

# **2022 IEEE International Autumn Meeting on Power, Electronics and Computing (ROPEC 2022)**

**Ixtapa, Mexico  
9 – 11 November 2022**



**IEEE Catalog Number: CFP2244W-POD  
ISBN: 978-1-6654-5893-1**

**Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2244W-POD
ISBN (Print-On-Demand):	978-1-6654-5893-1
ISBN (Online):	978-1-6654-5892-4
ISSN:	2381-5515

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## TABLE OF CONTENTS

Electrification Systems for Off-Grid Rural Communities in Ecuador ..... <i>José Jarrín-Díaz, Rubén Sánchez-Figueroa, Xavier Serrano-Guerrero</i>	1
Control Strategy for a Dedicated On-Board Isolated Battery Charger ..... <i>D. Reyes, D. Langarica, S. Iturriaga, P. R. Martinez, J. M. Sosa, G. Vazquez</i>	7
Theoretical and Experimental Investigation of a Faraday Disc Generator ..... <i>Jorge Luis Galvan-Ruiz, F. Sergio Sellschopp-Sanchez, Carlos Álvarez-Macías, Rodrigo Loera, Raúl A. Ávalos-Zúñiga, Michel Rivero</i>	13
Recurrence Quantification Analysis in Accelerometric Signals of the Rectus Femoris During Quiet Stance ..... <i>Idari B. Sánchez-Flores, Claudia I. Ledesma-Ramírez, José J. Reyes-Lagos, Adriana C. Pliego-Carrillo</i>	19
Non-Linear PID Controller Optimization Using the Artificial Bee Colony Algorithm Applied to a Small-Scale Pasteurization Plant ..... <i>Luis Caiza, Diego S. Benítez, Oscar Camacho</i>	24
Unit Commitment Problem Considering Solar Power Penetration Levels and Pumped Hydroelectric Storage ..... <i>David Sánchez-Heredia, Elisa Espinosa-Juárez</i>	30
Analysis of Predictive Control Strategies for High-Speed Operation of PMSM Drive ..... <i>Julio Hernandez, Jose Rangel-Magdaleno, Roberto Morales-Caporal</i>	36
DC Line Current in a Compact MTDC System for DC Short-Circuit Fault Analysis ..... <i>Juan M. S. Fuentes-Burrueal, Edgar L. Moreno-Goytia</i>	42
Comparative Study of DC Short-Circuit in MMC-HVDC System Considering FCL ..... <i>Saúl A. Mendoza-Caballero, Juan M. S. Fuentes-Burrueal, Edgar L. Moreno-Goytia</i>	47
Multi-Variable Fuzzy+PID Control of a Buck-Boost Four Port Converter for Renewable Energy System ..... <i>Danny Valencia, Nataly Pozo, Alberto Sánchez</i>	52
Artificial Neural Network-Based Voltage Control in a DC-DC Converter Using a Predictive Model ..... <i>Marcos Yair Bote-Vázquez, Jazmin Ramirez-Hernandez, Leobardo Hernandez-Gonzalez, Eric David Delgado-Piña, Oswaldo Ulises Juarez-Sandoval</i>	58
Support Tool for Presumptive Diagnosis of Glaucoma Using Fundus Image Processing and Artificial Intelligence Implementation ..... <i>Ma. Isabel Cordero-Mendieta, Eduardo Pinos-Vélez, Edison Buri-Abad, Roberto Coronel-Berrezueta</i>	64
Fault Diagnosis in Nonlinear Systems Based on Real Time Generalized Unknown Inputs Observer Scheme (GUIOS) ..... <i>Juan Anzures Marin, Juan Manuel De La Torre, Salvador Ramirez Zavala, Juan José Avilés Espinoza</i>	69

