



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Biomedical Engineering/ Biomimetics (BIO)

Session BIO 1- Biomedical Engineering/ Biomimetics

Measurement Systems

Wednesday October 23rd, 2024

12:00-13:00

Room 1

Session Chair: **Dr. Arturo Vera Hernández**

ID 137 12:00-12:20 **Jesús Fausto Córdova-Manzo**, Gabriel Vega-Martínez, Cinthya Lourdes Toledo-Peral, Arturo Vera-Hernández, Lorenzo Leija-Salas and Gabriela Flores-Mondragón.

Hydration Status During the Micturition Cycle Using Bioimpedance for Bladder Monitoring: A Pilot Study

Speaker: Jesús Fausto Córdova-Manzo

ID 149 12:20-12:40 **Jesús Fausto Córdova-Manzo**, Gabriel Vega-Martínez, Arturo Vera-Hernández, Lorenzo Leija-Salas and Josefina Gutiérrez-Martínez.

Finite Element Model for Parameterization of Adipose Tissue Thickness to Assess Near-Infrared Infrared Beam Penetration: A First Approach

Speaker: Jesús Fausto Córdova-Manzo

ID 142 12:40-13:00 **Ramon Eduardo Cortina**, Janette Arminda Magaña Cortes, Abraham Hernández Jiménez, Fernando Perez Escamiroza, Daniel Lorias Espinoza and Arturo Minor Martinez.

Artificial Vision System for Physical Activity Practice for People with Visual Impairment

Speaker: Ramon Eduardo Cortina



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session BIO 2 - Biomedical Engineering/ Biomimetics

Prototype Proposals

Wednesday October 23rd, 2024

13:15-14:15

Room 1

Session Chair: Dra. Blanca Tovar Corona

ID 124 13:15-13:35 Uriel Pérez Flores, Amparo Dora Palomino Merino, Jesús Ricardo López Gutiérrez and Sergio Vergara Limon.

Modeling and Control of Ankle Exoskeleton

Speaker: Uriel Pérez Flores

ID 165 13:35-13:55 María Lesvia Escobar-Hernández, Jesús Fausto Córdova-Manzo, Daniel Acosta-Mares, Arturo Vera-Hernández, Lorenzo Leija-Salas, Josefina Gutiérrez-Martínez and Jesús Fausto Córdova-Escobedo.

Urological Condition Simulator for Accurate Uroflowmeter Calibration and Testing

Speaker: María Lesvia Escobar Hernández

ID 29 13:55-14:15 Adriana Martínez-García, Irving Ríos-Valtierra, Victor Hernández-Valderrama, José Gutiérrez-Gnecchi and Daniel Lorias-Espinoza.

Prototype of USB Flexible Endoscope for Training Based on the Task of the Society of American Gastrointestinal and Endoscopy Surgeons Tasks: Simulation and design.

Speaker: Adriana Martínez-García



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session BIO 3 - Biomedical Engineering/ Biomimetics

Sensors And Systems

Wednesday October 23rd, 2024, 15:30-17:30, Room 1

Session Chair: Dra. Blanca Tovar Corona

ID 37 15:30-15:50 Nafisa Zarrin Tasnim, Aoxin Ni, Edward Lobarinas and Nasser Kehtarnavaz.

Personalization and Smartphone Implementation of ADRO Hearing Aid Amplification by Bayesian Machine Learning

Speaker: Nasser Kehtarnavaz

ID 76 15:50-16:10 Oscar Eduardo Aguilar Mejía, Ernesto Suaste Gómez and José de Jesús Agustín Flores Cuautle.

Development of novel lead-free ceramic electrodes for the acquisition of bioelectric potentials.

Speaker: Oscar Eduardo Aguilar Mejía

ID 147 16:10-16:30 Víctor García Limón, Ernesto Suaste Gómez and Alfredo Cruz Orea.

Ferromagnetic membrane pore opening control and laser pattern analysis

Speaker: Victor Garcia Limon

ID 60 16:30-16:50 Juan de Dios Ortiz Alvarado, Juan Carlos Rodríguez Sierra and Mario Josué Aguilar Méndez.

Operating Conditions for Performance Improvement of Paired Emitter Detector Diode in Optical Measurements Based on Photocapacitance Discharge

Speaker: Juan de Dios Ortiz Alvarado

ID 104 16:50-17:10 Ada Michelle Velazquez Flores, José Abraham Morales Jimenez, Cristina Elizabeth Reyes Soto, Rigoberto Martinez Mendez, Zeus Tlaltecutili Dominguez Vega and Otniel Portillo Rodríguez.

Effect of Foot Position on Postural Balance Assessment Using Center of Pressure Parameters During the Romberg Test

Speaker: Ada Michelle Velázquez Flores

ID 93 17:10-17:30 Shoma Khanom, Mohammad Sakib, Nm Chisty, Munira Akter Mimi, Md. Ahad and Feroz Ahmed.

Detection of Leg Tremors in Parkinson's Disease Patients: An Experimental Wearable Leg Band Solution

Speaker: Nm Chisty



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session AC 3 - Automatic Control

Thursday October 24th, 2024

8:30-9:30

Room 1

Session Chair: Dra. Sabine Mondie Cuzange

ID 119 8:30-8:50 Pablo De Villeros, Juan Diego Sánchez-Torres, Michael Defoort and Alexander Loukianov.

