2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

CCE

Session BIO1- Biomedical Engineering/ Biomimetics

Wednesday October 22nd, 2025
12:00-14:00
Room 1
Session Chair: Dra. Blanca Tovar Corona

ID 3 12:00-12:20 Tarek Berghout
Trustworthiness and Interpretability in Deep Learning for Cardiac Ultrasound
Speaker: Tarek Berghout
ID 4 12:20-12:40 Tarek Berghout
Compressed Sensing and CertaintyTarek Berghout-Enabled Deep Learning in Cardiac Ultrasound Segmentation
Speaker: Tarek Berghout
ID 6 12:40-13:00 Tarek Berghout
A Reflective Study on Deep Learning in Brain Tumor Segmentation
Speaker: Tarek Berghout
ID 147 13:00-13:20 Luis Toribio-Campos, Alvaro Anzueto-Rios
Semantic Segmentation of Skin Macule Images
Speaker: Luis Toribio-Campos
ID 151 13:20-13:40 Eduardo Bernal-Bonilla, Álvaro Anzueto-Ríos, Blanca Tovar-Corona, Armando Juárez-Valdés, Juan C. Pino-Padrón, María del Pilar Cruz-Dominguez
Classification of Arrhythmic Heart Sound Signals
Speaker: Eduardo Bernal-Bonilla
ID 168 13:40-14:00 Antonio Dell'Osa, Natalia Y. Bravo, Alberto Concu
Cole Model: Implementation of a Fractional-Order Control Scheme for the Estimation of τ
Speaker: Natalia Y. Bravo

Session BIO2- Biomedical Engineering/ Biomimetics

Wednesday October 22nd, 2025
15:30-17:30
Room 1
Session Chair: Rafael Bayreh Mancilla

ID 70 *15:30-15:50* *Shahriar Ramit, Zotirmoy Chowdhury, Sajib Ghosh, Alaya Parven Alo, Md. Sadekur Rahman, Hejbulla Asad Shehab*
A Comparative Study of CNNs and Multimodal LLMs for Classifying Acute Lymphoblastic Leukemia Subtypes with a Focus on Model Interpretability
Speaker: Shahriar Sultan Ramit

ID 89 *15:50-16:10* *Md. Ashraf Bin Alam, Sajib Ghosh, Shahriar Ramit, Hejbulla Asad Shehab, Mondira Rani Dey, Md. Sadekur Rahman*
Deep Learning-Based Poultry Disease Classification from Fecal Images: A Comparative Study of CNN Architectures
Speaker: Md. Ashraf Bin Alam

ID 195 *16:10-16:30* *Fausto Cortes, Arturo Vera, Wilfrido Gómez*
Multi-Class Hand Image Dataset for Segmenting and Inferring Functional Zones
Speaker: Fausto Cortes

ID 201 *16:30-16:50* *Wilfrido Gómez-Flores, Wagner Coelho de Albuquerque Pereira*
A reconfigurable multiview CNN for breast tumor classification using intra- and peritumoral regions
Speaker: Wilfrido Gómez-Flores

Session BIO3- Biomedical Engineering/ Biomimetics

Thursday October 23rd, 2025
10:30-12:50
Room 1
Session Chair: Dr. Daniel Lorias Espinosa

ID 113 10:30-10:50 Paola Rondón-Villarreal
Identification of Novel Potential Anticancer Peptides in the Genome of Periplaneta Americana (American Cockroach) using Bioinformatics Tools
Speaker: Paola Rondón-Villarreal

ID 120 10:50-11:10 Edel Serafín Hernández-Gómez
Method for adulteration detection of diesel-biodiesel blend fuel (B15) by palm oil using permittivity at 2.45 GHz
Speaker: Edel-Serafín Hernández Gómez

ID 134 11:10-11:30 Mahady Hasan, Mohammad Rejwan Uddin
IoT-based Hemoglobin Level Detection system for Anemia Patients with image processing
Speaker: Md. Hasib Hasan

ID 140 11:30-11:50 Mohammad Rejwan Uddin, Mahady Hasan
Fall Detection System for Seizure Patients
Speaker: Ajwad Akib

ID 163 11:50-12:10 Gabriela González, Víctor Manuel Velasco-Herrera, Carlos Alvarado-Serrano, Alicia Ortega-Aguilar
Spectral Characterization of the Ictal Phase in Epileptic Seizures of Temporal Lobe using the Wavelet Transform
Speaker: Gabriela González-González

ID 165 12:10-12:30 Adriana Paola Arias López, Karina Gutiérrez Miguel, Álvaro Anzueto Ríos, Adrián Octavio Ramírez Morales
Modeling and experimental validation of a biomimetic soft actuator based on Octopus vulgaris
Speaker: Adriana Paola Arias López

Session BIO4- Biomedical Engineering/ Biomimetics

Thursday October 23rd, 2025
15:30-17:30
Room 1
Session Chair: Dra. Blanca Tovar Corona

ID 182 15:30-15:50 Ramon Cortina, Benjamín Álvarez, Arturo Martínez, Daniel Espinoza, Fernando Escamirosa
Design, development, and experimental testing of a neurostimulator for the tibial nerve in Wistar rats
Speaker: Ramon Eduardo Cortina

ID 185 15:50-16:10 Joel Méndez Ubaldo, Ernesto Suaste
A Novel Flow meter with Piezopolymer material of PVDF for Biomedical Applications
Speaker: Joel Méndez Ubaldo