Natural Language Processing: A Proposal for Word-Per-Minute Evaluation in Students' Performance Within the Classroom .....	76
<i>Sergio Faustino Vázquez Reyes, Juan Arias-Castillo, Roberto Ángel Meléndez-Armenta, Pedro Arguijo, José Antonio Hiram Vázquez López</i>	
A Dynamic Sliding Mode Controller Approach for Open-Loop Unstable Systems .....	82
<i>Christian Camacho, Oscar Camacho</i>	
Switching Analysis in a Back-To-Back Converter of the Type-4 Wind Turbine .....	88
<i>Rubén Rodríguez-Flores, Aurelio Medina-Rios, Juan Verduzco-Durán, J. Segundo-Ramirez</i>	
Analysis of Scenarios for the Operation of a University Campus Microgrid Using PSCAD/EMTDC .....	94
<i>Amiron W. Serra, Anna D. Rocha, Patricia S. Santos, Silvangela L. Barcelos, Osvaldo R. Saavedra, Rafael G. Bento</i>	
Accurate Analytical Calculation of Losses and Efficiency in Full - Bridge DC - DC Converter .....	100
<i>D. Gallo-Reyes, I. Álvarez-Marín, J. Ortiz-Marín, D. Ruiz-Robles, V. Venegas-Rebollar, E. L. Moreno-Goytia</i>	
Broken Rotor Bar Detection in Induction Motors Using Digital Taylor-Fourier Transform .....	107
<i>Sarahi Aguayo-Tapia, Gerardo Ávalos-Almazán, José Rangel-Magdaleno, Mario R. A. Paternina</i>	
Analysis and Design of Buck Converter $R^2P^2$ with Interleaved Function .....	113
<i>Iván A. Reyes-Portillo, Jorge A. Morales-Saldaña, Saúl R. Méndez-Elizondo, Aurelio Hernández-Rodríguez, Elvia R. Palacios-Hernández, Claudia A. Rivera-Romero</i>	
Unit Commitment Analysis in Hybrid Networks Containing Point-to-Point VSC-HVDC Links .....	119
<i>N. González-Cabrera, Luis M. Castro, L. E. Hernández-Amador</i>	
Selective Signal Extraction Based on OMP Algorithm and DCT and DST Dictionaries .....	125
<i>Carlos Morales-Perez, Jose Rangel-Magdaleno, Hayde Peregrina-Barreto, Jorge Cerezo-Sanchez, Ambrosio Leon-Bonilla</i>	
Design of a Physiological Parameter Monitoring System, Implementing Internet of Things Communication Protocols by Using Embedded Systems.....	131
<i>Daniel Llamas-Maldonado, Grace Leslie, Juan Alfonso Salazar-Torres, Adriana Del Carmen Téllez-Anguiano, Miguelangel Fraga-Aguilar</i>	
Design and Characterization of Magnetic Loop Distributed in Three Planes.....	136
<i>Hugo David Lozano Rodríguez, Iván De Jesús Rivas Cambero, José Humberto Arroyo Núñez, Clementina Rueda German</i>	
Shooting-Method-Based Simulink Initialization .....	142
<i>Julio Hernández-Ramírez, J. Segundo-Ramírez, N. Visairo, C. Nuñez</i>	
Small-Signal Models of Transmission Lines Oriented to the Impedance-Based Method .....	146
<i>Julio Hernández-Ramírez, J. Segundo-Ramírez</i>	
Economic Dispatch of Microgrids Considering CO <sub>2</sub> Emissions Reduction and BESS Units Integration .....	152
<i>José M. Diaz-Rojas, Giovanni Huerta-Aguilar, Rubén Tapia-Olvera, Hertwin Minor-Popocatl, Omar Aguilar-Mejía</i>	
Design of an Experimental Prototype of Low-Power Wind Generators with Savonius Turbines .....	158
<i>J. M. Guzmán León, Pablo Sosa Flores, M. E. Anaya Pérez, R. A. Pérez Enciso, L. N. Gutiérrez Ortíz, C. M. Sánchez Domínguez, Alejandro García-Juárez, Nun Pitalúa-Díaz</i>	

