

COBEP 2017

Monday, November 20, 2017

10:20AM -

PQ 1 - POWER QUALITY. Chair: Márcio do Carmo Barbosa Poncilio Rodrigues

12:20PM

- 170671 [Fuzzy-Granulation Based Controller for Low Distortion in PWM Inverter with Reduced Load Power](#)
Dante Inga Narvaez, Marcelo Gradella Villalva, *University of Campinas, Brazil*
Evelyn Lopez Vasquez, *Tecnologico de Monterrey, Mexico* .
- 171176 [Development of a Small-Signal Model for a Two-Phase Three-Wire Active Power Filter](#)
Marcio Barbosa Poncilio Rodrigues, *IF Sudeste MG, Brazil*
Pablo Furtado, *Federal University of Juiz de Fora, Brazil*
Cláudio Rodrigues, *Instituto Federal de Educação Ciência e Tecnologia do Sudeste de Minas Gerais, Brazil*
André Augusto Ferreira, Pedro Barbosa, Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*
Rodrigo Ferreira, *Instituto Federal Sudeste de Minas Gerais, Brazil* .
- 171240 [Reactive Power Injection Strategies for Three-Phase Four-Wire Inverters Under Symmetrical Voltage Sags](#)
Frederico Mendes, *Universidade Federal de Minas Gerais, Brazil*
Danilo Brandão, Sidélmo Magalhães Silva, *Federal University of Minas Gerais, Brazil*
Igor Amariz Pires, *Universidade Federal de Minas Gerais, Brazil* .
- 171618 [A Novel Optimized Pulse Pattern for Modular Multilevel Converter in High Power Applications](#)
Marcelo de Castro Fernandes, *Federal University of Juiz de Fora, Brazil*
Gabriel Fogli, *UFJF, Brazil*
Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil*
Pedro de Almeida, *Federal University of Juiz de Fora, Brazil* .
- 171628 [Performance Comparison of Different Power Module applied in Photovoltaic Inverters during Harmonic Compensation](#)
Renata de Sousa, Dhiogo Franco, *Universidade Federal de Viçosa, Brazil*
Rodrigo de Barros, *Universidade Federal de Viçosa, Brazil*
Allan Cupertino, *CEFET-MG, Brazil*
Erick Brito, *UFV, Brazil*
Heverton Pereira, *Universidade Federal de Viçosa, Brazil* .
- 171669 [Modified Series Interleaved Boost For Reduction of the Input Current Harmonics Distortion](#)
Gustavo Cardoso Orsi, *Federal University of Technology, Brazil*
Alceu Andre Badin, *UTFPR, Brazil*
Roger Gules, *Universidade Tecnológica Federal do Paraná, Brazil* .

10:20AM -

RE 1 - RENEWABLE ENERGY. Chair: Robson Bauwelz Gonzatti

12:20PM

- 168581 [Design and Commissioning of Wind Generation System Studies Workbench Using Permanent Magnet Synchronous Machine](#)
Rafael da Silva, *Federal University of Minas Gerais, Brazil*
Camilo L. M. Paula, Frederico F. V. Matos, *Federal University of Itajubá, Brazil*
Clodualdo Sousa, *Universidade federal de Itajubá, Brazil*
Guilherme M. Rezende, *Federal University of Itajubá, Brazil*
Victor F. Mendes, *Federal University of Minas Gerais, Brazil* .
- 170614 [Stator Harmonic Current Compensation of a DFIG Connected to a Grid With Voltage Distortion](#)
Gustavo Gontijo, Thiago Tricarico, Daniel Krejci, Sersan Guedes, *Federal University of Rio de Janeiro, Brazil*
Bruno França, *Fluminense Federal University, Brazil*
Mauricio Aredes, *Federal University of Rio de Janeiro, Brazil* .
- 170646 [Implementation of a single-stage single-phase grid connected PV converter](#)
Robson Bauwelz Gonzatti, *Universidade Federal de Itajubá, Brazil*
Bruno Guimarães, *Itajuba Federal University, Brazil*
Rondineli Pereira, Luiz Eduardo Borges da Silva, *Universidade Federal de Itajubá, Brazil*
Germano Lambert-Torres, *Gnarus Institute, Brazil* .
- 170663 [Control and Operation of Open-End Winding Permanent Magnet Synchronous Wind Generator](#)
Valmor Ricardi Junior, *Federal University of Minas Gerais, Brazil*
Frederico Matos, Victor Magno Rodrigues de Jesus, *Universidade Federal de Minas Gerais, Brazil*
Clodualdo Sousa, *Universidade federal de Itajubá, Brazil*
Lais Eduarda Zica, *Federal University of Itajubá, Brazil*
Victor F. Mendes, *Federal University of Minas Gerais, Brazil* .
- 170824 [Parameter Estimation Technique for Double-diode Model of Photovoltaic Modules](#)
Aguinaldo Nascimento Junior, Marcelo Cavalcanti, *Federal University of Pernambuco, Brazil*
Fabricio Bradaschia, *Universidade Federal de Pernambuco, Brazil*
Emerson Silva, *Federal University of Pernambuco, Brazil*
Leandro Michels, *Universidade Federal de Santa Maria, Brazil*
Luiz Pietta Junior, *Federal University of Santa Maria, Brazil* .
- 170826 [Power Voltage Characteristics and Global MPPT Algorithms for any Severe Partial Shading Condition](#)
Artur Furtado, *Federal University of Pernambuco, Brazil*
Fabricio Bradaschia, *Universidade Federal de Pernambuco, Brazil*
Marcelo Cavalcanti, Leonardo Limongi, *Federal University of Pernambuco, Brazil*
Gustavo Medeiros de Souza Azevedo, *Universidade Federal de Pernambuco, Brazil* .

10:20AM -

MS 1 - MODELING AND SIMULATION. Chair: Alessandro Batschauer

12:20PM

- 170628 [Model Predictive Control of a Modular Multilevel Converter with a reduced number of states](#)
Lais Crispino, *University of Rio de Janeiro, Brazil*
Luis Guilherme Rolim, *Universidade Federal do Rio de Janeiro, Brazil* .
- 170648 [HIL simulation of non linear control methods applied for buck-boost and flyback converters](#)
Arthur Rosa, *UFMG, Brazil*
Matheus Bezerra Eiras da Silva, *Universidade Federal de Minas Gerais - UFMG, Brazil*

- Marcos Campos, *Universidade Federal de Minas Gerais, Brazil*
Renato Santana, *UFMG, Brazil*
Marcos Mendes, Lenin Morais, Seleme Seleme Jr, Porfírio Cortizo, *Universidade Federal de Minas Gerais, Brazil* .
- 170653 [Experimental evaluation of robust and nonrobust H-infinity controllers for three-phase grid-connected converters](#)
Gustavo Koch, *Federal University of Santa Maria, Brazil*
Humberto Pinheiro, *Universidade Federal de Santa Maria, Brazil*
Ricardo Oliveira, *FEEC-UNICAMP, Brazil*
Vinícius Montagner, *Universidade Federal de Santa Maria, Brazil* .
- 170661 [Capacitor Voltage Balancing in a 5-L Full-Bridge Flying Capacitor Inverter](#)
Rodrigo Mauro Moritz, *UDESC- Universidade do Estado de Santa Catarina, Brazil*
Alessandro Batschauer, *UDESC, Brazil* .
- 171077 [High-Frequency Switch Modeling Technique Applied to DC-DC Converters Simulation](#)
Raoni Pegado, *Federal University of Paraíba, Brazil*
Ruan Gomes, Luciano Alves, *Federal University of Campina Grande, Brazil*
Montiê Vitorino, *Universidade Federal de Campina Grande, Brazil*
Yuri Percy Molina Rodriguez, *UFPB, Brazil*
Antonio Filho, *Federal University of Campina Grande, Brazil* .
- 171324 [Circulating Currents Suppression Strategies for Modular Multilevel Converter](#)
Andrei Almeida, *Universidade Federal de Juiz de Fora, Brazil*
Frederico Ghetti, *IF Sudeste MG, Brazil*
Adeilson Ribeiro, *Universidade Federal de Juiz de Fora, Brazil*
Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil* .
- 10:20AM -
12:20PM **PE 1 - POWER ELECTRONICS. Chair: Fernando Luiz Marcelo Antunes**
- 170596 [Detailed Design Procedure of a DC-DC Buck-Boost Converter Employing a Passive Snubber](#)
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Alexandre Rodrigues Vaz, *Federal Center of Technological Education of Minas Gerais, Brazil* .
- 170632 [Analysis of a multi-phase interleaved bidirectional dc/dc power converter with coupled inductor](#)
Robson Mayer, Menaouar Berrehil El Kattel, Maicon Possamai, Claudio Bruning, *Santa Catarina State University - UDESC, Brazil*
Sérgio Vidal Garcia Oliveira, *Universidade Regional de Blumenau - FURB, Brazil* .
- 170669 [Modular 11kW bidirectional onboard charger with SiC-MOSFET Technology for mobile applications](#)
Andreas Greifelt, *FEAM GmbH, Germany*
Georg Heiland, *FinePower GmbH, Germany*
Dieter Gerling, *UniBW Muenchen, Germany* .
- 170679 [Practical Design of A DC-DC Buck Converter Using An RCD Snubber](#)
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Alexandre Rodrigues Vaz, *Federal Center of Technological Education of Minas Gerais, Brazil* .
- 170717 [Conception of High Step-Up DC-DC Boost-Based Converters](#)
Lenon Schmitz, *Federal University of Santa Catarina, Brazil*
Denizar Martins, *Universidade Federal de Santa Catarina, Brazil*
Roberto Coelho, *Federal University of Santa Catarina, Brazil* .
- 171619 [On The Study of the Interleaving Technique Using an Interphase Transformer Considering the Use of SiC](#)
José Araújo, *Universidade Federal do Ceará, Brazil*
Demercil Oliveira Jr, *UFC, Brazil*
Paulo Praça, Luiz Henrique Barreto, *Universidade Federal do Ceará, Brazil* .
- 10:20AM -
12:20PM **MD 1 - ELECTRICAL MACHINE AND DRIVES. Chair: Domingos Sávio Lyrio Simonetti**
- 169664 [FPGA Design Approach of Digital Control of Three -Phase Induction Motor](#)
Cesar Costa, Christian Santin, *IFSP - Institute Federal of Sao Paulo, Brazil* .
- 170477 [Experimental results for predictive direct torque control for a squirrel cage induction motor](#)
Angelo Lunardi, *Universidade Federal do ABC, Brazil*
Alfeu Squarezi, *UFABC, Brazil* .
- 170594 [Implementation details of an adaptive control by a b-spline neural network applied to an asymmetric six-phase induction motor](#)
Paulo Dainez, *Federal Institute of Education, Science and Technology of São Paulo, Brazil*
Edson Bim, *State University of Campinas, Brazil* .
- 170625 [Sensorless Torque Control of an Induction Motor Through Quadrature Voltage Injection](#)
Renan Barroso, *Universidade Federal do Ceará, Brazil*
Tobias Neto, *Federal University of Ceará, Brazil* .
- 170668 [Transients analysis of synchronous and induction generators in parallel operation mode in an isolated electric system](#)
Vinícius Silva, *Federal University of Itajuba, Brazil*
Angelo Rezek, *UNIFEI, Brazil*
Rafael Correa, *Federal University of Itajuba, Brazil* .
- 170907 [Inverter-Based Motor Drive Systems: An Overview from the Electromagnetic Compatibility Perspective](#)
Helder Paula, Caio Fuccio, Philippe Pereira, *Universidade Federal de Minas Gerais, Brazil*
Augusto Silveira, Luciano Gomes, *Universidade Federal de Uberlândia, Brazil* .
- 2:00PM -
4:00PM **MD 2 - ELECTRICAL MACHINE AND DRIVES. Chair: Janaína Gonçalves de Oliveira**
- 170930 [Lifetime Estimation of a Novel High Current Low Resistance Single Phase Plug-in Connector for the ISCAD Application](#)
Benjamin Rubey, Adrian Patzak, Florian Bachheibl, *volabo GmbH, Germany*
Andreas Greifelt, *FEAM GmbH, Germany*
Dieter Gerling, *UniBW Muenchen, Germany* .
- 171334 [Performance Optimization of Switched Reluctance Generator in Wind Systems: An approach based on Design of Computer Experiment](#)
Pedro Jose dos Santos Neto, *University of Campinas, Brazil*

