



# CONCAPAN XL - PROGRAMA TÉCNICO



HORA **JUEVES 10 DE NOVIEMBRE DE 2022**

**8:30 - 9:15** **Keynote: Transición Energética de Panamá: Un Proceso Justo e Inclusivo - Dr. Jorge Rivera Staff - Salón The Syxth, Piso 6**

**9:15 - 9:30** **COFFEE BREAK**

HORA	SALÓN BERLIN 1	SALÓN BERLIN 2	SALÓN AMSTERDAM	SALÓN MADRID
<b>9:30 - 9:55</b>	Design and Performance Analysis of a Transverse-Flux PMSG for Applications in Small Wind Turbines <b>R. Iracheta, M. Hernández / México</b>	Comprehensive Management of Corrosion in Transmission Lines - An Operational Technical Approach in Asset Management <b>G. Salloum / Panamá</b>	Industry 4.0 Maturity Models in SMEs, Mexico Context <b>C. Cachutt, C. Sánchez, J. Velasco / México</b>	Design of a Unmanned Surface Robot for Lakes Monitoring <b>C. Villatoro, J. Ordóñez, M. Cardona / El Salvador</b>
<b>10:00 - 10:25</b>	Efficient Minigrad System Control with Synchronous Generation and Grid Following Inverter <b>L. Palacios, J. Gers, L. Molina / Colombia</b>	Are El Salvador's Volcanoes Being Harnessed to Power Bitcoin Mining? <b>C. Martínez-Cruz / El Salvador</b>	Study on the Implementation of Intelligent Methods for Order Preparation <b>A. Castillo, O. Castro, M. Perdomo / Honduras</b>	Non-Invasive Monitoring: Panthera Onca Recognition based on Image Processing <b>E. González, D. Cáceres / Panamá</b>
<b>10:30 - 10:55</b>	Comparison of wind resource among physical and virtual weather stations for analyzing the economic feasibility of wind farms <b>R. Iracheta, G. Martínez, L. Otamendi, J. De la Cruz, E. Dueñas / México</b>	Application of Three Wire and Messenger Supported Spacer Cable in Reference to National Electrical Safety Code <b>Edgardo Kliewer, Jose Di Ciommo / Panamá</b>	An indicator based on Wavelet and PCA to study the relationship between saline contamination and partial discharge activity in ceramic insulators <b>D. Saavedra, C. Boya / Panamá</b>	A remote laboratory platform for teaching automation and control <b>J. Cardona, J. Hoyos / Colombia</b>
<b>11:00 - 11:25</b>	Comparison of wind resource from physical and virtual weather stations in the municipality of La Estrella Tabasco <b>Y. Gómez, G. Villaseñor, R. Iracheta / México</b>	Analysis for the installation of an electric power generation site from ocean currents in Panama <b>C. Galdámez, J. Guevara / Panamá</b>	Study, design and manufacture of different propellers as paddle wheel, ducted and torpedo for underwater thrusters in fresh and salt water applying NC and additive technology <b>A. Meléndez, A. Reves / Honduras</b>	Optical Character Recognition in Equipment Calibrations <b>C. Sánchez / Panamá</b>
<b>11:30 - 12:00</b>	Motor bearing failures detection by using vibration data <b>J. Rodríguez, O. Nuñez, G. Gómez / Costa Rica</b>	Compound Index to Evaluate Energy Efficiency in Government Institutions in Panama <b>D. Cruz, G. Gonzalez / Panama</b>	Industrial instrumentation practices in engineering programs using virtual environments. Case Study: Transmitter-Controller Current Loop <b>J. Delgado, J. Guzmán, J. Florez / Colombia</b>	Flat Tension Functions and Minimally Rigid Graphs for Tasks of Synchronization and Control of Multi-Agent Robotic Systems <b>A. Peña, M. Zea, L. Rivera / Guatemala</b>

