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São Paulo State University (UNESP), School of Engineering, Bauru

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Co-Chair: Kaster, Mauricio	Universidade Tecnológica Federal do Parana
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<i>Implementation of the Particle Filter in a Embedded System for the Localization of a Differential Mobile Robot</i> , pp. 399-406. Sampaio Fortes, Luciano Leonardo (IFES), ROCHA, EDUARDO (IFES), Ruella da Silva, Joabe (IFES), Mantuan Ayres, Lucas (IFES), de Souza Leite Cuadros, Marco Antonio (IFES), Freitas, Ricardo (IFES)	
17:15-17:30	Mo9Track D.4
<i>Development of an Embedded CNC Control System</i> , pp. 407-412. Rocha Junior, Paulo (Universidade Federal do Pará), Lima Tostes, Maria Emília (Universidade Federal do Pará)	
17:30-17:45	Mo9Track D.5
<i>Design and Optimization of UAV for Surveillance at Fernando De Noronha's Risk Areas</i> , pp. 413-418. BORBUREMA, DIEGO (EPUSP), Sato, Andre (EPUSP), Tsuzuki, Marcos de Sales Guerra (EPUSP)	
17:45-18:00	Mo9Track D.6
<i>Genetic Algorithm and Poles-Placement: A Comparative Study on the Design of PD and PID Controllers Applied to a Quadrotor Flight Stabilization</i> , pp. 419-425. Constantino da Silva, Fernando Augusto (Federal University of Technology - Parana), Klosowski, Rodrigo (Federal University of Technology - Parana), Siqueira, Hugo Valadares (Federal University of Technology), Kaster, Mauricio (Universidade Tecnológica Federal do Parana), Correa, Fernanda Cristina (Universidade Tecnológica Federal do Parana)	

Technical Program for Tuesday November 13, 2018

Tu2Track A	Room 1
Electrical Vehicle and Energy Storage (Regular Session)	
Chair: Takimoto, Rogerio	EPUSP
Co-Chair: Horikawa, Oswaldo	Escola Politecnica of the University of São Paulo
08:40-08:55	Tu2Track A.1
<i>Analysis of the Performance in Wireless Transmission Systems for Application in Electric Vehicles</i> , pp. 426-432. Mendonça, Fabrício (Universidade Federal de Uberlândia), Andrade, Darizon Alves de (Universidade Federal de Uberlândia), de Oliveira, Cássio (Universidade Federal de Uberlândia), Viajante, Ghunter Paulo (Universidade Federal de Uberlândia), Fidelis, Ricardo Tirone (Universidade Federal de Uberlândia), Chaves, Eric Nery (Universidade Federal de Uberlândia)	
08:55-09:10	Tu2Track A.2
<i>Hybrid Modeling of Energy Storage System and Electrical Loads in a Pilot-Microgrid</i> , pp. 433-438. de Paula e Silva, Danilo (IFES), Dório, Marcello (UFES), Fardin, Jussara Farias (UFES), Salles, José Leandro (UFES), Orlando, Marcos T. D. (UFES)	
09:25-09:40	Tu2Track A.4
<i>Small-Signal Modeling and Analysis of an Isolated Bidirectional Battery Charger</i> , pp. 439-445. Carvalho, Edivan (Federal University of Technology - PR), Carati, Emerson Giovanni (UTFPR - Federal University of Technology - Paraná), de Oliveira Stein, Carlos Marcelo (Federal University of Technology - Paraná), Da Costa, Jean Patric (UTFPR), Cardoso, Rafael (Universidade Tecnológica Federal do Paraná)	
09:40-09:55	Tu2Track A.5

Evaluation of the Performance of HEV Technologies Using a MILP Model to Minimize Pollutants Emissions, pp. 446-452.

Cerna Nahuis, Fernando Vladimir (University State of Londrina), Gallego Pareja, Luis Alfonso (State University of Londrina), Pourakbari, Mahdi (Aalto University)

09:55-10:10 Tu2Track A.6

Hybrid Energy Storage System and Control Strategy for an Electric Urban Bus, pp. 453-458.

Silva, Danilo (University of Campinas), Pomilio, Jose (University of Campinas), Villalva, Marcelo (University of Campinas)

Tu2Track C Room 3

Smart Grids 1 (Regular Session)

Chair: Kobayashi, Guiou Universidade Federal do ABC

Co-Chair: Andrade, Alexandre acácio de Federal University of ABC

09:10-09:25 Tu2Track C.3

Faults Location Variability in Power Distribution Networks with High PV Penetration Level, pp. 459-466.

Vargas, Murillo (UFES), Mendes, Mariana (UFES), Batista, Oureste (UFES)

09:25-09:40 Tu2Track C.4

Cluster Formation Strategy As Ancillary Service of a Battery Storage System in a Distribution System, pp. 467-473.

Busarello, Tiago Davi Curi (UFSC), Lara Urdaneta, Hugo (UFSC), Péres, Adriano (UFSC), Pomilio, Jose (University of Campinas), Simões, M. G. (Colorado School of Mines)

09:40-09:55 Tu2Track C.5

A Single-Phase Distributed Generation System with Load Power Compensation Capability Using Linear Quadratic Regulator, pp. 474-481.

Fogli, Gabriel (Federal University of Ouro Preto), de Castro Fernandes, Marcelo (Federal University of Juiz de Fora), Tebar de Faria, José André (Universidade Federal de Ouro Preto), Gomes Barbosa, Pedro (Federal University of Juiz de Fora), de Almeida, Pedro (Federal University of Juiz de Fora)

09:55-10:10 Tu2Track C.6

Data Transmission Performance Analysis with Smart Grid Protocol and Cryptography Algorithms, pp. 482-486.

Sestrem Ochôa, Iago (Universidade do Vale do Itajaí), Leithardt, Valderi (University of Vale do Itajaí), Zeferino, Cesar (UNIVALI - University of Vale do Itajaí), Sá Silva, Jorge (University of Coimbra)

Tu2Track D Room 4

Industrial Lighting (Regular Session)

Chair: Oliveira, Clóvis Bôsko UFMA

Co-Chair: Almeida, Pedro UFJF

08:40-08:55 Tu2Track D.1

Comparison of Analytical Method of Flux Density Prediction for COB and Discrete LED Luminaires, pp. 487-494.

Laguardia Tavares, Pedro (Federal University of Juiz de Fora), Schroder Dutra, Jose Machado (Universidade Federal de Juiz de Fora), Silva, Aline (Federal University of Juiz de Fora), Albuquerque, Vinicius (Federal University of Juiz de Fora), Pereira, Dênis (Federal University of Juiz de Fora), Resende, Cristiano Ferrara de (Federal University of Juiz de Fora), Peixoto, Paulo (Instituto de Ciências Biológicas, UFJF), BRAGA, HENRIQUE A (Universidade Federal de Juiz de Fora - UFJF), Almeida, Pedro (UFJF)

08:55-09:10 Tu2Track D.2

Self-Oscillating LED Driver with Bus Voltage Regulation, pp. 495-501.

Kohler, Samuel (Universidade Tecnológica Federal do Paraná), Vargas, Diogo Ribeiro (Federal University of Technology - Paraná (UTFPR)), Denardin, Gustavo (Universidade Tecnológica Federal do Paraná (UTFPR)), Lopes, Juliano (Universidade Tecnológica Federal Paraná)

09:40-09:55 Tu2Track D.5

A Review on Impacts from Dust Deposition on Photovoltaic Modules, pp. 502-508.

Comerio, Alessandra (UFES), Muniz, Pablo (IFES), Rampinelli Fernandes, Mariana (IFES), Fardin, Jussara Farias (UFES)

09:55-10:10 Tu2Track D.6

Analysis of the Potential of Wind and Ocean Energy in the State of Maranhão, pp. 509-516.

Pinto Junior, Jonas Vicente (Universidade Federal do Maranhão), Velez Parente, Nadia (Universidade Federal do Maranhão), Oliveira, Clóvis Bôsko (UFMA), Osvaldo, R. Saavedra Mendez (Universidade Federal do Maranhão)

Tu4Track A Room 1

Power Electronics 4 (Regular Session)

Chair: Lazzarin, Telles Federal University of Santa Catarina

Co-Chair: Soares, Guilherme Márcio Federal University of Juiz de Fora

10:45-11:00 Tu4Track A.2

Non-Linearized Complete State-Space Model of an LED Driver Based on the LC Resonant Converter, pp. 517-522.