Tárcio Barros, *Universidade Estadual de Campinas, Brazil*
Marcelo Vinicius de Paula, Ernesto Ruppert Filho, *University of Campinas, Brazil*.

171376 [Construction and Measurements of an Electrical Excited Synchronous Machine with Inductive Contactless Energy Transfer to the Rotor](#)

Marcel Maier, Nejila Parspour, Patrick Kleemann, Michael Hagl, *University of Stuttgart, Germany*.

171465 [Methodology for calculating the value of static capacitance between conductors of circular cross-section](#)

Natalia Chagas, Tiago Bandeira Marchesan, *Universidade Federal de Santa Maria, Brazil*.

171493 [Ride-Through Capability Improvement of 30kW DFIG-based Wind Turbine Under Unsymmetrical Voltage Dip](#)

Renato Amorim Torres, *Universidade Federal de Minas Gerais, Brazil*

Victor F. Mendes, *Federal University of Minas Gerais, Brazil*

Edmar Cota, *Centro Federal de Educação Tecnológica de Minas Gerais, Brazil*.

171129 [Modeling and Measurement of Capacitive and Inductive Bearing Current in Electrical Machines](#)

Andreas Bubert, Jiakun Zhang, Rik De Doncker, *RWTH Aachen University, Germany*.

PE 2 - POWER ELECTRONICS. Chair: Marcelo Lobo Heldwein

2:00PM -
4:00PM

171417 [Overvoltage Protection Procedures for High Frequency High Voltage Transformers](#)

Diego Teruo Mendes de Souza, Bruno Valverde, *University of Campinas, Brazil*

José Pomílio, *Unicamp, Brazil*.

170947 [A High static-gain DC-DC-Quadrupler Converter with Coupled-Inductors](#)

Matias Schwambach, *Federal University of Technology, Brazil*

Gustavo Cardoso Orsi, *Federal University of Technology, Brazil*.

Roger Gules, *UTFPR, Brazil*

171246 [A Soft Switching Current Fed Bidirectional Isolated Three-Phase DC-DC Converter](#)

Hermínio Oliveira Filho, *University for the International Integration of the Afro-Brazilian Lusophony (UNILAB), Brazil*

Gilmar Costa, *University for the International Integration of the Afro-Brazilian Lusophony(UNILAB), Brazil*

Antonio dos Santos, *University for the International Integration of the Afro-Brazilian Lusophony UNILAB, Brazil*

Demercil Oliveira Jr, *UFC, Brazil*.

171371 [Analytical Procedure for Dimensioning Transcutaneous Inductive Energy Transfer Systems](#)

Alexander Enssle, Joerg Heinrich, Nejila Parspour, *University of Stuttgart, Germany*.

171372 [A Three-Port Three-Phase Isolated DC-DC Converter Feasible to PV Connection on a DC Distribution System](#)

Raimundo Nonato de Oliveira, *Institute Federal of Ceara - IFCE, Brazil*

Luan Carlos Mazza, *Federal Institute of Ceara - IFCE, Brazil*

Demercil Oliveira Jr, *UFC, Brazil*

Hermínio Oliveira Filho, *University for the International Integration of the Afro-Brazilian Lusophony (UNILAB), Brazil*.

171386 [High Voltage-Gain Interleaved Boost DC-DC Converter with Reduced Capacitance Requirement](#)

Breno Chaves, Mateus Pacheco Vieira, Francisco Barbosa de Brito Júnior, *Federal University of Ceara, Brazil*

Rene Bascopé, *Universidade Federal do Ceará, Brazil*

Bruno de Almeida, *Federal University of Ceara, Brazil*.

172957 [Multi-Winding Bidirectional Flyback Converter](#)

Arceu Campos, *Federal University of Uberlândia, Brazil*

Adjeferson Gomes, *Universidade Federal de Uberlândia, Brazil*

Aniel Moraes, *Federal University of Uberlândia - UFU, Brazil*.

3:10PM -
4:10PM

AT 1 - AUTOMOTIVE APPLICATIONS. Chair: Sérgio Vidal Garcia Oliveira & José Antenor Pomílio

171378 [Analysis of 12-pulse diode rectifier operating in aircraft systems with constant frequency](#)

Láís Vitoi, *Universidade Federal de Juiz de Fora, Brazil*

José Antenor Pomílio, *UNICAMP, Brazil*

Danilo Brandão, *Federal University of Minas Gerais, Brazil*.

171466 [Dynamic Charging of Electric Vehicles - Demonstrator for Contactless Energy Transfer](#)

Philipp Präg, Nejila Parspour, *University of Stuttgart, Germany*.

172896 [Analysis and simulation of a novel coupled inductor bidirectional dc-dc converter](#)

Sérgio Vidal Garcia Oliveira, *Universidade Regional de Blumenau - FURB, Brazil*

Murilo Rosa, *UDESC, Brazil*

Menaouar Berrehil El Kattel, Robson Mayer, Maicon Possamai, *Santa Catarina State University - UDESC, Brazil*.

172945 [Bidirectional Z-Source Inverter Modeling and Smith Predictor Strategy for Minimizing Right Half Zero Plan in the Voltage Loop](#)

Angelo Lanzoni, *Universidade do Estado de Santa Catarina, Brazil*

Cassiano Rech, *Federal University of Santa Maria, Brazil*

Joselito A Heerd, *Universidade de Santa Catarina, Brazil*.

3:10PM -
4:10PM

PD 1 - POWER DEVICES. Chair: João Onofre Pinto

168645 [A comparative efficiency study on bidirectional grid interface converters applied to low power DC nanogrids](#)

Hans Sathler, *Universidade Federal de Minas Gerais, Brazil*

Lara Sathler, *Federal University of Minas Gerais, Brazil*

Frederico Marcelino, *UFMG, Brazil*

Thiago Oliveira, Pedro Donoso-Garcia, Seleme Seleme Jr, *Universidade Federal de Minas Gerais, Brazil*.

171540 [Comparison of Iron Loss Calculation Methods for Soft Magnetic Composite](#)

Samuel Mueller, Marina Keller, Marcel Maier, Nejila Parspour, *University of Stuttgart, Germany*.

177939 [Power semiconductor failures due to cosmic rays](#)

Ricardo Prado, *SEMIKRON, Brazil*

Clovis Gajo, *Semikron, Brazil*.

177940 [Design of medium and high voltage rectifiers with avalanche diodes](#)

Clovis Gajo, *Semikron, Brazil*

Ricardo Prado, *SEMIKRON, Brazil*.

3:10PM -
4:10PM

ED 1 - EDUCATION AND SPECIAL TOPICS. Chair: Robson Bauwelz Gonzatti

170633 [Implementation of a Wind Turbine Emulator Test Bench Using a Squirrel Cage Induction Machine](#)

Gustavo Gontijo, Daniel Krejci, Sersan Guedes, Thiago Tricarico, *Federal University of Rio de Janeiro, Brazil*

- Bruno França, *Fluminense Federal University, Brazil*
Mauricio Aredes, *Federal University of Rio de Janeiro, Brazil*.
- 170650 [Low-Cost Didactic Module For Single-Phase Inverter Teaching](#)
Luiz Pedro Duque da Silva, *Itajuba Federal University, Brazil*
Rondineli Pereira, Robson Bauwelz Gonzatti, Luiz Eduardo Borges da Silva, *Universidade Federal de Itajubá, Brazil*
Germano Lambert-Torres, *Gnarus Institute, Brazil*.
Denis Mollica, *Joselino Santana Filho, EDP Sao Paulo Distribuicao de Energia, Brazil*.
- 170906 [Practical Application of the Physics-of-Failure Approach: Software and New Resources for Reliability Prediction of Power Electronics Systems](#)
Helder Paula, *Universidade Federal de Minas Gerais, Brazil*
Nayara Grazielle do Nascimento Irias, *Federal University of Minas Gerais, Brazil*.
- 171201 [Interactive Android Application For Education In AC-DC Converters](#)
Flávio Gonçalves, *São Paulo State University (Unesp), Institute of Science and Technology, Brazil*
Fernando Marafão, *Unesp - Univ. Estadual Paulista, Brazil*
Gustavo Landi, *São Paulo State University (Unesp), Institute of Science and Technology, Brazil*
Helmo Paredes, *Unesp Campus de Sorocaba, Brazil*.