Fully Distributed Federated Learning Using a Zero-Gradient-Sum Algorithm

Speaker: Pablo De Villeros

ID 132 8:50-9:10 Oscar Gonzalez Miranda and Juan Manuel Ibarra Zannatha.

Servomotor parameter identification using a Kalman filter with model reference estimator

Speaker: Oscar Gonzalez Miranda

ID 133 9:10-9:30 Bruno Gutiérrez Chávez, Jonathan Muñoz Solís, Miguel Ramírez-Barrios, Manuel Mera Hernández, Rodrigo Mora Martínez and Bernardo Flores Ramírez.

Preliminary experiments with a PI controller for cutting tissue with an electrosurgery unit

Speaker: Bruno Gutiérrez Chávez



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session AC 4 - Automatic Control

Thursday October 24th, 2024

13:00-15:00

Room 1

Session Chair: Dr. Rubén Garrido Moctezuma

ID 135 13:00-13:20 Claudia Rigel Duran, Filiberto Muñoz, Eduardo S. Espinoza and Benjamín N. Trinidad.

Real-Time Tracking Control Using Adaptive Dynamic Programming for Underwater Vehicles

Speaker: Claudia Rigel Duran

ID 139 13:20-13:40 Carlos Aguilar-Ibanez, Miguel Suarez-Castanon, Belem Saldivar, Julio Mendoza-Mendoza and Manuel Jimenez-Lizarraga.

A Robust trajectory tracking problem solution for a PVTOL system under crosswind

Spaker: Carlos Aguilar-Ibanez

ID 148 13:40-14:00 Camila Sofía Sánchez García, Jorge Said Cervantes-Rojas and Eduardo Steed Espinoza Quesada.

Fuzzy-Based Disturbance Rejection Control via Integral Sliding Mode for a Quadrotor Aerial Vehicle

Speaker: Camila Sofía Sánchez García



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session BIO 4 - Biomedical Engineering/ Biomimetics

Signal Processing and Classification

Thursday October 24th, 2024, 16:30-18:30, Room 1

Session Chair: Dr. Carlos Alvarado Serrano

ID 159 16:30-16:50 Josefina Gutierrez-Martinez, Jorge Airy Mercado-Gutierrez, Luis Eduardo Pachecho González, Jimena Quinzaños-Fresnedo, Ana G. Ramirez-Nava, Guadalupe Benitez-Sanchez and Oscar Yanez-Suarez.

Network Connectivity Measures to Assess Changes in Brain Activity of Stroke Patients

Speaker: Josefina Gutierrez-Martinez

ID 69 16:50-17:10 José Desiderio Torres Rodríguez, Blanca Tovar Corona and Álvaro Anzueto Rios.

Normal and Abnormal Lung Sound Classification for An Embedded System Implementation

Speaker: José Desiderio Torres Rodríguez

ID 46 17:10-17:30 José Castro-Gómez, Omar Hernandez, Boubekour Targui, Guillermo Valencia-Palomo and Maria-Eusebia Guerrero-Sánchez.

Glucose Estimation In A Diabetes Mellitus Virtual Patient With Sampled Signal And Input Delay

Speaker: José Castro-Gómez

ID 71 17:30-17:50 José-Emmanuel Vázquez-Galán, Laura-Ivoone Garay-Jiménez, Blanca Tovar-Corona and Martín-Arturo Silva-Ramírez.

Synthetic EEG Signal Generator of Morphologies Associated with Epileptogenic Events

Speaker: José-Emmanuel Vázquez-Galán

ID 155 17:50-18:10 Luis E. Cruz-Carrasco, Marcos A. Perez-Espinoza, Dulce Martinez-Peon, Vicente Parra-Vega, Nadia Garcia-Hernandez and Xochitl A. Ortiz-Jimenez.

Towards an Online Brain Computer Interface based on Binary Kinesthetic Motor Imagery Paradigm

Speaker: Luis E. Cruz-Carrasco

ID 65 18:10-18:30 Yoltic Uriel Palomino Ortega, Marco Antonio Hernández Alanis, Gabriel Sepúlveda Cervantes, Adrián Octavio Ramírez Morales and Blanca Tovar Corona.

Neurofeedback training system to induce concentration states using virtual reality

Speaker: Yoltic Uriel Palomino Ortega



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session BIO 5 - Biomedical Engineering/ Biomimetics -

Image Processing and Classification

Friday October 25th, 2024

8:30-9:50

Room 1

Session Chair: Dra. Blanca Tovar Corona

ID 157 8:30-8:50 Mohammad Sakib, Md. Asadullah, Sharif Mohd Shams, Md. Delowar Hossain, Md. Monzu Uddin and M. Mofazzal Hossain.

Eczema and Seborrheic Keratoses: A Novel Method for Skin Disease Classification Using Image-Based Analysis

Speaker: Mohammad Sakib

ID 23 8:50-9:10 Tarek Berghout.

