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313	**Thermoeconomic Analysis of Biomethane Large Scale Production for Cities from Landfill and Sewage Biogas** **Nilma R. Barsallo, Álvaro I. Ochoa, Lesmes A. Corredor, Maira A. Sierra, Iván Ochoa** Department of Mechanical Engineering, Universidad del Norte. Barranquilla. Colombia
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315	**Electrical Distribution Systems' Reconfiguration Considering Distributed Generation: Implementation and Comparison of Metaheuristic Tools** **W. R. Faria, M. E. De Oliveira, H. X. Rocha, L. G. W. Da Silva** Federal Institute of Education, Science and Technology of Goiás at Itumbiara, Researches in Energy Systems Group – NuPSE Itumbiara-GO. Brazil
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316	**Optimal design of the on-board electrical generation system of a jet airliner** **F.J. Asensio(1), J.I. San Martín(1), I. Zamora(2), G. Saldaña(1), A. Mollinedo(1)** 1. Department of Electrical Engineering, Engineering School of Gipuzkoa (Section of Eibar), University of the Basque Country (UPV/EHU). Spain 2. Department of Electrical Engineering, Engineering School of Bilbao, University of the Basque Country (UPV/EHU). Spain
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	Aiming Energy Quality Improvement **Jáder de Alencar Vasconcelos(1), Antônio César Baleeiro Alves(1), Marcelo Escobar de Oliveiros(2), Luis Gustavo Wesz de Silva(2)** 1. Federal University of Goiás. Brazil 2. Federal Institute Technology of Goiás. Brazil
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319	**Energy Storage Technologies towards Brazilian Electrical System** **Silvera , V. (1,2), Cantane, D. A.(2), Reginatto, R.(1), Ledesma, J. J. G.(4), Schimdt, M. H.(3), Ando Junior, O. H.(4)** 1. Department of Electrical Engineering, State University of Paraná Western Foz do Iguaçu – Paraná. Brazil 2. Battery Laboratory, Itaipu Technological Park (PTI) Foz do Iguaçu – Paraná. Brazil 3. Department of Planning and Control of the Distribution Expansion - DPLD COPEL, Paranaense Energy Company, Mossunguê, Curitiba – PR. Brazil 4. Department of Renewable Energies, UNILA, Federal University of Latin American Integration, Foz do Iguaçu-PR. Brazil
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322	**Microgrid controller standardization – principles and implementation** **G. Joos(1), J. Reilly(2)** 1. Department of Electrical and Computer Engineering, Montreal, QC, Canada 2. Reilly Associates, New Jersey.USA
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323	**Technological transformation from combustion engine vehicles to electric vehicles** **A. Edgar Salazar, B. Felipe Arroyave, C. Carlos Romero** Department of Mechanical Technology, Technology Faculty UTP, Technological University of Pereira. Campus of La Julita. Pereira. Colombia.
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325	**Minimising the levelised cost of energy and grid impact by multiobjective optimisation of wind turbine sizing** **Javier Serrano González(1), Manuel Burgos Payán(1), Jesús Riquelme**

	Santos(1), João de Almeida(2) 1. Department of Electrical Engineering, University of Seville. Spain 2. Faculty of Sciences of Lisbon University. Portugal
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326	**Intermittent personalized ventilation coupled with mixing ventilation for occupant protection against active and passive contaminants and energy savings** **D. Al Assaad(1), C. Habchi(2), K. Ghali(1), N. Ghaddar(1)** 1. Department of Mechanical Engineering, American University of Beirut. Lebanon 2. Department of Mechanical Engineering. Lebanese University, Branch II. Roumieh, Lebanon
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330	**Electricity Quality Estimation in Consequence of PV Power Penetration into Israeli Grid** **Kurtz D., Averbukh M.** Israel Electric Company (IEC), Department of Electric/Electronic Engineering, Ariel University. Israel
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332	**Wind Gust Protection Algorithm for Non-Pitched Control Wind Farm** **Mohamed M. A. Mahfouz(1), Mohamed A. H. El-Sayed(2)** 1. Electrical Power and Machines Dept., Helwan University, Cairo, Egypt 2. Electrical Dept., College of Engineering and Petroleum, Kuwait University.Kuwait
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337	**Working fluid effects on the performance of hybrid Brayton thermosolar plants** **M.J. Santos, C. Miguel-Barbero, R.P. Merchán, A. Medina, A. Calvo Hernández** Department of Applied Physics, University of Salamanca. Spain
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346	**Maximum Power Point Extraction in PV Array Under Partial Shading Conditions Using GWO-Assisted Beta Method** **M. V. Rocha, L. P. Sampaio, S. A. O. Silva** Department of Electrical Engineering Federal University of Technology – UTFPR-CP, Cornélio Procópio – PR - Brazil
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347	**Modelling of Aggregated Power Output of Photovoltaic Power Generation in Consideration of Smoothing Effect of Power Output Fluctuation around Observation Point** **T. Kato(1), T. Murase(2), M. Kurimoto(2), Y. Manabe(1), T. Funabashi(1)** 1. Institute of Materials and Systems for Sustainability (IMaSS) 2. Department of Electrical Engineering, Nagoya University. Japan
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353	**Nontechnical Loss Detection for Metered Customers in Alexandria Electricity Distribution Company Using Support Vector Machine** **A. Hatem Tameem Alfarra(1), B. Amani Attia(2), C. S. M. El Safty(1)** 1. Electrical Engineering & Control Department, Arab Academy for Sience Technology and Maritime Transpotation AASTMT. Egypt 2. Alexandria Electricity Distribution Company (AEDC). Egypt
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359	**Proposal of a Test Bench for Switched Reluctance Machine 8/6 for Wind Energy Application** **R.T. Fidelis(3), G.P. Viajante(1), L.C. Gomes(2), D.A. Andrade(2), E.N. Chaves(1), M.A.A. Freitas(1), C.C. Vieira(3), M.J.M. Filho(2)**