Tuesday, November 21, 2017

10:20AM - **ED 2 - EDUCATION AND SPECIAL TOPICS. Chair: Fernando Marafão**

- 12:20PM 171204 [Low Cost Digital Module for Demonstration of Modulation Strategies in DC-to-AC Converters](#)
Flávio Gonçalves, *São Paulo State University (Unesp), Institute of Science and Technology, Brazil*
Fernando Marafão, *Unesp - Univ. Estadual Paulista, Brazil*
Matheus Dias, *São Paulo State University (Unesp), Institute of Science and Technology, Brazil*
Helmo Paredes, *Unesp Campus de Sorocaba, Brazil*.
- 171452 [A Guideline for Employing PSIM on Power Converter Applications: prototyping and educational tool](#)
Augusto Alonso, *Sao Paulo State University (UNESP), Brazil*
Fernando Marafão, *Unesp - Univ. Estadual Paulista, Brazil*
Danilo Brandão, *Federal University of Minas Gerais, Brazil*
Elisabetta Tedeschi, *Norwegian University of Science and Technology, Norway*
Joel Filipe Guerreiro, *UNICAMP, Brazil*.
- 171467 [FPGA APPLIED TO THE CONTROL OF DC-AC CONVERTERS USING REPETITIVE AND FEEDFORWARD CONTROL LAWS](#)
Nei Souza, *Universidade Federal de Uberlândia, Brazil*.
- 171475 [A Compact FPGA-Based Single-Phase Cascaded H-Bridge Multilevel Inverter for Teaching and Research Activities](#)
Leonardo Göbel Fernandes, Carolina Antunes Coelho, *Universidade Tecnológica Federal do Paraná, Brazil*
Amauri Asséf, *Federal University of Technology, Brazil*.
- 171489 [Development of a Bench to Simulate a PMSG Wind Turbine Using a Frequency Inverter](#)
Rachel Carminati, Domingos Simonetti, José Luiz Vieira, Geisa Costa, Tiara Freitas, *UFES, Brazil*.
- 171580 [Estimation of losses in semiconductors of power through simulation](#)
Samuel Figueiredo, *Federal University of Piauí, Brazil*
Ranoyca Silva, *University for International Integration of the Afro-Brazilian Lusophony, Brazil*
Amanda Monteiro, *Federal University of Campina Grande, Brazil*
Hermínio Oliveira Filho, *University for the International Integration of the Afro-Brazilian Lusophony (UNILAB), Brazil*.

10:20AM - **PE 3 - POWER ELECTRONICS. Chair: Wilson Komatsu**

- 12:20PM 170676 [A DC-DC Buck-Boost Converter Based on The Three-State Switching Cell](#)
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Paulo Henrique Feretti, *pauloferetti@gmail.com, Brazil*.
- 171442 [A Five-Level Stacked Neutral Point Clamped Converter Based On Multi-State Switching Cell](#)
João Neto, *Federal University of Pará, Brazil*
Rene Bascopé, *Universidade Federal do Ceará, Brazil*.
- 171460 [Analysis of Operation Regions of an Isolated Bidirectional Dual Active Bridge DC-DC Converter with LC Coupling](#)
Bruno Enomoto, *University of Sao Paulo - Polytechnic School, Brazil*
Kelly Carvalho, *Universidade de São Paulo, Brazil*
Lourenço Matakas Junior, *Universidade de São Paulo, Brazil, Brazil*.
Wilson Komatsu, *Universidade de São Paulo, Brazil, Brazil*.
- 171462 [Extension of the Operating Region of a Nine-Level Asymmetrical Flying Capacitor Inverter](#)
Gabriel Saccol, *Universidade Federal de Santa Maria, Brazil*
Cassiano Rech, *Federal University of Santa Maria, Brazil*
Julian Giacomini, *Farroupilha Federal Institute, Brazil*
Alessandro Batschauer, *UDESC, Brazil*.
- 171479 [Design of an Efficient Hybrid AC-DC-AC Converter Using Silicon Carbide for UPS Applications: A Comparison](#)
Wendell Alves, *Graduate Program in Electrical Engineering - Universidade Federal de Minas Gerais, Brazil*
Lenin Morais, Porfírio Cortizo, *Universidade Federal de Minas Gerais, Brazil*.
- 171488 [Single-Stage AC/DC Converter Based on SEPIC Topology Operating in Continuous Conduction Mode](#)
Marcos Ewerling, *Federal University of Technology - Paraná (UTFPR), Brazil*
Carlos Illa Font, *Federal University of Technology - Paraná, Brazil*.

10:20AM - **PQ 2 - POWER QUALITY. Chair: Marcello Mezaroba**

- 12:20PM 171821 [A Control Strategy for a Series APF with Load-Bus Side Feedback that Avoids Transformer Saturation](#)
Guilherme da Silva Fischer, *UDESC, Brazil*
Alisson Mengatto, *Santa Catarina State University, Brazil*
Marcello Mezaroba, *UDESC, Brazil*.
- 172034 [Islanding Detection Using Impedance Measurements Techniques Based On Wavelet Injection](#)
Ramon Oliveira, *Federal University of Juiz de Fora, Brazil*
Henrique Monteiro, *UFJF, Brazil*
Renato Ribeiro, Leandro Silva, *Universidade Federal de Juiz de Fora, Brazil*
Carlos Duque, *Federal University of Juiz de Fora, Brazil*.

- 172523 [FPGA-based Power Meter Implementation for Three-Phase Three-Wire and Four-Wire Power Systems, according to IEEE 1459-2010 Standard](#)
Luis De Oro Arenas, *Sao Paulo State University, Brazil*
Guilherme Melo, *UNESP - Campus de Ilha Solteira, Brazil*
Carlos Canesin, *Sao Paulo State University - UNESP, Brazil*.
- 172901 [Five Level Anpc Converter Applied as a Single-Phase Shunt Active Power Filter with Features to Limit and Optimize the Converter Power Rating](#)
Edson Acordi, *Instituto Federal do Parana - IFPR, Brazil*
Rodrigo Barriviera, *Federal Institute of Parana - IFPR, Brazil*
Ricardo Machado, *Universidade de São Paulo, Brazil*.
- 172903 [Active Anti-islanding Protection Method Based on Active Power Flow Applied to VSI-based Distributed Generation](#)
Marina Carvalho, *Universidade de São Paulo, Brazil*
Rafael Magossi, *University of São Paulo, Brazil*
Mateus Quinalia, *Universidade de São Paulo, Brazil*
Klebber Ottoboni, *University of Sao Paulo, Brazil*
Ricardo Machado, *Universidade de São Paulo, Brazil*.
- 172908 [Compensation of Disturbances from the Electrical Network using the Dynamic Voltage Restorer \(DVR\)](#)
Dalmo Cardoso da Silva Júnior, *Universidade Federal de Juiz de Fora, Brazil*
Josué Lima da Silva, *Centro Federal de Educação Tecnológica, Brazil*
Janaina Gonçalves de Oliveira, *Universidade Federal de Juiz de Fora, Brazil*
Marlon José do Carmo, *Centro Federal de Educação Tecnológica de Minas Gerais, Brazil*
Matusalém Lanes, *Universidade Federal do Rio de Janeiro, Brazil*.
- 10:20AM - 12:20PM **RE 2 - RENEWABLE ENERGY. Chair: Denizar Cruz Martins**
- 171144 [Photovoltaic Micro-Inverter with Active Filtering and Thin-Film Capacitors](#)
Gustavo Knabben, *Universidade Federal de Santa Catarina, Brazil*
Lenon Schmitz, *Federal University of Santa Catarina, Brazil*
Odair José Custódio, *Inergiae Conversores Estáticos, Brazil*
Renato Zampiroli de Medeiros, *Empresa de Luz e Força Santa Maria, Brazil*
Arlan Luiz Bettiol, *A Vero Domino Consultoria e Pesquisa, Brazil*
Roberto Coelho, *Federal University of Santa Catarina, Brazil*
Denizar Martins, *Universidade Federal de Santa Catarina, Brazil*.
- 171381 [Resonant Harmonic Compensation For Synchronverter, Integrating Wind And Photovoltaic Power Generation Into An Electrical Grid, Case Study: Nonlinear And Unbalanced Load](#)
Jorge Caicedo, André Ramos de Castro, *UFRJ, Brazil*
Bruno França, *Fluminense Federal University, Brazil*
Mauricio Aredes, *Federal University of Rio de Janeiro, Brazil*.
- 171430 [A Novel Stator Voltage Distortion and Unbalance Compensation of a DFIG With Series Grid Side Converter Using Adaptive Resonant Controllers](#)
Gustavo Gontijo, Thiago Tricarico, Daniel Krejci, *Federal University of Rio de Janeiro, Brazil*
Bruno França, *Fluminense Federal University, Brazil*
Mauricio Aredes, *Federal University of Rio de Janeiro, Brazil*.
- 171457 [Single-Phase To Three-Phase Reduced-Switch-Count Converters Applied To Wind Energy Conversion Systems Using Doubly-Fed Induction Generator](#)
Guilherme Leandro, Emerson Soares, Nady Rocha, *Universidade Federal da Paraíba, Brazil*.
- 171506 [Efficient Scheme of Battery Charging Based on One Cycle Control Applied in Photovoltaic Systems](#)
João Teixeira, *Federal Institute of Education, Science and Technology of Rio Grande do Norte, Brazil*
Andrés Salazar, Alan Leite, André Hyago, Rafael Araújo, *UFRN, -- Select Country --*.
- 171514 [Maximum Power Point Tracking of a Wind Generator using a SEPIC Converter with LMI Control](#)
Igor Henrique Oliveira, *State University of Londrina (UEL), Brazil*
Newton da Silva, *Universidade Estadual de Londrina, Brazil*.
- 10:20AM - 12:20PM **SG 1 - SMART GRIDS. Chair: Luiz Henrique Silva Colado Barreto**
- 171021 [Advantages of Grid-Tied DC microgrid](#)
Marcello Neves, *Federal University of Rio de Janeiro, Brazil*
Maynara Aredes, *Universidade Federal do Rio de Janeiro, Brazil*
Hamidreza Khezri, Elisa Ida, Mauricio Aredes, *Federal University of Rio de Janeiro, Brazil*.
- 171507 [Analysis of AC Dispatchable Microgrid During Grid-connected and Isolated Modes Transitions](#)
Gabriel Fogli, *UFJF, Brazil*
Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil*.
- 171321 [Multiobjective Approach for Power Flow and Unbalance Control in Low-Voltage Networks Considering Distributed Energy Resources](#)
William Ferreira, *Federal University of Minas Gerais, Brazil*
Danilo Iglesias Brandao, Frederico G. Guimarães, *UFMG, Brazil*
Elisabetta Tedeschi, *Norwegian University of Science and Technology, Norway*
Fernando Marafão, *Unesp - Univ. Estadual Paulista, Brazil*.
- 171322 [One-Cycle Control Based Maximum Power Point Tracker Using Constant Voltage Method for Battery Charging Applications](#)
João Teixeira, *Federal Institute of Education, Science and Technology of Rio Grande do Norte, Brazil*
Andrés Salazar, André Hyago, Alan Leite, *UFRN, Brazil*.
- 171473 [Reduced-Order Model of AC Microgrid for Stability Analysis and Adjustment of Droop Control](#)
Everton Correa, *State University of Santa Catarina, Brazil*
Marcello Mezaroba, *UDESC, Brazil*
Gustavo Azevedo, *Universidade Federal de Pernambuco, Brazil*.
- 170963 [VSG Based Control Application for Inverter-Interfaced Distributed Generators in Microgrids](#)

César Palacio Restrepo, *Santa Catarina State University, Brazil*
José Renes Pinheiro, *Federal University of Santa Maria, Brazil*
Marcello Mezaroba, *UDESC, Brazil*.