**12:00 - 13:00** **ALMUERZO**

<b>13:00 - 13:25</b>	Grid Code, Part 1: Conceptualization and Highlights for application in energy systems <b>L. Ruiz / México</b>	Canopy Extraction in a banana crop from UAV captured multispectral images <b>A. Espinosa, M. Polo, J. Gómez, R. Linero / Colombia</b>	Smart-home technology and its impact on the elderly health <b>C. Del-Valle, L. Valdivia, F. Cortés, R. Velázquez / México</b>	Development of virtual plant over embedded system <b>L. Belloso, D. Altuve / El Salvador</b>
<b>13:30 - 13:55</b>	Grid Code, Part 2: Global Parameterization and Comparison in the Electricity Sector <b>L. Ruiz / México</b>	Computer Vision Extended Perception System for Blind People <b>F. Machado, J. Aguilar, J. Fuentes / El Salvador</b>	Cryptography model to secure IoT device endpoints, based on polymorphic cipher OTP <b>C. Bran, C. Hernández / El Salvador</b>	Reconfiguring an RFET Based Differential Amplifier <b>M. Reuter / Alemania</b>
<b>14:00 - 14:25</b>	Remote Protection Reading System, Implementation Experiences in Substation Cruz Solar <b>A. Martínez del Sol / España</b>	Using Topic Modelling for Analyzing Panamanian Parliamentary Proceedings with Neural and Statistical Methods <b>K. Contreras, J. Sánchez, G. Verbel, J. Sánchez-Galán / Panamá</b>	A binary linear programming to the planning of wireless systems <b>J. Gómez, L. Camargo, B. Medina / Colombia</b>	Determining the accuracy and feasibility of measuring atmospheric density in the ionosphere through a nanosatellite <b>J. Sanchez, A. Fischer, A. Mejia, M. Arellano, P. Rodrigo, H. Gilardi / México</b>
<b>14:30 - 14:55</b>	Methodology for Practical Estimation of the Wind Resource for Low Power Applications <b>E. Blanco / El Salvador</b>	Application to manage digital certificates as a Certificate Authority (CA) according to the Digital Signature Law of El Salvador <b>A. Zavala, L. Maye / El Salvador</b>	Simple Methodology to Model On-Chip Inductors for CMOS RF Integrated Circuits Design <b>J. Loo-Yau / México</b>	Simulation of Electrical Power System for nanosatellite using Simulink <b>G. Vega, N. Ríos / Perú</b>

**15:00 - 15:20** **COFFEE BREAK**

<b>15:20 - 15:45</b>	Use of Attention-Based Neural Networks to Short-Term Load Forecast in the Republic of Panama <b>V. Navarro, J. Sánchez-Galán / Panamá</b>	URL-Based Dynamic Monitoring of Android Malware using Machine Learning <b>O. Somarriba, H. Jaentchke / Nicaragua</b>	Testing flexible fiber optic ribbon cables <b>F. Corcini, L. Yock / Costa Rica</b>	Objective quality metrics for algorithm evaluation in Computed Tomography <b>C. Navarro, R. Orozco, Y. Rodríguez / El Salvador</b>
<b>15:50 - 16:15</b>	CO2 Emission Payback Time of c-Si Photovoltaic Systems in Costa Rica <b>I. Rojas-Hernández / Costa Rica</b>	Allocation of Dairy Products and Wheat Flours through Mathematical Modeling in Tegucigalpa <b>A. Mendoza / Honduras</b>	Development of prototype of network analyzer embedded in FPGA <b>D. Altuve, L. Belloso / El Salvador</b>	A serious game for cognitive and fine motor skill rehabilitation: a qualitative evaluation <b>D. Mariaca, D. Guzmán, J. Londoño / Colombia</b>
<b>16:20 - 16:45</b>	Energy Management Strategies in Hybrid Renewable Energy Systems Isolated in the Grid <b>J. Lata, C. Cáceres, C. Pérez / Ecuador</b>	An IoT Mobil Prototype for quality air monitoring at Smart Campus Zacatenco <b>F. Felipe-Durán, J. Posadas, M. Sánchez / México</b>	UAV Data collection in hard-to-reach areas from a Wireless Sensor Network <b>L. Castrillo, M. Polo, L. Camargo, Y. Beltrán / Colombia</b>	Additively Manufactured Flexible Strain Gauge <b>C. Clarke, E. Romero, C. Frear, G. Carbajal, A. Rincón / USA</b>