Design of a High-Reduction Ratio, Doubly Interleaved Buck Converter .....	164
<i>José-David Marín-De-La-Cruz, Ismael Araujo-Vargas, Mario Ponce-Flores, Fermín Valencia-Figueroa, Enrique Velázquez-Elizondo, Kevin Cano-Pulido</i>	
Towards the Development of an Acne-Scar Risk Assessment Tool Using Deep Learning .....	170
<i>Jordan Aguilar, Diego Benítez, Noel Pérez, Jorge Estrella-Porter, Mikaela Camacho, Maria Viteri, Paola Yépez, Jonathan Guillerno</i>	
Data Analysis Architecture Using Techniques of Machine Learning for the Prediction of the Quality of Blood Fonations Against the Hepatitis C Virus.....	176
<i>Paul Idrovo-Berrezueta, Denys Dutan-Sanchez, Remigio Hurtado-Ortiz, Vladimir Robles-Bykbaev</i>	
Exposure Time and Depth Effect in Laser Speckle Contrast Images Under an Adaptive Processing .....	183
<i>E. Morales-Vargas, H. Peregrina-Barreto, J. C. Ramirez-San-Juan</i>	
A Proxemic Potential Field Approach for Modeling Interactions Between Autonomous Vehicles with Pedestrians and Cyclists .....	189
<i>Jesus Eduardo Hermosilla-Diaz, Antonio Marin-Hernandez, Miguel Gonzalez-Mendoza</i>	
Machine-Learning Based Fault Monitoring System for Electric Vehicle Onboard Chargers.....	195
<i>Luis Fernando Gaona Cárdenas, Martin Antonio Rodriguez Licea, Nimrod Vazquez Nava</i>	
Minimization of Energy Storage in a Solar Farm by Controlling the State of Charge of a Battery Bank .....	201
<i>Miguel Mendieta, Luis I. Minchala, Oliver Probst</i>	
2D Automatic Alignment of Optical Spatial Filtering System by PID Control.....	207
<i>Gregorio Alejandro Oropeza Gómez, J. Onofre Orozco-López, Francisco J. Casillas-Rodríguez, Miguel Mora-Gonzalez</i>	
Optimal Charging Schedules for PEVs with Voltage Profile Support in Distribution Grids .....	213
<i>J. C. Silva, Jaime Cerda, J. A. Avendaño</i>	
Training of a Convolutional Neural Network for Autonomous Vehicle Driving.....	219
<i>Sergio Iván Morga Bonilla, Daniel Galván Pérez, Iván De Jesús Rivas Cambero, Jacinto Torres Jiménez</i>	
Comparison of PID and Fuzzy Controllers in an Omnidirectional Robot to Follow People.....	225
<i>Sergio Hernandez-Mendez, Carolina Maldonado-Mendez, Antonio Marin-Hernandez, Fernando Montes-Gonzalez, Sergio Fabian Ruíz Paz</i>	
Detection and Classification of Faults in Transmission Lines Compensated with TCSC in the Time Domain .....	231
<i>Javier Rodríguez-Herrejón, Daniel Durán-Durán, Enrique Reyes-Archundia, Marco Vinicio Chávez Báez</i>	
Adaptive IDA-PBC for Output Voltage Regulation of a Fuel Cell Hybrid Storage System.....	236
<i>Carlo A. Beltrán, Luis H. Diaz-Saldiernat, Pánfilo R. Martínez-Rodríguez, Rafael Cisneros, Gerardo Vázquez-Guzmán, Diego Langarica-Córdoba</i>	
Fast Steady-State Solution of Electric Systems Under Harmonic Distortion Conditions Based on Sparse Matrix LU Decomposition .....	242
<i>J. Cesar Godinez-Delgado, Aurelio Medina-Rios, Rafael Cisneros-Magaña</i>	

