. Forte(2), P. M. Belchor(1,2)
1. ACET, UNOESC, Joaçaba. Brazil
2. LaPol, UFRGS, Porto Alegre. Brazil
- 236 pp:62-65**
Comparative of heat transfer performance between a parallel serpentine-baffle flow field plate and a parallel flow field plate design in a direct ethanol proton exchange membrane fuel cell
G. Benetti(1), P. Barbieri(1), E. Mathias(1), J. Bottin(1), M. Klein(1), M. M. Forte(2), P. M. Belchor(1,2)
1. ACET, UNOESC, Joaçaba. Brazil
2. LaPol, UFRGS, Porto Alegre. Brazil
- 237 pp:66-70**
Probabilistic Evaluation Method of Interconnectable Capacity for Wind Power Generation Using Actual Data
T. Yoshida(1), M. Kato(1), K. Kashima(2)
1. Department of Electrical and Electronic Engineering, Tokyo Denki University Japan
2. Kyoto University, Yoshida-honmachi, Sakyo-ku, Kyoto. Japan
- 240 pp:71-76**
Shunt Active Power Filter with Selective Harmonics Compensation for LV distribution grid
F. Belloni, R. Chiumeo, C. Gandolfi
Ricerca sul Sistema Energetico – RSE s.p.a. Milano. Italy
- 243 pp:77-82**
Application of PI-Notch controller in the control of grid side converter to reduce PCC harmonic current for DFIG wind energy system
Ramon Rodrigues de Souza, Adson Bezerra Moreira, Paulo Sergio Nascimento Filho, Tarcio André dos Santos Barros, Ernesto Ruppert Filho
LEPO/DSE/FEEC/UNICAMP. Brazil
- 245 pp:83-88**
Operation and Protection of Grid Connected Wind Farm
M. M.A. Mahfouz(1,2), Mohamed A. El-Sayed(3)
1. Department of Electrical Power and Machines, Faculty of Engineering, Helwan University, Cairo. Egypt
2. Department of Electrical Power Engineering Technology, Yanbu Industrial College, Kingdom of Saudi Arabia

3. Department of Electrical Engineering, College of Engineering and Petroleum, Kuwait University. Kuwait

247 pp:89-94

Delivering Energy from PEV batteries: V2G, V2B and V2H approaches

J. García-Villalobos, I. Zamora, J.I. San Martín, I. Junquera, P. Eguía
Department of Electrical Engineering - University of Basque Country - UPV/EHU.
Bilbao. Spain

249 pp:95-100

Photovoltaic powered irrigation system applied to familiar agriculture

Chilundo, R. J.(1), Carvalho, Paulo C. M.(1), Diniz, M. M. N.(2), Bezerra, A. M. E.(3)
1. Electrical Engineering Department, Federal University of Ceará. Brazil
2. Instituto Joazeiro de Desenvolvimento Sustentável, Fortaleza/CE. Brazil
3. Fitotechny Department , Federal University of Ceará. Brazil

250 pp:101-107

Technical and economic assessment of energy from Tidal Currents

Isabel Páscoa, C. Camus, E. Eusébio
Department of Power Systems Engineering and Automation, I.S.E.L, Instituto Politécnico de Lisboa. Portugal

251 pp:108-113

Renewable Energy in Islands. An Integrated Proposal for Electricity Generation and Transports

P. Marques, E. Silva, C. Camus, E. Eusébio
Department of Power Systems Engineering and Automation
ISEL, Instituto Politécnico de Lisboa. Portugal

253 pp:114-119

Solar and Wind powered Stand Alone Water Pumping System

Arruda. M. F. D.(1), Carvalho. P. C. M.(1), Albiero, D. J.(2), Canafistula, F.J.F.(2),
Teixeira, A. S.(2)
1. Department of Electrical Engineering, Federal University of Ceará – UFC.
Fortaleza/CE. Brazil
2. Department of Agriculture Engineering , Federal University of Ceará – UFC.
Fortaleza/CE. Brazil

254 pp:120-125

Efficient reciprocating internal combustion engine operating under a regenerative isobaric expansion based cycle

R. Ferreira-García(1), R. Borrás-Formoso(1), J. Carbia-Carril(2)
1. Ind. Eng. Department, E.T.S.N.y M., A Coruña University . Spain
2. Energy and Propulsion Department, E.T.S.N.y M., A Coruña University. Spain

- 255 pp:126-131**
Estimate of Average Energy Generated in a River Basin by Statistical Analysis for Small Hydropower plants
J. H. I. Ferreira(1), J. A. Malagoli(2), J. R. Camacho(2)
1. Instituto Federal do Triângulo Mineiro. Ituiutaba-MG . Brazil
2. School of Electrical Engineering, Universidade Federal de Uberlândia. Brazil
- 257 pp:132-134**
Technical and economic feasibility of the use of Solar Thermal Energy in Condominiums with Popular Dwellings
Moraes-Santos, E.C., Souza, T. M., Balestieri, J.A.P.
Department of Energy. UNESP Campus of Guaratinguetá. Brazil
- 258 pp:135-138**
Comparison of the Parameters of Thermal Comfort in a House Built With Green Bricks With a Conventional Construction
A. O. Esteves(1,2), T. M. Souza(1,2)
1. Department of Electrical Engineering, UNESP. Brazil
2. Renewable Energies Center – UNESP . Brazil
- 260 pp:139-144**
Indicators for assessing sustainability of power plants: environmental, social, economic and technical aspects
J.J. Cartelle, M. Lara, M.P. de la Cruz, A. del Caño
Departamento de Ingeniería Industrial II, Escuela Politécnica Superior, Universidade da Coruña, Ferrol. Spain
- 261 pp:145-150**
Conceptual framework for an integrated method to optimise sustainability of engineering systems
A. del Caño, M.P. de la Cruz, J.J. Cartelle, M. Lara
Departamento de Ingeniería Industrial II, Escuela Politécnica Superior, Universidade da Coruña, Ferrol. Spain
- 263 pp:151-155**
Model to Maximize Self-consumption of Olive Mills Powered by a Mixed System of Renewable Energies
O. Rabaza, J. Contreras-Montes, A. Espín-Estrella, D. Gómez-Lorente
Department of Civil Engineering, E.T.S.I.C.C.P., University of Granada. Spain
- 267 pp:156-161**
Hydrokinetic Micro-Power Generation in Small Rivers - a New Approach
D. Norta(1,2), S. Ramanathan(1) , S. Sachau(1), H.-J. Allelein(2)
1. Reliable Decentral Energy Systems, SnT, Systems Univeristé . Luxembourg
2. Lrst, RWTH Aachen University. Germany