Ferraz, Ruan (Federal University of Juiz de Fora), RESENDE, LUCAS HENRIQUE (Universidade Federal de Juiz de Fora), BRAGA, HENRIQUE A (Universidade Federal de Juiz de Fora - UFJF), Almeida, Pedro (UFJF), Soares, Guilherme Márcio (Federal

University of Juiz de Fora)	
11:00-11:15	Tu4Track A.3
<i>Balancing Voltage in the DC Bus with Split Capacitors in Three-Phase Four-Wire PWM Boost Rectifier</i> , pp. 523-529. Bueno, Alexandre (University of Campinas), Pomilio, Jose (University of Campinas)	
11:15-11:30	Tu4Track A.4
<i>Design and Control for a Single-Phase/-Stage Buck/Boost-Type PWM PFC Rectifier</i> , pp. 530-536. Brito Junior, Francisco Jose Barbosa (Federal University of Ceará), Daher, Sérgio (Federal University of Ceará), TORRICO-BASCOPE, RENE PASTOR (Federal University of Ceara), Bezerra Chaves, Breno (Federal University of Ceará), Pereira Damasceno, Debora (Universidade Federal do Ceará), Almeida, Bruno Ricardo de (University of Fortaleza (Unifor))	
11:30-11:45	Tu4Track A.5
<i>Interleaved Two-Switch Flyback Converter with Power Factor Correction for UPS Applications</i> , pp. 537-543. TORRICO-BASCOPE, RENE PASTOR (Federal University of Ceara), Bezerra Chaves, Breno (Federal University of Ceará), Barbosa, Samanta Gadelha (Federal University of Ceará - UFC), Silva de Souza, José Janiere (Universidade Federal do Ceará), Veras, Caio (Federal University of Ceará), Silva, Bruno (Federal University of Ceara), Oliveira Jr, Demercil de Souza (Federal University of Ceara)	
11:45-12:00	Tu4Track A.6
<i>Quadratic Boost-Flyback Converter DC-DC with Coupled Inductors</i> , pp. 544-550. Marcelo Flavio Guepfrih, Guepfrih (UFSC), Lazzarin, Telles (UFSC), Waltrich, Gierri (UFSC)	
Tu4Track B Room 2	
Power Systems 2 (Regular Session)	
Chair: Almeida Có, Márcio	Instituto Federal do Espírito Santo
Co-Chair: Pessoa, Marcosiris	Universidade de São Paulo
10:30-10:45	Tu4Track B.1
<i>Integration of a Shunt Active Filter and Energy Storage to Energy Quality Improvement in Distributed Power Systems</i> , pp. 551-556. Alves, Francisco Kelson Pereira (Universidade Federal do Ceará), de Araujo, Lucivando (Universidade Federal do Ceará), Machado, Isaac Rocha (Federal University of Ceará), Pereira,Pinto, Vandilberto (Federal University of Ceará), Pereira, Larissa Souza (Federal University of Ceará)	
10:45-11:00	Tu4Track B.2
<i>Characterization of False Positive Occurrences of Undesired Reverse Active Power Flow in Electrical Power Consumer Units</i> , pp. 557-563. Campos Pompermayer, Daniel (IFES), Donadel, Clainer Bravin (IFES), Almeida Có, Márcio (IFES), Abreu Martins, Laura (EDP Espírito Santo Distribuição de Energia SA), Quemelli Magioni, Paula Luiza (EDP Espírito Santo Distribuição de Energia SA)	
11:00-11:15	Tu4Track B.3
<i>ATP Cards Automatic Generation from an Eletrical Network Elements Database Using Python</i> , pp. 564-570. Muniz, João Rodrigo (Federal University of Pará), Moraes, Jean (Federal University of Pará), Rocha, Gabriel (Federal University of Pará), Nunes, Marcus (UFPA), Barradas, Raphael Pablo (Federal University of Pará), Bezerra, Ubiratan Holanda (Federal University of Pará), Brito, Adriane (Celpa), Monteiro, Flávia (Universidade Federal do Oeste do Pará), Carvalho, Rodrigo (Federal University of Pará)	
11:15-11:30	Tu4Track B.4
<i>A Computational Tool for Teaching-Learning of Mechanical Parameters in Transmission Lines</i> , pp. 571-575. de Souza Silva, João Lucas (University of Campinas), Melo Cavalcante, Michelle (University of Campinas), Kitayama da Silva, Michelle (University of Campinas), Mesquita, Daniel (University of Campinas (UNICAMP)), Soeiro Moreira, Hugo (University of Campinas), Bandeira de Mello Delgado, Danielle (Instituto Federal Da Bahia (IFBA)), Villalva, Marcelo (University of Campinas)	
11:45-12:00	Tu4Track B.6
<i>Solving Economic Dispatch Problem with Valve-Point Loading Effects and Network Constraints through Gradient-Based Approach</i> , pp. 576-583. Bento Nogueira Mori, Pinheiro, Ricardo (São Paulo State University (UNESP), School of Engineering), Nepomuceno, Leonardo (Universidade Estadual Paulista - Unesp)	
Tu4Track C Room 3	
Electrical Machines and Drives 2 (Regular Session)	
Chair: Albuquerque de Castro, Bruno	Unesp - São Paulo State University
Co-Chair: Andrade, Alexandre acácio de	Federal University of ABC
10:45-11:00	Tu4Track C.2
<i>Comparative Study of Methods to Evaluate Three Phase Induction Motors Loading</i> , pp. 584-590. Melo, Karen Barbosa (University of Campinas), Souza, Rubem (Universidade Federal do Amazonas), Gomes dos Reis, Marcos Vinicios (Campinas State University), Kitayama da Silva, Michelle (University of Campinas), Villalva, Marcelo (University of Campinas)	
11:00-11:15	Tu4Track C.3

Assessment of Operation Performance of Power Converters with Low Frequency PWM Drive Issues and Field Weakening, pp. 591-598.

Gomes, Marcos (UFMG), Luiz, Alex-Sander Amável (CEFET-MG), Stopa, Marcelo Martins (CEFET-MG)

11:15-11:30 Tu4Track C.4

Study of a Three Phase Induction Motor Load Estimation System by Low-Cost Piezoelectric Sensor, pp. 599-605.

Beraldi Lucas, Guilherme (São Paulo State University (UNESP)), Albuquerque de Castro, Bruno (Unesp - São Paulo State University), Rocha, Marco Aurélio (São Paulo State University (UNESP)), Andreoli, Andre Luiz (São Paulo State University (UNESP)), School of Engineering, Bauru)

11:30-11:45 Tu4Track C.5

DC Microgrid with Wind Energy Conversion System Based on Switched Reluctance Generator Operating in Grid Connected Mode, pp. 606-613.

dos Santos Neto, Pedro José (University of Campinas), dos Santos Barros, Tarcio André (University of Campinas), de Paula, Marcelo Vinicius (University of Campinas), de Souza, Ramon Rodrigues (University of Campinas), Carvalho Silveira, João Pedro (University of Campinas), Ruppert Filho, Ernesto (University of Campinas)

Tu6Track A Room 1

Power Electronics 5 (Regular Session)

Chair: Stefanello, Marcio

Federal University of Pampa

13:30-13:45 Tu6Track A.1

A Design Methodology for a Simple and Efficient Dimmable Ac-Dc Flyback Converter with Visible Light Communication Support, pp. 614-621.

Marcio da Silva Brier, Rafael (Federal University of Juiz de Fora (UFJF)), Salmento, Marlon Lucas (UFJF), BRAGA, HENRIQUE A (Universidade Federal de Juiz de Fora - UFJF), Laguardia Tavares, Pedro (Federal University of Juiz de Fora), Soares, Guilherme Márcio (Federal University of Juiz de Fora)

13:45-14:00 Tu6Track A.2

Comparison of Double Star Topologies of Modular Multilevel Converters in STATCOM Application, pp. 622-629.

de Sousa, Renata (CEFET-MG), Mendonça, Dayane (Universidade Federal de Viçosa), Amorim, William (Universidade Federal de Viçosa), Cupertino, Allan (CEFET-MG), Pereira, Heverton (UFV), Teodorescu, Remus (Aalborg University)

14:00-14:15 Tu6Track A.3

Finite Set Model Predictive Control of Four-Leg Split-Source Inverters, pp. 630-635.

Maier Cocco, Gabriel (UNIPAMPA), de Azevedo Borges, Juliano (UNIPAMPA), Stefanello, Marcio (Federal University of Pampa), Bovolini Grigoletto, Felipe (UNIPAMPA)

14:15-14:30 Tu6Track A.4

Robust Design of Control Structure for Three-Phase Grid-Tied Inverters, pp. 636-643.

Kraemer, Rodrigo Antonio Sbardeloto (Federal University of Technology - Parana), Carati, Emerson Giovanni (UTFPR - Federal University of Technology - Paraná), Da Costa, Jean Patric (UTFPR), Cardoso, Rafael (Universidade Tecnológica Federal do Paraná), de Oliveira Stein, Carlos Marcelo (Federal University of Technology - Paraná)

14:30-14:45 Tu6Track A.5

A Three-Phase Flyback-Push-Pull ZVS-PWM Converter, pp. 644-650.

Costa, André Elias (Universidade Federal Da Paraíba), Cardoso, Ronnan (Universidade Federal Da Paraíba), Vieira Rocha, Filipe (Federal University of Paraíba), Lacerda Filho, Antonio Venancio de Moura (Universidade Federal Da Paraíba)

14:45-15:00 Tu6Track A.6

An Indirect AC-AC Converter with Power Factor Correction and High Frequency Insulation, pp. 651-658.

A. da Silva, Emerson J. (Universidade Federal do Ceará), Almeida, Bruno Ricardo de (University of Fortaleza (Unifor)), Praca, Paulo (Federal University of Ceara), Oliveira Jr, Demercil de Souza (Federal University of Ceara), Barreto, Luiz Henrique (Federal University of Ceara), Antunes, Fernando (Federal University of Ceara)

Tu6Track B Room 2

Industry Applications 3 (Regular Session)

Chair: Munaro, Celso Jose

Federal University of Espirito Santo

14:00-14:15 Tu6Track B.3

Monitoring of Self-Excited Vibration in Grinding Process Using Time-Frequency Analysis of Acceleration Signals, pp. 659-663.