- 171663 [Analysis, Design and Implementation of a Isolated Full-Bridge Converter for Battery Charging](#)
Edivan Carvalho, *Federal University of Technology - Paraná, Brazil*
Emerson Carati, Jean Patric da Costa, *Universidade Tecnológica Federal do Paraná, Brazil*
Carlos Marcelo de Oliveira Stein, *Federal Technological University of Paraná, Brazil*
Rafael Cardoso, *Universidade Tecnológica Federal do Paraná, Brazil*.

2:00PM -
4:00PM

LI 1 - LIGHT APPLICATIONS. Chair: Edilson Mineiro Sá Junior

- 171200 [A Charge-Pump LED Driver with PFC and Low-Frequency-Flicker Reduction](#)
Rodrigo Santos, *Federal University of Ceara, Brazil*
Diogo Rufino, Maxwell Morais, *Federal Institute of Ceará, Brazil*
Edilson Sá Jr., *Instituto Federal de Educação, Ciência e Tecnologia do Ceará - Campus Sobral, Brazil*.
- 171344 [Comparative Analysis of Basic Single-Stage Non-Isolated AC-DC Topologies Employed as High-Current COB LED Drivers](#)
Denis de Castro Pereira, Wesley de Paula, Pedro Tavares, *Federal University of Juiz de Fora, Brazil*
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*.
- 171409 [Application of a Flyback Converter and Variable Pulse Position Modulation for Visible Light Communication](#)
Marlon Salmento, Rafael Brier, Jhulliane Amaral, *Federal University of Juiz de Fora, Brazil*
Lucas Diniz, Vinicius Albuquerque, *Universidade Federal de Juiz de Fora, Brazil*
Guilherme Márcio Soares, *UFJF, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*.
- 171445 [Self-Oscillating Resonant Converter for LED Applications at 500 kHz](#)
William da Rosa, Alysson Ranieri Seidel, Fábio Bisogno, *Federal University of Santa Maria, Brazil*
Maikel Menke, *Universidade Federal de Santa Maria, Brazil*.
- 172959 [A Comparative Study the Percent Flicker and Photometric Measurement in Three-Phase and Single-Phase Drivers](#)
Maxwell Morais, Diogo Rufino, Pedro Ferreira, *Federal Institute of Ceará, Brazil*
Rodrigo Santos, *Federal University of Ceara, Brazil*
Edilson Sá Jr., *Instituto Federal de Educação, Ciência e Tecnologia do Ceará - Campus Sobral, Brazil*.

2:00PM -
4:00PM

MD 3 - ELECTRICAL MACHINE AND DRIVES. Chair: Marcelo Aroca Tomim

- 171659 [Comparative study of PI-AW and MPC-T controllers, with feedback noise applied for speed control to a Switched Reluctance Motor \(SRM\)](#)
Misael Quispe Maidana, *University Federal of Ceará, Brazil*
Wellington Silva, Wilkey Correia, Bismark Torrico, *Universidade Federal do Ceará, Brazil*
Fabricio Gonzalez Nogueira, *University Federal of Ceará, Brazil*.
- 172698 [Analytical modeling of permanent magnetic synchronous motors considering spatial harmonics](#)
Amir Ebrahimi, *Fraunhofer IPA, Germany*.
- 171723 [Analysis Of Modulation Techniques For An Alternative Five-Level NPC Converter Used On Adjustable-Speed Drives](#)
Ramon Souza, *Centro Federal De Educação Tecnológica De Minas Gerais, Brazil*
José Lucas de Lima Magalhães, *Centro Federal de Educação Tecnológica de Minas Gerais, Brazil*
Gabriela Silva, *Federal Center of Technological Education of Minas Gerais, Brazil*
Alex-Sander A. Luiz, Marcelo Stopa, *Centro Federal de Educação Tecnológica de Minas Gerais, Brazil*.
- 172849 [Silent Low Speed Self-Sensing Strategy for Permanent Magnet Synchronous Machines Based on Subtractive Filtering](#)
Joao Bonifacio, Notker Amann, *ZF Friedrichshafen AG, Germany*.
Ralph Kennel, *Technical University of Munich, Germany*.
- 171568 [Cost Function Tuning Methodology for FCS-MPC Applied to PMSM Drives](#)
Arthur Bartsch, *Universidade do Estado de Santa Catarina, Brazil*
Gabriel Negri, *UDESC, Brazil*
Mariana Cavalca, Jose Oliveira, Ademir Nied, *Universidade do Estado de Santa Catarina, Brazil*.
- 171602 [An Optimal MIMO Control Approach for PMSM Drives](#)
Christian Meirinho, *Universidade do Estado de Santa Catarina, Brazil*
José de Oliveira, *UDESC, Brazil*
Mariana Cavalca, Arthur Bartsch, Jose Oliveira, *Universidade do Estado de Santa Catarina, Brazil*.

2:00PM -
4:00PM

MS 2 - MODELING AND SIMULATION. Chair: Fernando Lessa Tofoli & Lourenço Matakas Junior

- 169639 [Small-Signal Model Validation of A SEPIC Converter Based on the Three-State Switching Cell in CCM Using the PWM Switch Model](#)
Fernando Lessa Tofoli, José Augusto Rocha Carvalho, *Universidade Federal de São João del-Rei, Brazil*.
- 171139 [A Control Technique to Balance the Voltage of DC-Link for Three-Level NPC Converter](#)
Abinadabe Andrade, *Universidade Federal de Campina Grande, Brazil*
Luciano Barros, *Federal University of Campina Grande, Brazil*
Alvaro Maciel, *Instituto Federal de Educação, Ciência e Tecnologia da Paraíba, Brazil*
Reuben Rezende de Sousa, *Universidade Federal de Campina Grande, Brazil*
Marcelo Vieira, *Universidade Federal de Sergipe, Brazil*.
- 171347 [Decoupled Stationary ABC Frame Current Control of Three-Phase Four-Leg Four-Wire Converters](#)
Pedro Hayashi, *Universidade de São Paulo, Brazil*.
Lourenço Matakas Junior, *Universidade de São Paulo, Brazil*.
- 171358 [Fullbridge MMC Control for Hybrid HVDC Systems](#)
Jose Rafael Lebre, Edson H. Watanabe, *COPPE/UFRRJ, Brazil*.
- 171443 [Modeling and Control of AC Current and DC Voltage of PWM Converters using Polynomial RST and PI Controllers](#)
Wilson Santana, Camila Salomon, *Universidade Federal de Itajuba, Brazil*
Germano Lambert-Torres, *Federal University of Itajuba, Brazil*
Eduardo Borges, *Universidade Federal de Itajubá, Brazil*
Erik Bonaldi, Levy Oliveira, *PS Soluções, Brazil*
Denis Mollica, Joselino Santana Filho, *EDP Sao Paulo Distribuicao de Energia, Brazil*.