ID 203 16:10-16:30 Raquel Martínez Valdez, Ivonne Bazan Trujillo
Ultrasonic field evaluation through order of discretization variation and distribution of grid points: BEM modeling
Speaker: Raquel Martínez-Valdez

ID 207 16:30-16:50 Pedro Morales Flores, Valeria Ramos Vázquez, Blanca Tovar Corona, Álvaro Anzueto Ríos, Rafael Bayareh Mancilla
Sensor-based Mexican Sign Language Recognition Using Machine Learning
Speaker: Valeria Ramos Vázquez

ID 208 16:50-17:10 Amaury Santiago Horta, Biaani Donají Delfín-García, Blanca Tovar-Corona, Laura Ivoone Garay Jimenez, Yesenia Eleonor González
Biomarkers for Stress and Sleepless Evaluation
Speaker: Biaani Donají Delfín García

ID 209 17:10-17:30 Blanca Tovar Corona, Sebastián Loeza Saldaña, René Luna García
Predicting Neurological Recovery After Cardiac Arrest Using MLP and Histogram-Based RR Interval Features
Speaker: Sebastián Loeza Saldaña

Session CS3 - Computer Science and Computer Engineering

Friday October 24th, 2025
9:00-10:20
Room 1
Session Chair: Dr. José Matías Alvarado Mentado

ID 52 9:00-9:20 Cecilie Simona Pulkrabek, Janek Otilie Kostelecky, Evelina Vladislava Kratochvil, Behiye Sahin
Aerial Intelligence for Ecosystem Protection through AI-Enhanced UAV Surveillance of Invasive Flora
Speaker: Behiye Sahin

ID 61 9:20-9:40 Walter Xylander, Sonnhild Camilla Fiedler, Eckart Gebhard Raskop, Zeynep Sahutoglu
Strengths and Trade-Offs of Deep Learning-Based Crack Detection in Smart Mechanical Inspection
Speaker: Zeynep Sahutoglu

ID 123 9:40-10:00 Franco Rivadeneira
Selecting What Matters: A Regression-Based Embedding for Variable Influence Discovery
Speaker: Franco Rivadeneira

ID 149 10:00-10:20 Noureen Islam, Tahfizul Hasan Zihan, MD Han Sultan Chowdhury, Md Hana Chowdhury, Mahady Hasan
IoT-based weather and dust Level Monitoring System in context to Bangladesh
Speaker: Noureen Islam

Session AE - Aeronautics and Aerospace Engineering

Friday October 24th, 2025
12:00-14:00
Room 1
Session Chair: Dr. Hebert Sira Ramírez

ID 12 12:00-12:20 Carlos Osorio Quero, José Carranza
CNN-Based DPU for Radio Frequency Signal Classification in Rescue Applications
Speaker: Carlos A. Osorio Quero

ID 44 12:20-12:40 Braidy Mason Oliverson, Wali Bandyopadhyay, Sefton Mottershead, Irem Bayraktar
Decoding Ship Signatures in SAR Imagery Using Deep Learning for Maritime Surveillance
Speaker: Irem Bayraktar

ID 101 12:40-13:00 Murat Bakirci
Simulation-Based Real-Time Object Detection and Autonomous Vehicle Tracking in UAVs Using YOLOv13 and DeepSORT within ROS 2 Framework
Speaker: Murat Bakirci

ID 127 13:00-13:20 Murat Bakirci
Scale-Aware UAV Detection in Aerial Imagery Using a Refined YOLOv8 with High-Resolution Feature Integration
Speaker: Murat Bakirci

ID 191 13:20-13:40 Martin Ríos, Anand Sánchez, Octavio García
Design of a Robust singularity-free Controller for the Flight Modes of a Quadrotor Tilt-Wing Convertible Drone
Martín Alejandro Ríos Juárez

2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session SSM1 - Solid-state materials, Electron Devices and Integrated Circuits

Wednesday October 22nd, 2025
12:00-14:00
Room 2
Session Chair: Dr. Arturo Morales Acevedo

ID 23 12:00-12:20 Rofaida Nezzar, Faycal Djeffal, Kalinka Kacha, Adel bendjerad, Abdelhamid Benhaya
Electrical and optical characterization of sputtered and annealed ZnO/Ag structures for TCO applications
Speaker: Rofaida NEZZAR

ID 41 12:20-12:40 AbdelHak Maoucha, Tarek Berghout, Faycal Djeffal
Boosting Short-Circuit Current in Perovskite Solar Cells through Gold Nanoparticle Incorporation
Speaker: Tarek Berghout / Dr. AbdelHak Maoucha

ID 42 12:40-13:00 AbdelHak Maoucha, Faycal Djeffal, Tarek Berghout
Performance Assessment of $FACsSnI_3$ Perovskite Solar Cells via Deep Learning
Speaker: Tarek Berghout / Dr. AbdelHak Maoucha

ID 81 13:00-13:20 Valentina Sneha George, Aruna-Devi Rasu Chettiar, Claudia Elena Pérez García, Latha Marasamy
Numerical simulation of Cd-free Strontium Titanate Electron Transport Layer in Sb2(S,Se)3 solar cell
Speaker: Valentina Sneha George

ID 171 13:20-13:40 Ashok Adhikari, Jorge Evaristo Conde Diaz, Francisco Javier Cano, Mauricio Ortega López, Odín Reyes Vallejo, Miguel Angel Luna Arias, María de la Luz Olvera Amador, Arturo Maldonado Alvarez
Explore the Impact of CuGaSe2 Back-Surface Field Layer on the performance of CISe PV Devices through the Theoretical Modeling
Speaker: Ashok Adhikari