- 270 pp:162-167**
Smart Load Management in Distribution Networks Incorporating Different Load Sectors using PSO
S.M. El Safty, Amany El Zonkoly, Osama Hebala
Department of Electrical Engineering, College of Engineering and Technology, Arab Academy of Science ,Technology and Maritime Transport. Alexandria.Egypt
- 271 pp:168-173**
Influence of the reliability of short-term electrical power forecasting for a wind farm on the generation cost per MWh. A case study in the Canary Islands
Ulises Portero(1), Sergio Velázquez(2), María Miranda(1)
1. School of Industrial and Civil Engineering, University of Las Palmas de Gran Canaria, Canary Islands. Spain
2. Department of Electronics and Automatics Engineering, University of Las Palmas de Gran Canaria, Canary Islands. Spain
- 273 pp:174-178**
The impact of photovoltaic systems on power losses and voltage profiles in a real medium voltage distribution network
Nevena Srečković, Gorazd Štumberger
University of Maribor, Faculty of Electrical Engineering and Computer Science. Slovenia
- 274 pp:179-183**
Trends in electricity prices and their relation to the competitiveness and efficiency in UE countries
A. Martínez, S. Valero, E. Velasco, C. Senabre
Electrical Engineering Area, Universidad Miguel Hernández de Elche. Spain
- 276 pp:184-189**
Characterization of current switching transients for appliance identification
Yulieth Jimenez(1), Cesar Duarte(1), Johann Petit(1), Jan Meye(2), Peter Schegner(2), Gilberto Carrillo(3)
1.School of Electrical, Electronics and Telecommunications Engineering. Universidad Industrial de Santander – UIS. Bucaramanga. Colombia
2.Institute of Electrical Power Systems and High Voltage Engineering. Technical Universitaet Dresden – TUD. Germany
3.Universidad de Santander - UDES. Bucaramanga. Colombia
- 278 pp:190-195**
A Concept to Increase the Bulk Warm Water Production of Ordinary Direct and Indirect Solar-Thermal Systems in Rural India
D. Norta(1,2), C. Winkler(1) , Adoni-Team(1)
1. Regionalgruppe Aachen, Ingenieure ohne Grenzen e.V.
2. Engineers Without Borders Luxembourg

280 pp:196-201**A Comparative Performance Analysis between Saturated Core Voltage Regulators Using Silicon Steel and Amorphous Alloys**

C. S. Chaves(1), J. C. Oliveira(2), J. A. F. Barbosa Jr.(2)

1. Department of Electronic – Federal Institute of Triângulo Mineiro (IFTM) Minas Gerais. Brazil
2. NQEE – Federal University of Uberlândia (UFU) , Minas Gerais. Brazil

281 pp:202-207**Fault detection and isolation in a photovoltaic system**

M. Muñoz(1), A. Correcher(2), E. Ariza(3), E. García(2), F. Ibañez(3)

1. Grupo de Automática Industrial, Universidad del Cauca. Popayán. Colombia
2. Instituto de Automática e Informática Industrial, Universitat Politècnica de València. Spain
3. Instituto de Ingeniería Energética, Universitat Politècnica de València. Spain

282 pp:208-212**Supervision, Condition Monitoring and Fault Diagnosis System in a Hybrid Renewable Energy Systems (HRES) Laboratory**

E. Ariza(1), A. Correcher (2), C.Vargas(1), F. Morant(2)

1. Instituto de Ingeniería Energética - IIE, Universitat Politècnica de València. Spain
2. Instituto de Automática e Informática Industrial, Universitat Politècnica de València. Spain

284 pp:213-217**Dynamic Behavior of Three phase Inductions Motors as Loads in an Electric Power System with Distributed Generation, a Case of Study**

Marcelo Rodrigo García Saquicela, Ernesto Ruppert Filho, José Luis Azcue Puma. School of Electrical and Computer Engineering, State University of Campinas (UNICAMP), SP, Brazil

285 pp:218-222**A Study on Regeneration Performance Characteristics of an Internally Heated Regenerator in a Liquid Desiccant System**

Ji-Hyun Mun(1), Dong-Soon Jeon(2), Seon-Chang Kim(2), Young-Lyoul Kim(2)

1. Energy System Engineering, Korea University of Science and Technology. Republic of Korea
2. Thermal & Fluid System R&BD Group, Korea Institute of Industrial Technology Republic of Korea

286 pp:223-226**Step Size Selection for Tap Changers in Converter Transformers for Line Commutated HVDC Systems**

K. Roggenkamp(1), C. Hahn(2), V. Hussennether(1), A. Chaudhry(1), M. Luther(2)

1. Siemens AG, Energy Management. Erlangen. Germany
2. Chair of Electrical Energy Systems, Friedrich-Alexander-University of Erlangen Nuremberg. Germany

- 291** pp:227-232
The energy saving effect of incorporating an ATRIUM into a building
R. Getino-De la Mano, J. L. Falagán Cavero, E. Getino Grande
Departamento de Ingeniería Eléctrica y de Sistemas y Automática.
University of León. Spain
- 292** pp:233-238
Modeling and Simulation of Renewables for Telelabs
P. Kolhe, B. Bitzer
Department of Automation, South Westphalia University of Applied Sciences
Soest. Germany
- 294** pp:239-244
A Survey on Innovative Solutions and Projects for the Integration of Renewable Generation in Weak Power Grids
J.I. San Martín(1), P. Eguia(2), A. Etxegarai(2), E. Torres(2), I. Albizu(1)
1. Department of Electrical Engineering, University of the Basque Country (UPV/EHU). Eibar. Spain
2. Escuela Técnica Superior de Ingeniería de Bilbao. Spain
- 295** pp:245-250
Novel approach to concentrating and harvesting solar radiation in hybrid transparent photovoltaic façade's in Southern Africa
RH Gevers, JHC Pretorius, P Van Rhyn
Department of Electrical and Electronic Engineering, University of Johannesburg, Engineering Faculty. South Africa
- 297** pp:251-255
Analysis of Energy Saving and Efficiency Action Plan 2008-2012 in Spain for the Residential Sector (Heating, Appliances and Lighting)
Yolanda Fernández Ribaya, Antonio José Gutiérrez Trashorras, José Pablo Paredes, Jorge Xiberta Bernat
Department of Energy. E.I.M.E.M., Oviedo University. Spain
- 298** pp:256-261
Wideband estimation of the drive torque of a wind turbine using LiDAR measurements, blade element momentum theory and Kalman filtering
N. Eill, M. Stubbe, D. Turschner, H.-P. Beck
Institute for Electrical Power Engineering and Energy Systems, Power Mechatronics
Clausthal University of Technology. Germany