POTENCIA Y ENERGIA

INFORMATICA Y TI

APLICACIONES INDUSTRIALES

ROBOTICA Y

TELECOMUNICACION

SISTEMAS

TECNOLOGIA

PROCESAMIENTO

INGENIERIA EN

VIERNES 11 DE NOVIEMBRE DE 2022				
<b>Keynote: Advancing Innovation to Meet Society Challenges, Dr. Jessica Bian, IEEE PES President - Salón The Syxth, Piso 6</b>				
<b>COFFEE BREAK</b>				
HORA	SALÓN BERLIN 1	SALÓN BERLIN 2	SALÓN AMSTERDAM	SALÓN MADRID
8:30 - 9:15				
9:30 - 9:55	Overvoltage protection for DC link in microinverters <b>E. Henao, S. Acevedo, A. Saavedra, C. Ramos / Colombia</b>	Hierarchical Forecasting of Load Demand With Smart Meter Data for Distribution Networks <b>O. Rivera, A. Cogley, M. Ríos, J. Gonzalez, C. Boya / Panamá</b>	Multistage Decimation Filter with Decreased Complexity and Improved Aliasing Rejection <b>G. Jovanovic / México</b>	Wireless-based pest control in tomato crops <b>O. Olarte, J. Quintero, A. Von Chong / Panamá</b>
10:00 - 10:25	Lessons Learned from Analysis of Power Transformer Failure Rates <b>R. Hernández, B. Hancock, M. Salmeron / USA</b>	Recloser - Fuse Coordination in the Distribution System of a Non-Interconnected Zone <b>L. Gaitán, J. Gómez, L. Zapata, J. Jaramillo, J. González / Colombia</b>	Detection of Flight Phase in Race Walking Based on Pressure Sensors <b>J. Campoverde, J. Chuqui, L. Serpa, F. Bueno / Ecuador</b>	A STEM Course for Computational Thinking Development with BEAM Robotics <b>C. Boya, D. Díaz, A. Fehrenbach, D. Saavedra / Panamá</b>
10:30 - 10:55	Generation Re-dispatch and Deliverability Analysis using Power Transfer Distribution Factors <b>F. Osorio / Panamá</b>	Potential Impacts of Demand-side Battery Storage on Distribution Networks with PV Penetration <b>O. Rivera, A. Cogley, M. Ríos, J. González, C. Boya / Panamá</b>	Water Volume Analysis in Reservoirs from Satellite Images <b>F. Jorge / El Salvador</b>	Model Predictive Control and Genetic Algorithm PID for DC Motor position. <b>M. Flores, Wendy Yáñez, I. Carrera, L. Espín, J. Barzola / Ecuador</b>
11:00 - 11:25	Reliability in Medium Voltage Distribution Systems in Renewable Energy Applications <b>C. Ospina, J. Rodríguez / Costa Rica</b>	A Perspective of the Energy Transition in Panama focused on Distributed Generation and Electric Vehicles on the Demand-Side <b>C. Boya, O. Rivera / Panamá</b>	Experimental scope of an electrical energy consumption device based on multi-microprocessors, local printed circuit boards and Internet of Things (IoT) <b>D. Flores, N. Reyes, H. Cerrato / Honduras</b>	Proposal of a Game with Dynamic Difficulty Adjustment from Physiological Signals in the Context of an Exergame <b>J. Aguilar / Colombia</b>
11:30 - 12:00	Reflections on the On-Line Partial Discharge Monitoring and Analysis for Condition Assessment of large Generators and Motors <b>M. Huzmezan, A. Toribio / USA</b>	Analysis of the impact on voltage due to the massive connection of distributed generation to reduce electrical interruptions in densely populated areas <b>K. Fernández, J. Guevara / Panamá</b>	Creating an Immersive Environment in 3D Surroundings using Sound Processing <b>M. Aguilar / El Salvador</b>	Model-based Control of a 3UPS+1RPU Parallel Robot for Knee Rehabilitation <b>K. Vicente, L. Arcos, P. Cruz, J. Abad, O. Zambrano / Ecuador</b>
<b>12:00 - 13:00 ALMUERZO</b>				
13:00 - 13:25	On-line Partial Discharge Monitoring of Substation Power Transformers <b>M. Huzmezan, A. Toribio / Alemania</b>	Study of Load Flows and Optimal Power Flows using a simulator prototype <b>A. Reyes, S. Chavarría / Nicaragua</b>	Educational resources with digital contents for pedagogical and research formation in technologies of knowledge and learning <b>Y. Caviativa, V. Jaramillo, F. Sanz, F. Castro / Colombia</b>	Determination of Favourable Conditions for Profitability of an Off-Shore Wind Farm in Mexico <b>A. Ponce, B. Hernández, J. Peña, R. Iracheta / México</b>