ID 205 13:40-14:00 Mateus Torres-Herrera, Rosa Nava-Sánchez, Arturo Morales-Acevedo
Comparison of Two Hole-Transport Layers for Hybrid Perovskite Solar Cells
Speaker: Mateus Torres-Herrera

Session SSM2 - Solid-state materials, Electron Devices and Integrated Circuits

Wednesday October 22nd, 2025
15:30-17:30
Room 2
Session Chair: Dr. Yasuhiro Matsumoto

ID 62 15:30-15:50 Rabia Ouchen, Faycal Djeffal, Tarek Berghout
Modeling Accurate Prediction of Junctionless Infrared Phototransistor Performance using Explainable DL Regression Models
Speaker: Rabia Ouchen

ID 63 15:50-16:10 Rabia Ouchen, Faycal Djeffal, Rudiger Arnold, Marco Liem
Low-Power Design of a 3 Gbps LVDS Receiver for Optical Data Transmission
Speaker: Rabia Ouchen

ID 64 16:10-16:30 Maylu Guadalupe Romero Sánchez, Omar Rodríguez Abreo, José Manuel Juárez López, Alondra Anahí Ortiz Verdín, Olaf Martínez Guzmán, Juan Diego Castillo Irineo
Development of a Solar Panel Monitoring System for Power and Visible Light using Arduino and INA219/BH1750 Sensors
Speaker: Olaf Martínez Guzmán

ID 159 16:30-16:50 Roshini Ravi, Goban Kumar Panneer Selvam, María de la Luz Olvera Amador
Silver-added SnO2 coatings processed by Sol–Gel Dip-Coating for CO and C3H8 Gas Sensing
Speaker: Roshini Ravi

ID 117 16:50-17:10 Rabia Ouchen, Faycal Djeffal
Performance analysis of a Subthreshold Differential Amplifier Using JLGAA Verilog-A Behavioral Modeling and Device-Level DG Model
Speaker: Rabia Ouchen

ID 189 17:10-17:30 Maricela Meneses, Mario Moreno, J. Ramon Ramos, Yasuhiro Matsumoto, J. Miguel Zarate, J. Federico Ramirez
Study of SiOxCy films deposited by Cat-CVD using methyltrimethoxysilane for application in optoelectronics
Speaker: Maricela Meneses

Session SSM3 - Solid-state materials, Electron Devices and Integrated Circuits

Thursday October 23rd, 2025
10:30-12:50
Room 2
Session Chair: Dr. Felipe Gómez Castañeda

ID 13 10:30-10:50 Luis Elías Salgado Solano, Luis Martín Flores Nava, Felipe Gómez Castañeda
Convolutional Neural Network for Multi-Channel Vibrational Analysis Applied to Bearing Fault Detection
Speaker: Luis Elías Salgado Solano

ID 14 10:50-11:10 Luis Elías Salgado Solano, Luis Martín Flores Nava, Felipe Gómez Castañeda
Approximating Eigenpairs with Neural Networks by Loss Function Minimization
Speaker: Luis Elías Salgado Solano

ID 67 11:10-11:30 Juan Pablo Varela, Mónico Linares, Roberto Murphy
Derivation of the frequency equation for an RTWO oscillator based on its geometry and topology in CMOS technology.
Speaker: Juan Pablo Azucena Varela

ID 76 11:30-11:50 Julio Alamilla Ríos, Mónico Linares Aranda, Luis Hernández Martínez
Evaluating the Behavior and Robustness of State-of-the-Art Physically Unclonable Functions (PUFs) Against Machine Learning Attacks
Speaker: Julio Alamilla Ríos

Session NANO1 - Nanomaterials and Applications

Nanomaterials and its application in photocatalysis

Thursday October 23rd, 2025

15:30-17:30

Room 2

Session Chair: Dr. Ashok Adhikari

ID 29 15:30-15:50 Francisco Javier Cano, Abdelhadi Kassiba, Velumani Subramaniam, Enrique Lima, Odín Reyes Vallejo, Ashok Adhikari, Guillermo Aguilar

Architectural Control of TiO_2-GO Hybrids via Graphene Oxide Concentration: Balancing Adsorption and Photocatalysis

Speaker: Francisco Javier Cano

ID 152 15:50-16:10 Odín Reyes Vallejo, Rocío Magdalena Sánchez Albores, Francisco J. Cano, Ashok A., Edith Luévano Hipólito, Leticia Torres Martínez, José Escorcia García, Pathiyamattom Joseph Sebastian

Eco-Friendly $BiVO_4$ Photocatalysts via Orange Peel-Mediated Solvothermal Synthesis: Applications in H_2 Production and CO_2 Conversion

Speaker: Odín Reyes Vallejo

ID 153 16:10-16:30 Odín Reyes Vallejo, Rocío Magdalena Sánchez Albores, Francisco J. Cano, Jorge Rodrigo Mora Viquez, Edith Luévano Hipólito, Leticia Torres Martínez, Jesus Mauricio Ernesto Hernández Méndez, Kervin Gabriel Rincón Soto

Photocatalytic Hydrogen Production and CO_2 Reduction Using ZnO-GO Composites: A Sustainable Microwave-Assisted Synthesis via Orange Peel Extract

Speaker: Odín Reyes Vallejo

ID 154 16:30-16:50 Rocío Magdalena Sánchez Albores, Roliber Escobar Velázquez, Adillanet del Rocío Farelo Toledo, Odin Reyes Vallejo, Erick Fernando Vázquez Vázquez, Carlos Alonso Meza Avendaño, Héctor Hiram Torres Ventura, Wilber Montejo López