- 299** pp:262-266
Multi frequency wideband active damping device for compensation of torsional vibration
M. Stubbe, N. Ell, D. Turschner, H.-P. Beck
Institute for Electrical Power Engineering and Energy Systems, Power Mechatronics
Clausthal University of Technology. Germany
- 300** pp:267-271
Control of a Power Generation System Based on a Dual Star Induction Generator
K. Marouani(1), K. Nounou(1), M. Benbouzid(2), B. Tabbache(1), H. Alloui(1)
1. Laboratoire Commande des Machines, Ecole Militaire Polytechnique, Algeria
2. University of Brest, EA 4325, LBMS. France
- 302** pp:272-277
Sustainable desalination: integration of power supply with renewable energy sources
M. Marini(1), C. Palomba(2), P. Rizzi(1), E. Casti(1), A. Marcia(1), M. Paderi(2)
1. Department of Architecture, Planning and Design. DADU, University of Sassari. Italy
2. Department of Mechanical, Chemical and Materials Engineering, DIMCM, University of Cagliari. Italy
- 304** pp:278-282
Investment Analysis for Energy Efficiency Management Systems in Industrial Refrigeration
T. T. Portela, J. M. S Lafay
Electrical Engineering, UTFPR, Federal Technological University of Parana. Patro Branco, PR . Brasil
- 305** pp:283-287
Energy Efficiency in Brazil: Policies, Motivators, Barriers
T. T. Portela, J. M. S Lafay
Electrical Engineering, UTFPR, Federal Technological University of Parana. Patro Branco, PR . Brasil
- 306** pp:288-293
Capacitorless DC-DC Regulator as a Candidate Topology for Photovoltaic Solar Facilities
Herminio Martínez-García
Barcelona College of Industrial Engineering (EUETIB)
Department of Electronics Engineering, Technical University of Catalonia (UPC).
BarcelonaTech. Spain

309 pp:294-299**Review of Technical Requirements for Brazilian Distributions Companies for the Integration of Distributed Generators - A Comparative Analysis on the Perspective of IEEE-std 1547-2**

J.R.C de Almeida(1), M.J.B.B. Davi(1), C. B. dos Santos(1), F. A. M. Moura(1), J. R. Camacho(2)

1. Department of Electrical Engineering, Universidade Federal do Triângulo Mineiro Uberaba- Minas Gerais. Brazil
2. School of Electrical Engineering, Universidade Federal de Uberlândia, Minas Gerais. Brazil

310 pp:300-304**A Contribution of a Computer Tool Using ATP-EMTP TACS to the Modeling of a Photovoltaic (PV) Module**

C. B. dos Santos(1), J. R. C. de Almeida(1), M. J. B. B. Davi(1), F. A. M. Moura(1), J. R. Camacho(2)

1. Department of Electrical Engineering, UFTM, Universidade Federal do Triângulo Mineiro. ICTE. Uberaba. Brazil
2. Department of Electrical Engineering. UFU, Universidade Federal de Uberlândia. Brazil

312 pp:305-310**A Comparative Analysis between Methodologies for Responsibility Assignment on Harmonic Distortions**

A. C. Santos, J. C. Oliveira, I. N. Santos

Faculty of Electrical Engineering

Federal University of Uberlândia (UFU) Uberlândia. Brazil

314 pp:311-316**Analysis of the Influences of Changes in Gains and Time Constants in a Power Factor Regulator using ATP-EMTP**

M.J.B.B. Davi(1), J.R.C de Almeida(1), C. B. dos Santos(1), F. A. M. Moura(1), M. V. B. Mendonça(1), J.R. Camacho(2)

1. Universidade Federal do Triângulo Mineiro, Electrical Engineering Department, Uberaba, Minas Gerais. Brazil
2. Universidade Federal de Uberlândia, School of Electrical Engineering, Uberlândia, Minas Gerais. Brazil

315 pp:317-321**A system for visualization of power-quality and optimization of the charging behavior for electric vehicles**

Y. Wang(1), B. Schwake(2), B. Fischer(1), P. Stroganov(1)

1. Department of informatics, Clausthal University of Technology . Clausthal-Zellerfeld. Germany
2. Institute of Electrical Power Engineering and Energy Systems. Clausthal University of Technology ,Clausthal-Zellerfeld. Germany

- 317 pp:322-326**
Requirements for Fault Protection in HVDC Grids
D.M. Larruskain, O. Abarategui, I. Zamora, G. Buigues, V. Valverde, A. Iturregi
Department of Electrical Engineering. EUITMOP - UPV/EHU. Bilbao. Spain
- 318 pp:327-332**
Comparison of Transmission Technologies with Regard to their Contribution to Power System Stability
S. Höhn, A. Semerow, M. Luther
Institute of Electrical Energy Systems. University of Erlangen-Nuremberg. Germany
- 319 pp:333-338**
Wind power prediction for onshore wind farms using neural networks
Bogusław Świątek, Mateusz Dutka
AGH University of Science and Technology. Krakow. Poland
- 320 pp:339-344**
Photovoltaic Maximum Power Point Grid Connected based on Power Conditioning Technique Employing Fuzzy Controller
M. Bakkar, M. Abd_El-Geliel, M. Abo zied
Department Electrical and Control Engineering. AAST, Alexandria, Egypt
- 322 pp:345-350**
Energetic Use of Landfill Biogas as a Power Energy Source: An Economic Feasibility Study
Alessandro Nunes Costa, Elder Geraldo Domingues, Daywes Pinheiro Neto, Wesley Calixto Pacheco, Aylton José Alves, Liberato Santos
Nucleus of Studies and Researches Experimental & Technological (NEXT)
Federal Institute of Goiás (IFG). Brazil
- 323 pp:351-356**
Brazilian Automotive Market and Environment: An Analysis of Fighting Measures Measures CO₂ Emission
Nilcéia Cristina dos Santos(1), Reinaldo Gomes da Silva(2), Manoel Gonçales Filho(3)
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
3. Universidade Metodista de Piracicaba (UNIMEP). Brazil
- 325 pp:357-361**
Feasible methods to evaluate voltage dips origin
R. Chiumeo, L. Garbero, F. Malegori, L. Tenti
Ricerca sul sistema energetico- RSE SpA. Milan. Italy