13:30 - 13:55	Application of a UPFC for Power Flow Control in the Honduran Electrical System <b>S. Matute / Honduras</b>	Voltage Collapse system Protection Increases power Transfer Limits at the Panama Transmission System <b>A. Castillo, E. Palma, M. Cruz / Ecuador</b>	General Design of a power-saving strategy for a Collaborative Wireless Sensor Network <b>R. Céspedes, A. Ruiz, C. Garita, G. Ortiz / Costa Rica</b>	Electric Vehicle Fleet control through OCPP deployment <b>I. Rojas-Hernández / Costa Rica</b>
14:00 - 14:25	Algorithm and criteria for the measurement of energy consumption in a CNC milling machine: a proposal <b>C. Flores, E. Rosales / El Salvador</b>	Design of a solar-powered air pollution monitoring system under tropical climate environments <b>E. Collado, G. Harish, Y. Sáez / Panamá</b>	Hand Gesture Recognition with ConvNets for School-Aged Children to Learn Basic Arithmetic Operations <b>A. Terán, V. López, J. Rangel, J. Sánchez / Panamá</b>	Simulation of a driving assistant by means of a Multisensory Alert System (MAS) <b>A. Medina, E. Ordóñez, M. López, J. Bravo / Ecuador</b>
14:30 - 14:55	Mathematical modeling and computer simulation of the University of St. Thomas Microgrid: 3-phase short-circuit analysis <b>V. Villavicencio, P. Singh / USA</b>	Evaluation of the technological advance and the Efficiency of the Public Lighting System of the municipality of Quetzaltenango Guatemala <b>J. Rosales, R. Padilla / Guatemala</b>	Geospatial, earth observations and statistical data integration in the Cortés department, Honduras <b>D. Mena, R. Durón, G. Pineda, J. Bardales, H. Villatoro, G. Munguía, R. Delgado, L. Herrera, J. Hernández, M. Portillo, F. Torres / Honduras</b>	Bibliometric study for CO2 measurement using IoT: Looking for the Latin American contributions <b>D. Paéz, M. Huerta, J. Castillo / Ecuador</b>
<b>15:00 - 15:20 COFFEE BREAK</b>				
15:20 - 15:45	Third harmonic voltage distortion levels in an urban distribution network in El Salvador <b>J. Ramos, C. Pocasangre / El Salvador</b>	New IEEE industrial recommended practices Series 3000 <b>G. Salloum / Panamá</b>	A long-range, low-cost technique to measure water level variations over limimeters on hydraulic weir using machine vision and IoT <b>D. Rivas, R. Clotet / Ecuador</b>	Prototype for evaluation of wireless technologies in IoT ecosystems <b>N. Agudelo, J. Amezcua, O. Salcedo / Colombia</b>
15:50 - 16:15	Sustainability in transformers: A key concept in a more sustainable power grid <b>C. Rodríguez, J. Piñeros / Colombia</b>	Analysis of the Crucial Factors in Biomass Electricity Generation <b>T. Abrego, J. Guevara / Panamá</b>	Conversational AI to improve local environmental risk management <b>J. Clímaco, M. Escalante, T. Chávez / El Salvador</b>	Experimental Analysis of Depolarization Effects of Infrastructure-to-Vehicle Radio Channels <b>J. Contreras, C. Gutiérrez, F. Castillo / México</b>
16:20 - 16:45	STATCOM in Panama - First application of this technology in Central América <b>L. Halphen / Panamá</b>	Study of Photovoltaic Energy Penetration at the Level of Self-consumption Clients Using the 13 Nodes IEEE Test Feeder Adjusted to Panama <b>M. Quijano, G. González / Panamá</b>	Automated Honduran Banknote Image Classification using Machine Learning <b>S. Castelar, L. Banegas, D. Mendoza, J. Soto, K. Dávila / Honduras</b>	Towards 6G Networks for Rural Environments: Vision for Improving Digital Inclusion through Open Source Hardware and Software <b>I. Armuelles, J. Chung, B. Bordel, R. Alcarria, R. Kettimuthu, T. Robles / Panamá</b>
16:50 - 17:10	Benefits of solar thermal energy in the agrobusiness sector by Termosolar Panama <b>J. González / Panamá</b>	Mini UPS for modem, reusing 18650 lithium cells. <b>C. Morales, S. Morales / Costa Rica</b>	Proposal of a base structure for a software project management methodology <b>L. Esquivel, V. Loria, A. González, L. Noguera / Costa Rica</b>	Design of an FTTH Network for the Improvement of Voice, Broadband, and Television Services in Hard-to-Reach Areas. The Colombian Case <b>L. Hernández, J. Albas, J. Camargo, C. De La Hoz / Colombia</b>