Iron Deficiency Anemia Diagnosis for Young Children: Image-Driven Comparative Analysis of Recurrent and Projected Neural Networks

Speaker: Tarek Berghout

ID 90 9:10-9:30 Tarek Berghout.

Anemia Severity Detection in Pediatric Patients through REXlayer-Integrated Deep Learning and Eye Conjunctival Imaging

Speaker: Tarek Berghout



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 1

Session BIO 6 - Biomedical Engineering/ Biomimetics -

Image Processing and Classification

Friday October 25th, 2024, 12:40-14:40, Room 1

Session Chair: Dr. Rafael Bayareh Mancilla

ID 52 12:40-13:00 Nirvana Cinnereth Amparan-Ortega, Juan Alberto Ramirez-Quintana, Mario Ignacio Chacon Murguia and Alma Delia Corral-Saenz.

Deep Neural Network Evaluation for Emotion Recognition through Facial Expressions Analysis

Speaker: Juan Alberto Ramirez-Quintana

ID 106 13:00-13:20 Mayra Adriana León-Sánchez, Yazmín Mariela Hernández-Rodríguez, Oscar Eduardo Cigarroa-Mayorga and Rafael Bayareh-Mancilla.

Comparative Analysis of CLAHE and VOI LUT for Enhanced Mammogram Contrast in Tumor Detection

Speaker: Mayra Adriana León Sánchez

ID 55 13:20-13:40 Donaldo Francisco Vega Lagunas, Arturo Vargas-Olivares, J. Enrique Chong-Quero, Héctor Cervantes-Culebro, Carlos A. Cruz-Villar, Laura Curiel and Samuel Pichardo.

Evaluation of Segmentation Quality in Magnetic Resonance Images using Singular Value Decomposition: A Feasibility Study

Speaker: Donaldo Francisco Vega Lagunas

ID 126 13:40-14:00 Héctor Gerardo Martínez Fuentes, Mario Ibrahim Gutierrez, Jorge Airy Mercado Gutierrez and Josefina Gutiérrez Martínez.

Exploring Reproducibility of fMRI Analysis Using SPM and Nilearn Open-Source Tool

Speaker: Héctor Gerardo Martínez Fuentes

ID 21 14:00-14:20 Benjamin Eduardo Aguilar Arce, Ingrid Gutiérrez Villegas and Gerardo Vera Juárez.

Implementation of Computer Vision and Image Processing in Technovigilance at the National Institute of Cardiology Ignacio Chávez: Adenosine Vial Case

Speaker: Benjamin Eduardo Aguilar Arce

ID 36 14:20-14:40 Alfredo Bayu Satriya, Myles Joshua Tan and Yong-Kyu Yoon.

Machine Learning-Based Thickness Estimation of Abdominal Fat and Muscle Using Simulated Radio Frequency Scattering Parameters

Speaker: Alfredo Bayu Satriya



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session SSM 1 - Solid-state materials, Electron Devices and Integrated Circuits –

Advanced FET Technologies

Wednesday October 23rd, 2024

12:00-13:00

Room 2

Session Chair: Dra. Arely Cano Martínez

ID 34 12:00-12:20 R. Ouchen, I. Rahmani, H. Ferhati and F. Djeflal.

Performance Assessment of Nanoscale SiGe High-k Negative Capacitance Junctionless GAA MOSFETs

Speaker: R. Ouchen

ID 99 12:20-12:40 Hichem Ferhati, Fayçal Djeflal and Tarek Berghout.

Steep Subthreshold Swing Nanoscale Tunnel FET based on Silicon Tin Channel and High-k Dielectric Gate

Speaker: Ferhati Hichem

ID 109 12:40-13:00 Rabia Ouchen, Tarek Berghout, Fayçal Djeflal and Hichem Ferhati.

Subthreshold Swing Performance Assessment of Nanoscale Junctionless GAA FETs using Machine Learning Approach

Speaker: Rabia Ouchen



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session COMM 1 - Communications systems

Wednesday October 23rd, 2024

13:15-14:15

Room 2

Session Chair: Dr. Mauricio Lara Barrón

ID 39 13:15-13:35: Aleksey Gvozdev and Tatiana Artemova.

Performance Analysis of an Amplify-and-Forward Relay-Assisted Communication in the Presence of Double-Rayleigh Fading and Shadowing

Speaker: Aleksey S. Gvozdev

ID 57 13:35-13:55 Fernando Evier Lopez Perez and Jose Cruz Nunez Perez.

FPGA Emulation of the Physical Layer of an 802.11n-Based Transceiver

Speaker: Fernando Evier Lopez Perez

ID 72 13:55-14:15 Ramon Ulises Almada Prieto, Gilberto Enrico Vazquez Alcaraz and Jose Cruz Nunez Perez.

Graphical Interface for Obtaining Lyapunov Exponents in Fractional Order Chaotic Systems

Speaker: Ramon Ulises Almada Prieto



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session CS 1 - Computer Science and Computer Engineering –

Health Care Applications

Wednesday October 23rd, 2024, 15:30-17:30

Room 2

Session Chair: Dr. Ernesto López Mellado

ID 18 15:30-15:50 Tarek Berghout.