Development of membranes based on recycled polyethylene terephthalate (PET) functionalized with ZnO/GO for the removal of methylene blue by adsorption

Speaker: Odín Reyes Vallejo

ID 162 16:50-17:10 Gabriela Bobadilla Barrón, Arturo Maldonado Álvarez, María de la Luz Olvera Amador, Eduardo Ramírez Martínez, Angel Eduardo Zamora

Influence of Precursor Milling Time on the Photocatalytic Performance of ZnO Thin Films in Methylene Blue Degradation

Speaker: Eduardo Ramírez Martínez

Session SSM4 - Solid-state materials, Electron Devices and Integrated Circuits

Friday October 24th, 2025
9:00-10:20
Room 2
Session Chair: Dr. José Guadalupe Sánchez López

ID 25 9:00-9:20 Dhineshkumar Srinivasan, Aruna-Devi Rasu Chettiar, Latha Marasamy
Design and performance of BaHfSe3/SnS2 Heterojunction Solar Cells: A SCAPS-1D Study
Speaker: Dhineshkumar Srinivasan

ID 27 9:20-9:40 Eupsy Navis Vincent Mercy, Aruna-Devi Rasu Chettiar, Francisco Javier De Moure-Flores, Latha Marasamy
Unveiling TiS2 as a Promising HTL for Efficient BaZrS3 Solar Cells: A SCAPS-1D Perspective
Speaker: Eupsy Navis Vincent Mercy

ID 31 9:40-10:00 Kaviya Tracy Arockiadoss, Aruna-Devi Rasu Chettiar, José Santos Cruz, Latha Marasamy
Boosting Efficiency of Emerging Cu2CoSnS4 Solar Cells with WS2 Buffer using SCAPS-1D *Simulation*
Speaker: Kaviya Tracy Arockiadoss

Session NANO2 - Nanomaterials and Applications

Nanostructured materials y their applications

Friday October 24th, 2025

12:00-14:00

Room 2

Session Chair: Dr. Rodrigo Mora Viquez

ID 33 12:00-12:20 Rofaida Nezzar, Faycal Djeffal, Kalinka Kacha, Adel bendjerad, AbdelHamid Benhaya

Assessment of Optoelectronic Properties in ZnO–Ag(NPs)–ZnO Trilayer Thin Films Deposited by RF Sputtering

Speaker: Rofaida Nezzar

ID 59 12:20-12:40 Rofaida Nezzar, Nicolas Martin, Aya Moussi, Faycal Djeffal

Structural and Optical Characterization of Au:SnO2 Thin Films Deposited via DC Sputtering and GLAD Techniques

Speaker: Rofaida Nezzar

ID 97 12:40-13:00 Jorge Cruz-Gómez, N. E. Vázquez-Barragán, L. A. Hernández-Hernández, Arturo Hernández-Hernández, J. Santos-Cruz, A. Guillen-Cervantes, M. de la L Olvera, G. Contreras Puente, F de Moure-Flores

Structural properties of GaN thin films grown by RF sputtering

Speaker: Jorge Cruz-Gómez

ID 129 13:00-13:20 Ximena Trujano-González, Pamela Trejo-Checa, Andrea Varela-Meléndez, Yuritzi Salgado-González, Alexis Eduardo Salas-Rincón, Venkata Krishna Karthik Tangirala, Angelica Hernández

Al modified SnOx nanostructures as CO2 sensors: Effect of physical properties on sensitivity

Speaker: Pamela Trejo-Checa

ID 174 13:20-13:40 José Guadalupe Sánchez López, José Manuel Ramón, Miriam Más-Montoya, Eugenia Martínez-Ferrero, David Curiel, Emilio Palomares

Indolocarbazole-based Self-Assembled Molecules as Hole-Selective Electrodes in Perovskite Solar Cells

Speaker: José Guadalupe Sánchez López

Session AC1 - Automatic Control

Wednesday October 22nd, 2025
12:00-14:00
Room 3
Session Chair: Dr. Alberto Soria López

ID 22 *12:00-12:20* *Md Mehedi Hassain, Mobinul Islam, Md. Nayeem Ibna Harun, S.M. Rahbar Abdullah Hasnat, Abdur Rahman*
An IoT Based Smart Irrigation Management System with Real Time Notifications
Speaker: Md Mehedi Hassain

ID 32 *12:20-12:40* *Md Mehedi Hassain, Gonga Sutradhar, Md. Nayeem Ibna Harun, Abdur Rahman, Md Ariful Islam*
Industrial Centralized Control Automation System using IoT based Embedded System
Speaker: Md Mehedi Hassain

ID 90 *12:40-13:00* *María Alcorta-García, José Armando Sáenz Esqueda, Joel Pérez, Héctor Atletl Romero Pando, Hiram Asahel Partida Villarreal*
Optimal Risk Sensitive and PID Controls Applied to an Actuated Pendulum
Speaker: Hector Atletl Romero Pando

ID 105 *13:00-13:20* *César Morales De Jesús, Jorge Antonio Torres Muñoz, Jesús Norberto Guerrero Tavarez, Carlos de la Cruz Alemán*
Precision Underwater Navigation: Robust Trajectory Tracking for Hybrid Gliders via Novel STA-Backstepping Control
Speaker: César Morales De Jesús