326 pp:362-367**Testing new ensemble forecasts of solar irradiance**

J.M. Botana, A. Rodríguez, J.A. Gonzalez

Department of Chemical Engineering

School of Engineering, University of Santiago de Compostela. Spain

327 pp:368-373**Use of Generic Dynamic Models for Photovoltaic Plants**

P. Eguia(1), A. Etxegarai(1), E. Torres(1), J.I. San Martín(2), I. Albizu(2)

Department of Electrical Engineering - University of the Basque Country (UPV/EHU)

1. Escuela Técnica Superior de Ingeniería de Bilbao. Spain

2. Escuela de Ingeniería de Eibar. Spain

329 pp:374-379**Using Constant Switching Frequency Control in Linear-Assisted DC-DC Switching Converters for Photovoltaic Solar Regulators**

Herminio Martínez-García

Barcelona College of Industrial Engineering (EUETIB)

Department of Electronics Engineering, Technical University of Catalonia (UPC).

BarcelonaTech. Spain

332 pp:380-385**Technical and Economic Study to Installing a Photovoltaic System at Roof of Public Building**

J. M. Rodrigues, A. J. Alves, E. G. Domingues, W. P. Calixto

Nucleus of Studies and Researches Experimental & Technological

Electrotechnical Department - Federal Institute of Goiás. Brazil

334 pp:386-390**Synthesis of porous LSM films on dense YSZ substrates for use in SOFC**

D.P. Tarragó, C.F. Malfatti, V.C. Sousa

School of Engineering. Federal University of Rio Grande do Sul. Brazil

336 pp:391-395**Optimal Volume and Slip of a Three Phase Induction Motor using Differential Evolution**

J. A. Malagoli(1), J. H. I. Ferreira(1), J. R. Camacho(1), M. V. Ferreira da Luz(2)

1. Faculty of Electrical Engineering, Federal University of Uberlândia. Brazil

2. Department of Electrical Engineering, Federal University of Santa Catarina Florianópolis-SC. Brazil

337 pp:396-401**Harmonic Modeling of Electric Vehicle Chargers in Frequency Domain**

S. Müller(1), J. Meyer(1), P. Schegner(1), S. Djokic(2)

1. Technische Universitaet Dresden. Institute of Electrical Power Systems and High Voltage Engineering. Faculty of Electrical and Computer Engineering. Germany
2. University of Edinburgh. United Kingdom

338 pp:402-407

EDP Distribuição experience in Power Quality permanent monitoring in Portugal

F. Gonçalves, F. Bastião, A. Lebre, P. Veloso, N. Melo

Department of Quality of Service – Power Quality. EDP Distribuição (EDP Group) Coimbra. Portugal

340 pp:408-413

Proposal for Development of a Fragmented Mobile Substation for Treatment of Seasonal Loads

Arnulfo Barroso de Vasconcellos(1), Jéssica Romeiro de Carvalho(1), Marina Silva Camillo de Carvalho(1), Marllon Welter Schlischtig(1), Teresa Irene Ribeiro de Carvalho Malheiro(2), Luciano Vogel Dutra(3), Wagner Gentil(3)

1. Faculty of Architecture, Engineering and Technology, UFMT –Federal University of Mato Grosso – Cuiabá/MT. Brazil
2. Federal Institution of Education, Science and Technology of Mato Grosso – IFMT Brazil
3. Utility Energisa/Cemat– Cuiabá/MT. Brazil

341 pp:414-418

Influence on a Consumer Unit Power Factor Provided by the Connection of a SHPP in Shunt with the Utility Power

Arnulfo Barroso de Vasconcellos(1), Raul Vitor Arantes Monteiro(1), Jéssica Romeiro de Carvalho(1), Marina Silva Camillo de Carvalho(1), Tisciane Perpétuo e Oliveira(1), Teresa Irene Ribeiro de Carvalho Malheiro(2)

1. Faculty of Architecture, Engineering and Technology, UFMT –Federal University of Mato Grosso – Cuiabá/MT. Brazil
2. Federal Institution of Education, Science and Technology of Mato Grosso – IFMT Brazil

342 pp:419-423

The Influence of Reactive Flow by Electronic Loads in Electricity Billing System of a Shopping Mall's Consumer Unit

Arnulfo Barroso de Vasconcellos(1), José Mateus Rondina(1), Jéssica Romeiro de Carvalho(1), Marina Silva Camillo de Carvalho(1), Cátia Sanchez Roboredo(1), Teresa Irene Ribeiro de Carvalho Malheiro(2)

1. Faculty of Architecture, Engineering and Technology, UFMT –Federal University of Mato Grosso – Cuiabá/MT. Brazil
2. Federal Institution of Education, Science and Technology of Mato Grosso – IFMT Brazil

- 345 pp:424-428**
Deterioration and performance evaluation of photovoltaic modules in a semi-arid climate
M.M.D. Afonso (1), P.C.M. Carvalho,(1),F.L.M. Antunes(1),J.J. Hiluy Filho (2)
1. Department of Electrical Engineering
2. Department of Chemical Engineering
Federal University of Ceará. Brazil
- 347 pp:429-432**
Modeling Hybrid Renewable Energy System for Micro Grid
Y. Varetsky, Z. Hanzelka
Department of Power Electronics and Energy Control System
AGH-University of Science & Technology. Krakow. Poland
- 350 pp:433-438**
Low Drop-Out Voltage Regulator as a Candidate Topology for Photovoltaic Solar Facilities
Herminio Martínez-García
Barcelona College of Industrial Engineering (EUETIB)
Department of Electronics Engineering
Technical University of Catalonia (UPC). BarcelonaTech. Spain
- 352 pp:439-444**
Voltage Dip Detection with Half Cycle Window RMS Values and Aggregation of Short Events
Yun Qin, Gu Ye, V.Cuk, J.F.G.Cobben
Department of Electrical Engineering, Technology University of Eindhoven.
The Netherlands
- 353 pp:445-448**
Potential Study of Biomass in the Area of Cartagena (Spain) under the ENERING LIFE+ European Project
J. Serrano(1), J. M. Paredes(1), M. S. García-Cascales(2), J. M. Sánchez-Lozano(3), A. Molina-García(4)
1. Área de Energía. Centro Tecnológico de la Energía y Medio Ambiente(CETENMA). Cartagena. Spain
2. Departamento de Electrónica, Tecnología de Computadoras y Proyectos
3. Centro Universitario de la Defensa. Academia General del Aire
4. Department of Electrical Engineering, Universidad Politécnica de Cartagena. Spain
- 354 pp:449-454**
Comparison of Voltage Dip Characterization under Grid-Code Requirements: Application to PV Power Plants
T. García-Sánchez(1), E. Gómez-Lázaro(1), A. Molina-García(2)
1. Institute of Renewable Energy, Universidad de Castilla La Mancha, Albacete. Spain