Lopes, Wenderson (São Paulo State University), Thomazela, Rogério (São Paulo State University), Alexandre, Felipe (São Paulo State University), Aguiar, Paulo (São Paulo State University), Bianchi, Eduardo (São Paulo State University), Pontes Junior, Bento (São Paulo State University), Aulestia Viera, Martin Antonio (São Paulo State University)

14:15-14:30 Tu6Track B.4

Application of Multivariable PID Controllers in a Coupled Tank System, pp. 664-671.

Santana, Heitor Gonçalves (Universidade Federal do Piauí), Almeida, Otacilio da Mota (Universidade Federal do Piauí), Coêlho, Stenio de Sousa (Universidade Federal do Piauí)

14:30-14:45 Tu6Track B.5

A Robust Volt/Var Control Via Multi-Objective Optimization, pp. 672-678.

Soares Vitor, Tiago (Federal Institute of Education, Science and Technology of São Pa), Vieira, Jose Carlos (Sao Carlos School of Engineering - University of Sao Paulo)

14:45-15:00 Tu6Track B.6

Development and Implementation of a Test Set for Quality Assurance of IEC 61850-Based Ethernet Switches in Manufacturing Process, pp. 679-684.

Scheffer-Dutra, Cynthia Beatriz (IFSC - Instituto Federal de Santa Catarina), Pamplona, Guilherme (IFSC - Instituto Federal de Santa Catarina), Guterres, Michel (IFSC - Instituto Federal de Santa Catarina), Rachadel, Igor (GE), Dalmas, Marcelo (GE Grid Solutions), Dutra, Carlos (IFSC - Instituto Federal de Santa Catarina)

Tu6Track C Room 3

Automation and Process Control 3 (Regular Session)

Chair: Maruyama, Newton EPUSP

Co-Chair: de Moura Fernandes, Eisenhower Federal University of Campina Grande (UFCG)

13:45-14:00 Tu6Track C.2

Performance Comparison of Particle Swarm Optimization Strategies to Adjust a Nonlinear GAPID Controller, pp. 685-691.

Kaster, Mauricio (Universidade Tecnológica Federal do Parana), Borges, Fabio (Universidade Tecnológica Federal do Parana), Monteiro, Lucas (Universidade Tecnológica Federal do Parana), Siqueira, Hugo Valadares (Universidade Tecnológica Federal do Parana), Correa, Fernanda Cristina (Universidade Tecnológica Federal do Parana), Martins, Marcella (Universidade Tecnológica Federal do Parana)

14:00-14:15 Tu6Track C.3

The Panorama and Challenges of PROFIBUS Technology in Brazilian Market, pp. 692-697.

Serpa Sestito, Guilherme (University of São Paulo), Dias, Andre Luis (Federal Institute of Sao Paulo), Turcato, Afonso Celso (IFSP), Ferrari, Paolo (University of Brescia), Brandão, Dennis (University of São Paulo)

14:15-14:30 Tu6Track C.4

Thermal Vision for Remote Monitoring through Cross-Platform Application, pp. 698-703.

Figueiredo, Lucas Oliveira (Universidade Federal de Campina Grande), Candeia Medeiros Maia, Lucas (Universidade Federal de Campina Grande), Matheus, Rocha, Matheus Torres Rocha (Universidade Federal de Campina Grande), Nunes Barbosa Junior, José Adeilmo (Universidade Federal de Campina Grande), Aguiar, Anna Paula Virgolino de Andrade (Univ. Federal de Campina Grande), Lima, Rafael (UFCG), Junior, George (UFCG), Barros, Pericles Rezende (Univ. Federal de Campina Grande)

14:30-14:45 Tu6Track C.5

New Nonlinear Control Method Applied for Power Converters, Based on D-Transform, pp. 704-710.

Rosa, Arthur (UFMG), Seleme Jr., Seleme (UFMG), Lenin, Moraes (UFMG), He, Wei (School of Automation, Nanjing University of Information Science)

14:45-15:00 Tu6Track C.6

Self Healing Technique Applied to an Industrial Plant Using IEC 61850, pp. 711-716.

Fonseca, Jonatha Revoredo Leite (Federal University of Rio Grande do Norte), Oliveira, Arrhenius Vinicius da Costa (Federal University of Rio Grande do Norte), Almeida, Marcos Antônio Dias (Federal University of Rio Grande do Norte), SILVA JUNIOR, JOSÉ LUIZ DA (UFRN), Medeiros Júnior, Manoel Firmino (Federal University of Rio Grande do Norte), Pimentel Filho, Max Chianca (Federal University of Rio Grande do Norte)

Tu6Track D Room 4

Power Quality 2 (Regular Session)

Chair: Lima, Daniel Martins Universidade Federal de Santa Catarina

13:30-13:45 Tu6Track D.1

An Analysis of Steady-State and Transient Effects When Adding a Photovoltaic Generator into the Power Distribution System, pp. 717-721.

Costa, Tatiane Silva (University of Campinas), Inga Narvaez, Dante (University of Campinas), Kitayama da Silva, Michelle (University of Campinas), Gabriel Lopes, Davi (FEEC/UNICAMP), Villalva, Marcelo (University of Campinas)

13:45-14:00 Tu6Track D.2

Single-Stage Grid Tied Converter to Improve Solar PV Array Performance and Power Quality in Microgeneration-Consumers Units, pp. 722-729.

Costa, Paulo Robson M. (Federal University of Ceará), Pereira, Larissa Souza (Federal University of Ceará), Pontes, Yury (Universidade Federal do Ceará), de Castro, Marcus Rogério (Federal University of Ceará), Machado, Isaac Rocha (Federal University of Ceará)

14:00-14:15 Tu6Track D.3

Kalman Filter Observers with Harmonic Disturbance Estimation Applied to a Grid-Connected LCL Filter, pp. 730-737.

Lima, Daniel Martins (UFSC), Lima, Bruno Martins (UFSC), Maccari Junior, Luiz Antonio (UFSC), Normey-Rico, Julio Elias (UFSC)

Tu7Plenaries Gallery

Coffee Break Tue + Posters (Plenary Session)

Chair: Forner-Cordero, Arturo Escola Politecnica Da USP

Co-Chair: Kobayashi, Guiou Universidade Federal do ABC

15:00-16:30	Tu7Plenaries.8
<i>Implementation of an Induction Motor Mathematical Model for Stator Winding Fault Analysis</i> , pp. 738-743.	
Costa, Christielly Fernandes (Universidade Estadual Paulista), Rocha, Marco Aurélio (São Paulo State University (UNESP)), Gabriel de Souza, Wallace (Universidade Estadual Paulista "Júlio de Mesquita Filho"), Justino, Pauline Tamarozzi (Universidade Estadual Paulista), Andreoli, Andre Luiz (São Paulo State University (UNESP), School of Engineering, Bauru)	
15:00-16:30	Tu7Plenaries.17
<i>Automatic Tuning Method for PID Controllers Applied to Integrating and Unstable Processes</i> , pp. 744-749.	
Pereira, Rene Descartes Olimpio (Federal University of Ceara), Correia, Wilkley B. (Federal University of Ceara), Nogueira, Fabricio G. (Federal University of Ceara), Torrico, Bismark Claure (Federal University of Ceara)	
15:00-16:30	Tu7Plenaries.22
<i>A Trajectory Simulator Using Frenet-Serret Formulas Applied to Punctual Objects</i> , pp. 750-755.	
Frencl, Victor (Universidade Tecnológica Federal do Paraná), Dadalto Mendes Martins, Gabriel (Universidade Tecnológica Federal do Paraná), Naruto, Isutomu (Universidade Tecnológica Federal do Paraná), Danner, Patricia (Universidade Tecnológica Federal do Paraná)	
15:00-16:30	Tu7Plenaries.24
<i>An Improved Methodology to Operate Electrical Distribution Networks with Distributed Generation Units in a Pre-Smart Grid Environment</i> , pp. 756-762.	
Donadel, Clainer Bravin (IFES), Fardin, Jussara Farias (UFES), Encarnação, Lucas Frizera (IFES)	
15:00-16:30	Tu7Plenaries.28
<i>Torque Control of a DC Motor with a State Space Estimator and Kalman Filter for Vehicle Traction</i> , pp. 763-769.	
Archela, Alex (Universidade Estadual de Londrina), Toginho, Dario Guilherme (Londrina State University (UEL)), melo, leonimer (State University of Londrina)	
15:00-16:30	Tu7Plenaries.29
<i>Human Blood Circulatory System Modeling Based on Hybrid Systems</i> , pp. 770-774.	
Jorge, André (EPUSP), Ribeiro, Sonia (EPUSP), Miyagi, Paulo (EPUSP), Junqueira, Fabrício (EPUSP), Santos Filho, Diolino José dos (EPUSP)	
15:00-16:30	Tu7Plenaries.30
<i>A Simplified Small-Signal Model for Analyzing the Parallel Operation of Frequency Inverters in UPS</i> , pp. 775-782.	
Saldanha, Marcos Alberto (CEFET-MG), Santos Filho, Rubens Marcos (CEFET-MG), Cortizo, Porfirio Cabaleiro (UFMG), Stopa, Marcelo Martins (CEFET-MG), Luiz, Alex-Sander Amável (CEFET-MG)	
15:00-16:30	Tu7Plenaries.31
<i>Development and Implementation of an Interconnection Module for Smart Microgrids</i> , pp. 783-788.	
Silveira Ortmann, Márcio (Instituto Federal de Santa Catarina), Dantas da Silva, Daniela (Embraco), Lobo Heldwein, Marcelo (UFSC)	
15:00-16:30	Tu7Plenaries.32
<i>Dc-Dc and Dc-Ac Series or Parallel Hybrid Converters</i> , pp. 789-794.	
Vidor, Dalton L.R. (UFSM), Pinheiro, José Renes (UFSM), Rigo, Nataniel (UFSM)	
15:00-16:30	Tu7Plenaries.33
<i>Technical Feasibility of Diagnosis of Electrical Busbar Connections by Infrared Thermography</i> , pp. 795-798.	
Santos, Felipe de Souza (IFES), Muniz, Pablo (IFES), Comerio, Alessandra (UFES)	
15:00-16:30	Tu7Plenaries.35
<i>On the Performance of State Estimators in Distribution Systems under Fault Conditions</i> , pp. 799-805.	
Ugarte, Luis (UNICAMP), Sau, Rodrigo (Unicamp), Cortes de Almeida, Madson (State University of Campinas)	
Tu8Track A	Room 1
Power Electronics 6 (Regular Session)	
Chair: Oliveira Jr, Demercil de Souza	Federal University of Ceara
Co-Chair: Pessoa, Marcosiris	Universidade de São Paulo
16:30-16:45	Tu8Track A.1
<i>Performance Analysis of GEFS and GEVS Anti-Islanding Methods for Three-Phase Grid Connected Photovoltaic Systems</i> , pp. 806-810.	
LOHMANN, ANDRE (Universidade Tecnológica Federal do Paraná), Romaneli, Eduardo (Federal University of Technology - Paraná), Badin, Alceu Andre (Universidade Tecnológica Federal do Paraná)	
16:45-17:00	Tu8Track A.2
<i>Three-Phase Half-Controlled Boost Converter Operating in Quasi-Critical Conduction Mode</i> , pp. 811-816.	
Morais, Douglas Carvalho (Universidade Estadual Paulista, Faculdade de Engenharia de Ilha), Seixas, Falcondes José Mendes de (UNESP), Souza, Lucas Carvalho (Universidade Estadual Paulista, Faculdade de Engenharia de Ilha), Silva, Luciano de Souza da Costa e (Instituto Federal de Goiás (IFG) - Jataí), Júnior, João Carlos Pelicer (Instituto Federal de São Paulo - IFSP)	