- 171458 [H-infinity robust control with application for active power filters](#)
Gustavo Koch, Caio Osorio, *Federal University of Santa Maria, Brazil*
Humberto Pinheiro, Robinson Camargo, *Universidade Federal de Santa Maria, Brazil*
Ricardo Oliveira, *FEEC-UNICAMP, Brazil*
Vinicius Montagner, Alexandre Pereira, *Universidade Federal de Santa Maria, Brazil*.
- 172894 [Cascade DC/DC Converter Modeling Developed to Supercapacitor Energy Management System](#)
Jonathan Hunder Dutra Gherard Pinto, Guilherme Avelar, Salatiel Lobato, *Universidade Federal de Juiz de Fora, Brazil*
Ettore Aquino, *Federal University of Juiz de Fora, Brazil*
Marcio Barbosa Poncilio Rodrigues, *IF Sudeste MG, Brazil*
Marcelo Tomim, *UFJF, Brazil*
Pedro Barbosa, André Augusto Ferreira, *Universidade Federal de Juiz de Fora, Brazil*.
- 2:00PM - **SG 2 - SMART GRIDS. Chair: Francisco de Assis dos Santos Neves & Cassiano Rech**
- 4:00PM 171519 [A case study of adaptive microgrid protection during transitions and operations](#)
Bruno I. Pacheco, Marcos A. I. Martins, Cesare Q. Pica, Nilo Rodrigues, *ERTI Foundation, Brazil*.
- 171546 [Implementation of Droop Control with Enhanced Power Calculator for Power Sharing on a Single-Phase Microgrid](#)
Tiago Cardoso, *Federal University of Pernambuco, Brazil*
Gustavo Medeiros de Souza Azevedo, *Universidade Federal de Pernambuco, Brazil*
Marcelo Cavalcanti, Francisco Neves, Leonardo Limongi, *Federal University of Pernambuco, Brazil*.
- 171595 [A solution proposal for communication and management of converters operating in microgrids](#)
Guilherme Eichstädt, Felipe Joel Zimann, *Universidade do Estado de Santa Catarina - UDESC, Brazil*
Marcello Mezaroba, *UDESC, Brazil*
Christofer Schwartz, *Universidade do Estado de Santa Catarina, Brazil*.
- 171607 [Comparative analysis of predictive current control techniques applied to single-phase grid-connected inverters](#)
Caio Osorio, *Federal University of Santa Maria, Brazil*
Guilherme da Silva, *Federal University of Pampa, Brazil*
Julian Giacomini, *Farrroupilha Federal Institute, Brazil*
Cassiano Rech, *Federal University of Santa Maria, Brazil*.
- 171622 [Impedance Shaping of Grid-Connected Three-Phase PV Systems](#)
João Silva, Evandro Nunes, *UFRN, Brazil*
Thiago Rocha, *DEE/UFRN, Brazil*
Flávio Costa, *Federal University of Rio Grande do Norte, Brazil*.
- 171626 [Impact of pv systems on microgrids under different levels of penetration and operational scenarios](#)
Ricardo Lucio De Araujo Ribeiro, Evandro Nunes, *UFRN, Brazil*
Thiago Rocha, *DEE/UFRN, Brazil*
Flávio Costa, Denis Alves, *Federal University of Rio Grande do Norte, Brazil*
Everton Dantas, *UFRN, Brazil*.
- 4:40PM - **AT 2 - AUTOMOTIVE APPLICATIONS. Chair: José Antenor Pomilio.**
- 6:40PM 171495 [Modeling and Prototype of a Dynamic Wireless Charging System Using LSPS Compensation Topology](#)
Glauber Lima, *Universidade Federal de Santa Catarina, Brazil*
Ruben Godoy, *Universidade Federal de Mato Grosso do Sul, Brazil*.
- 171523 [CBERS04A power supply simulation and power budget analysis](#)
Renato Magalhaes, *Instituto Nacional de Pesquisas Espaciais, Brazil*.
- 171729 [Analysis and Operation of an Integrated Battery Charger Using the EV Traction Motor as Filter](#)
Alisson Mengatto, *Santa Catarina State University, Brazil*
Joselito A Heerd, *Universidade de Santa Catarina, Brazil*.
- 172876 [Railway Trajectory Modeling For Simulation Of Locomotives Drive Systems](#)
Lucas de Paula Resende, Loan Silva, *Federal University of Juiz de Fora, Brazil*
Marcelo Tomim, *UFJF, Brazil*.
- 172935 [Modeling and Control of Interleaved Buck Converter for Electric Vehicle Fast Chargers](#)
Gleisson Balen, *Universidade Federal de Santa Maria, Brazil*
Andrei Reis, *GEPOC - Federal University of Santa Maria, Brazil*
Humberto Pinheiro, Luciano Schuch, *Universidade Federal de Santa Maria, Brazil*.
- 172937 [Wireless power transmission applied to pure electric vehicle](#)
Marcus Jorgetto, *IFMS - Institute Federal of Education, Science and Technology of Mato Grosso do Sul, Brazil*
Guilherme Melo, *UNESP - Campus de Ilha Solteira, Brazil*
Jean Ribeiro, *Universidade Estadual Paulista - UNESP, Brazil*
Carlos Canesin, *Sao Paulo State University - UNESP, Brazil*.
- 172958 [Modularized bidirectional step-up DC-DC converter with predictive battery equalization method](#)
Edson Lorencetti, *Santa Catarina State University, Brazil*
Joselito A Heerd, *Universidade de Santa Catarina, Brazil*.
- 4:40PM - **IA - INDUSTRY APPLICATIONS. Chair: João Onofre Pinto**
- 6:40PM 171502 [Adaptions in a Three Phase Water Pump Drive to Improve Dynamic Control and Reduce Costs](#)
Caio da Silva Moraes, Ruben Godoy, Luigi Galotto, *Universidade Federal de Mato Grosso do Sul, Brazil*.
- 171707 [An Aiding Tool to the Design and Simulation of Multilevel Inverters](#)
Samuel Mesquita, *Federal University of Ceara, Brazil*
Fernando Antunes, Sergio Daher, *Federal University of Ceará, Brazil*
Rene Bascopé, *Universidade Federal do Ceará, Brazil*.
- 171715 [Energy efficiency in the replacement of fluorescent lamps by led: application in a store](#)
Larissa Souza Pereira, Yury Pontes, *Federal University of Ceará, Brazil*
Francisco Costa, *Irla Maria Pedrosa Rodrigues*
- 172888 [Selective Compensation of Harmonics Applied in a Multi-Level Single-Phase UPOC System](#)
Rodrigo Barriviera, *Federal Institute of Parana - IFPR, Brazil*
Edson Acordi, *Instituto Federal do Parana - IFPR, Brazil*
Ricardo Machado, *Universidade de São Paulo, Brazil*.

	172938	Droop control strategy using resonant controllers to achieve resistive output impedance characteristics for UPS inverters Roberto Carballo, Fernando Botteron, <i>Universidad Nacional de Misiones, Argentina</i> Germán Oggier, <i>Universidad Nacional de Río Cuarto, Argentina</i> Guillermo Oscar García, <i>Grupo de Electrónica Aplicada, Argentina</i> .
	171543	Solid-State Light Simulator for Horticultural Applications Klaus Martin, <i>Federal University of Santa Maria, Brazil</i> Marcelo Da Silva, Saul Bonaldo, Olinto Araújo, <i>Universidade Federal de Santa Maria, Brazil</i> .
	172844	DEVELOPMENT AND IMPLEMENTATION OF A SMART INDUCTION STOVE Diego Chacón, <i>Universidad Politécnica Salesiana, Ecuador</i> .
4:40PM - 6:40PM		RE 3 - RENEWABLE ENERGY. Chair: Fernando Soares dos Reis
	171573	Control strategy for a current-source boost-buck converter for PV systems Daniel Westerman Spier, <i>Federal University of Technology - UTFPR-CP, Brazil</i> German Oggier, <i>Universidad Nacional de Río Cuarto, Argentina</i> Sergio Oliveira da Silva, <i>Universidade Tecnológica Federal do Paraná, Brazil</i> .
	171590	DESIGN AND IMPLEMENTATION OF LEAD-ACID BATTERY STATE-OF-HEALTH AND STATE-OF-CHARGE MEASUREMENTS Gabriel Bressanini, Tiago Busarello, <i>Federal University of Santa Catarina, Brazil</i> Adriano Péres, <i>Universidade Federal de Santa Catarina - UFSC Blumenau, Brazil</i> .
	171593	A Zero Axis Robust Model Reference Adaptive Controller Applied to Voltage Regulation in Standalone Self-Excited Induction Generator under Unbalanced Loads Francisco Gentile, Victor Kurtz, <i>Universidad Nacional de Misiones, Argentina</i> Lucas Scherer, <i>UFSM, Brazil</i> Robinson Camargo, <i>Universidade Federal de Santa Maria, Brazil</i> .
	171624	SEPIC Converter With Wide Bandgap Semiconductor for PV Battery Charger Manisha Maharjan, Prajina Tandukar, Abhilasha Bajracharya, Fernando Bereta dos Reis, Ujjwol Tamrakar, Dipesh Shrestha, <i>South Dakota State University, USA</i> Fernando dos Reis, <i>PUCRS, Brazil</i> Reinaldo Tonkoski Jr., <i>Concordia University, Canada</i> .
	172301	Sliding Mode Control of a Grid-Emulator Converter Applied on a PHIL Igor Souza, <i>Universidade Federal de Juiz de Fora, Brazil</i> Pedro de Almeida, <i>Federal University of Juiz de Fora, Brazil</i> Pedro Barbosa, <i>Universidade Federal de Juiz de Fora, Brazil</i> .
	171672	Performance Comparison Of Igbts And Sic-Mosfet Applied In Photovoltaic Inverters During Reactive Power Injection Paulo Júnior, <i>University of Viçosa, Brazil</i> Lara Rios, Wesley Ribeiro, <i>Universidade Federal de Viçosa, Brazil</i> Allan Cupertino, <i>CEFET-MG, Brazil</i> Heverton Pereira, <i>Universidade Federal de Viçosa, Brazil</i> .
4:40PM - 6:40PM		MS 3 - MODELING AND SIMULATION. Chair: Leandro Michels & Ernane Antônio Alves Coelho
	172963	AN ALTERNATIVE ANALYSIS OF AC-AC PWM CONVERTER VOLTAGE STABILIZER Ana Caroline Costa, <i>Universidade Federal de Uberlândia, Brazil</i> Antônio Oliveira Costa Neto, <i>Federal University of Uberlândia, -- Select Country --</i> Joaquim Henrique Reis, Ernane A. A. Coelho, <i>Universidade Federal de Uberlândia, Brazil</i> Luiz Freitas, <i>Universidade Federal de Uberlândia - Núcleo de Pesquisa em Eletrônica de Potência, Brazil</i> Joao Vieira Jr, <i>Universidade Federal de Uberlândia, Brazil</i> Luiz Carlos Freitas, <i>Universidade Federal de Uberlândia, Brazil</i> .
	171477	Flexible Control System For Experimental Evaluation Of Static Converters Applied To Dc/Dc Converters Paula Stael Barbosa, <i>Centro Federal de Educação Tecnológica de Minas Gerais-CEFET-MG, Brazil</i> Jéssica Bertolino Gregório, <i>CEFET-MG, Brazil</i> Matusalém Lanes, <i>Universidade Federal do Rio de Janeiro, Brazil</i> Natã Franco Soares de Bem, <i>Centro Federal de Educação Tecnológica de Minas Gerais, Brazil</i> .
	171481	Finite Set Model Predictive Control of Grid Connected Split-Source Inverters Juliano Borges, Felipe Grigoletto, <i>Universidade Federal do Pampa, Brazil</i> .
	171531	MODELING AND SIMULATION OF CONTROLLABLE AC SERIES RESISTIVE LOAD Rafael Oliveira, Luis Ferreira, <i>Federal University of Itajuba, Brazil</i> Enio Roberto Ribeiro, <i>UNIFEI, Brazil</i> .
	171551	Considerations on One Cycle Control Technique Aluisio Bento, <i>universidade estadual do rio de janeiro, Brazil</i> Luis Monteiro, <i>UERJ, Brazil</i> .
	171566	Cascaded MPPT Control with Adaptive Voltage Controller Applied to Boost Converters for PV Applications Lucas Bellinaso, <i>Universidade Federal de Santa maria, Brazil</i> Mauro Fernando Basquera Júnior, <i>PHB Eletrônica Ltda, Brazil</i> Rodrigo Padilha Vieira, <i>Federal University of Santa Maria, Brazil</i> Hilton Gründling, <i>UFSM, Brazil</i> Leandro Michels, <i>Universidade Federal de Santa Maria, Brazil</i> .
	172899	Design and implementation of a predictive current controller applied to regulate a battery bank's power flow connected to a DC microgrid Pedro Peters, <i>Federal University of Juiz de Fora (UFJF), Brazil</i> João Pedro Peters Barbosa, <i>Universidade Federa de Juiz de Fora, Brazil</i> Pedro de Almeida, <i>Federal University of Juiz de Fora, Brazil</i> Rodolfo Lacerda Valle, <i>Universidade Federal de Juiz de Fora, Brazil</i> .
Wednesday, November 22, 2017		
10:20AM - 12:20PM		MD 4 - ELECTRICAL MACHINE AND DRIVES. Chair: Richard Magdalena Stephan
	172870	Mathematical modeling and numerical simulation of locomotives electrical drive systems in Modelica Loan Silva, Lucas de Paula Resende, <i>Federal University of Juiz de Fora, Brazil</i> Marcelo Tomim, <i>UFJF, Brazil</i> .