ID 106 *13:20-13:40* *Diego López Hernández, Carlos Sotelo, Antonio Favela-Contreras, Francisco Beltrán-Carbajal, David Sotelo*
Proximal Gradient-Based Model Predictive Control for Obstacle Avoidance in Holonomic Robots
Speaker: Diego López Hernández

ID 119 *13:40-14:00* *Cesar Villaseñor-Ríos, Octavio Gutiérrez-Frías, Saúl Córdova-Luría*
Adaptative PD controller on a PVTOL system based on a Single-neuron Neural Network
Speaker: Saúl Córdova-Luría

Session AC2 - Automatic Control

Wednesday October 22nd, 2025
15:30-17:30
Room 3
Session Chair: Dr. Alejandro Rodríguez Ángeles

ID 36 15:30-15:50 Shamik Mondal
Low Cost AI-Driven Autonomous Rescue Bot for Water-Based Life-Saving Missions
Speaker: Shamik Mondal

ID 73 15:50-16:10 José Guarnizo, Sindy Amaya, Nicolas Alvares, Mario Segura
Comparison Between Kalman Filter SLAM and Particle Filter SLAM Applied to Indoor Environments in a Mobile Robot
Speaker: José Guillermo Guarnizo, Nicolas Alvares, Mario Segura

ID 102 16:10-16:30 Marco Gómez, Christopher Diego Cruz-Ancona
Safe Sliding Mode Control in Position for Double Integrator Systems
Speaker: Marco Gómez

ID 132 16:30-16:50 Víctor Márquez, Jesús Guerrero
STA-based Design of a Fixed-Time Convergence Disturbance Observer for Autonomous Underwater Vehicles
Speaker: Víctor Hugo Márquez Roa

ID 138 16:50-17:10 Mohammad Rejwan Uddin, Mahady Hasan
Offline Vehicle Tracking System using GPS, GSM and Android
Speaker: Mohammed Obyead

ID 156 17:10-17:30 Martin Reynoso, Gilgamesh Luis, Luis Gerardo Trujillo, Diego Adrián Fabila
Passivity-Based Control for Velocity Regulation of a Brushless DC Motor
Speaker: Martín Reynoso Cerón

Session AC3 - Automatic Control

Thursday October 23rd, 2025
10:30-12:50
Room 3
Session Chair: Dr. Alberto Soria López

ID 170 10:30-10:50 Ghiordy Contreras Contreras, Bernardino Castillo-Toledo, Alexandre G. Loukianov, Stefano Di Gennaro
Continuous Control of Time Delay Systems Using a Hybrid Predictor
Speaker: Ghiordy Ferney Contreras Contreras

ID 179 10:50-11:10 Frida López Ruiz, Julio Rodríguez Cervantes, Héctor Becerra Fermín, José Ruiz León
Bearing-Only Super-Twisting Control for Multi-Quadrotor Formations
Speaker: Frida Guadalupe López Ruiz

ID 187 11:10-11:30 Santos Orozco Soto, José Ricardo Rojas Suastes
Self-Tuning Optimal Control of Time-Varying Buck Converters using the Extremum-Seeking Algorithm
Speaker: José Ricardo Rojas Suastes

ID 190 11:30-11:50 Bernardo Sandoval, Jorge Antonio Torres Muñoz, Jesús Guerrero, Carlos de la Cruz Alemán
Control strategies design: Backstepping control and saturation based PD control for the trajectory tracking of a HAUG
Speaker: Bernardo Sandoval

ID 197 11:50-12:10 Juan Abdiel Mercado Velázquez, Diego Alberto Mercado Ravell, Héctor Manuel Becerra Fermín
Decentralized Neural Control for Individual Trajectory Tracking in Lower Limb Joints of a Bipedal Robot
Speaker: Juan Abdiel Mercado Velázquez

Session AC4 - Automatic Control

Friday October 24th, 2025
9:00-10:20
Room 3
Session Chair: Dr. Alejandro Rodríguez Ángeles

ID 94 9:00-9:20 Lorenz Oliva, Rafael Martínez-Guerra, Israel Hernández
Chaotic Systems: Generalized quasi-Synchronization
Speaker: Lorenz Oliva-González

ID 122 9:20-9:40 José Medina
Nonlinear Oscillations with Linear Solutions
Speaker: José Antonio Medina Hernández

ID 157 9:40-10:00 Laura-Adriana Galicia-Galicia, Omar Hernández-González, Carlos Daniel García-Beltrán, Guillermo Valencia-Palomo, María-Eusebia Guerrero-Sánchez
Distributed event-triggered estimation over sensor networks for satellite tracking in LEO
Speaker: Laura-Adriana Galicia-Galicia

2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

CCE

ROOM 3

Session ME/POW – Mechanical Engineering (ME) / Power Electronics (POW)

Friday October 24th, 2025
12:00-14:00
Room 3
Session Chair: Dr. Alejandro Rodríguez Ángeles

ID 194 12:00-12:20 Axel Martínez Jacobo, Alejandro Villegas Ortega, Pedro Martínez Ortiz
Design and Experimental Evaluation of an ESP32-Based Power Quality Analyzer with Introduction to Supra-Harmonic Analysis.
Speaker: Axel Uriel Martínez Jacobo

ID 2 12:20-12:40 Tarek Berghout, Lim Wei Hong
Deep Learning and Machine Life: A Critical Empirical Perspective — Introducing Phase-Shift Degradation Analysis in Prognostics
Speaker: Tarek Berghout

ID 21 12:40-13:00 Mehdi Fazilat, Nadjet Zioui
Quantum-Enhanced Sliding Mode Control for Robust and High-Performance Industrial Robotic Manipulation
Speaker: Mehdi Fazilat