17:00-17:15	Tu8Track A.3
<i>Analysis and Design of a High Step-Up Boost Converter Applied to Fuel Cell</i> , pp. 817-824.	
Tiburski, Mateus (Federal University of Santa Maria), Bridi, Éder (Universidade Federal de Santa Maria), Sartori, Hamilton (Federal University of Santa Maria), Pinheiro, José Renes (UFSM)	
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Chair: Sato, Andre	EPUSP
Co-Chair: Bonatto, Benedito Donizeti	UNIFEI - Federal University of Itajuba
16:30-16:45	Tu8Track B.1
<i>Open Source Implementations of Electromagnetic Transient Algorithms</i> , pp. 825-828.	
Tavante, Hanneli (Universidade Federal de Itajuba), Bonatto, Benedito Donizeti (UNIFEI - Federal University of Itajuba), Coutinho, Maurilio Pereira (Universidade Federal de Itajuba)	
16:45-17:00	Tu8Track B.2
<i>Ant Lion Optimizer Applied to Economic Emission Load Dispatch Problems Turning Off the Engines</i> , pp. 829-836.	
Brito Júnior, Jorge de Almeida (Instituto de Tecnologia E Educação Galileo Da Amazônia - ITEGAM), Nunes, Marcus (UFPA), Nascimento, Manoel (Education Institute of Technology and Galileo of Amazon (ITEGAM)), Freitas, Carlos Alberto Oliveira de (ITEGAM), Cabral leite, Jandecy (ITEGAM), Moraes, Nadime (Universidade do Estado do Amazonas)	
17:00-17:15	Tu8Track B.3
<i>Obstruction Map Local Search Solution for 2D Irregular Bin Packing Problem with Cache Acceleration</i> , pp. 837-843.	
Sato, Andre (EPUSP), Martins, Thiago (EPUSP), Tsuzuki, Marcos de Sales Guerra (EPUSP)	
17:15-17:30	Tu8Track B.4
<i>Tuning of the Parameters of Damping Controllers for Power Electrical Systems Using Bioinspired Algorithms</i> , pp. 844-851.	
MIOTTO, Ednei Luiz (UTFPR), Araujo, Percival Bueno de (São Paulo State University), Fortes, Elenilson de Vargas (Goiás Federal Institute), Miyahara Takahashi, André Luiz (São Paulo State University)	
17:30-17:45	Tu8Track B.5
<i>R-GPC Controller of Mold Level in a Steel Continuous Casting Process with Bulging</i> , pp. 852-857.	
Amaral Pereira, Rogério (IFES), Almeida, Gustavo Maia de (IFES), de Souza Leite Cuadros, Marco Antonio (IFES), Salles, José Leandro (UFES), Bastos, Teodiano (UFES), Freitas, Ricardo (IFES)	
17:45-18:00	Tu8Track B.6
<i>Development and Experimental Evaluation of a Vision System for Detecting Defects of Stator Windings in Induction Motor Assembly Lines</i> , pp. 858-863.	
Cassimiro Fonseca de Oliveira, Bernardo (UFSC), Flesch, Rodolfo C. C. (UFSC), Burg Demay, Miguel (Fundação Certi)	
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Automation and Process Control 4 (Regular Session)	
Chair: Maruyama, Newton	EPUSP
Co-Chair: Furukawa, Celso Massatoshi	Escola Politécnica Da Universidade de São Paulo
16:30-16:45	Tu8Track C.1
<i>Application of the IoT Paradigm for Supervision in the Utilities Industry</i> , pp. 864-869.	
DIAS, ROBERTO ALEXANDRE (IFSC), Schreiber, Fábio Victor (Instituto Federal de Educação, Ciência E Tecnologia de Santa Cat), de Borba, Bruno (AQTech Engenharia E Instrumentação S.A), Noll, Valdir (Instituto Federal de Educação, Ciência E Tecnologia de Santa Cat), Gallo, Victória (Instituto Federal de Santa Catarina)	
17:45-18:00	Tu8Track C.6
<i>Pull-Production System in a Lean Supply Chain: A Performance Analysis Utilizing the Simulation-Based Optimization</i> , pp. 870-874.	
Ledoux Takeda Berger, Satie (UFSC), Morosini Frazzon, Enzo (UFSC), Mund Carreirão Danielli, Apolo (UFSC)	
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Robotics and Mechatronics 2 (Regular Session)	
Chair: Andrade, Alexandre acácio de	Federal University of ABC
Co-Chair: Angélico, Bruno Augusto	Universidade de São Paulo
16:30-16:45	Tu8Track D.1
<i>Control of Ball and Beam System Using Fuzzy PID Controller</i> , pp. 875-880.	
Osinski, Cristiano (Federal University of Parana), Silveira, Alessandro (Fahor), Stiegelmaier, Claudinei (Fahor), Gideon, Leandro (Universidade Federal do Paraná), Gavioli Bergamini, Mariane (Universidade Federal do Paraná)	
16:45-17:00	Tu8Track D.2
<i>Hierarchical Integrative Sliding Mode Control of a 3-DOF Helicopter</i> , pp. 881-886.	
Castello Branco de Oliveira, Arthur (University of São Paulo), Angélico, Bruno Augusto (Universidade de São Paulo)	

17:00-17:15	Tu8Track D.3
<i>Methodology for the Feasibility Study for Drones' Route in Open and Closed Environment - Case Study of UFABC</i> , pp. 887-893.	
Andrade, Alexandre acácio de (UFABC), Gonçalves Lins, Romulo (Federal University of ABC), Luis Quintino, Luis Fernando (Centro Universitário Carlos Drummond de Andrade), Alves dos Santos, Guilherme Akira (Fundação Universidade Federal do ABC), Oliveira, Lucas Loffredo (Fundação Universidade Federal do ABC)	
17:15-17:30	Tu8Track D.4
<i>Machine Vision to Industrial Robotic Manipulator Using Raspberry Pi</i> , pp. 894-901.	
Araújo, Bárbara (Instituto Federal Da Paraíba), Araújo, Julierme Silva de (Federal Institute of Education, Science and Technology of Paraíba), Silva, Rafael Franklin Alves (IFPB), Miranda Regis, Carlos Danilo (GPDS, IFPB)	
17:30-17:45	Tu8Track D.5
<i>An Automatic Object Detection and Location System Applying Faster R-CNN</i> , pp. 902-908.	
Falquete, Rodrigo Bernardes (IFES), Cavalieri, Daniel Cruz (IFES), Pereira, Flávio Garcia (IFES)	