- 172875 [Sensorless Vector Control for BLDC Machine](#)
Thales Portes de Almeida, Geyverson Teixeira de Paula, *Universidade de São Paulo, Brazil*
Allan de Castro, *USP, Brazil*
William César Andrade Pereira, José Roberto Monteiro, *Universidade de São Paulo, Brazil* .
- 172877 [Real-Time Simulator of Interior Permanent-Magnet Synchronous Motor Based on FPGA Devices](#)
Eisenhauer Fernandes, *Federal University of Campina Grande, Brazil* .
- 172898 [Brushless Cascaded Doubly-fed Induction Machine: Modeling and Simulation](#)
Ryan Berriel, *Universidade Federal do Rio de Janeiro, Brazil*
Richard Stephan, *COPPE-UFRJ, Brazil*
Ivan Eduardo Chabu, *USP, Brazil*
Ântonio Ferreira, *Universidade Federal do Rio de Janeiro, Brazil* .
- 172907 [Induction motor parameter estimation from manufacturer data using genetic algorithms and heuristic relationships](#)
Sandro Lima, Carlos Wengerkiewicz, *UFSC, Brazil*
Nelson Batistela, Nelson Sadowski, *Universidade Federal de Santa Catarina, Brazil*
Pedro Da Silva Jr., *IFSC, Brazil*
Anderson Beltrame, *ENGIE Brasil Energia, Brazil* .
- 172919 [Parameter estimation of the transient model of a synchronous generator from accessible measurements and with parameter constraints](#)
Taylon Landgraf, Elmer Cari, *University of São Paulo, Brazil*
Luis Alberto, *Universidade de São Paulo, Escola de Engenharia de São Carlos, Departamento de Engenharia Elétrica, Brazil* .
- 10:20AM - 12:20PM **MS 4 - MODELING AND SIMULATION. Chair: Vinícius Montagner**
- 171534 [Design and Lifetime Analysis of a DSCC-MMC STATCOM](#)
João Victor Matos Farias, *UFV, Brazil*
Allan Cupertino, *CEFET-MG, Brazil*
Victor de Nazareth Ferreira, *UFMG, Brazil*
Seleme Seleme Jr, *Universidade Federal de Minas Gerais, Brazil*
Heverton Pereira, *Universidade Federal de Viçosa, Brazil*
Remus Teodorescu, *Aalborg University, Denmark* .
- 171586 [Modelling of a ZVS full bridge DC-DC converter for photovoltaic applications](#)
Bernardo Andres, Rafael Concato Beltrame, *Universidade Federal de Santa Maria, Brazil*
Mário Lúcio Martins, Helio Hey, *Federal University of Santa Maria, Brazil*
Leonardo Cassol Bach, *UFSM, Brazil* .
- 171634 [A discrete repetitive current controller for single-phase grid-connected inverters](#)
Fabiano Costa, *Universidade Federal da Bahia, Brazil*
James Neves da Silva, *Universidade Federal do Vale do São Francisco, Brazil*
Alfeu Squarezi, *UFABC, Brazil*
André Nóbrega, *Federal University of Bahia, Algeria*
Edison da Silva, *Universidade Federal da Paraíba, Brazil* .
- 171653 [Filtered Smith Predictor Applied to a Boost Converter for Minimizing the Effect of Non-Minimal Phase and Rejection of Disturbances](#)
Francisco Everton Uchoa Reis, *Universidade Federal do Ceará, Brazil*
Kristian Santos, *Federal University of Ceará, Brazil*
Bismark Torrico, Paulo Praça, Rene Bascope, *Universidade Federal do Ceará, Brazil*
Tobias Neto, *Federal University of Ceará, Brazil* .
- 171671 [Current source converter model and control for a particle accelerator quadrupole magnet.](#)
Fernando Henrique de Oliveira, Ettore Aquino, *Federal University of Juiz de Fora, Brazil*
Cleber Rodrigues, *Brazilian Synchrotron Light Laboratory, Brazil*
Janaina Goncalves de Oliveira, *Universidade Federal de Juiz de Fora, Brazil*
Vinícius Montagner, *Universidade Federal de Santa Maria, Brazil*
Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
André Augusto Ferreira, *Universidade Federal de Juiz de Fora, Brazil* .
- 171721 [A hybrid digital control method for synchronous buck converters using multisampled linear PID and V² constant on-time controllers](#)
Renan Vasconcelos, *Universidade Federal de Santa Maria, Brazil*
Mário Lúcio Martins, *Federal University of Santa Maria, Brazil* .
- 10:20AM - 12:20PM **PE 4 - POWER ELECTRONICS. Chair: Demercil de Souza Oliveira Junior & José Renes Pinheiro**
- 171520 [Carrier-based pwm technique applied to single-phase asymmetric npc inverters with three levels on input and seven on output, using fpga](#)
Francisco de Oliveira, *Federal University of Paraíba, Brazil*
Isaac de Freitas, *Universidade Federal da Paraíba, Iceland*
Ronnan Cardoso, *Universidade Federal da Paraíba, Brazil*
Zariff Gomes, *University of Paraíba, Brazil* .
- 171660 [Loss Analysis of a High Frequency Isolated AC-AC Converter Applied to Voltage Regulation](#)
Olympio Silva Filho, *Universidade Federal de Campina Grande, Brazil*
Bruno de Almeida, *Federal University of Ceará, Brazil*
Demercil Oliveira Jr, *UFC, Brazil*
Tobias Neto, *Federal University of Ceará, Brazil* .
- 171541 [A HF transformer design methodology for high efficiency isolated zvs dc/dc converters](#)
Julio Maragaño Schmidt, *Federal University of Santa Maria-UFSM, Brazil*
Gustavo Medeiros de Souza Azevedo, *Universidade Federal de Pernambuco, Brazil*
Marcelo Cavalcanti, *Federal University of Pernambuco, Brazil*
José Renes Pinheiro, *Federal University of Santa Maria, Brazil* .
- 171553 [A Normalized approach for analysis and design a flyback resonant converter for energy harvesting systems](#)
Lucas Mendonça, Thiago Cattani Naidon, Fábio Bisogno, *Universidade Federal de Santa Maria, Brazil* .

- 171591 [Cooling Methods Design For Power Electronics Converters](#)
Adriano Dias, Anand Almeida, Diogo Brum Candido, *WEG Drives & Controls, Brazil*
Joable Alves, *WEG, Brazil*.
- 171612 [The D-Converter in CCM: Analysis, Design And Results](#)
Fernando dos Reis, *PUCRS, Brazil*
Henrique Cabral, *Pontifical Catholic University of Rio Grande do Sul, Brazil*
Reinaldo Tonkoski, *South Dakota State University, USA*.
- 10:20AM -
12:20PM
- RE 4 - RENEWABLE ENERGY. Chair: André Augusto Ferreira**
- 171933 [Optimal Reactive Power Compensation in Weak Grids with Insertion of Wind and Solar Sources](#)
Yuri Stypulkowski, *Federal University of Rio Grande do Sul (UFRGS), Brazil*
Roberto Chouhy Leborgne, *UFRGS, Brazil*.
- 171670 [Generation analysis of a small wind turbine with a back-to-back converter connected to the grid at Juiz de Fora](#)
Fernando Henrique de Oliveira, Ettore Aquino, *Federal University of Juiz de Fora, Brazil*
Janaina Goncalves de Oliveira, *Universidade Federal de Juiz de Fora, Brazil*
Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
André Augusto Ferreira, *Universidade Federal de Juiz de Fora, Brazil*.
- 172315 [Transformerless DC-DC Converter with High Voltage Gain Based on Switched-Inductor Applied to Photovoltaic Systems](#)
Julio Cezar de Moraes, Roger Gules, Juliano Luiz dos Santos de Moraes, *UTFPR, -- Select Country --*
Leonardo Göbel Fernandes, *Universidade Tecnológica Federal do Paraná, Brazil*.
- 172341 [An Experimental Comparative Study of Perturb and Observe and Incremental Conductance MPPT techniques for Two-Stage Photovoltaic Inverter](#)
Hugo Moreira, Marcos Vinicius Gomes dos Reis, *University of Campinas, Brazil*
Lucas Savoi de Araujo, *UNICAMP, Brazil*
Tisciane Oliveira, *University of Campinas, Brazil*
Marcelo Gradella Villalva, *UNICAMP, Brazil*.
- 171678 [Real-Time Data Monitoring with Zigbee Wireless Transmission Applied to a WECS](#)
Samanta Barbosa, Bruno de Almeida, *Federal University of Ceará, Brazil*
Demercil Oliveira Jr, *UFC, Brazil*.
- 172369 [Enhancing Harmonic Rejection Capability Of Grid-Connected Module-Integrated Converters](#)
Sebastián Manrique Machado, *Universidade Tecnológica Federal Do Paraná, Brazil*
Rodrigo Pereira, *Universidade Tecnológica Federal do Paraná - Apucarana, Brazil*
Cicero De Oliveira, *Universidade Tecnológica Federal Do Paraná, Brazil*
Newton da Silva, *Universidade Estadual de Londrina, Brazil*.
- 10:20AM -
12:20PM
- SG 3 - SMART GRIDS. Chair: Cassiano Rech**
- 171630 [Enhanced Power Flow Control of Distributed Generator Units by using Virtual Impedance Scheme](#)
Ricardo lucio De Araujo Ribeiro, Thales Fonseca, *UFRN, Brazil*
Flavio B. Costa, *Universidade Federal de Campina Grande, Algeria*
Thiago Rocha, *DEE/UFRN, Brazil*.
- 171635 [Hybrid DC and AC Power Distribution Network as an Alternative Solution for Isolated Microgrids](#)
Hércules Oliveira, *Federal University of Maranhão, Brazil*
Luiz Ribeiro, *UFMA, Brazil*
José Gomes de Matos, *UFMA-Federal University of Maranhão, Brazil*
Osvaldo R. Saavedra Mendez, *Universidade Federal do Maranhão, Brazil*
Marcos Assunção, *Federal University of Maranhão, Brazil*.
- 171692 [Feed-forward active attenuation of low frequency common-mode voltages in DC microgrids](#)
Thiago Oliveira, Pedro Donoso-Garcia, Seleme Seleme Jr, *Universidade Federal de Minas Gerais, Brazil*.
- 171722 [Proposal of model predictive control \(MPC\) method for a four-leg three-phase inverter applied in a distributed generation system](#)
Lázaro Rubens Pinto, *Universidade Federal de Goiás, Brazil*
Sérgio Pimentel, Enes Marra, Bernardo Alvarenga, Thaissa Cesar, Ciliana Lima, *UFG, Brazil*.
- 171930 [A Hybrid Simulation Tool for Penetration Studies of Distributed Generation in Smartgrids](#)
Thainan Theodoro, *University of Juiz de Fora, Brazil*
Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil*
Marcelo Tomim, *UFJF, Brazil*
Antonio Carlos S. de Lima, *UFRJ, Brazil*.
- 172736 [Comparison of harmonic detection methods applied in a photovoltaic inverter during harmonic current compensation](#)
Felipe Antunes, *UFSJ, Brazil*
Lucas Xavier, *Universidade Federal de Viçosa, Brazil*
Allan Cupertino, *CEFET-MG, Brazil*
Leonardo Felix, Heverton Pereira, *Universidade Federal de Viçosa, Brazil*.
- 2:00PM -
4:00PM
- MD 5 - ELECTRICAL MACHINE AND DRIVES. Chair: José Santisteban**
- 171508 [Modelling and control of a switched reluctance machine for application in a Flywheel Energy Storage System](#)
Lucas Almeida, *Universidade Federal de Juiz de Fora, Brazil*
Guilherme Sotelo, Gustavo Ferreira, *Universidade Federal Fluminense, Brazil*
Janaina Goncalves de Oliveira, Thomás Vieira, *Universidade Federal de Juiz de Fora, Brazil*.
- 172920 [Adaptive Observer for Sensorless Permanent Magnet Synchronous Machines with Online Pole Placement](#)
Cesar Volpato Filho, Filipe Scalcon, *University of Santa Maria, Brazil*
Thieli Gabbi, *Federal University of Santa Maria, Brazil*
Rodrigo Padilha Vieira, *Universidade Federal de Santa Maria, Brazil*.
- 172930 [Sliding Mode Vector Control of Non-Sinusoidal Permanent Magnet Synchronous Machine](#)
José Roberto Monteiro, Thales Portes de Almeida, *Universidade de São Paulo, Brazil*
Allan de Castro, *USP, Brazil*.
- 172972 [Design of a MIMO IMC-TS Fuzzy Speed Controller for PMSM](#)