ID 142 13:00-13:20 Arslan Saleem, Carlos E. Ugalde-Loo
Design of a Solar Photovoltaic Coupled Ground-Source Heat Pump for a Small Residential Community
Speaker: Arslan Saleem

ID 169 13:20-13:40 Antonio Rodríguez, Luis Trujillo, Hugo Abundis, Hugo Lozano
Design and assembly of a vibration measurement system for a small wind turbine
Speaker: Antonio Rodríguez Cruz

ID 177 13:40-14:00 Rafael Batista, Rubén Ramos
Implementation of a Waste Heat Recovery System Based on an Organic Rankine Cycle in a Cement Industry in Dominican Republic
Speaker: Rafael Batista

Session CS1 - Computer Science and Computer Engineering

Wednesday October 22nd, 2025
12:00-14:00
Room 4
Session Chair: Dr. Luis Gerardo de la Fraga

ID 28 *12:00-12:20* *Pablo Benavides-Herrera, Sara Rodríguez-Reyes, Gregorio Álvarez-Álvarez, Riemann Ruiz-Cruz, Juan Diego Sánchez-Torres*
Support Vector Regression under Percentage-Error Loss
Speaker: Pablo Benavides-Herrera

ID 30 *12:20-12:40* *Iván Urbina, Jesús Medrano Hermosillo, Abraham Rodríguez, Francisco Ronay López, Larbi Djilali, Anuar Badillo*
Adaptive Real-time Neural Control for Permanent Magnet DC Motors under Uncertainties
Speaker: Iván R. Urbina Leos

ID 98 *12:40-13:00* *Javier Rivas, Yolanda Vásquez, Matías Alvarado-Mentado*
Toward Machine Learning Prediction of Immunotherapy to cope to Breast Cancer
Speaker: Matías Alvarado-Mentado

ID 210 *13:00-13:20* *Felipe Trujillo-Romero, Francisco-Javier Moreno Vázquez*
Automating Classification for American Sign Language Using PyCaret
Speaker: Francisco-Javier Moreno Vázquez

ID 79 *13:20-13:40* *Itzel Sinaí Castillo García, Ignacio Enrique Zaldívar Huerta, Min Won Lee*
A Numerical Comparison of a Novel Postprocessing Technique and 4-LSB Extraction Based on a Chaotic Laser Source
Speaker: Itzel Sinaí Castillo García

ID 100 *13:40-14:00* *Daniel Estrada-Sánchez, Ernesto López-Mellado*
Structural Complexity Metrics for Workflow Nets
Speaker: Daniel Estrada Sánchez

Session MEC – Mechatronics

Wednesday October 22nd, 2025
15:30-17:30
Room 4

Session Chair: Dr. Martín Velasco Villa

ID 5 *15:30-15:50* *José Hermilo Cerón Guerrero*
Modeling of Electric Trains for Power Systems Dynamic Analysis
Speaker: Jose Hermilo Ceron Guerrero

ID 93 *15:50-16:10* *Juan Tejada, Daniel Sanin-Villa, Alejandro Toro-Ossaba, Alexandro López-González, Eduardo G. Hernández-Martínez*
Trajectory Tracking and Obstacle Avoidance: A Comparative Study of LQR and Reinforcement Learning Approaches
Speaker: Juan C. Tejada

ID 111 *16:10-16:30* *Allan Christopher Coronado Andrade, Hugo Alberto Moreno Jiménez, Juan Eduardo Velázquez Velázquez, Luis Manuel Valentín Coronado, Noé Guadalupe Aldana Murillo, Gerardo Ramón Flores Colunga*
Construction and Characterization of a Tendon-Sensor Driven Continuum Robot
Speaker: Allan Christopher Coronado Andrade

ID 160 *16:30-16:50* *Jessica Sierra, José Rico, Marco Gómez*
Analysis and Control on SO(3) of a Serial Spherical Wrist with Balanced Links
Speaker: Jessica Guadalupe Sierra Méndez

ID 172 *16:50-17:10* *Alexis Castelán-Pérez, Francisco Beltran-Carbajal, Iván Rivas-Cambero*
Comparison of Parameter Estimation Techniques in Permanent Magnet DC Motors
Speaker: Alexis Castelan-Perez

Session SS - “Renewable Energy Development in Distribution Networks”

Participation of Red Iberoamericana RIBIERSE-CYTED with the collaboration of Universidad de Jaén (España) and Universidad Autónoma Metropolitana, Unidad Azcapotzalco (México)

Thursday October 23rd, 2025

10:30-12:50

Room 4

Session Chair: Dr. Oscar Danilo Montoya Giraldo - Universidad Distrital Francisco José de Caldas, Colombia

ID 46 10:30-10:50 Juan Felipe Alvarado, Oscar Montoya Giraldo, Jesús C. Hernández
Transmission Expansion Planning in the Energy Transition Era: Challenges, Limitations, and Research Perspectives
Speaker: Juan Felipe Alvarado

ID 56 10:50-11:10 Luis Fernando Grisales Noreña, Juan Tapia Aguilera, Daniel Sanin Villa
Reliable and Profitable Energy Dispatch of Battery Storage in PV-PMGDs Using Genetic Algorithm: A Chilean Feeder Case
Speaker: Daniel Sanin Villa

ID 75 11:10-11:30 Angélica Mercedes Nivia-Vargas, Oscar Montoya Giraldo, Nelson Leonardo Díaz-Aldana
Adaptive PI-PBC Performance via Proportional Gain Scaling in Single-Phase PWM-CSC under Linear Current Demand
Speaker: Angélica Mercedes Nivia Vargas