2. Department of Electrical Engineering, Universidad Politécnica de Cartagena.
Spain

356 pp:455-460

Performance analysis of a new system for speed control in wind turbines

P. V. Silva, R. F. Pinheiro, A. O. Salazar and J. D. Fernandes

Universidade Federal do Rio Grande do Norte

Campus Universitário Lagoa Nova – Natal, 1524 Rio Grande do Norte. Brazil

358 pp:461-465

Offshore wave potential of the Mediterranean Sea

F. Karathanasi(1,2), T. Soukissian(1), D. Sifnioti(3)

1. Institute of Oceanography. Hellenic Centre for Marine Research
Anavyssos. Greece

2. Department of Naval Architecture and Marine Engineering, National Technical
University of Athens. Greece

3. Faculty of Geology and Geoenvironment . National and Kapodistrian University of
Athens . Greece

361 pp:466-469

Photovoltaic Luminaire of Low Cost for Public Streets

Spacek, A. D.(1), Neto, J. M.(1), Clemente,L.G(1), Ando Junior, O. H.(2), Malfatti,
F.C.(3)

1. Department of Industrial Automation. **SATC**, Beneficent Association of Santa
Catarina Coal Industry . Criciúma-Sc. Brazil

2. Departament of Renewable Energies Engineering UNILA, Federal University of
Latin American Integration. Foz do Iguaçu-PR. Brazil

3. School of Engineering. UFRGS, Federal University of Rio Grande do Sul.
Brazil

363 pp:470-473

Development of a metering system to evaluate power distribution losses

E. A. Silva(1), O. H. A. Junior(2), A. D. Spacek(1),J.D.Spacek(3), J. M. Neto(1), L.
F. Venturini, V. L. Coelho(1), A. A. Tavares(1), M. Sunada(1), J. C. Cutipa-Luque(1)

1. Department of Electrical Engineering. SATC Faculty . Criciúma, SC. Brazil

2. Department of Renewable Energies Engineering. UNILA, Federal University of
Latin American Integration. Foz do Iguaçu, PR. Brazil

3. Cooperativa Pioneira de Eletrificação. COOPERA. Brazil

364 pp:474-477

Frequency Regulation with the Lifespan of EVs Batteries

Yufeng Guo, Yi Jiang , Jilai Yu

School of Electrical Engineering and automation. Harbin Institution of Technology.
China

- 365 pp:478-482**
Assessment of Voltage Dips based on Field Measurements in MV Networks
L.E. Weldemariam, F. Papathanasiou, V. Cuk, J.F.G. Cobben, W.L. Kling
Department of Electrical Engineering, Eindhoven University of Technology.
The Netherlands
- 368 pp:483-488**
Towards a Better Understanding of Harmonics and Power Electronics – New Measurement Results and Analysis Methods for Modern Large-Scale Inverters
S. Rogalla, F. Ackermann, N. Bihler, G. Dötter, R. Singer, E. Wolf
Department Power Electronics, Fraunhofer Institute for Solar Energy Systems ISE.
Freiburg. Germany
- 369 pp:489-493**
Friction Expander for the Generation of Electricity (FEGE)
Axel Kölling(1), Roberto Lisker(2), Udo Hellwig(3), Franz Wildenauer(2)
1. ERK Eckrohrkessel GmbH. Berlin. Germany
2. University of Applied Sciences Wildau. Germany
3. La Mont GmbH. Berlin. Germany
- 370 pp:494-499**
WiFi Data Acquisition System and online monitoring applied to thermoelectric microgeneration modules
R. I. S. Pereira(1), P. C. M. Carvalho(1), S. C. S. Jucá(2)
1. Electrical Engineering Department (DEE) Federal University of Ceará – UFC.
Fortaleza. Brazil
2. Telematics Area. Federal Institute of Ceará – Maracanaú. Brazil
- 373 pp:500-505**
Comparison of Residential Wind and Solar Energy Generation in the Island of Puerto Rico
Rachid Darbali-Zamora Carlos J. Gómez-Méndez, Andrés J. Díaz-Castillo
Department of Electrical and Computer Engineering
University of Puerto Rico
- 380 pp:506-513**
Analysis of DC/DC converters by mean node voltage method
Gianpaolo Vitale
National Research Council of Italy, CNR – ISSIA UOS Palermo. Italy
- 382 pp:514-518**
Calculation of the weighted average efficiency of photovoltaic systems in the Brazilian State of Santa Catarina
Alexandre Kellermann, Renê Alfonso Reiter, Adriano Péres
Department of Electrical and Telecommunications Engineering

Regional University of Blumenau. Brazil

383 pp:519-523

The position of the maximum erosion points in coal powder pneumatic transport installations, function of the bend radius / pipe diameter ratio

Dorina Ionescu

Department of Mechanical and Industrial Engineering, School of Engineering – College of Science, Engineering and Technology. South Africa

387 pp:524-529

A criterion for rotational augmentation based on a boundary-layer analysis

W.-G. Früh(1), A.C.W. Creech(2)

1. Institute of Mechanical, Process and Energy Engineering, School of Engineering and Physical Sciences. Heriot-Watt University. United Kingdom

2. Institute of Energy Systems, School of Engineering, University of Edinburgh. United Kingdom

389 pp:530-535

Vertical Axis Wind Turbines: Current Technologies and Future Trends

J. Damota (1), I. Lamas (2), A. Couce (1), J. Rodríguez(1)

1. Marine Innovations Research Group. E.U.P. A Coruña University. Spain

2. Thermal Systems and Heat Transfer Research Group.E.P.S. A Coruña University Spain

394 pp:536-540

A Comparison of Two Controller Designs for a Hybrid Excitation Synchronous Generator for Wind Applications