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360	**Comparative Analysis of the 6/4 and 8/6 Switched Reluctance Generator in Different Operating Conditions** **M. A. A. Freitas(1), G. P. Viajante(1), D. A. Andrade(2), E. N. Chaves(1), C.A. Queiroz(1), L. G. W. Silva(1), R. V. R. Silva(1) , R.T. Fideli(2), J.L. Domingos(1)** 1. Federal Institute of Education, Science and Technology of Goiás. Energy Systems Research Center (Núcleo de Pesquisas em Sistemas de Energia - NuPSE) . Brazil 2. Electric Drives Laboratory, Federal University of Uberlândia. Brazil
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365	**A Wind Turbine Blade Damage Detection System Based on Data Analysis: An Academic Example on the Use of Histograms** **Leonardo Acho, Pablo Buenestado** Department of Mathematics, E.E.B.E., Polytechnic University of Catalonia, Barcelona. Spain
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370	**Torrefaction of Portuguese woody biomasses and the evaluation of its properties** **L.J.R. Nunes(1,2), R. Godina(1,3) J.C.O. Matias(1,2,3), J.P.S. Catalão(3,4,5)** 1. DEGEIT - Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro. Portugal 2. GOVCOPP, University of Aveiro.Portugal 3. C-MAST, University of Beira Interior, Covilhã. Portugal 4. INESC TEC and Faculty of Engineering of the University of Porto. Portugal 5. INESC-ID, Instituto Superior Técnico, University of Lisbon. Portugal
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371	**Characterization of the effect of pyrolysis in torrefied wood chips** **L.J.R. Nunes(1,2), R. Godina(1,3) J.C.O. Matias(1,2,3), J.P.S. Catalão(3,4,5)** 1. DEGEIT - Department of Economics, Management, Industrial Engineering and Tourism, University of Aveiro. Portugal 2. GOVCOPP, University of Aveiro. Portugal

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375	**Renewable Energy Storage in the Republic of South Africa** **A.J. van der Walt(1), J.H.C. Pretorius(1), J.H. Enslin(1,2)** Postgraduate School of Engineering Management 1. University of Johannesburg, Johannesburg. South Africa 2. Clemson University, Charleston. USA
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378	**Influence of the compression pressure ratio on the energetic and exergetic efficiency of a solar driven regenerative closed Brayton cycle with helium as working fluid** **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
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383	**Influence of auxiliary mounted passive solar systems on thermal comfort in office building** **M. Belik** Department of Power Engineering and Ecology, University of West Bohemia, Pilse. Czech Republic
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384	**Three-phase four wire shunt active power filter based on Simplified Backstepping technique for DC voltage control** **M. Dellahi(1), Az. Mouhsen(1), H. Maker(1), A. Mouhsen,(1), E. Alameda**