Technical Program for Wednesday November 14, 2018

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Internet of Things (Regular Session)	
Chair: Casella, Ivan	Universidade Federal do ABC
Co-Chair: da Cunha, Marcio Jose	University Federal of Uberlândia
08:40-08:55	We2Track A.1
<i>Internet of Things: Concepts, Architectures and Technologies</i> , pp. 909-916.	
Viel, Felipe (University of Vale do Itajaí), Silva, Luis Augusto (University of Vale do Itajaí), Leithardt, Valderi (University of Vale do Itajaí), Zeferino, Cesar (UNIVALI - University of Vale do Itajaí)	
09:40-09:55	We2Track A.5
<i>Development of an Internet of Things Gateway Applied to a Multitask Industrial Plant</i> , pp. 917-923.	
Tietz, Fabrício (University of São Paulo), Brandão, Dennis (University of São Paulo), Ferreira Alves, Luiz (University of São Paulo)	
09:55-10:10	We2Track A.6
<i>Wireless Sensor Networks in Industry 4.0: WirelessHART and ISA100.11a</i> , pp. 924-929.	
Adriano, José Domingos (National Institute of Telecommunications (Inatel)), Rosário, Elcio Carlos (National Institute of Telecommunications (Inatel)), Rodrigues, Joel J. P. C. (National Institute of Telecommunications (Inatel))	
We2Track B	Room 2
Power Systems 3 (Regular Session)	
Chair: Zanetta, Luiz	USP
Co-Chair: Pessoa, Marcosiris	Universidade de São Paulo
08:40-08:55	We2Track B.1
<i>Evaluation of the Influence of a High-Quality Initial Solution in the Coordination of DOCRs Using an ACO Algorithm</i> , pp. 930-936.	
Labrador Rivas, Angel Esteban (State University of Londrina), Gallego Pareja, Luis Alfonso (State University of Londrina), Cerna Nahuis, Fernando Vladimir (University State of Londrina)	
08:55-09:10	We2Track B.2
<i>Application of a Virtual Synchronous Machine for Undershoot Reduction of the Frequency in Microgrids with Renewable Generation</i> , pp. 937-942.	
Ribeiro Gayer, Renato (Educational Association Dom Bosco), Marcello, Kaique (Educational Association Dom Bosco), Ferreira, Leonardo (Educational Association Dom Bosco), Monteiro, Juliana (IFRJ), Zamboni de Souza, A. C. (Federal University of Itajuba), F. Ribeiro, Paulo (Federal University of Itajuba), I. L. Lopes, Benedito (Federal University of Itajuba)	
09:10-09:25	We2Track B.3
<i>Lightning-Induced Surge in Transmission Towers Calculated Using Full-Wave Electromagnetic Analysis and the Method of Moments</i> , pp. 943-948.	
Justo de Araújo, Anderson Ricardo (São Paulo State University), Kurokawa, Sergio (Sao Paulo State University), Mendes Seixas, Claudiner (IFSP-Federal Institute of São Paulo), Kordi, Behzad (University of Manitoba)	
09:25-09:40	We2Track B.4
<i>A New Methodology for Calculating Electromagnetic Transients in Transmission Lines</i> , pp. 949-954.	
LEON COLQUI, JAIMIS SAJID (São Paulo State University), Justo de Araújo, Anderson Ricardo (São Paulo State University), Kurokawa, Sergio (Sao Paulo State University)	
09:40-09:55	We2Track B.5
<i>A Current Sensitivity Model for Power System Stability Studies</i> , pp. 955-962.	
Miyahara Takahashi, André Luiz (São Paulo State University), Fortes, Elenilson de Vargas (Goiás Federal Institute), Araujo, Percival Bueno de (São Paulo State University), MIOTTO, Ednei Luiz (UTFPR), Martins, Luis Fabiano Barone (Paraná Federal Institute)	

We2Track C		Room 3
Smart Grids 2 (Regular Session)		
Chair: Ferreira, Danton Diego	Universidade Federal de Lavras	
08:40-08:55	We2Track C.1	
Integration of Electric Vehicles in Smart Grids for Optimization and Support to Distributed Generation, pp. 963-970.		
Salvatti, Gabriel Antonio (UTFPR - Federal University of Technology - Parana), Carati, Emerson Giovani (UTFPR - Federal University of Technology - Paraná), Da Costa, Jean Patric (UTFPR), Cardoso, Rafael (Universidade Tecnológica Federal do Paraná), de Oliveira Stein, Carlos Marcelo (Federal University of Technology - Paraná)		
08:55-09:10	We2Track C.2	
Enabling Smart Grid Concept in Wind Farms by Means of Power Line Communication Technology, pp. 971-978.		
Castro Pereira, Samuel (Instituto Federal de São Paulo), Murari, André (Universidade Federal do ABC), Capovilla, Carlos Eduardo (UFABC - Universidade Federal do ABC), Torrico, Jose (UFABC), Jacomini, Rogério (Instituto Federal de São Paulo), Belati, Edmarcio Antonio Belati (UFABC), Sguarezi Filho, Alfeu (Universidade Federal do ABC), Casella, Ivan (Universidade Federal do ABC)		
09:25-09:40	We2Track C.4	
Grid Connected PV with Storage System Simulation for Distribution Grid Supporting, pp. 979-986.		
Pinheiro, Guilherme (UNIFEI, GEPCI), Alejandro Herrera Gomez, Nelson (Unifei, Isee, Sg²), F. Ribeiro, Paulo (Federal University of Itajuba), Cesar Sant'ana, Wilson (Gnarus Institute), Bauwelz Gonzatti, Robson (Unifei, Iesti, Gepci), Rodrigues Pereira, Rondineli (Unifei, Iesti, Gepci), Pinto Braga Guimarães, Bruno (Unifei, Iesti, Gepci), Lambert-Torres, Germano (Gnarus Institute), Henrique da Silva, Carlos (UFOP, GEPCI)		
09:55-10:10	We2Track C.6	
A Selection Criterion for Grid-Connected Photovoltaic Systems, pp. 987-992.		
DILL, GUSTAVO (Centro Tecnológico Celso Suckow Da Fonseca)		
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Industrial Ultrasound Theory and Application (Regular Session)		
Chair: Buiochi, Flávio	School of Engineering at the University of São Paulo	
Co-Chair: Takimoto, Rogerio	EPUSP	
08:40-08:55	We2Track D.1	
Estimation of Conveyor Belts Thickness Using Ultrasound Transducers, pp. 993-998.		
Cruz, José Neves (Universidade Federal Da Paraíba), Lucena, Daiana Correia (IFPB/UFCG), Villanueva, Juan Moises (Universidade Federal Da Paraíba), de Macêdo, Euler Cássio (Federal University of Paraíba)		
08:55-09:10	We2Track D.2	
An Echo Analysis Method for the Ultrasonic Measurement of Micrometric Wall-Thickness Loss Inside Pipes, pp. 999-1003.		
Takimoto, Rogerio (EPUSP), Matuda, Marcelo (EPUSP), Oliveira, Timoteo (EPUSP), Adamowski, Julio Cezar (EPUSP), Pires, Gustavo (Petrobras), Peres, Nicolas (Universidade de La Republica do Uruguay), Ueda, Edson Kenji (EPUSP), Tsuzuki, Marcos de Sales Guerra (EPUSP)		
09:10-09:25	We2Track D.3	
Development of a PVDF Needle-Type Hydrophone for Measuring Ultrasonic Fields, pp. 1004-1007.		
Boechat, Flavio (Universidade de São Paulo), Patricio, Estevão (Universidade de São Paulo), Oliveira, Timoteo (Universidade de São Paulo), Buiochi, Flávio (School of Engineering at the University of São Paulo)		
We4Track B		Room 2
Power Systems 4 (Regular Session)		
Chair: Zanetta, Luiz	USP	
Co-Chair: Araújo, Marcos R.	Universidade Federal de Itajubá, Campus Itabira	
10:30-10:45	We4Track B.1	
Performance Analysis of Non-Conventional Distance Protection and Phase Selection Algorithms in Transmission Lines Little Longer Than Half-Wavelength, pp. 1008-1015.		
Castro, André G. de (Universidade Federal de Itajubá, Campus Itabira), Soares, Lucas A. (Universidade Federal de Itajubá, Campus Itabira), Araújo, Marcos R. (Universidade Federal de Itajubá, Campus Itabira), Drumond, Webert B. F. (Universidade Federal de Itajubá, Campus Itabira), Coelho, Aurélio L. M. (Universidade Federal de Itajubá, Campus Itabira), Faria, Ivan P. (Universidade Federal de Itajubá, Campus Itabira)		
We4Track C		Room 3
Electrical Machines and Drives 3 (Regular Session)		
Chair: de Paula, Geyverson	Federal University of Goiás	
Co-Chair: Monteiro, José Roberto Boffino de Almeida	University of São Paulo	
10:30-10:45	We4Track C.1	
Zero Sequence Power Contribution on BLDC Motor Drives. Part I: A Theoretical Investigation, pp. 1016-1023.		
de Castro, Allan Gregori (University of São Paulo), Guazelli, Paulo Roberto Ubaldo (University of São Paulo), dos Santos, Stefan		