Sandrine Le Ballois, Lionel Vido

SATIE, ENS Cachan, CNRS, Cergy Pontoise University. France

399 pp:541-546

Maximum Power Point Tracking Technique Based on Particle Swarm Optimization Method Applied to a Single-Phase Grid-Tied Photovoltaic System

F. M. Oliveira, S. A. O. Silva, F. R. Durand , L. P. Sampaio

Federal Technological University of Paraná – UTFPR-CP

Department of Electrical Engineering. Cornélio Procópio-PR. Brazil

400 pp:547-552

Influence of standard sections and time periods on optimization of a distribution network supplied by solar source

Fergani.S(1), Si Ali.M(1),Flazi.S(1), Boudghene Stambouli.A(2)

1. Department of Electrical Engineering

2. Department of Electronics
University of sciences and the Technology of Oran Mohamed Boudiaf. Oran.
Algerie

403 **pp:553-559**

Observability of a 2-branch Double-Layer-Capacitor

F. Alonge(1), M. Cirrincione(2), G. Vitale(3), G. Rodonò(1)

1. Department of Energy, Information Engineering and Mathematical models
D.E.I.M., University of Palermo. Italy
2. School of Engineering and Physics (SEP), The University of the South Pacific.
Fiji Islands
3. Institute on Intelligent Systems and Automation (ISSIA), National Research
Council of Italy

406 **pp:560-563**

Benefits that could be achieved by a proper reactive power generation in small photovoltaic systems operating inside low voltage distribution network

Katarina Dežan, Ernest Belič, Gorazd Štumberger

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

410 **pp:564-569**

Development of a mobile photovoltaic stand-alone energy supply system

K.K.T. Thanapalan, T.J. Stockley, M.A. Bowkett, J.G. Williams

Centre for Automotive & Power Systems Engineering (CAPSE), Faculty of
Computing, Engineering and Science, University of South Wales. United Kingdom

412 **pp:570-574**

Optimization of total investment cost of solar distribution network

M.Siali(1), S. Fergani(1), S.Flazi(1), A. Boudghene Stambouli(2)

1. Department of Electrical Engineering
2. Department of Electronics
University of Sciences and Technology of Oran –Mohamed Boudiaf- (USTO-MB-)
Oran. Algerie

414 **pp:575-580**

Analysis of probabilistic properties of harmonic currents of loads connected to high-voltage networks

L. I. Kovernikova

The Siberia Branch of the Russian Academy of Sciences
Energy Systems Institute. Irkutsk. Russia

415 **pp:581-584**

A study on the voltage calculation method for ESS operation plan in Hybrid Generation System

S. Jung, G. Jang
School of Electrical Engineering. Korea University. Seoul. Korea

417 pp:585-587

Thermal Performance of a Single Slope Solar Water Still with Enhanced Solar Heating System

Abdullah M. Al Shabibi, M. Tahat
Department of Mechanical and Industrial Engineering
Sultan Qaboos University. Oman

418 pp:588-591

Displacement ventilation system combined with a novel evaporative cooled ceiling for a typical office in the city of Beirut: performance evaluation

Mariam Itani, Kamel Ghali, Nesreen Ghaddar
Department of Mechanical Engineering, American University of Beirut. Lebanon

419 pp:592-595

Impact of Wind Geographical Correlation in Reliability Assessment Studies Using Sequential Monte Carlo Simulations

F. Vallée(1), J-F. Toubeau(2), Z. De Grève(2), J. Lobry(2)
1. Department of General Physics
2. Department of Electrical Power Engineering
Faculté Polytechnique, University of Mons. Belgium

420 pp:596-601

Verification and Implementation of Pseudo-Random-Binary-Sequences for Online Determination of Grid Impedance Spectrum

Udit Tewari(1), Surena Neshvad(2), Daniel Goldbach(1), Jürgen Sachau(2)
1. Faculty of Energy Technology. FH Aachen, Campus Jülich. Germany
2. Interdisciplinary Centre for Security Reliability and Trust (SnT).
University of Luxembourg

421 pp:602-606

Economic Optimization of a Hybrid Solar-Wind Power Plant in Chile

José O. Maldifassi(1), Julián Lizama M.(1), Ignacio Mongillo M.(2)
1. School of Engineering and Science. Universidad Adolfo Ibáñez.
Viña del Mar Campus. Chile
2. Servicios Logísticos; Arauco S.A.Santiago. Chile

424 pp:607-611

Reduction of energy losses achieved by an optimal reactive power generation in photovoltaic systems installed inside a low voltage distribution network

Ernest Belič, Katarina Dežan, Niko Lukač, Gorazd Štumberger

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

425 **pp:612-615**

A new Measure-Correlate-Predict Wind Resource Prediction method

C. Skittides, W.-G. Früh

Institute of Mechanical, Process and Energy Engineering,
School of Engineering and Physical Sciences. Heriot-Watt University.
Riccarton, Edinburgh .United Kingdom

426 **pp:616-621**

The influence of diesel generators on frequency stability for isolated grids with high wind power penetration

Georgia Papaioannou, Ignacio Talavera, Jutta Hanson

Department of Electrical Power Supply with Integration of Renewable Energies
Technische Universität Darmstadt. Germany

428 **pp:622-627**

Probabilistic Study of the Impact on the Network Equipment of Changing Load Profiles in Modern Low Voltage Grids

J-F. Toubeau(1), V. Klonari(1), Z. De Grève(1), J. Lobry(1), F. Vallée(2)

1. Department of Electrical Engineering

2. Department of General Physics

Faculté Polytechnique, University of Mons. Belgium

430 **pp:628-633**

Influence of a metallic wall on 245 kV disconnector behaviour during short-circuit test

J. A. Güemes(1), A. M. Iraolagoitia(1), P. Fernández(2)

1. Department of Electrical Engineering

2. Department of Electronic Technology

E.U.I.T.I., University of the Basque Country UPV/EHU. Bilbao. Spain

431 **pp:634-637**

Accumulation small hydro power plant on lake - Slovenian case

L. Somi, K. Deželak, G. Štumberger

Power Laboratory Department

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

432 **pp:638-641**

Electricity generation from tidal power in artificial “albúfera” in the Rio Negro Province, Argentina

Luis Bertani(1), Carlos Labriola(2), Ariel Marchegiani(3), Orlando Audisio(3), Samuel Troncoso Schenker(2)

1. Department of Geography - Faculty of Human Sciences

2. Department of Electrotecnia – Faculty of Engineering

3. Department of Mechanics – Faculty of Engineering
Universidad Nacional del Comahue, Neuquén, Argentina

434 pp:642-647

Behavior of Mechanically Switched Capacitors with Damping Network (MSCDN) during Energization