Improved Anemia Medical Diagnosis on Complete Blood Count: Tuning Projected Long-Short Term Memory Layers with Coefficient of Determination

Speaker: Tarek Berghout

ID 84 15:50-16:10 Abqa Javed, Sahar Ajmal, Taliah Tajammal, Muhammad Aslam, Ana Maria Martinez-Enriquez and Usman Sadiq Sheikh.

Enhancing Anxiety Prediction: Leveraging Machine Learning with Functional Design Metrics

Speaker: Abqa Javed - This paper will not be presented at this session

ID 130 16:10-16:30 Nazhir Amaya-Tejera, Eduardo Zurek and Matías Alvarado.

Emotion Regulation in Breast Cancer Patients: Initial study with Regression Models

Speaker: Matías Alvarado

ID 156 16:30-16:50 Carlos Minutti.

Unraveling the Complex Interplay Between Socioeconomic Status, Air Pollution, and Heart Disease Hospitalizations in an Urban Population

Speaker: Carlos Minutti-Martinez

ID 44 16:50-17:10 Aoxin Ni, Edward Lobarinas and Nasser Kehtarnavaz.

Field Deployment of Personalized DSLv5 Hearing Aid Amplification by Bayesian Machine Learning

Speaker: Nasser Kehtarnavaz

ID 20 17:10-17:30 Lamia Alam and Nasser Kehtarnavaz.

Improving Identification of Defective Wafer Maps by Data Augmentation via Enhanced CycleGAN

Speaker: Nasser Kehtarnavaz



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session SSM 2 - Solid-state materials, Electron Devices and Integrated Circuits –

Light-Emitting Devices: Materials and Innovations/Memristors and Emerging Circuit

Thursday October 24th, 2024, 13:00-15:00

Room 2

Session Chair: Dr. Yurik Kudriavtsev/ Dr. Angel Sacramento Orduño

Dr. Yurik Kudriavtsev

ID 79 13:00-13:20 Maricela Meneses, Mario Francisco Ávila Meza, Juan Ramon Ramos Serrano, Yasuhiro Matsumoto, Manmohan Jain and Srinivas Godavarthi.

White electroluminescence of SiO_xC_y films obtained by HW-CVD using vinyl silane

Speaker: Maricela Meneses

ID 81 13:20-13:40 Juan Ramón Ramos-Serrano, Mario Moreno, Alfredo Morales, Armando Hernández, Victor Aca and Ignacio Juárez.

DC and RF Sputtered ITO Thin Films as Electrodes in Light-emitting Diodes Based on a-Si_{1-x}C_x:H

Speaker: Juan Ramón Ramos Serrano

ID 59 13:40-14:00 Juan Federico Ramirez Rios, Jose Juan Aviles Bravo, Sergio Alfonso Pérez García, Mario Moreno Moreno, Juan Ramón Ramos Serrano and Alfredo Morales Sánchez.

Luminescent Defects in ZnO Thin Films: Effect of the Deposition Temperature and Thermal Treatment

Speaker: Juan Federico Ramirez Rios

Dr. Angel Sacramento Orduño

ID 113 14:00-14:20 Jesús Jiménez-León, Arturo Sarmiento-Reyes and Pedro Rosales-Quintero.

Novel Modeling Methodology for Memristive Devices for Circuit Design and Simulation

Speaker: Arturo Sarmiento-Reyes

ID 118 14:20-14:40 Ashok Adhikari, Dwight Roberto Acosta-Najarro, Amira Jalil Fragoso-Medina, Tommy Kevin Merino Alama, Odin Reyes Vallejo, Francisco Javier Cano and María de La Luz Olvera Amador.

An Application of Vanadium Oxide Thin Film as Window Layer in CIGSe Thin Film Solar Cells: A Computational Study

Speaker: Ashok Adhikari



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session NANO 2 - Nanomaterials and Applications

Thursday October 24th, 2024

16:30-18:30, Room 2

Session Chair: Dr. Salvador Gallardo Hernández

ID 75 16:30-16:50 Citlalli Rodriguez, Cesar Camas, Dorian Valencia, Irving Zúñiga and Heber Vilchis.

Multiscale Computational Roughness Analysis of InGaAs Growth Process for Solar Cell Applications

Speaker: Citlalli Rodríguez Vázquez

ID 49 16:50-17:10 Asma Dekkiche, M. O. Bellouber, Hichem Ferhati, K. Dibi and Fayçal Djeflal.

Novel Ultraviolet Phototransistor Design Based On SnO₂ Thin-Film Combined With Surface Ag Nanoparticles

Speaker: Ferhati Hichem

ID 66 17:10-17:30 Francisco Javier Cano, Odin Reyes Vallejo, Ashok Adhikari, Sandrine Coste, Velumani Subramaniam, Abdelhadi Kassiba, Iouri Koudriavtsev and Jose Juan Diaz Lopez.

Optical and electrical properties of TiO₂-GO hybrid nanostructures by ball-milling

Speaker: Francisco Javier Gomez Cano

ID 125 17:30-17:50 Kevin Rueda Castellanos, Brenda Garcia Farrera, Maria de La Luz Olvera Amador and Venkata Krishna Karthik Tangilara.