Thiago Cury Alves (University of São Paulo), Oliveira, Carlos Matheus Rodrigues de (University of São Paulo), Pereira, William César de Andrade (University of São Paulo), Monteiro, José Roberto Boffino de Almeida (University of São Paulo)	
10:45-11:00	We4Track C.2
<i>Zero Sequence Power Contribution on BLDC Motor Drives. Part II: A FCS-MPC Current Control of Three-Phase Four-Leg Inverter Based Drive</i> , pp. 1024-1029.	
de Castro, Allan Gregori (University of São Paulo), Guazelli, Paulo Roberto Ubaldo (University of São Paulo), dos Santos, Stefan Thiago Cury Alves (University of São Paulo), Oliveira, Carlos Matheus Rodrigues de (University of São Paulo), Pereira, William César de Andrade (University of São Paulo), Monteiro, José Roberto Boffino de Almeida (University of São Paulo)	
11:00-11:15	We4Track C.3
<i>Improved Sliding Mode and PLL Speed Estimators for Sensorless Vector Control of Induction Motors</i> , pp. 1030-1037.	
PINHEIRO, DIEGO (UNICAMP), Carati, Emerson Giovani (UTFPR - Federal University of Technology - Paraná), Del Sant, Felipe Sassi (UTFPR), Da Costa, Jean Patric (UTFPR), Cardoso, Rafael (Universidade Tecnológica Federal do Paraná), de Oliveira Stein, Carlos Marcelo (Federal University of Technology - Paraná)	
11:15-11:30	We4Track C.4
<i>Dual Predictive Current Control of Grid Connected Nine-Switch Converter Applied to Induction Generator</i> , pp. 1038-1044.	
Guazelli, Paulo Roberto Ubaldo (University of São Paulo), de Castro, Allan Gregori (University of São Paulo), dos Santos, Stefan Thiago Cury Alves (University of São Paulo), Oliveira, Carlos Matheus Rodrigues de (University of São Paulo), Pereira, William César de Andrade (University of São Paulo), Monteiro, José Roberto Boffino de Almeida (University of São Paulo), de Aguiar, Manoel Luis (Universidade de São Paulo)	
11:30-11:45	We4Track C.5
<i>Sensorless Rotor Position Detection of Doubly-Fed Induction Generators for Wind Energy Applications</i> , pp. 1045-1050.	
Soares, Emerson de Lacerda (Federal University of Paraíba), Vieira Rocha, Filipe (Federal University of Paraíba), Silva de Siqueira, Luanna Maria (University of Regina), Rocha, Nady (UFPB)	
11:45-12:00	We4Track C.6
<i>Influence of Vector Control Strategies on Magnetic Saturation and Its Effects on Torque Ripple of a PMSM</i> , pp. 1051-1058.	
Filho, Celio (Federal University of Goiás), Assis, Lucas (Federal University of Goiás), Alvarenga, Bernardo (Federal University of Goiás), de Paula, Geyverson (Federal University of Goiás)	
We4Track D	
Artificial Intelligence / Machine Learning 3 (Regular Session)	
Chair: Silva, Carlos Alexandre Gouvea da	
Co-Chair: Amaral, Haroldo	
Federal University of Paraná University of São Paulo – USP	
10:30-10:45	We4Track D.1
<i>On the Applicability of Deep Learning for Road Signal Recognition</i> , pp. 1059-1066.	
Soares, Vinícios (Federal University of Technology - Paraná - Ponta Grossa - (UTFP), Luz, Mathias (Federal University of Technology - Paraná - Ponta Grossa - (UTFP), Ribeiro, Afonso H (Federal University of Technology - Paraná - Ponta Grossa - (UTFP), Ribeiro, Rafael S (CESCAGE), Martins, Marcella (Universidade Tecnológica Federal do Paraná), Santos, Max Mauro Dias (UTFPR-PG), Mira, Joaquim (Federal University of Technology - Paraná - Ponta Grossa - (UTFP)	
10:45-11:00	We4Track D.2
<i>Application of Knn and Artificial Neural Network Classifiers for Fault Detection and Diagnosis in a Diesel Engine Cooling System</i> , pp. 1067-1071.	
Carmo, Daniel Augusto (UFES), Munaro, Celso Jose (UFES)	
11:15-11:30	We4Track D.4
<i>A New Intelligent System Architecture for Energy Saving in Smart Homes</i> , pp. 1072-1079.	
Ayres, Rodrigo Moura Juvenil (São Paulo State University (UNESP), School of Engineering, Bauru), Nunes de Souza, André (São Paulo State University (UNESP), School of Engineering, Bauru), Gastaldello, Danilo Sinkiti (Universidade do Sagrado Coração (USC)), Amaral, Haroldo (University of São Paulo – USP), Ikeshoji, Marco Akio (São Paulo State University (UNESP), School of Engineering, Bauru), Santana, Gustavo Vinicius (São Paulo State University (UNESP), School of Engineering, Bauru)	
We6Track A	
Power Electronics 8 (Regular Session)	
Chair: Lazzarin, Telles	
Co-Chair: Monteiro, José Roberto Boffino de Almeida	
Federal University of Santa Catarina University of São Paulo	
13:30-13:45	We6Track A.1
<i>Assessment of Modulation Techniques for a Five-Level Type-G NPC Based Inverter</i> , pp. 1080-1086.	
Tavares, Suzanne Emanuelle (CEFET-MG), Luiz, Alex-Sander Amável (CEFET-MG), Stopa, Marcelo Martins (CEFET-MG)	
13:45-14:00	We6Track A.2
<i>Multi-Port Single-Phase Converter Applied to Residential Microgeneration</i> , pp. 1087-1093.	
Barbosa, Samanta Gadelha (Federal University of Ceará - UFC), Almeida, Bruno Ricardo de (University of Fortaleza (Unifor)), de Oliveira Pacheco, Juliano (Federal University of Ceara), Oliveira Jr, Demercil de Souza (Federal University of Ceara), Praca, Paulo (Federal University of Ceara)	

14:00-14:15	We6Track A.3
<i>High-Gain Modular Three-Phase Hybrid Boost Rectifier for Small Wind Energy Harvesting System</i> , pp. 1094-1099. Dias, Julio Cesar (UFSC), Lazzarin, Telles (UFSC)	
14:15-14:30	We6Track A.4
<i>Comparison of Core Technologies Applied to Power Inductors</i> , pp. 1100-1106. Cerutti Bolsi, Pedro (University of Santa Maria), Sartori, Hamiltom (Federal University of Santa Maria), Pinheiro, José Renes Pinheiro (UFSC)	
14:30-14:45	We6Track A.5
<i>AC-AC Hybrid Switched-Capacitor Series Resonant Converter</i> , pp. 1107-1114. gomes bandeira junior, delvanei (Brazilian Power Electronics & Renewable Energy Institute), Flor Borges, Victor Luiz (Brazilian Institute of Power Electronics and Renewable Energies), Silva Junior, Rogerio Luiz (Brazilian Institute of Power Electronics and Renewable Energy), Barbi, Ivo (UFSC)	
14:45-15:00	We6Track A.6
<i>A New Transformerless Photovoltaic Inverter with Common Mode Leakage Current Elimination</i> , pp. 1115-1122. Fiori, Vitor Mauro (UFSC), Rocha Burigo, Lucas (UFSC), Barbi, Ivo (UFSC)	
We6Track B	Room 2
Industry Applications 5 (Regular Session)	
Chair: de Moura Fernandes, Eisenhower	Federal University of Campina Grande (UFCG)
Co-Chair: Cury, Ricardo	EPUSP
13:30-13:45	We6Track B.1
<i>Measurement of Thickness of Oxygen Lance Skull in LD Converters Using Artificial Vision</i> , pp. 1123-1127. Mantuan Ayres, Lucas (IFES), France Salarolli, Pablo (IFES), Batista, Leonardo Gonçalves (IFES), Rodrigues Salcides, Igor (IFES), Destefani Bernardes, Nemerson (IFES), Contarato, Rodrigo (Consórcio Boulevard Shopping Vila Velha), FURTADO, HENRIQUE (ArcelorMittal), de Souza Leite Cuadros, Marco Antonio (IFES), Almeida, Gustavo Maia de (IFES)	
13:45-14:00	We6Track B.2
<i>Modeling and Simulation of the Performance and Efficiency of a Sport Utility Vehicle Powertrain with Automatic Transmission through Model-Based Design</i> , pp. 1128-1132. Silva, Samuel Filgueira (Universidade Federal de Campina Grande), de Moura Fernandes, Eisenahwer (Federal University of Campina Grande (UFCG)), Amorim Jr., Wanderley Ferreira (University Federal of Campina Grande)	
14:00-14:15	We6Track B.3
<i>A Visual Computing Approach for Automatic Workpiece Referencing in Machining Centers</i> , pp. 1133-1136. Marques de Araujo, Paulo Ricardo (Federal University of ABC), Andrade, Alexandre acácio de (UFABC), Gonçalves Lins, Romulo (Federal University of ABC)	
14:15-14:30	We6Track B.4
<i>Slopping Detection System for LD Converters Using Sound Signal Digital and Image Processing</i> , pp. 1137-1142. Batista, Leonardo Gonçalves (IFES), France Salarolli, Pablo (IFES), Menezes, Ricardo (IFES), Mantuan Ayres, Lucas (IFES), Amaral Pereira, Rogério (IFES), FURTADO, HENRIQUE (ArcelorMittal), de Souza Leite Cuadros, Marco Antonio (IFES)	
14:30-14:45	We6Track B.5
<i>Defect Inspection in Stator Windings of Induction Motors Based on Convolutional Neural Networks</i> , pp. 1143-1149. Cassimiro Fonseca de Oliveira, Bernardo (UFSC), Flesch, Rodolfo C. C. (UFSC), Burg Demay, Miguel (Fundação Certi), Birck Fröhlich, Herberth (UFSC), Seibert, Artur (UFSC), Arrigoni Iervolino, Lucas (UFSC), Birck Lopes, Liasse (UFSC), ROCHA CARNAUBA DA COSTA, LEONARDO (UFSC)	
14:45-15:00	We6Track B.6
<i>Small Size Inverters: Development Challenges for PV , Renewable Energy Applications, As Well IoT, EMC, Lightning and Robustness Tradeoffs</i> , pp. 1150-1157. Maltione, Ricardo (Unicamp - School of Electrical and Computer Engineering – FEEC), Gomes dos Reis, Marcos Vinicios (Campinas State University), Inga Narvaez, Dante (University of Campinas), Villalva, Marcelo (University of Campinas), Luiz Carlos, Kretly (University of Campinas)	
We6Track C	Room 3
Automation and Process Control 5 (Regular Session)	
Chair: Dias, Andre Luis	Federal Institute of Sao Paulo
Co-Chair: Góes, Luiz Carlos Sandoval	ITA Aeronautical Institute of Technology
13:30-13:45	We6Track C.1
<i>Profibus DP Network Simulator</i> , pp. 1158-1164. Torres, Renato (Technische Universität Chemnitz), Serpa Sestito, Guilherme (University of São Paulo), Dias, Andre Luis (Federal Institute of Sao Paulo), Eduardo André Mossin, Eduardo (Federal Institute of São Paulo), Brandão, Dennis (University of São Paulo)	
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Multivariable Control in Industrial Processes: Comparison of MIMO LQR and Multi-SISO PID Techniques Applied to an Industrial Plant in Scale, pp. 1165-1172.