- Raymundo Cordero, *UFMS, Brazil*
 João Onofre Pinto, *Federal University of Mato Grosso, Brazil*
 Edson Antonio Batista, *UFMS, Brazil*
 Luigi Galotto, *Universidade Federal de Mato Grosso do Sul, Brazil* .
- 172982 [Turning Induction Motors in Four Poles Active Magnetic Poles With Coupled Fluxes](#)
 Christian Tshizubu, José Santisteban, *Universidade Federal Fluminense, Brazil* .
- 2:00PM -
 4:00PM
- MS 5 - MODELING AND SIMULATION. Chair: Rodolfo Lacerda Valle**
- 171355 [Grid Connected Voltage-Source Converter Pre-energization Strategy](#)
 Samuel Duarte, Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
 Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil* .
- 172230 [Comparative Analysis of PID, Resonant and Repetitive Controllers Applied to a Single-Phase PWM Inverter](#)
 Henrique Jank, *Federal University of Santa Maria, Brazil*
 William Venturini, *Federal University of Santa Maria, Brazil*
 André Meurer, *University of Santa Maria, Brazil*
 Fábio Bisogno, Mário Lúcio Martins, Cassiano Rech, *Federal University of Santa Maria, Brazil* .
- 172479 [Generalized Predictive Control with Harmonic Rejection Applied to a Grid-Connected Inverter with LCL Filter](#)
 Daniel Martins Lima, *Universidade Federal de Santa Catarina, Brazil*
 Luiz Antonio Maccari Jr., *Federal University of Santa Maria, Brazil*
 Vinicius Montagner, *Universidade Federal de Santa Maria, Brazil* .
- 172861 [Modeling and analysis of a DC-DC converter for renewable energy applications](#)
 Daniel Westerman Spier, *Federal University of Technology - UTFPR-CP, Brazil*
 German Oggier, *Universidad Nacional de Río Cuarto, Argentina*
 Sergio Oliveira da Silva, *Universidade Tecnológica Federal do Paraná, Brazil* .
- 172932 [Analysis of an Adaptive Voltage Control of DC Microgrids Using CHIL Real Time Simulation](#)
 Rodrigo Ferreira, *Instituto Federal Sudeste de Minas Gerais, Brazil*
 Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil*
 Marcio Barbosa Poncilio Rodrigues, *IF Sudeste MG, Brazil* .
- 172934 [Discontinuous Carrier-Based Modulation for Three Level Flying Capacitor Converter](#)
 Mauricio da Silva, *Federal University of Santa Maria, Brazil*
 Ademir Toebe, Humberto Pinheiro, *Universidade Federal de Santa Maria, Brazil* .
- 3:10PM -
 4:10PM
- PQ 3 - POWER QUALITY. Chair: Rondineli Pereira**
- 172910 [Hardware in the Loop Simulation of Shunt Active Power Filter \(SAPF\) utilizing RTDS and dSPACE](#)
 Dalmo Cardoso da Silva Júnior, *Universidade Federal de Juiz de Fora, Brazil*
 Bernardo Ferraz Musse, *Federal University of Juiz de Fora, Brazil*
 Nathan Silva, *Universidade Federal de Juiz de Fora, Brazil*
 Pedro de Almeida, *Federal University of Juiz de Fora, Brazil*
 Janaina Goncalves de Oliveira, *Universidade Federal de Juiz de Fora, Brazil* .
- 172955 [Influence of the PLL phase-angle quality on the static and dynamic performance of grid-connected systems](#)
 Vinicius Bacon, Vinicius Souza, *UTFPR, Brazil*
 Sergio Oliveira da Silva, *Universidade Tecnológica Federal do Paraná, Brazil*
 Esteveao Padim, *UTFPR, Brazil* .
- 172966 [Fast and Robust Fundamental Component Estimation Algorithm for a Single Phase System](#)
 Andre Sousa, *Centro Federal de Educação Tecnológica Celso Suckow da Fonseca, Brazil*
 João Moor, *CEFET-RJ, Brazil*
 Júlio Ferreira, *Centro Federal de Educação Tecnológica Celso Suckow da Fonseca, Brazil*
 Mauro Reis, *mauro.s.reis@gmail.com, Brazil*
 Livia Peres, *Centro Federal de Educação Tecnológica Celso Suckow da Fonseca, Brazil* .
- 172969 [Harmonic compensation as ancillary service of a grid-connected photovoltaic power system](#)
 Jéssica Rocha, Fabiano Salvadori, Camila Gehrke, *UFPA, Brazil* .
- 3:10PM -
 4:10PM
- SG 4 - SMART GRIDS. Chair: Marcelo Lobo Heldwein**
- 172953 [A comparative study of lead-acid batteries and lithium iron phosphate batteries used in micro-gridsystems](#)
 Cristiane Figueira Brasil, *University of the State of Amazonas, Brazil*
 Charles Luiz Melo, *Universidade do Estado do Amazonas, Brazil* .
- 172918 [Evaluation of the performance of state of charge of a lithium-ion battery energy storage systems applied to primary frequency regulation of microgrids](#)
 Tatiana Tostes, Mariana Silva, Kelvin Do Nascimento, Debora Rosana Ribeiro Penido Araujo, Leandro Araujo, *Universidade Federal de Juiz de Fora, Brazil* .
- 172939 [Stability Analysis of a Smart Microgrid Solar Photovoltaic System](#)
 Gustavo Andres Finamor, *Universidade Federal de Santa Catarina, Brazil*
 Diego Suarez Solano, *UFSC-INEP, Brazil*
 Marcio Ortmann, *Federal University of Santa Catarina, Brazil*
 Adriano Ruseler, *UFSC, Brazil*
 Lucas Munaretto, *UFSC-INEP, Brazil*
 Luiz Carlos Gili, *Universidade Regional de Blumenau, Brazil*
 Roberto Coelho, *Federal University of Santa Catarina, Brazil*
 Marcelo Heldwein, *Universidade Federal de Santa Catarina, Brazil* .
- 172904 [Controller-Hardware-In-The-Loop Simulation of a Distribution System with PV Penetration Using RTDS and dSPACE](#)
 Bernardo Ferraz Musse, *Federal University of Juiz de Fora, Brazil*
 Nathan Silva, Dalmo Cardoso da Silva Júnior, Leonardo Willer Oliveira, Janaina Oliveira, *Universidade Federal de Juiz de Fora, Brazil* .
- 3:10PM -
 4:10PM
- PD 2 - POWER DEVICES. Chair: Pedro Santos Almeida**
- 171170 [A Review on Gallium Nitride Switching Power Devices and Applications](#)
 Wesley de Paula, Denis de Castro Pereira, Pedro Tavares, *Federal University of Juiz de Fora, Brazil*
 Filipe Silva, *UFJF, Brazil*
 Gabriel Tavares, Pedro Almeida, *Federal University of Juiz de Fora, Brazil*

- Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil* .
- 172892 [Optimal Inductor Design for Single-Phase Three-Level Bridgeless PFC Rectifiers](#)
André Lange, *Federal University of Santa Catarina, Brazil*
Marcelo Heldwein, *Universidade Federal de Santa Catarina, Brazil* .
- 172900 [SiC Power Devices In Power Electronics: An Overview](#)
Luciano Alves, Ruan Gomes, *Federal University of Campina Grande, Brazil*
Pierre Lefranc, *University Grenoble Alpes - G2Elab, France*
Raoni Pegado, *Federal University of Paraíba, Brazil*
Pierre Jeannin, *University Grenoble Alpes - G2Elab, France*
Benedito Luciano, *Universidade Federal de Campina Grande, Brazil*
Filipe Rocha, *Federal University of Paraíba, Brazil* .
- 177941 [Bipolar power semiconductor devices failure modes and best practices](#)
Ricardo Prado, *SEMIKRON, Brazil*
Clovis Gajo, *Semikron, Brazil* .
- 4:40PM -
6:40PM
- ED 3 - EDUCATION AND SPECIAL TOPICS. Chair: André Augusto Ferreira**
- 172257 [A First Order Model plus a Buck Converter Emulating a Solar Panel](#)
Stefanie Recla Schwab, Thiago Sales Rocha, Sofia Pola Simonetti, Domingos Simonetti, *UFES, Brazil* .
- 171712 [Worst Case Response Time Approach Evaluation for Computing CAN Messages Response Time in an Automotive Network](#)
Saulo Marcos Torres de Carvalho, Gustavo Lobato Campos, Instituto Federal de Educação, Ciência e Tecnologia de Minas Gerais (IFMG), Brazil.
- 171392 [Development of a Compact Platform for Power Converter Prototyping](#)
Vinicius Albuquerque, *Universidade Federal de Juiz de Fora, Brazil*
Livia Mendes, Luiz Loures, Pedro Almeida, *Federal University of Juiz de Fora, Brazil* .
- 171522 [Implementation of a High Frequency PWM Signal in FPGA for GaN Power Devices Switching](#)
Gabriel Tavares, Marlon Salmento, Wesley de Paula, *Federal University of Juiz de Fora, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*
Denis de Castro Pereira, *Federal University of Juiz de Fora, Brazil* .
- 172882 [Simplified Educational Platform for SVPWM Control of a Two-Level Three-Phase Inverter using MATLAB GUI and FPGA](#)
Raymundo Cordero, *UFMS, Brazil*
Igor Ono, Vitoria Fahed, *Federal University of Mato Grosso do Sul, Brazil*
João Onofre Pinto, *Federal University of Mato Grosso, Brazil* .
- 172886 [Position and current controller design for an electromagnetic levitation platform](#)
Alan Endalecio, Paulo Silva, Hugo Ferreira, *Universidade Federal do Rio de Janeiro, Brazil*
Afonso Celso Gomes, *Universidade Federal do Rio de Janeiro, Brazil*
Richard Stephan, *COPPE-UF RJ, Brazil* .
- 172897 [Didactic Prototype to Model and to Design Linear Control applied to a RLC plant](#)
Salatiel Lobato, Diego Carvalho, *Universidade Federal de Juiz de Fora, Brazil*
Andre Ferreira, *Federal University of Juiz de Fora, Brazil*
Vinicius Montagner, *Universidade Federal de Santa Maria, Brazil* .
- 4:40PM -
6:40PM
- LJ 2 - LIGHT APPLICATIONS. Chair: Ricardo Nederson do Prado**
- 171346 [Current Multilevel PFC Buck Rectifier Applied to a High-Power COB LED Driver](#)
Denis de Castro Pereira, Wesley de Paula, Pedro Tavares, *Federal University of Juiz de Fora, Brazil*
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil* .
- 171611 [Switched Capacitor Converter with Variable Duty Cycle to Feed LED Tubular Lamp](#)
Priscila Bolzan, *UFMS CT PPGEE GEDRE, Brazil*
Igor Barboza, Josué Puntzke, Veridiane Rosa, *GEDRE - UFMS, Brazil*
Ricardo Prado, *Universidade Federal de Santa Maria, Brazil* .
- 171679 [PWM ALGORITHM FOR REAL-TIME POWER MONITORING AND BRIGHTNESS CONTROL OF LARGE SCALE MATRIX LEDs](#)
Denis Martins, *Universidade Estadual de Campinas, UNICAMP, Brazil*
Yuzo Iano, *Unicamp, Brazil*
Eduardo Tozetto, *Universidade Estadual de Campinas, UNICAMP, Brazil*
Jacobus Swart, *Unicamp, Brazil* .
- 172035 [Analysis of a High Power COB LED Light Source Driven by Offline Double-Stage PFC Converter](#)
Denis de Castro Pereira, Wesley de Paula, Pedro Tavares, Pedro Almeida, *Federal University of Juiz de Fora, Brazil*
Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Guilherme Soares, Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*
Bruno Rosa, *Federal University of Juiz de Fora, Brazil* .
- 172890 [Design of a High-Power Factor Offline LED Driver Employing a Cuk-Based Low Frequency Pre-Regulator](#)
Fernando Nogueira, Lucas Resende, *UFJF, Brazil*
Cristiano Gomes Casagrande, *Universidade Federal de Juiz de Fora, Brazil*
Felipe Marinho, Edmar Silva, *UFJF, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil* .
- 172917 [LED System with Independent Red and Blue Channels Employing Radiant Flux Estimation and Indirect Flux Control for Greenhouse Hop Cultivation](#)
Pedro Tavares, *Federal University of Juiz de Fora, Brazil*
Inah Guimarães, *UFJF, Brazil*
Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil*
Vitor Bender, *UNIPAMPA - Federal University of Pampa, Brazil*
Pedro Almeida, *Federal University of Juiz de Fora, Brazil* .
- 172962 [Simplified Control Techniques Applied to a Boost-Based Low Frequency Offline LED Driver](#)
Fernando Nogueira, Lucas Resende, Ruan Ferraz, *UFJF, Brazil*
Cristiano Gomes Casagrande, *Universidade Federal de Juiz de Fora, Brazil*
Felipe Marinho, *UFJF, Brazil*

- Henrique A C Braga, *Universidade Federal de Juiz de Fora, Brazil* .
- 4:40PM - **PE 5 - POWER ELECTRONICS. Chair: Claudinor Bittencourt Nascimento**
- 6:40PM 171469 [An Isolated Bidirectional Soft-Switching Converter based on LLC Resonant Half-Bridge with Synchronous Rectification](#)
João Coimbra, Renan Pontara, Luiz Loures, Pedro Almeida, *Federal University of Juiz de Fora, Brazil* .
- 171683 [Fast transient response capacitorless DC-DC converter.](#)
Dalton Vidor, Nataniel Rigo, Everton Rosa, *UFSM, Brazil*
José Renes Pinheiro, *Federal University of Santa Maria, Brazil* .
- 172222 [Three-Phase Bridgeless Boost Pfc Converter With Variable Duty Cycle Control](#)
Douglas Morais, *São Paulo State University (UNESP), School of Engineering, Ilha Solteira São Paulo - Brazil, Brazil*
Falcondes J. M. de Seixas, Luciano Silva, *UNESP - Campus de Ilha Solteira, Brazil*
João Pelicer Junior, *Univ. Estadual Paulista, Brazil* .
- 172891 [A novel non-isolated high DC-DC voltage based on boost converter employing coupled inductor](#)
Eduardo Hass, Fernanda Corrêa, *Universidade Tecnológica Federal do Paraná, Brazil*
Claudinor Nascimento, *Federal University of Technology - Parana, Brazil* .
- 172921 [DCM Forward-Flyback converter integrated with a 5-order Cockcroft-Walton voltage multiplier: a steady-state and resonant current analysis.](#)
Matheus Schramm Dall Asta, Vinicius Bernardi Fuerback, Telles Brunelli Lazzarin, *Federal University of Santa Catarina, Brazil* .
- 4:40PM - **RE 5 - RENEWABLE ENERGY. Chair: Leandro Michels**
- 6:40PM 172879 [Comparative Analysis of Buck and Boost Converters Applied to Different Maximum Power Point Tracking Techniques for Photovoltaic Systems](#)
Deividi Zaians, Anderson Balbino, Cássio Baratieri, *Regional Integrated University of High Uruguay and Missions - Campus of Erechim, Brazil*
Adilson Stankiewicz, *URI, Brazil* .
- 172895 [Inverter losses analysis for dual fed open winding machines with a novel modulation technique](#)
Herbert Ramos, Caio Oliveira, *Universidade Federal de Itajubá, Brazil*
Marcos Mendes, Frederico Matos, *Universidade Federal de Minas Gerais, Brazil*
Victor F. Mendes, *Federal University of Minas Gerais, Brazil* .
- 172929 [Photovoltaic Dg With Accumulation, Active And Reactive Power Control For Grid-Connected And Intentional Islanding Operations](#)
Marcos G Alves, *Sao Paulo State University - UNESP, Brazil*
Moacyr de Brito, *Federal Technological University of Parana, Brazil*
Guilherme Melo, *UNESP - Campus de Ilha Solteira, Brazil*
Carlos Canesin, *Sao Paulo State University - UNESP, Brazil* .
- 172936 [PORTABLE AND LOW COST PHOTOVOLTAIC CURVE TRACER](#)
Eduardo Vicente, Fernando Lessa Tofoli, *Universidade Federal de São João del-Rei, Brazil*
Paula dos Santos, *Universidade Federal de Itajubá, Brazil*
Ítalo Silva , *UFSJ, -- Select Country --* .
- 172946 [ANALYSIS OF MODULAR MULTILEVEL CONVERTERS FOR HVDC CONNECTION OF OFFSHORE WIND POWER PLANTS](#)
Roberto Batista, *University Federal of Santa Maria, Brazil*
Humberto Pinheiro, *UFSM, Brazil*
Fernanda Carnielutti, *Federal University of Santa Maria, Brazil*
André Nicolini, *University Federal of Santa Maria, Brazil* .
- 172947 [Project of a Solar Module Emulator Using a Zener Diode to Analyze the Behavior of Mppt Algorithms](#)
Rafael Magossi, *University of São Paulo, Brazil*
Mateus Quinalia, *Universidade de São Paulo, Brazil*
Plínio Gonçalves Bueno Ferreira, *University of São Paulo, Brazil*
Marina Carvalho, Ricardo Machado, *Universidade de São Paulo, Brazil* .
- 172949 [Compatibilizing Multifunctional Photovoltaic Converters with Brazilian Standards: Analysis and Discussion](#)
Ricardo Bortolini, *Universidade Federal de Santa Maria, Brazil*
Lucas Bellinaso, *Universidade Federal de Santa maria, Brazil*
Leandro Michels, Jorge Massing, *Universidade Federal de Santa Maria, Brazil* .
- 4:40PM - **MS 6 - MODELING AND SIMULATION. Chair: Márcio do Carmo Barbosa Poncilio Rodrigues**
- 6:40PM 172968 [A Control method for DG connected to the utility grid based on current droop with accurate gain](#)
Gustavo Pontes, Camila Gehrke, *Universidade Federal da Paraíba, Brazil* .
- 172941 [PI + Resonant Controller With Active Damping for High Efficiency PV-Module-Integrated Buck Inverter](#)
André Meurer, *University of Santa Maria, Brazil*
Antonio Andrade, Mário Lúcio Martins, Helio Hey, *Federal University of Santa Maria, Brazil* .
- 172948 [Proportional-Resonant Stabilizing Set Applied For Three-Phase Voltage Source Inverter with a LCL Filter](#)
Mateus Quinalia, *Universidade de São Paulo, Brazil*
Rafael Magossi, Plínio Gonçalves Bueno Ferreira, *University of São Paulo, Brazil*
Ricardo Machado, Vilma Oliveira, *Universidade de São Paulo, Brazil* .
- 172950 [A Control System for Battery Current Sharing in DC Microgrids with DC Bus Voltage Restoration](#)
Wagner Coelho Leal, *Federal University of Ouro Preto, Brazil* .
- 171327 [DC capacitor energization and voltage regulation of a single-phase hybrid active filter](#)
Mateus Braga, *University of Juiz de Fora, Brazil*
Samuel Duarte, *Federal University of Juiz de Fora, Brazil*
Pedro Barbosa, *Universidade Federal de Juiz de Fora, Brazil*
Pedro Almeida, *Federal University of Juiz de Fora, Brazil* .
- 172973 [Closed-loop control for a single-phase cascaded multilevel inverters operating with SHE-PWM](#)
Fabrício Dupont, *Chapecó Region Community University (Unochapecó), Brazil*
Júnior Romani, *Federal University of Santa Maria, Brazil* .