Transducer Based on Current Transfer Ratio of Optocouplers to Smart Electricity Meters.....	248
<i>Ismael Molina Moreno, Marco Vinicio Chávez Báez, Juan Alfonso Salazar Torres, Javier Correa Gómez</i>	
Sequential Models for Automatic Personality Recognition from Multimodal Information in Social Interactions.....	254
<i>Jeanfed Ramirez Lima, Hugo Jair Escalante, Luis Villaseñor Pineda</i>	
Visual Sensor System Applied to Trajectory Generation for UAVs .....	260
<i>Luis Felipe Muñoz Mendoza, José Trinidad Guillen Bonilla, Guillermo García-Torales, Cuauhtémoc Acosta Lua, Stefano Di Gennaro</i>	
Real-Time Optimal Harmonics Estimation: An Internet of Things Approach.....	266
<i>Fernando Ornelas-Tellez, Jose Ortiz-Bejar, Serafin Ramos-Paz, Luis Alfonso Inostroza-Moreno, Jose Rodolfo Lopez-Galvan</i>	
A Fault Diagnosis Comparative Approach for a Quadrotor UAV .....	272
<i>J. J. Avilés-Espinoza, J. Anzures-Marin, F. R. López-Estrada</i>	
Exhaustive Search Applied to Time Series Forecasting Methods Using Parallel Processing.....	278
<i>Jesús De La Torre Bucio, Antonio Ramos Paz, J. Aurelio Medina Ríos</i>	
Design and Development of an Intent-Based Intelligent Network Using Machine Learning for QoS Provisioning.....	284
<i>Marco Vinicio Barzallo Huanga, Remigio Ismael Hurtado Ortiz, Juan Daniel Amay Marca</i>	
Optimal Sizing of a Stand-Alone Renewable-Powered Hydrogen Fueling Station.....	291
<i>Shoab Hussain, Shabnam Vahdati Daneshmand, Hamidreza Zareipour, David Layzell, Adnan Khan</i>	
Optimal Sizing of BESS for Peak Shaving in a Microgrid.....	297
<i>José Andrés Saaravia-Guerrero, Elisa Espinosa-Juárez</i>	
Real-Time Simulation of Model Predictive Control for Boost Converters in the Linear Complementarity Framework.....	303
<i>Rodrigo Morfín-Magaña</i>	
DSOGI-PLL with FLL to Mitigate Transient Oscillations in the Frequency and Phase Angle Measurement .....	309
<i>Gilberto A. Herrejón-Pintor, Enrique Melgoza-Vázquez</i>	
A Data Analytics Method Based on Data Science and Machine Learning for Bank Risk Prediction in Credit Applications for Financial Institutions.....	316
<i>Remigio Hurtado Ortiz, Edisson Salinas Jara, Juan Hurtado Ortiz, Johnny Maisincho Panjón</i>	
Grid-Forming Type Converter Decoupling and Resynchronization for an AC Microgrid .....	321
<i>Raul Teran, Eduardo Maldonado, Javier Perez, Jose Beristain</i>	
Simultaneous MPPT and MEPT for Asymmetric Parallel Boost-Type Converters.....	327
<i>J. G. Parada-Salado, M. A. Rodríguez-Licea, F. J. Pérez-Pinal</i>	
High Gain Step-Up DC-DC Converter with Low Duty Cycle Operation .....	333
<i>Cesar A. Hernández-Jacobo, Rodrigo Loera-Palomo, Jorge Alberto Morales Saldaña, Carlos Álvarez-Macias</i>	