Zilio, Douglas Eduardo (Instituto Federal de Santa Catarina), Peccin, Vinícius Berndsen (Instituto Federal de Santa Catarina)

14:00-14:15 We6Track C.3

Robust Control Applied to a Beam of Composite Material Using Electromagnetic Actuators, pp. 1173-1178.

Albertin Xavier da Silva, Camila (Universidade Tecnológica Federal do Paraná), dos Santos, Willian Faria (Universidade Tecnológica Federal do Paraná - Câmpus Cornélio Pro), Repinaldo, Joana Pereira (Universidade Tecnológica Federal do Paraná - Câmpus Cornélio Pro), Faria, Albert Willian (Universidade Federal do Triângulo Mineiro - ICTE), Molina, Fabian Andres Lara (Universidade Tecnológica Federal do Paraná - Câmpus Cornélio Pro), Koroishi, Edson Hideki (Universidade Tecnológica Federal do Paraná - Câmpus Cornélio Pro)

14:15-14:30 We6Track C.4

A Labview/Arduino Measurement System for Shape Memory Alloy Wires, pp. 1179-1186.

Driesen, Joran Bart (University of Twente), Fsicher, Clécio (Instituto Tecnológico Da Aeronáutica), Caselato de Sousa, Guilherme Luiz (Instituto Tecnológico Da Aeronáutica), de Sousa Santos, Osmar (Instituto Tecnológico Da Aeronáutica), Loendersloot, Richard (University of Twente), Rade, Domingos Alves (Instituto Tecnológico Da Aeronáutica), Martins, Cristiane Aparecida (Instituto Tecnológico Da Aeronáutica), Góes, Luiz Carlos Sandoval (ITA Aeronautical Institute of Technology)

14:45-15:00 We6Track C.6

Autotuned Fuzzy Based PID Deformation Control of a Shape Memory Alloy Actuated Cantilever Beam, pp. 1187-1193.

Patriota Campos, Andrei Henrique (Federal University of Campina Grande), de Moura Fernandes, Eisenahwer (Federal University of Campina Grande (UFCEG)), Silva, Jaidilson (UFCEG), Rocha Neto, Jose Sergio (Federal University of Campina Grande)

We6Track D Room 4

Power Quality 3 (Regular Session)

Chair: Azcue, José Luis Federal University of ABC - UFABC

14:15-14:30 We6Track D.4

Analysis of Overvoltage in Distribution Networks under Different Ground Conditions Using ATP, pp. 1194-1199.

Barradas, Raphael Pablo (Federal University of Pará), Nunes, Marcus (UFPA), Tuma, Eduardo (Federal University of Pará), André, Morais (Federal University of Pará), Manito, Allan (Federal University of Pará), Muniz, João Rodrigo (Federal University of Pará), Tavares, Jorge (Cemar), Silva, Jucileno (Celpa)

We7Plenaries Gallery

Coffee Break Wen + Posters (Plenary Session)

Chair: Miyagi, Paulo University of Sao Paulo

Co-Chair: Lebensztajn, Luiz University of São Paulo

15:00-16:30 We7Plenaries.1

Comprehensive Analysis of a Flyback Converter for Voltage Equalization of Battery Strings, pp. 1200-1207.

Costa, Gustavo Duarte (UFSC), Illa Font, Carlos Henrique (Federal University of Technology - Paraná), Barbi, Ivo (UFSC)

15:00-16:30 We7Plenaries.2

Analysis of Single-Phase High Power Factor SEPIC Rectifiers with Split-Capacitor Output, pp. 1208-1213.

Costa, Paulo Junior Silva (UFSC), Kremes, William de Jesus (UFSC), Illa Font, Carlos Henrique (Federal University of Technology - Paraná), Lazzarin, Telles (UFSC)

15:00-16:30 We7Plenaries.3

An UPS System Suitable for Noise-Sensitive Loads, pp. 1214-1219.

Göbel Fernandes, Leonardo (Universidade Tecnológica Federal do Paraná), Avila, Victor Habermann (Universidade Tecnológica Federal do Paraná), Romanelli, Eduardo (Federal University of Technology - Paraná), Gules, Roger (Federal University of Technology - UTFPR)

15:00-16:30 We7Plenaries.4

Integration Control Strategy for Voltage Source Inverter, pp. 1220-1225.

Alves de Melo Bento, Aluisio (State University of Rio de Janeiro), Fernando Corrêa Monteiro, Luís (State University of Rio de Janeiro)

15:00-16:30 We7Plenaries.15

Study on the Effect of the Temperature in Acoustic Emission Sensor by the Pencil Lead Break Test, pp. 1226-1229.

Lopes, Barbara Guedes (São Paulo State University), Alexandre, Felipe (São Paulo State University), Lopes, Wenderson (São Paulo State University), Aguiar, Paulo (São Paulo State University), Bianchi, Eduardo (São Paulo State University), Aulestia Viera, Martin Antonio (São Paulo State University)

15:00-16:30 We7Plenaries.16

Big Data Systems Requirements for Industry 4.0, pp. 1230-1236.

Alcarpe Coda, Felipe (EPUSP), Salles, R.M., Rafael Machado de Salles (EPUSP), Junqueira, Fabrício (EPUSP), Santos Filho, Diolino José dos (EPUSP), Silva, Jose Reinaldo (EPUSP), Miyagi, Paulo (EPUSP)

15:00-16:30 We7Plenaries.17

Requirements Analysis for Machine to Machine Integration within Industry 4.0, pp. 1237-1243.

Salles, R.M., Rafael Machado de Salles (EPUSP), Alcarpe Coda, Felipe (EPUSP), Silva, Jose Reinaldo (Universidade de São Paulo/EPUSP), Santos Filho, Diolino José dos (EPUSP), Miyagi, Paulo (EPUSP), Junqueira, Fabrício (EPUSP)

15:00-16:30 We7Plenaries.26

Technical and Economic Considerations of Harmonic Studies with Renewable Sources, pp. 1244-1251.

Tiburcio, Vicente (Federal University of Itajuba)

15:00-16:30 We7Plenaries.27

Impact of Distributed Generation on Distribution Systems with Cascaded Bidirectional Step Voltage Regulators, pp. 1252-1258.

Brito, Hugo Rodrigues de (Federal University of Pará), Souza, Valéria Monteiro de (Federal University of Pará), Souza, Vanderson Carvalho de (Federal University of Pará), Vieira, João Paulo Abreu (Federal University of Pará), Bezerra, Ubiratan Holanda (Federal University of Pará), Lima Tostes, Maria Emília (Universidade Federal do Pará), Garcia, Alexandre Orpheo Rico (ITB Electrical Equipments Co., Ltd), Costa, Marcelo Sousa (The Electric Distribution Utility of the State of Pará), Carrera, Gilberto Teixeira (The Electric Distribution Utility of the State of Pará), Cardoso, Hugo Nazareno de Souza (The Electric Distribution Utility of the State of Pará)

15:00-16:30 We7Plenaries.31

Characterization of Electromagnetic Interference Conducted in DC-DC Buck Converter LED Light in Accordance with CISPR 25 - Class 5, pp. 1259-1265.

Araújo, Carlos M.B (PWM Automation and Protection of Power Systems)

15:00-16:30 We7Plenaries.33

Analysis of the Dynamic Emulation Problem for Validation of Position Control Algorithms in Machine Drives, pp. 1266-1273.

Oliveira, Carlos Matheus Rodrigues de (University of São Paulo), de Aguiar, Manoel Luis (Universidade de São Paulo), Guazelli, Paulo Roberto Ubaldo (University of São Paulo), de Castro, Allan Gregori (University of São Paulo), dos Santos, Stefan Thiago Cury Alves (University of São Paulo), Monteiro, José Roberto Boffino de Almeida (University of São Paulo)

15:00-16:30 We7Plenaries.34

Assessment of Loss Estimation Approaches for Distribution Transformers, pp. 1274-1279.