ID 88 11:30-11:50 Karla Mariel Fernández Fabian, Antonio Cano Ortega, David Gregorio Pacheco Salazar, Francisco J. Sánchez Sutil, Jesús C. Hernández
Advanced clustering with high resolution in photovoltaic systems and its impact on prediction models
Speaker: Karla Mariel Fernández Fabian

ID 91 11:50-12:10 Miguel Castro, Miriam Vilaragut, Ovel Concepción, Antonio Martínez, Jesus de la Casa Hernández
Photovoltaic solar parks and the possible effects of hurricanes: a case study in Cuba
Speaker: C. Miguel Castro Fernández

ID 92 12:10-12:30 Diego Fernando Muñoz Torres, Oscar Montoya Giraldo, Jesús C. Hernández
A Tutorial on Solving Transcendental Equations in Solar Cell Models through the Chebyshev Method
Speaker: Diego Fernando Muñoz Torres

ID 175 12:30-12:50 Carlos A. Muñoz, Carlos R Baier, Jesús C. Hernández, Víctor S. Monteiro, Bruno Franca, Oscar D. Montoya
Fault-Tolerant Operation of Star- and Delta-Connected Cascaded H-Bridge Multilevel Inverters: A Comparative Study
Speaker: Carlos A. Munoz

Session CS2 - Computer Science and Computer Engineering

Thursday October 23rd, 2025
15:30-17:30
Room 4

Session Chair: Dr. Ana María Antonia Martínez Enríquez

ID 51 15:30-15:50 Zdislav Kratochvilova, Stana Sarka Zahradnik, Melanie Yveta Pokorna, Behiye Sahin
Autonomous Aerial Surveillance for Photovoltaic Crack Detection via UAV Imaging
Speaker: Behiye Sahin

ID 55 15:50-16:10 Fabian Kornelia Hildebrand , Marina Kreszenz Schnell , Erich Bachmann ,Zeynep Sahutoglu
Performance Assessment of Object Detection for Military Vehicles in Complex Visual Environments
Speaker: Zeynep Sahutoglu

ID 104 16:10-16:30 Isaac Estrada Tableros, Alberto Jair Nava Rodríguez, Brandon López Hernández, Francisco Javier Alvarado Sánchez, José Ambrosio Bastián, Zizilia Zamudio
Transfer Learning Based Approach for Real Time Mexican Traffic Sign Recognition in a Web Educational System
Speaker: Isaac Estrada Tableros

ID 118 16:30-16:50 Latha Challa Madhaví, Matias Alvarado
Resilient Climate Modeling for Smart Cities: Nash Equilibrium Multi-Agent Simulation
Speaker: Matías Alvarado-Mentado

ID 103 16:50-17:10 MD Ajmain Mahtab, Sanjida Tasnim, Manosh Choudhury, Sefatul Wasi, Siam Tahsin Bhuiyan, Saadia Binte Alam, Rashedur Rahman
SensaNet: A Lightweight Deep Learning Model for Tuberculosis Detection in Histopathological Images
Speaker: MD Ajmain Mahtab

ID 181 17:10-17:30 Vasco Hinostroza Fuentes, Myles Joshua Toledo Tan
Demystifying Random-Forest Fraud Filters via Multi-Level Explainability
Speaker: Vasco Gerardo Hinostroza Fuentes

Session COMM1 - Communications systems

Friday October 24th, 2025
9:00-10:20
Room 4

Session Chair: Dr. Fernando Ramos Alarcón

ID 40 *9:00-9:20* *Aleksey Gvozdarev, Tatiana Artemova, Anton Afonin*
Hybrid RF-FSO/FSO-RF Multihop Relay Performance in Presence of Hyper-Rayleigh Fading
Speaker: Aleksey S Gvozdarev
ID 213 *9:20-9:40* *Fernando Luis Ramos-Alarcon, Carmen Beatriz Rodriguez-Estrello, Valeri Kontorovich*
SNR Enhancement in OFDM systems: Non-linear filtering approach
Speaker: Fernando Luis Ramos-Alarcon
ID 85 *9:40-10:00* *Aleksey Gvozdarev*
Strictly Positive Secrecy Capacity Analysis of a Wiretapped Wireless Communication System in Presence of Full Hyper-Rayleigh Fading Channel
Speaker: Aleksey S. Gvozdarev

Session COMM2 - Communications systems

Friday October 24th, 2025
12:00-14:00
Room 4

Session Chair: Dr. Fernando Ramos Alarcón

ID 186 12:00-12:10 Fernando Evier López Pérez, José Cruz Nunez Pérez, J. Apolinar Reynoso Hernández
FPGA Realization of a MIMO-OFDM RF Transceiver with 256-QAM Modulation
Speaker: Fernando Evier Lopez Perez

ID 96 12:10-12:20 Sathish Golukonda, Dwarapu Lakshmi Narayana
Transparent Circular Polarized Quad Port MIMO Antenna for 5G mm Wave Applications
Speaker: Golukonda Sathish

ID 69 12:20-12:40 Mario Jiménez Hernández
Shortwave Radio Audio Signals Denoising using a Filter Bank Modeled with Cochlear Macromechanics
Speaker: Mario Jiménez Hernández

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2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 4