A Study of a Grid-Forming Photovoltaic Plant for Fast Frequency Response .....	339
<i>Luis F. Ayala-Maciel, Enrique Melgoza-Vázquez, José L. Monroy-Morales, Alejandra G. Andrade-Partida</i>	
Robotic Arm Handling Based on Real-Time Gender Recognition Using Convolutional Neural Networks .....	346
<i>Leonel Miranda, Daniel Jiménez, Diego Benítez, Noel Pérez, Daniel Riofrío, Ricardo Flores Moyano</i>	
Differential Protection Analysis for Detection of Ground Faults on the Generator Stator .....	352
<i>Christian H. Fernandez Alvarez, Carlota M. Pinos Veintimilla, Flavio A. Quizhpi Palomeque</i>	
Condition Monitoring of Power Insulators Using Intelligent Techniques—A Survey .....	358
<i>Ivan Silva, Danilo Spatti, Victor Yoshizumi, Sofia Lopes, Rogério Flauzino, Beatriz De Lima Tavares, Ana Cláudia Barquete, Wallace Honorato</i>	
Induction Motor Failure Analysis Using Machine Learning and Infrared Thermography .....	364
<i>Emmanuel Reséndiz-Ochoa, Luis A. Morales-Hernández, Irving A. Cruz-Albarran, Shaila Álvarez-Junco</i>	
Watermarking Scheme with Bounded-Exhaustive Self-Recovery Approach .....	370
<i>Felix Calderon, Sergio Bravo-Solorio</i>	
A Low-Cost Stereo Vision System for Eye-to-Hand Calibration .....	381
<i>Jesús Abraham Rojas Úrzulo, José-Joel González-Barbosa, Xochitl Yamile Sandoval Castro, Maximiano Francisco Ruiz Torres</i>	
Automatic Selection of White Paint Types for Automotive Industry .....	387
<i>Deborah Martínez-Camacho, Daniel A. May-Arrijoja, Miguel Torres-Cisneros, Rafael Guzmán-Cabrera</i>	
Using Partial Least Square for Identification of Powdery Mildew in Cucurbits Plants .....	391
<i>C. A. Rivera-Romero, E. R. Palacios-Hernández, J. U. Muñoz-Minjares, O. Vite-Chávez, J. A. Morales-Saldaña, I. A. Reyes-Portillo</i>	
Sampling Algorithms for Unsupervised Prototype Selection .....	397
<i>José Ortiz-Bejar, Arturo A. Solorzano-Rodríguez, Juan C. Silva-Chávez, Eric S. Tellez, Mario Graff, Jesús Ortiz-Bejar</i>	
Implementation of an IEC61850 Virtual Relay Network in a Protection Laboratory.....	403
<i>Flavio Quizhpi-Palomeque, Freddy Jiménez, Pedro Rivera, Mateo Quizhpi-Cuesta, Francisco Gómez-Juca</i>	
An Analysis Method for Predicting Breast Cancer Using Data Science Processes and Machine Learning .....	409
<i>Juan Jose Cordova Calle, John Xavier Farez Villa, Remigio Ismael Hurtado Ortiz</i>	
Solid State Transformers Bi-Directional Control Based on Dual Active Bridge.....	413
<i>Francisco Javier Arcos-Pardo, Luis U. Chávez-Campos, Vicente Venegas-Rebollar, L. E. Ugalde-Caballero, E. L. Moreno-Goytia</i>	
Determination of Optimal Steady-State Equilibrium Points in Electrical Systems Constrained by Static Thermal Limits Using the Interior Point Method .....	420
<i>Lino Manuel Reyes-Martínez, Mohamed Badaoui, Daniel Ruiz-Vega</i>	