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410	**Economic Analysis for Brazil Residential Consumers Considering the Time-of-use Tariffs and Demand Side Management of Electricity Using HOMER PRO Energy** **O.C.N. Souto, S.B. Silva, D.M. de Souza, J.S.Amaral, G.P. Viajante** Federal Institute of Education, Science and Technology of Goias at Itumbiara, NupSOL. Brazil
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417	**Analysis of the energy conversion efficiency of photovoltaic panels installed on reflective and opaque surface** **Dayane Martins Salles(1,2), Debora Pereira da Silva(3), Joseph Rodrigues Oliveira(4), Luane Schiochet Pinto(1,2), Jussana Milograna(1), Elder Geraldo Domingues(1,2)** 1. Master Program on Sustainable Process Technology 2. Nucleus of Experimental and Technological Studies and Research (NExT) 3. Civil Engineering Program, 4. Control and Automation Engineering Program Federal Institute of Goiás (IFG), Campus of Goiânia – Goiás, Brazil
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418	**Thermodynamic Simulation of Photovoltaic Panels Installed in Surfaces with Different Albedo Indices using the Finite Element Method** **Dayane Martins Salles(1,2), Antônio Pereira Arantes Neto(3), Nikholas Segatti(4), Jussanã Milograna(1), Elder Geraldo Domingues(1,2)** 1. Master Program on Sustainable Process Technology 2. Nucleus of Experimental and Technological Studies and Research (NExT) 3. Mechanical Engineering Program 4. Electrical Engineering Program Federal Institute of Goiás (IFG), Campus of Goiânia – Goiás, Brazil
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430	**Switched Reluctance Machine Modeling through Multilayer Neural Networks** **A. C. F. Mamede(1), J. R. Camacho(1), R. E. Araújo(2)** 1. Department of Electrical Engineering, Universidade Federal de Uberlândia (UFU). Brazil 2. INESC TEC and Faculty of Engineering, University of Porto. Portugal
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436	**Electric vehicles in |Brazil as an alternative to the reduction of air pollution caused by fossil fuels** **Nilcéia Cristina dos Santos(1), Reinaldo Gomes da Silva(2), Alberto Martins Junior(2)** 1. Faculty of Technology of Piracicaba "Dept. Roque Trevisan" (FATEC PIRACICABA) CEETPS, Paula Souza Technological Education State Center Piracicaba/SP. Brazil 2. Engineering School of Piracicaba (EEP) FUMEP, Municipal Foundation of Teaching of Piracicaba. Piracicaba/SP. Brazil
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	emission and summation of electronic household appliances **Ana Maria Blanco(1), Manish Gupta(2), Aurora Gil de Castro(3), Sarah Rönnberg(4), Jan Meyer(1)** 1. Institute for Electrical Power Systems and High Voltage Engineering Technische Universität Dresden. Germany 2. Electrical Engineering Department, Malaviya National Institute of Technology, Jaipur. India 3. Departamento de Arquitectura de Computadores, Electrónica y Tecnología Electrónica, Universidad de Córdoba, Spain 4. Luleå University of Technology, Skellefteå, Sweden
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440	**Analysis of the optimum allocation of BESS for contingency support** **J García-Villalobos, E. Torres, P. Eguía, A. Etxegarai** Department of Electrical Engineering, E.I. Bilbao., University of the Basque Country UPV/EHU. Spain
	PP: 710-715
442	**Power Calculation Algorithm for Single-Phase Droop-Operated Inverters Considering Nonlinear Loads and unsing n-Order SOGI Filtering** **J. El Mariachet(1), J. Matas(1), J. de la Hoz(1) , Y. Al-Turki(2), H. Abdalgader(2)** 1. Department of Electric Engineering, Universidad Politécnica de Cataluña (UPC), Barcelona. Spain. 2. Renewable Energy Research group, King Abdulaziz University (KAU), Jeddah. Saudi Arabia
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443	**A New LPF-Based Grid Frequency Estimation for the SOGI Filter with Improved Harmonic Rejection** **J. Matas(1), H. Martin(1), J. Elmariachet(1), A. Abusorrah(2), Y. Al-Turki(2)** 1. Department of Electric Engineering, Universidad Politécnica de Cataluña (UPC), Barcelona. Spain. 2. Renewable Energy Research group, King Abdulaziz University (KAU), Jeddah. Saudi Arabia
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444	**Modeling and Control of a DC Supply System for Electrical Vehicle Charging Based on Renewable Energy Sources with the Support of Storage** **A. Roque(1,2), V. Fernão Pires(1,2),L. Pedraza(1,3), E. Margato(2,4), D. M. Sousa(2,5)** 1. Department of Electrical Engineering, ESTSetúbal/Instituto Politécnico de Setúbal. Portugal 2. INESC-ID Lisboa. Portugal 3. Universidad Politécnica de Madrid . Spain 4.CEI, ISEL-Instituo Superior de Engenharia de Lisboa, Instituto Politécnico d Lisboa, and INESC-ID. Portugal,