10:00-10:20 - Opening Ceremony

10:20-10:20 Plenary Talk

Prof. Charvaka Duvvury, PhD
ESD Consulting LLC, Texas, USA, IEEE Region 6 (Western USA)
United State
"Advanced Electrostatic Discharge Technology Issues"
Session Chair : Dr. Arely Cano Martínez

Date: October 22, 2025
Hour: 10:20-11:20 (Mexico City central time zone, UTC-6)
https://ieeexplore.ieee.org/author/37284697000
Participation of IEEE Student Branch Cinvestav-EDS

Short Biography:
Charvaka Duvvury received his PhD in engineering science from the University of Toledo and afterwards worked as a post-doctoral fellow in Physics at the University of Alberta in Edmonton, Canada, before joining Texas Instruments during 1977. His experience at Texas Instruments spanned for 35 years in semiconductor device physics with pioneering development work in ESD design. He was elected as TI Fellow in 1997 and as IEEE Fellow during 2008. He is currently working across the industry as a technical consultant on semiconductor reliability with particular emphasis on electro-static discharge (ESD) protection methods for integrated circuit (IC) devices. He is a recipient of the IEEE Electron Devices Society's Education Award (2013), Outstanding Contributions Award from the EOS/ESD Symposium (1990), and Outstanding Industry Mentor Award twice from the Semiconductor Research Council (1994 and 2012). From 2004-2006 he served on the IEDM CMOS Reliability Sub-committee, and during 2001-2011 served as editor of the IEEE-TDMR. He is currently an active member of the EDS DL program. Charvaka has been serving on Board of Directors of the ESD Association (ESDA) since 1997 promoting ESD education and research at academic institutes. He served twice as General Chairman of the ESD Symposium. He is co-founder and co-chair of the Industry Council on ESD since 2006. During 2015 he became a co-founder of the iT2 Technologies that utilizes software engine for rapid ESD data analysis.

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2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 4

Plenary Talk

Plenary
Prof. Baiying Lei, PhD
Professor Shenzhen University Medical School, Shenzhen University (SZU), China
"Empowering Medical Image Analysis with Artificial Intelligence"
Session Chair: Dr. Carlos Alvarado Serrano

Date: October 23, 2025
Hour: 9:00-10:00 (Mexico City central time zone, UTC-6)
https://www.embs.org/membership/chapters/distinguished-lecturers-program/distinguished-lecturers/baiying-lei/
CV
Participation of IEEE Student Branch Cinvestav - EMBS

Short Biography
Dr. Baiying Lei is a Distinguished Professor in the School of Biomedical Engineering, Shenzhen University Medical School, Shenzhen University (SZU). Dr. Lei received her M.Eng. degree in Electronic Science and Technology from Zhejiang University, China, and Ph.D. degree from Nanyang Technological University, Singapore, respectively. Her research interests include medical image analysis via artificial intelligence. She has been very active in providing professional services to the IEEE and to the academic community at large. She is an IEEE senior member and has served as Technical Committee members of IEEE Bio Imaging Signal Processing (BISP), IEEE Biomedical Imaging and Image Processing (BIIP) and Biomedical Signal Processing. She is an associate editor for several prestigious journals, including IEEE Transactions on Medical Imaging, IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions Cybernetics, and IEEE Journal of Biomedical and Health Informatics. She is a receipt of Distinguished Changjiang Young Scholar of Chinese Ministry of Education, Qingyun Shi Female Scientist from the China Image and Drawing Society (CSIG), “Top 2% Top Scientists in the World released by Stanford University (2020-2024), Top 0.05% ScholarGPS Highly Ranked Scholars, Chinese Young Scientist from China Association for Science and Technology.

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2025 22nd International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 4

Plenary

Prof. Yi Huang, PhD

Professor in Wireless Engineering and the Head of High-Frequency Engineering Group, Department of Electrical Engineering & Electronics, the University of Liverpool, UK

“Wireless Charging for Medical, EV, and IoT Applications"

Session Chair : Dr. Mauricio Lara Barrón

Date: October 24, 2025

Hour: 10:30-11:30 - (Mexico City central time zone, UTC-6)

https://www.liverpool.ac.uk/people/yi-huang

Short Biography

Prof Yi Huang has been conducting research in the areas of antennas, wireless communications, applied electromagnetics, radar, measurements, and EMC since 1987. More recently, he is working on antenna developments using liquid and new materials, wireless energy harvesting and power transfer. His experience includes 3 years spent with NRIET (China) as a Radar Engineer and various periods with the Universities of Birmingham, Oxford, and Essex in the UK as a member of research staff. He worked as a Research Fellow at British Telecom Labs in 1994 and then joined the Department of Electrical Engineering & Electronics, the University of Liverpool, UK as a Faculty in 1995, where he is now a full Professor in Wireless Engineering and the Head of High-Frequency Engineering Group.

Prof Huang has published over 500 refereed papers in leading international journals and conference proceedings and authored four books, including Antennas: from Theory to Practice (John Wiley, 2008, 2021). He has received many patents, and research grants from research councils, government agencies, charities, EU, and industry, and is a recipient of over 10 awards (e.g. BAE Systems Chairman’s Award 2017, IET, and Best Paper Awards). He has served on a number of national and international technical committees and has been an Editor, Associate Editor, or Guest Editor of five international journals. In addition, he has been a keynote/invited speaker and organiser of many conferences and workshops (e.g. IEEE iWAT2010, LAPC2012, and EuCAP2018). He is at present an Associate Editor of IEEE Antennas and Wireless Propagation Letters, UK and Ireland Rep to the European Association of Antenna and Propagation (EurAAP), a Fellow of IET, and a Fellow of IEEE.