CO Gas Sensing Properties of Zn₂SnO₄ Thinfilms.

Speaker: Kevin Rueda Castellanos

ID 108 17:50-18:10 Alfonso Caleb Vázquez Ruiz, Yael Magaña Aguilar, Fernando Almendra Cruz and Venkata Krishna Karthik Tangilara.

Effect of Al doping on SnO₂ nanoparticles for CO sensing

Speaker: Fernando Almendra Cruz

ID 31 18:10-18:30 K. Kacha, Adel Bendjerad, Hichem Ferhati, Fayçal Djeflal and A Benhaya.

Optical and Electrical characteristics of Flexible AZO-Cu-AZO Structure Prepared Via RF sputtering Technique

Speaker: Ferhati Hichem



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session CS 4 - Computer Science and Computer Engineering

Image analysis

Friday October 25th, 2024

8:30-9:50

Room 2

Session Chair: Dr. Rogelio Hasimoto Beltrán

ID 42 8:30-8:50 Areli Cabrera Oros, Jonathán de Jesús Estrella Ramírez and Juan Carlos Gómez Carranza.

Late Fusion of Text and Images for Predicting User Interests in Pinterest Social Network

Speaker: Areli Cabrera Oros

ID 73 8:50-9:10 Emmanuel de Jesus Gonzalez-Ramos, Luis Angel Olvera-Martinez, Manuel Cedillo-Hernandez, Carlos Adolfo Diaz-Rodriguez and Leonardo Faustino-Morales.

Symmetric cipher for grayscale images based on quantum differential geometry

Speaker: Emmanuel de Jesus Gonzalez-Ramos

ID 74 9:10-9:30 Erasmo Gabriel Martínez Soltero, Joshua Alexander Aguilar, Carlos Humberto Avila Sanchez and Alma Y. Alanis.

Semantic Segmentation to Identify Enemies in First-Person Shooters

Speaker: Erasmo Gabriel Martinez Soltero

The following paper is rescheduled for this session

ID 84 15:50-16:10 Abqa Javed, Sahar Ajmal, Taliah Tajammal, Muhammad Aslam, Ana Maria Martinez-Enriquez and Usman Sadiq Sheikh.

Enhancing Anxiety Prediction: Leveraging Machine Learning with Functional Design Metrics

Speaker: Abqa Javed



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 2

Session CS 5 - Computer Science and Computer Engineering –

Architectures and Machine learning

Friday October 25th, 2024, 12:40-14:40

Room 2

Session Chair: Dr. Rogelio Hasimoto Beltrán

ID 6 12:40-13:00 Sara Yousefi and Seyedreza Taghizadeh.

AnyComputing: A Novel Architecture for Orchestrating Various Computing Paradigms for Adaptive Workload Management

Speaker: Sara Yousefi

ID 136 13:00-13:20 Adriana Perez-Navarro and Brisbane Ovilla-Martinez.

Hardware Architecture for the SHA-3 Family in CRYSTALS-KYBER: Post-Quantum Cryptography

Speaker: Adriana Pérez-Navarro

ID 45 13:20-13:40 Víctor Rodríguez, Luis Pizano and Omar Longoria.

Application of Machine Learning Techniques to Characterize AI Benchmarks using Hardware Events

Speaker: Victor Manuel Rodriguez Bahena

ID 48 13:40-14:00 Ali Alouache.

Feature Selection using Teaching-Learning-Based Optimization Algorithm for Classification of Remote Sensing Images

Speaker: Ali Alouache

ID 61 14:00-14:20 Francisco-Javier Moreno-Vazquez, Felipe Trujillo-Romero and Amanda Enriqueta Violante Gavira.

Enhanced Fuzzy Inference System for PM10 Concentration Prediction Using Genetic Algorithms

Speaker: Francisco-Javier Moreno-Vazquez

ID 68 14:20-14:40 Gerardo Hernández, Alejandro Rodríguez, Máximo Sánchez and Mario Villafuerte.

Forward-Forward Algorithm on Morphological-Linear Neural Networks

Speaker: Gerardo Hernández Hernández



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 3** Automatic Control

Session AC 1 - Automatic Control

Wednesday October 23rd, 2024

12:00-13:00

Room 3

Session Chair: **Dr. Rubén Garrido Moctezuma**

ID 2 12:00-12:20 Antonio Saldivar-Mendez, Josue Gomez-Casas and America Berenice Morales-Diaz.

Data-driven kinematic control with adaptive gains for a redundant robot

Speaker: Antonio Saldivar Mendez

ID 5 12:20-12:40 Rodolfo Villalobos-Salazar, Abimael Contreras-Carlos, Carlos A. Toro-Arcila and America Morales-Diaz.

Hierarchical Drone Navigation Control for Ensuring Safety with Stationary Humans

Speaker: Abimael Contreras-Carlos

ID 16 12:40-13:00 Cesar Solis, Sergio Isai Palomino and Hipolito Aguilar.