Puma Flores, Fransk Abdel (UNICAMP), Melo Cavalcante, Michelle (University of Campinas), Ugarte, Luis (UNICAMP), Sau, Rodrigo (Unicamp), Cortes de Almeida, Madson (State University of Campinas)

15:00-16:30 We7Plenaries.35

Intelligent Control System Applied to in Vitro Ventricular Assist Device Tests Bench for Decision Support Support, pp. 1280-1284.

Cerqueira Dias, Jonatas (Universidade de São Paulo - USP), Dias, Jeferson (University of São Paulo - USP), Barboza, Marcelo (Escola Politécnica Da Universidade de São Paulo), Sobrinho, José Ricardo (Escola Politécnica of the University of São Paulo)

15:00-16:30 We7Plenaries.36

Acoustic Emission System for Continuous Monitoring, pp. 1285-1290.

Taborda Ribas Tovar, Felipe (Lactec), Luzio, Marco Aurélio (Lactec), Sirino, Leonardo (Lactec), Meneguel, Jessica (Lactec), Moura, Nestor (Lactec), Yamao, Eduardo Massashi (Lactec), Moro, Paulo Cristiano (Lactec), Tomal Ribas, Luis Gustavo (Lactec), Silveira Marques Lisboa, Felipe (Lactec), Meneghini Pires, Leonardo (Lactec), Filippin, Carlo Giuseppe (Lactec), Toledo, Cintia (U.E.G. Araucária)

We8Track A Room 1
Power Electronics 9 (Regular Session)

Chair: Fernando Corrêa Monteiro, Luís State University of Rio de Janeiro
Co-Chair: de Brito, Moacyr Aureliano Gomes UFMS

16:30-16:45 We8Track A.1

Single-Phase to Three-Phase Conversion System, pp. 1291-1298.

Alves de Melo Bento, Aluisio (State University of Rio de Janeiro), Dias Bellar, Maria (State University of Rio de Janeiro), Debora Lima, Marcia (State University of Rio de Janeiro), Fernando Corrêa Monteiro, Luís (State University of Rio de Janeiro)

16:45-17:00 We8Track A.2

Modeling and Control of a Converter Based AC Subsea Power Cable Emulator, pp. 1299-1305.

Almeida, André de Albuquerque (Petrobras), Santos, Tito (Federal University of Bahia (Brazil)), Tahim, André Pires Nóbrega (Universidade Federal Da Bahia)

17:00-17:15 We8Track A.3

Design of a Low-Cost Residual Current Sensor for LVDC Power Distribution Application, pp. 1313-1319.

Oliveira, Thiago Ribeiro (UFMG)

17:00-17:15 We8Track A.3

Current-Fed Switched-Capacitor 5-Level Single-Phase Inverter, pp. 1306-1312.

Tomin Jr., Valdir Pedrinho de (UFSC), Estofanero Larico, Hugo Rolando (UFSC), Greff, Diego Santos (UFSC)

17:30-17:45 We8Track A.5

Analysis of Hybrid MPPT Techniques for Photovoltaic Systems, pp. 1320-1326.

Omine, Leandro (UFMS), de Brito, Moacyr Aureliano Gomes (UFMS), Pinto, João Onofre Pereira (UFMS)

17:45-18:00	We8Track A.6
<i>Application of the DAB Converter to a Hybrid System for Hydro-PV and Battery</i> , pp. 1327-1334.	
Flach, Maicon Luís (Federal University of Santa Maria), de Souza, Carlos (Federal University of Santa Maria), Giuliani Scherer, Lucas (Federal University of Santa Maria), Camargo, Robinson (UFMS), Dupont, Fabricio (Unochapeco)	
We8Track B	Room 2
Industry Applications 6 (Regular Session)	
Chair: Pereira, Fernando da Cruz	IFSP - Presidente Epitácio - SP
Co-Chair: da Costa Junior, Pedro	São Paulo State University (UNESP), School of Engineering, Bauru
16:45-17:00	We8Track B.2
<i>Piecewise Bézier Curve Fitting of a Point Cloud Boundary by Simulated Annealing</i> , pp. 1335-1340.	
Ueda, Edson Kenji (EPUSP), Barari, Ahmad (University of Ontario Institute of Technology), Tsuzuki, Marcos de Sales Guerra (Escola Politécnica Da USP)	
17:00-17:15	We8Track B.3
<i>Procedural Method for Finding Roller Coaster Rails Centerlines Based on Heart Line Acceleration Criteria</i> , pp. 1341-1348.	
Duran, Guilherme Cortez (EPUSP), Tsuzuki, Marcos de Sales Guerra (EPUSP)	
17:15-17:30	We8Track B.4
<i>A Performance Evaluation of Electromagnetic Time Reversal Method for Locating Faults in Branched Cable Networks</i> , pp. 1349-1354.	
da Costa Junior, Pedro (São Paulo State University (UNESP), School of Engineering, Bauru), Nunes de Souza, André (São Paulo State University (UNESP), School of Engineering, Bauru), Martins, André Christóvão Pio (Universidade Estadual Paulista Júlio de Mesquita Filho)	
17:30-17:45	We8Track B.5
<i>Interferometric Characterization of an XY Piezoelectric Nanopositioner: Linearity, Hysteresis and Frequency Response</i> , pp. 1355-1361.	
Martinez, Guilherme Alves (Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP), Pereira, Fernando da Cruz (IFSP - Presidente Epitácio - SP), GALETI, JOSE HENRIQUE (Federal Institute of Mato Grosso Do Sul), Higuti, Ricardo Tokio (Univ Estadual Paulista UNESP, Dep. Electrical Engineering, Ilha), Nelli Silva, Emilio Carlos (University of Sao Paulo), Kitano, Claudio (Faculdade de Engenharia de Ilha Solteira - UNESP)	
17:45-18:00	We8Track B.6
<i>High Voltage Optical Sensor Insulation Using PLA (Polylactic Acid)</i> , pp. 1362-1367.	
Barbosa, Kelvin Meira (Federal Institute of Mato Grosso Do Sul), Martinez, Guilherme Alves (Universidade Estadual Paulista "Júlio de Mesquita Filho" - UNESP), Pereira, Fernando da Cruz (IFSP - Presidente Epitácio - SP), Higuti, Ricardo Tokio (Univ Estadual Paulista UNESP, Dep. Electrical Engineering, Ilha), Kitano, Claudio (Faculdade de Engenharia de Ilha Solteira - UNESP), GALETI, JOSE HENRIQUE (Federal Institute of Mato Grosso Do Sul)	
We8Track D	Room 4
Robotics and Mechatronics 3 (Regular Session)	
Chair: Angélico, Bruno Augusto	Universidade de São Paulo
Co-Chair: Yoshioka, Leopoldo	University of Sao Paulo
16:30-16:45	We8Track D.1
<i>Ball Balancing Robot: Construction, Modeling and Control Design</i> , pp. 1368-1372.	
Lima, Flavio Henrique Barbosa (EPUSP), Poleze, Eduardo (EPUSP), Pereira das Neves, Gabriel (EPUSP), Angélico, Bruno Augusto (EPUSP)	
16:45-17:00	We8Track D.2
<i>Evaluation of Perpendicularity Methods for a Robotic End Effector from Aircraft Industry</i> , pp. 1373-1380.	
Roberto da Silva Santos, Kleber (UNIFEI - Universidade Federal de Itajubá), de Melo Carvalho, Gustavo (ITA - Instituto Tecnológico de Aeronáutica), Tanure Tricarico, Rodrigo (ITA - Instituto Tecnológico de Aeronáutica), Fernando Lapetina Rocha Ferreira, Luiz (ITA - Instituto Tecnológico de Aeronáutica), Villani, Emília (ITA - Instituto Tecnológico de Aeronáutica), Sutério, Ricardo (INPE - Instituto Nacional de Pesquisas Espaciais)	
17:00-17:15	We8Track D.3
<i>Dynamic Model Identification of an RV-M1 Robot Arm</i> , pp. 1381-1386.	
Risnik, Guilherme (EPUSP), de Oliveira Fialho, Fábio (EPUSP)	
17:15-17:30	We8Track D.4
<i>Numerical Error and Temporal Analysis of Embedded Magnetic Sensor Calibration Using ARM Cortex-M4 Processor</i> , pp. 1387-1394.	
Croisfelt Rodrigues, Victor (Universidade Estadual de Londrina), Silva, Guilherme Brandão (UEL), Batista, Daniel Strufaldi (State University of Londrina), Tosin, Marcelo Carvalho (State University of Londrina), Granziera Jr, Francisco (State University of Londrina)	
17:30-17:45	We8Track D.5
<i>Privacy Methods for Virtual Sensors in a Sensing-As-A-Service Industry Paradigm</i> , pp. 1395-1401.	
Daguano, Rodrigo França (University of São Paulo), Sequeira Aikawa, Arthur (Universidade de São Paulos), Yoshioka, Leopoldo	

Augmented Reality Applied to a Wireless Power Measurement System of an Industrial 4.0 Advanced Manufacturing Line, pp. 1402-1406.

Amici, Thiago Tadeu (SENAI-SP), Hanser Filho, Peter (Federal Institute of São Paulo), Brincalpe Campo, Alexandre (Instituto Federal de São Paulo)