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446	**Characterization of Non-linear Inductors Including Thermal Effects for Power Applications** **G. Lullo(1), S. Rosato(1), D. Scirè(1), G. Vitale(2)** 1. Dipartimento di Energia, Ingegneria dell'Informazione e modelli Matematici, Università di Palermo. Italy 2. Istituto di Studi sui Sistemi Intelligenti per l'Automazione (ISSIA), Consiglio Nazionale delle Ricerche (CNR), Via Dante. Italy
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450	**Integration of maintainability and operativity criteria in the contracts to build under EPC model in energy infrastructures to optimize the OPEX. Example of the methodology to analyse the preferences in the owner and contractor point of view** **Jesus Losada Maseda(1), Almudena Filgueira Vizoso(2), Eugenio Muñoz Camacho(3) , Laura Castro Santos(2), Francisco Javier López Montero(2)** 1. Project and business development manager of Reganosa. Spain 2. Chemical Engineering department. The Coruña University. Spain 3. Chemical Engineering Department . Universidad a Distancia(UNED). Spain
	PP: 741-744
454	**Design and Synthesis of New Fullerene Derivatives for Organic Solar Cells** **Jianping Lu(1), Salima Alem(1), Afshin Dadvand(1), Jianfu Ding(2), Ye Tao(1)** 1. Advanced Electronic and Photonic Research Centre. Canada 2. Security and Disruptive Technologies, National Research Council of Canada
	PP: 745-750
455	**Development of a small wind turbine for stand-alone system in rural environment. Reuse and recycling of electric motors** **J.S. Artal-Sevil(1), R. Dufo(1), M. Astaneh(2), J.A. Domínguez(1), J.L.Bernal-Agustín(1)** 1. Department of Electrical Engineering, Escuela de Ingeniería y Arquitectura. Universidad de Zaragoza. Spain 2. Department of Energy Engineering, Sharif University of Technology, Tehran.Iran
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456	**Analysis of power supply possibilities through lithium batteries connected to the AC grid** **R. Dufo López(1), S. Sanz Ortega(1), J.S. Artal Sevil(1), M. Astaneh(2), J. M. Lujano Rojas(1), J.A. Domínguez Navarro(1), J.L. Bernal Agustín(1)** 1. Department of Electrical Engineering, Escuela de Ingeniería y Arquitectura. Universidad de Zaragoza. Spain 2. Department of Energy Engineering, Sharif University of Technology, Tehran.Iran
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460	**A case study of floating offshore wind park in the Mediterranean** **J. Milagro Serrano(1), J.A. Domínguez-Navarro(1), J.S. Artal Sevil(1), R. Dufo**

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462	**Analysing Effect of Solar Photovoltaic Production on Load Curves and their Forecasting** B. Sinkovics, B. Hartmann Centre for Energy Research, Hungarian Academy of Sciences. Hungary
	PP: 766-771
463	**Investment risk analysis of electricity generation from vinasse biodigestion in the Brazilian Regulated Market** **Luane Schiochet Pinto, Daywes Pinheiro Neto, Elder Geraldo Domingues** Master Program in Sustainable Process Technologies. Federal Institute of Goiás (IFG). Campus of Goiânia – Goiás, Brazil
	PP: 772-777
465	**A three phase *3*-level inverter with reduced THD factor** **J. Iwaszkiewicz, A. Muc** Department of Electrical Engineering. Gdynia Maritime University. Gdynia. Poland
	PP: 778-781
466	**Effect of nitridation temperature on TiO_2 nanotubular structure and its photoelectrochemical performance** **T. Lemes (1), S. Khan(2), E. Leal da Silva(1), L. L. de Costa(3), S. R. Teixeira(2), C. Aguzzoli(4), C.F. Malfatti(1)** 1. LAPEC/PPGE3M, Universidade Federal do Rio Grande do Sul, Porto Alegre/RS. 2. Instituto de Física, Universidade Federal do Rio Grande do Sul, Porto Alegre/RS. 3. LDTM/PPGE3M, Universidade Federal do Rio Grande do Sul, Centro de Tecnologia, Porto Alegre/RS. Brazil 4. PGMAT/UCS, Universidade de Caxias do Sul, Caxias do Sul, RS, Brazil
	PP: 782-788
467	**Speed Estimation of Induction Motor at Low and Zero Speed using High Frequency Signal Injection for Rotor Slot Harmonics Detection** **S. Damkhi(1), M.S. Nait Said(2), N. Nait Said(1)** 1. Department of Electrical Engineering. L.S.P.I.E., Batna University. Batna. Algeria 2. Faculty of Technology University of Batna. Batna. Algeria
	PP: 789-792
468	**Solar Induction Cooker** **S. Karim** Department of Electrical and computer Engineering, Ryerson University, Toronto, Ontario, Canada
	PP: 793-796
470	**Solar Radiation Gridded Satellite data comparison in Gran Canaria Island**

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