Self-Tuning PID Controller for Serial Robots with Real-Time Functional Optimization

Speaker: Cesar Solis



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 3

Session MEC 1– Mechatronics

Wednesday October 23rd, 2024

13:15-14:15

Room 3

Session Chair: Dr. Juan Fernando Peza Solís

ID 101 13:15-13:35 Mauro Alberto Lopez, Richard Torrealba, Cesar Augusto Arriaga and Edna Iliana Tamariz.

IoT-Based USV for Water Quality Monitoring

Speaker: Mauro Alberto Lopez

ID 150 13:35-13:55 Carlos Ernesto Vazquez-Garcia, Jose Elias Perales-Mayorga, Vicente Parra-Vega and Nadia Vanessa Garcia-Hernandez.

Navigation in a 3D Virtual Environment under Continuum Soft Robot Guidance: A Preliminary Study

Speaker: Carlos Ernesto Vazquez-Garcia

ID 158 13:55-14:15 Hugo Yañez-Badillo, Daniel Galvan-Perez, Francisco Beltran-Carbajal and Ivan Rivas-Camero.

Integration of Virtual Vibration Absorbers in UAV Motion Control Design for Monitoring Civil Structures in Dam Engineering

Speaker: Daniel Galvan-Perez



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 3

Session AC 2 - Automatic Control

Wednesday October 23rd, 2024, 15:30-17:30

Room 3

Session Chair: **Lorenz Josue Oliva-Gonzalez**

ID 38 15:30-15:50 Lorenz Josue Oliva-Gonzalez and Rafael Martínez-Guerra.

Fractional-Order Newton-Like State Estimator for Discrete-Time Nonlinear Systems

Speaker: Lorenz Josue Oliva-Gonzalez

ID 50 15:50-16:10 Federico Augusto Trampe-Torija, Francisco Beltrán-Carbajal, Jorge Ramírez-Muñoz and Mario Sampedro Cruz.

Non-linear Model based Trajectory Tracking Control for Drying Process of Spirulina platensis and Red Chili in a Type-Tunnel Dryer

Speaker: Federico Augusto Trampe-Torija

ID 56 16:10-16:30 Víctor Reza, Jorge Torres and Jesus Guerrero.

A Continuous-Discrete ADRC for LTI Systems under Nonuniform Discrete Measurements and External Disturbances

Speaker: Víctor Alejandro Reza López

ID 102 16:30-16:50 Diego Hernán Gaytán Rivas, Jorge Rivera Domínguez, Susana Ortega Cisneros, Héctor Emmanuel Muñoz Zapata and Emilio Isaac Baungarten Leon.

On the Novel Design and FPGA Implementation of a Fuzzy PD Control for a DC Motor

Speaker: Diego Hernán Gaytán Rivas

ID 105 16:50-17:10 Emmanuel Gamero Ramirez, Jorge Antonio Torres Muñoz and Jesús Norberto Guerrero Tavares.

Adaptive Gains Sliding Mode Observer for the Estimation of Unknown Dynamics in a Heavy Metal Bioremediation Process

Speaker: Emmanuel Isaí Gamero Ramírez

ID 112 17:10-17:30 Oscar Federico Garcia-Castro, Luis Enrique Ramos-Velasco, Vicente Parra-Vega, Rodolfo Garcia-Rodriguez and Carlos Ernesto Vazquez-Garcia.

Neural Network Modeling of Continuum soft robots based on WaveNets Equipped with Adaptive IIR

Speaker : Oscar Federico Garcia-Castro



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 3** Automatic Control

Session MEC 1– Mechatronics

Wednesday October 23rd, 2024

13:15-14:15

Room 3

Session Chair: Dr. Juan Fernando Peza Solís

ID 101 13:15-13:35 Mauro Alberto Lopez, Richard Torrealba, Cesar Augusto Arriaga and Edna Iliana Tamariz.

IoT-Based USV for Water Quality Monitoring

Speaker: Mauro Alberto Lopez

ID 150 13:35-13:55 Carlos Ernesto Vazquez-Garcia, Jose Elias Perales-Mayorga, Vicente Parra-Vega and Nadia Vanessa Garcia-Hernandez.

Navigation in a 3D Virtual Environment under Continuum Soft Robot Guidance: A Preliminary Study

Speaker: Carlos Ernesto Vazquez-Garcia

ID 158 13:55-14:15 Hugo Yañez-Badillo, Daniel Galvan-Perez, Francisco Beltran-Carbajal and Ivan Rivas-Camero.

Integration of Virtual Vibration Absorbers in UAV Motion Control Design for Monitoring Civil Structures in Dam Engineering

Speaker: Daniel Galvan-Perez



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 3

Session CS 2 - Computer Science and Computer Engineering – Systems analysis

Thursday October 24th, 2024, 13:00-15:00

Room 3 - Session Chair: **Dra. Ana María Martínez Enríquez**

ID 10 13:00-13:20 Erick Axel Martinez Ríos and Rogelio Bustamante-Bello.
Parameter Selection of Generalized Morse Wavelets for Water Leakage Classification
Speaker: Erick Axel Martinez Ríos