Incipient Damage Detection in a Truss-Type Bridge Using Vibration Responses and MUSIC Technique .....	426
<i>Cristian J. Hernández-Maqueda, Juan P. Amezcuita-Sanchez, Martin Valtierra-Rodriguez, Carlos A. Perez-Ramirez, Aurelio Dominguez-Gonzalez, Manuel Toledano-Ayala, Luis A. Morales-Hernandez</i>	
IPaddle: An Intelligent Swimming Training System .....	433
<i>Jahziel Oswaldo Cabrera-Arellano, Jose Luis Hernandez-Hernandez, Antonio Marin-Hernandez, Roberto Cruz-Estrada, Sergio Hernandez-Mendez, Jeronimo Manuel Guzman-Saldaña</i>	
Modeling and Parameter Identification of an Equivalent Electrical Circuit for Corrosion-Sensitive Lead-Acid Battery .....	439
<i>Humberto Velasco-Arellano, Nancy Visairo-Cruz, Ciro Nuñez-Gutiérrez, Juan Segundo-Ramírez</i>	
Methodology for Characterization and Calibration of Linear Infusion Electromedical Devices .....	446
<i>Jose Paredes, Alex Andrade, Malena Loza, Pablo S. Rivadeneira, Alberto Sánchez</i>	
Impact of High Penetration of Photovoltaic Distributed Generation on the Protection Coordination in Distribution Networks .....	451
<i>Héctor A. Álvarez-Macías, Rafael Peña-Gallardo, Carlos Soubervielle-Montalvo, Edgar D. De León-Mendoza, José A. Pecina-Sánchez</i>	
Controller Based on Combined Tracking Error Applied in a Tilt-Rotor MAV .....	457
<i>David Nieto-Hernández, Miguel-Angel Lastras-Montaño, César-Fernando Méndez-Barrios, José S. Murguía-Ibarra, Pánfilo Martínez-Rodríguez, Diego Langarica-Córdoba</i>	
Returning to the Same Point Through Bounded Controls in Finite Time .....	463
<i>Abdon E. Choque-Rivero, Efrain Cruz Mullisaca, Graciela A. González</i>	
Strong Ground Motion Signal Analysis and Nonlinear Response Spectra for Seismic Code Implementation.....	467
<i>Fabricio Yépez, Diego S. Benítez, Viviana Silva</i>	
Virtual Inertia Control Applied to a Multi-Area Electrical Power System with Low Inertia and High Penetration of Renewable Energy Sources .....	473
<i>Angel Constantino Barajas, Manuel Madrigal Martinez, Edgar L. Moreno-Goytia, Jose L. Murillo Perez, Carlos A. Melendez Ceja, Williams G. Najera Guitierrez</i>	
Watermarks Based on Pyramidal Images for Tampering Image Self-Restoration.....	479
<i>Felix Calderon, Juan J. Flores, Sergio Bravo-Solorio</i>	
Analysis of the Appropriate Decomposition Level Based on Discrete Wavelet Transform for Detection of Power Quality Disturbances .....	486
<i>Aldo Vinicio Rico-Medina, Enrique Reyes-Archundia, José Antonio Gutiérrez-Gnecchi, Juan Carlos Olivares-Rojas, María Del Carmen García-Ramírez</i>	
Detection of Multiple Faults in a Low-Power Wind Turbine by Using Convolutional Neural Networks .....	492
<i>Angel H. Rangel-Rodriguez, Jose R. Huerta-Rosales, Juan P. Amezcuita-Sanchez, David Granados-Lieberman, Maximiliano Bueno-Lopez, Martin Valtierra-Rodriguez</i>	
Grid-Feeding Power Converter in an AC Microgrid with a Photovoltaic Array and a Battery Pack.....	498
<i>A. Eduardo Maldonado, Raul A. De J. Teran G., R. Javier Perez, Jose A. Beristain J.</i>	