S. Weck, I. Talavera, J. Hanson

Institute of Electrical Power Systems with Integration of Renewable Energies
Technical University Darmstadt. Germany

436 pp:648-653

Hybrid Reluctance Machines with U-Shaped Electromagnets and Permanent Magnets

P.Andrada(1), B. Blanque(1), E. Martinez(1), M.Torrent(1), O. Rolando Ávila(2), M. Gomila(1), X. Adelantado(2)

1. EPS d'Enginyeria de Vilanova i la Geltrú, Departament d'Enginyeria Elèctrica
Universitat Politècnica de Catalunya (UPC). Vilanova i la Geltrú. Spain

2. RAC Rolando, Sucre. Bolivia

437 pp:654-658

Sensitivity analysis of the Electrical Stresses in Mechanically Switched Capacitors with Damping Network due to Components' Tolerances

I. Talavera, S. Weck, J. Hanson

Department of Electrical Power Supply with Integration of Renewable Energies
Technische Universität Darmstadt . Germany

438 pp:659-664

Analysis of an Advanced Compounding Strategy based on Reactive Power Flow Measurement in the Medium Voltage Network

P. Franz, G. Stapff, I. Talavera, J. Hanson

Department of Electrical Power Supply and Integration of Renewable Energies
Technische Universität Darmstadt. Germany

440 pp:665-670

Robust Control Applied to a Photovoltaic Array Emulator Using Buck Converter

L. P. Sampaio, S. A. O. Silva

Federal Technological University of Paraná – UTFPR-CP

Department of Electrical Engineering. Cornélio Procópio-PR .Brazil

442 pp:671-674

Analysis of the electrical energy intensity under energy efficiency actions

López Pereiro D.(1), Zaragoza S.(1), Tarrío J.(2), Naya S.(2), Álvarez A.(3)

1.- Departamento de Ingeniería Industrial II. Universidad de A Coruña.

Ferrol –A Coruña (Spain)

- 2.- Departamento de Matemáticas. Universidad de A Coruña.
Ferrol –A Coruña (Spain)
- 3.-Departamento de Ingeniería Naval y Oceánica. Universidad de A Coruña.
Ferrol –A Coruña (Spain)

443 pp:675-679

Analysis of LED lighting for a service ship

JM. Orbaneja(1), A. Álvarez(1), J. López-Beceiro(2), R. Artiaga(2), B. Álvarez(3)

1. Department of Naval and Oceanic Engineering. E.P.S., A Coruña University
Ferrol. Spain
2. Department of Industrial Engineering II. E.P.S., A Coruña University. Ferrol
A Coruña. Spain
3. Department of Financial Economy and Accounting.
Economy and Business Faculty, A Coruña University. Spain

445 pp:680-685

Techno-Economic Design of a Stand-Alone Renewable Energy System

S. Abdelkader

Electrical Engineering Department, Faculty of engineering, Mansoura University
School of Electronics, Electrical Engineering & Computer Science
Queen's University Belfast. United Kingdom

450 pp:686-691

Study of Induced Voltage by Lightning on Transmission Lines

Paulo César Álvares Mota, José Roberto Camacho, Marcelo Lynce Ribeiro Chaves
School of Engineering. Federal University of Uberlândia. Brazil

454 pp:692-697

The road to nearly zero energy buildings. Case of study: Spain comparison between CTE HE 2006 and 2013 in a simulated

D. Carmona(1), D.De La Maya(1), A. García(2), L.A. Horrillo(1), A.M. Reyes(1)

1. Escuela de Ingenieros Industriales. Badajoz. Spain
2. Facultad de Ciencias Económicas y Empresariales. Badajoz. Spain

455 pp:698-703

A Fault Detection method for pitch actuators faults in Wind Turbines

C. Tutivén, Y. Vidal, L. Acho, J. Rodellar

Universitat Politècnica de Catalunya, Applied Mathematics-III (MA-3) Department,
CoDALab. Barcelona. Spain

459 pp:704-707

Increase of Voltage Quality in Industrial Distribution Systems

M. Cernan, Z. Muller, J. Tlustý

Department of Electrical Power Engineering

Faculty of Electrical Engineering, Czech Technical University. Prague. Czech
Republic

- 460 pp:708-713**
Metaheuristic approach to the Holt-Winters optimal short term load forecast
E.Eusébio, C. Camus, C. Curvelo
Department of Power Systems Engineering and Automation
ISEL, Instituto Politécnico de Lisboa. Portugal
- 465 pp:714-718**
Control of Battery Energy Storage System for Wind Turbine based on DFIG during Symmetrical Grid Fault
T. Riouch(1,2), R. EL-Bachtiri (2), A. Alamery(1) C. Nichita(1)
1. Groupe de Recherche en Electrotechnique et Automatique. GREAH Laboratory, University of Le Havre. France
2. LESSI laboratory, FSDM USMBA University REEPER Group, EST-Fez. Morocco
- 470 pp:719-724**
Identification of potential users of photovoltaic conversion
Do Carmo, D. L., Souza, C. R., Frota, N. M.
Postgraduate Program in Metrology. Metrology for Quality and Innovation.
Pontifical University. PUC-Rio, Pontifical Catholic University of Rio de Janeir. Brazil
- 475 pp:725-728**
Three- Phase Planar Actuator's Reduced Model Validation using Exploratory Coils and Evaluation Applying Somaloy 500 as Core Material
Neto J. M.(1), Sebastião, L.M(1), Spacek, A.D(1), Ferreira, C.A(1) Ando Junior, O.H(2) , Schaeffer, L.(3)
1. Department of Industrial Automation. SATC, Beneficent Association of Santa Catarina Coal Industry. Criciúma-Sc. Brazil
2. Department of Renewable Energies Engineering. UNILA, Federal University of Latin American Integration. Brazil
3. School of Engineering. UFRGS, Federal University of Rio Grande do Sul. Porto Alegre-Rs. Brazil
- 477 pp:729-732**
New models related with heating and cooling of an old building in Évora (South of Portugal)
Mari Rosa Alves Duque
Department of Physics, School of Sciences and Technologies
Évora University. Portugal
- 478 pp:733-737**
Power Supply Issues in E-health Monitoring Applications
Alan Davidson(1), Neha Mathur(1), Ivan Glesk(1), Arjan Buis(2)
1. Department of Electronic and Electrical Engineering. Faculty of Engineering. University of Strathclyde. Glasgow. United Kingdom
2. Dept. of Biomedical Engineering. Faculty of Engineering University of Strathclyde. Glasgow. United Kingdom