ID 47 13:20-13:40 Carlos Adolfo Cardenas Flores, Marco Antonio Silva Maldonado, Jesus Emiliano Chavez Garcia, Jesus Adan Ibarra Castro, Reyes Apolonio Castro Corral and Marcos Eduardo Cruz Victorio.
Development of wind speed forecast models using Artificial Intelligence in Mexicali
Speaker: Marco Antonio Silva Maldonado

ID 96 13:40-14:00 Mohammad Sakib, Hanif Mia, Mukta Akter, Jannatul Farduse, Sharmin Akter and Md. Shahjalal.
Rainfall Prediction and Real-Time Weather Monitoring in Bangladesh: A Comparative Analysis of Machine Learning Algorithms
Speaker Mukta Akter

ID 97 14:00-14:20 Mohammad Sakib, Sadikul Hasan Mridha Atul, Tania Sarkar, Hanif Mia, A.S.M. Daiyan Haider Nafiu and Md. Shahjalal.
Monitoring Toxic Gases in Dhaka Brick Kiln Areas & Comparing CNN vs. ResNeT for Brick Kiln Identification via Satellite Imagery in Bangladesh
Speaker: Hanif Mia

ID 154 14:20-14:40 Giovanni Caicedo, Diana Peralta Garcia, Jaime Andres Perez Taborda and Liliana Vera Londoño.
Low-Cost Portable Device for Water Quality Monitoring
Speker: Giovanni Caicedo

ID 164 14:40-15:00 Cristian Ayala, Manuela Londoño, Samuel Lopez, Vanesa Triana, Daniela Payares and Juan Sebastian Sanchez-Gomez.
Transportation models and unsupervised learning methods to minimize food waste in schools of Medellin
Speaker: Juan Sebastián Sánchez Gómez



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 3

Session CS 3 - Computer Science and Computer Engineering –

Object detection and process discovery

Thursday October 24th, 2024, 16:30-18:30

Room 3- Session Chair: Dr. Antonio Ramírez Treviño

ID 35 16:30-16:50 Murat Bakirci and Irem Bayraktar.

Comparative Performance of YOLOv9 and YOLOv10 for Vehicle Detection towards Real-Time Traffic Surveillance with UAVs

Speaker: Irem Bayraktar

ID 114 16:50-17:10 Maria Laura Miranda Leon, Jesús Carlos Pedraza Ortega, Marco Antonio Aceves Fernandez and Juan Manuel Ramos Arreguin.

A Comparative Analysis of Object Detection Models for Drowsiness Detection: Evaluating Raw, Processed, and Hybrid Image Datasets with Faster R-CNN

Speaker: Maria Laura Miranda Leon

ID 120 17:10-17:30 Zareen Tasnim Pear and Hafsa Binte Kibria.

Enhanced Network Intrusion Detection Using a Hybrid CNN-LSTM Approach on the UNSW-NB15 Dataset

Speaker: Zareen Tasnim Pear

ID 161 17:30-17:50 Zhengmao Ye.

Computational Complexity Reduction in Feature Detection via Nonlinear Component Analysis and Information Quantitative Synthesis

Speaker: Zhengmao Ye

ID 141 17:50-18:10 Ernesto Lopez-Mellado and Néstor Martínez-Medina.

Synthesis of WFN from Reduced Event Logs based on Event Precedence Structures

Speaker: Ernesto Lopez-Mellado

ID 33 18:10-18:30 Marina Montes-Partida and Ernesto Lopez-Mellado.

Accuracy Measures for Timed Petri Nets

Speaker: Ernesto Lopez-Mellado



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 3

Session NANO3 - Nanomaterials and Applications

Friday October 25th, 2024

8:30-9:50

Room 3

Session Chair: **Dra. Reyna Méndez Camacho**

ID 51 8:30-8:50 Francisco J. Cano, Odín Reyes Vallejo, Rocío Magdalena Sánchez Albores, Ashok A., Fernández Vázquez Vázquez, Salvador Escobar, Arturo Fernández Madrigal and Sebastian P.J.

Adsorption of dyes by charcoal and activated charcoal from Moringa Oleifera leaves

Speaker: Odín Reyes Vallejo

ID 107 8:50-9:10 Israel Iván Lara Garcilazo, Juan Jesús Rocha Cuervo, Venkata Krishna Karthik Tangirala and Angélica Guadalupe Hernández Zanabria.

Green Synthesis of ZnO and SnO₂: structural and morphological studies based on citrus extracts

Speaker: Juan Jesús Rocha Cuervo

ID 15 9:10-9:30 Israel Iván Lara Garcilazo, Venkata Krishna Karthik Tangirala and Arturo Maldonado Álvarez.

Photocatalytic Degradation of Levonorgestrel by Sprayed ZnO Thin Films

Speaker: Israel Iván Lara Garcilazo

ID 62 9:30-9:50 **Adsorption of Malachite Green on CaO-ZnFe₂O₄ Composite Derived from Agroindustrial Waste**

Odin Reyes Vallejo, Rocío Magdalena Sánchez Albores, Roliber Escobar Velazquez, Clara López Aguilar, Francisco J Cano, Ashok A., José Escorcía García and Pascual Bartolo Pérez.