Modeling and Simulation of Brushless DC Motor Considering Magnetic Saturation .....	504
<i>J. Delgado-Quintero, R. Escarela-Perez, E. Campero-Littlewood, J. C. Olivares-Galvan</i>	
Performance Analysis of a Novel Zinc-Air Battery Powering an IoT Node .....	510
<i>C. A. Ugalde, C. Gonzalez, M. Vera, J. E. García, W. N. Velázquez</i>	
Embedded System for Agriculture Variables Monitoring Based on IoT Technology .....	515
<i>Cristian Mejia-Aguirre, Tania A. Ramírez-Delreal, Dagoberto Armenta-Bojorquez, Dagoberto Armenta-Medina</i>	
Bio-Inspired Optimization Strategy for Identify Coherent Nonlinear Generators Response .....	520
<i>Eyder K. Cervera, Emilio Barocio, Ramon D. Rodriguez-Soto, Harold R. Chamorro</i>	
Modeling of VSC-Based BESS and PV Plants as Distributed Resources for Steady-State Studies .....	526
<i>Jesús H. Sánchez, Andrea Arroyo-Serrano, Luis M. Castro</i>	
Raspberry-Based Low-Resolution Thermal Image System Using a Smoothing Filter-Based Kalman .....	532
<i>Miguel Á. López-Pérez, Allan A. Flores-Fuentes, Rosendo Peña-Eguiluz, Everardo E. Granda-Gutiérrez, J. F. García-Mejía</i>	
Potential Impacts of the Reform to the Electricity Industry Law in the Energy Dispatch of the Mexican Wholesale Electricity Market .....	538
<i>Carlos A. Mata-Martinez, Ricardo Rios-Zalapa</i>	
Regions Detection in Cervical Cytology to Help the Diagnosis of Cervical Cancer .....	543
<i>J. E. Alcaráz Chávez, A. C. Téllez-Anguiano, C. D. Campos Valdés</i>	
Subscriber Location in 5G mmWave Networks - Machine Learning RF Pattern Matching .....	549
<i>Játiva E. René, Anthony Salazar, Katty Beltrán, Oliver Caisaluisa</i>	
Optimal Switching Angles Calculation for a Multilevel Inverter Through the ABC Algorithm .....	555
<i>Adolfo R. Lopez, Christopher J. Cortés, Carlos A. Muñoz, Luis A. Alonso, Gilberto Muñoz, G. Vazquez, José M. Sosa, Susana De León Aldaco, J. Aguayo</i>	
Efficiency Improvement of a H5 Transformerless Inverter with MOSFET-IGBT Hybrid Switches .....	560
<i>H. B. Rea-Rios, G. Vazquez, J. M. Sosa, M. A. Juarez-Balderas, P. R. Martinez-Rodriguez, D. Langarica</i>	
A Cloud Remote Monitoring System of Hydraulic Pressure by a Minicomputer .....	566
<i>Macario Ramirez, Felipe J. Torres, Fabrizio López, Francisco A. Cervantes, César A. Ramirez, Diego A. Núñez</i>	
Skin Color Detection by Digital Image Processing to Compensate Deviations in a Non-Invasive Blood Glucose Estimation .....	572
<i>S. J. Márquez-González, A. C. Téllez-Anguiano, L. A. Castro-Pimentel, E. Reyes-Archundia</i>	
Noise Shaping SAR ADCs: Fundamentals, Challenges, Trends and Possibilities .....	578
<i>D. Rivera-Orozco, F. Sandoval-Ibarra, L. Guerrero-Linares</i>	
An Efficient Neurocontroller Position Method for PMSM Drive System .....	583
<i>O. Aguilar-Mejia, H. Minor Popocatl, J. M. Garcia-Morales, C. O. Castillo-Ibarra, A. Valderrabano-Gonzalez</i>	
Linear Control of the Non-Linear Model of the Convey-Crane .....	589
<i>Rodrigo Vázquez-López, Jacobo Sandoval-Gutiérrez, Daniel-Librado Martínez-Vázquez</i>	

Time Delay Detector in Seismic Signals Using Real-Time Multipoint Radiofrequency Links .....	594
<i>Aldo Misael Bucio-Ibarra, Jorge Fonseca-Campos, Israel Reyes-Ramírez, Luis Miguel Díaz Albarrán</i>	
Methodology for Weapon Detection in Social Media Profiles Using an Adaptation of YOLO-V5 and Natural Language Processing Techniques .....	600
<i>Alberto Baez-Velazquez, Aldo Hernandez-Suarez, Gabriel Sanchez-Perez, Karina Toscano-Medina, Jose Portillo-Portillo, Jesus Olivares-Mercado, Hector-Manuel Perez Meana</i>	

**Author Index**