484 pp:738-743

A First Approach on the Fault Impedance Impact on Voltage Sags Studies

A. C. L. Ramos(1,4), A. J. Batista(2), R. C. Leborgne(3), E. G. Domingues(4), W. P. Calixto(1,4), A. J. Alves(4).

1. Program in Electronic Systems and Automation, University of Brasilia, Brazil
2. School of Electrical and Computer Engineering, Federal University of Goias
3. Department of Electrical Engineering, Federal University of Rio Grande do Sul
4. Nucleus of Studies Experimental and Technological, Electrotechnical Department-Federal Institute of Goias, Brazil

485 pp:744-749

Fault detection in a three-phase system grid connected using SOGI structure to calculate vector components

C.X. Rocha(1), J.R. Camacho(1), G.P. Viajante(2)

1. Department of Electrical Engineering. FEELT, Universidade Federal de Uberlândia. Minas Gerais. Brazil
2. Department of Industry. IFG, Instituto Federal de Goiás. Brazil

487 pp:750-753

Calculation of involved energies in thermal plasma at the opening of high voltage breakers

A. Ziani, H. Moulai, A. Nacer

Laboratory of Electrical and Industrial Systems, FEI, USTHB, Algiers, Algeria.

490 pp:754-757

Assessment of Power Level Variations in a Small PV System

P. Janik, Z. Waclawek, J. Rezmer

Department of Electrical Engineering. Wroclaw University of Technology. Poland

494 pp:758-762

Assessment of biomass potential for Power Production

E. Mateos(1), J.M. Edeso(2)

1. Department of Chemical and Environmental Engineering. E.U.I.T.I., University of the Basque Country. Bilbao. Spain
2. Department of Mining and Metallurgical Engineering and Materials Science E.U.I.T.I., University of the Basque Country. Spain

495 pp:763-767

Design and Analysis of Experiments for a PEM Fuel Cell Mathematical Modelling

A. Crăciunescu, C. L. Popescu, M. O. Popescu, L. Pătularu, M. Predescu

Department of Electrical Engineering. University "Politehnica" of Bucharest. Romania



- 498 pp:768-773**
Smart City, Sustainable Mobility, Home-Work Mobility: data analysis and Actions
Silvano Vergura
Department of Electrical and information Engineering. Technical University of Bari. Italy
- 503 pp:774-779**
Experimental investigation on saturated critical heat flux of refrigerant R134a at high saturation temperatures
F. Botticella(1), F. De Rossi(1), R. Mastrullo(2), G.P. Vanoli(1), L. Viscito(2)
1. Department of Engineering. Sannio University. Benevento. Italy
2. Department of Industrial Engineering. Federico II University of Naples. Italy
- 505 pp:780-785**
Phasor Measurement Unit-Based Power Sharing for Optimal Decentralized Controller Design of Inverter-based Microgrid
M. A. Hassan(1,2), M. A. Abido(3,4)
1. Research Institute, Center of Engineering, King Fahd University of Petroleum & Minerals, Dhahran. Saudi Arabia
2. Electrical Engineering Dept., King Fahd University of Petroleum & Minerals, Dhahran. Saudi Arabia
3. Electrical Engineering Dept., Faculty of Engineering, Mansoura University, Mansoura. Egypt
4. Electrical Engineering Dept., Faculty of Engineering, Menoufia University, Shebin El-Kom. Egypt
- 508 pp:786-790**
Study of the current performance of the European power transformer fleet
F. Ortiz, C. Fernández, J. Carcedo, C. Renedo, F. Delgado
Department of Electrical and Energy Engineering. E.T.S.I.I., Cantabria University Santander. Spain
- 511 pp:791-796**
Day-ahead Optimal Scheduling of Loads and Dispatchable Resources in a Hybrid AC/DC Microgrid of an Industrial System
L. Alfieri, G. Carpinelli, D. Proto, G. Russo
Department of Electrical Engineering and of Information Technologies DIETI, University of Naples "Federico II". Italy
- 513 pp:797-800**
Analysis of a Real Case of Ampacity Management in a 132 kV Network Integrating High Rates of Wind Energy
A. Madrazo(1), A. González(2), R. Martínez(1), R. Domingo(1), M. Mañana(1), A. Arroyo(1), P.B. Castro(1), D. Silió(1), R. Lecuna(1)
1. Department of Electrical and Energy Engineering, University of Cantabria Santander . Spain

2. E.ON Distribución. Santander. Spain

514 pp:801-803

Preliminary Results of a Power Quality Survey in a Distribution Network Based on No-Gap PQ Meters

A. González(2), A. Madrazo(1), A. Laso(1), R. Martínez(1), R. Domingo(1), M. Mañana(1), A. Arroyo(1), M.A. Cavia(1)

1. Department of Electrical Engineering, E.T.S.I.I.T., University of Cantabria. Santander. Spain

2 E.ON Distribución. Santander. Spain

515 pp:804-808

Energy audit as an input for energy management and energy efficiency improvement in a gypsum manufacturing plant

H. Bernardo (1,2), F. Oliveira (1,2), L. Serrano (2,3)

1. INESC Coimbra - Institute for Systems Engineering and Computers at Coimbra Coimbra, Portugal.

2. School of Technology and Management, Polytechnic Institute of Leiria Leiria, Portugal

3. ADAI - Association for the Development of Industrial Aerodynamics, LAETA Coimbra, Portugal

517 pp:809-814

Investigation and Understanding the Conditions of Power Transformer Internal Faults using On-line Technique

E. A. F. Aburaghiega, M. E. Farrag, D. M. Hepburn

School of Engineering & Built Environment, Glasgow Caledonian University United Kingdom

518 pp:815-819

Virtual Smart Network Cell

Péter Kádár

Óbuda University. Dept. of Power Systems, Alternative Energy Sources Knowledge Centre. Hungary

PL2 pp:820-825

Energy storage systems for frequency stability enhancement in small-isolated power systems

I. Egido(1), L. Sigrist(1), E. Lobato(1), L. Rouco(1), A. Barrado(2), P. Fontela(2), J. Magriñá(2)

1.- Universidad Pontificia Comillas. Madrid, Spain

2.- Endesa. Madrid, Spain