Speaker: Odín Reyes Vallejo



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

9:00-9:20 - Opening Ceremony

9:20-10:20 Plenary Talk

Carlos Ocampo-Martinez, PhD

Professor in Universitat Politècnica de Catalunya, Automatic Control Department (ESAII)
Escola Tècnica Superior d'Enginyeria Industrial de Barcelona (ETSEIB)
Barcelona, España

<https://carlos-ocampo.staff.upc.edu>

Talk Title: "Event-Driven Partitioning for Non-Centralized Predictive Control in Economic Dispatch of Interconnected Microgrids"

Wednesday October 23rd, 2024 – 9:20-10:20, Mexico City Time Zone (GMT-6, Central Time)

ROOM 4

Session Chair: Francisco Beltrán-Carbajal

Short Biography:

Prof. Ocampo-Martinez received his doctoral degree in control engineering from the Universitat Politècnica de Catalunya (UPC), Barcelona, Spain, in 2007. In 2007-2008, he held a post-doctoral position at the ARC Centre of Complex Dynamic Systems and Control, The University of Newcastle, Callaghan, NSW, Australia, and, afterward, at the Spanish National Research Council (CSIC), Institut de Robòtica i Informàtica Industrial, CSIC-UPC, Barcelona, as a Juan de la Cierva Research Fellow. Since 2011, he has been with the Automatic Control Department (ESAII), UPC, as an Associate Professor in automatic control and model-predictive control. He spent visiting periods at MIT, Cambridge, MA, USA; the University of Delft, Delft, The Netherlands; the University of Cambridge, Cambridge, U.K.; the University of Siena, Siena, Italy; and ITBA, Buenos Aires, Argentina. His main research interests include constrained model-predictive control, large-scale systems management (partitioning and noncentralized control), process control, and industrial applications (mainly related to the key scopes of water and energy, and smart manufacturing under the IoT framework).





2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

Plenary Talk

Spyretta Golemati, PhD

Professor in National and Kapodistrian University of Athens
Greece

Talk Title: "Exploring cardiovascular mechanics with ultrasound"

Wednesday October 23rd, 2024 – 10:30-11:30 - Mexico City Time Zone (GMT-6, Central Time)

ROOM 4

Session Chair: IEEE EMBS Student Chapter

Short Biography

Spyretta Golemati is Associate Professor of Biomedical Engineering in the Medical School of the National and Kapodistrian University of Athens, Greece. She holds a Diploma in Mechanical Engineering from the National Technical University of Athens, Greece, and the M.Sc. and Ph.D. degrees in Bioengineering from Imperial College London, UK. As visiting scholar/researcher, she visited the Ultrasound Elasticity Imaging Laboratory in Columbia University in the city of New York, USA (2013 and 2016), and the Centre for Visual Computing, Ecole Centrale de Paris (2013). She is alumna of the Fulbright Foundation-Greece. Her main research interests include image analysis of B-mode ultrasound images of the carotid artery, and the identification of novel indices of arterial mechanics and pathophysiology of atheromatous plaque. She has edited the book *Cardiovascular Computing – Methodologies and Clinical Applications*, published by Springer-Singapore in 2019. She has co-authored 37 papers published in international peer-reviewed journals, 15 book chapters, and 46 papers published in international scientific peer-reviewed conference proceedings. She is Associate Editor of Elsevier's journal *Ultrasonics*, Editorial Board member of *ERJ Open Research* and of *BMC Cardiovascular Disorders*, member of the Advisory Editorial Board of *Ultrasound in Medicine and Biology*, and Guest Editor of *IEEE-JBHI*. She is member of IEEE-EMBS, IEEE-UFFC, IEEE-WiE, the Technical Chamber of Greece, and the Hellenic Atherosclerosis Society. She is the Chair of the Greek chapter of IEEE-EMB (2020-today), co-chair of IEEE EMB Education committee (2022) and member of the IEEE EMB Chapter Development committee (2021-2022).





2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

Session AE - Aeronautics and Aerospace Engineering

Wednesday October 23rd, 2024

12:00-13:00

Room 4

Session Chair: Dr. Oscar Alejandro García Pérez

ID 100 12:00-12:20 Amandine Azzarello, Antoine Eon, José Gabriel Ramírez Torres and Jean-Pierre Gazeau.

Mobile Manipulation Based on ROS1/ROS2 Middleware: Software Architecture and Evaluation of ROS2 Planning Algorithms

Speaker: Amandine Azzarello

ID 27 12:20-12:40 Carlos Osorio Quero and Jose Martinez-Carranza.

Physics-Informed Machine Learning for UAV Control

Speaker: Carlos Osorio Quero

ID 28 12:40-13:00 Murat Bakirci and Irem Bayraktar.

Assessment of YOLOv10 for Ship Detection in SAR Imagery under Open Ocean and Coastal Challenges

Speaker: Irem Bayraktar



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4**
Automatic Control



Conference

José de Jesús Rodríguez Flores
TEKTRONIX

Title: "Electrification: AC to DC transition"

Hour: 13:15-14:15, Mexico City Time Zone

ROOM 4

Session Chair: Jonathan Meza

José de Jesús Rodríguez Flores
TEKTRONIX

Title: "Fundamentals of Oscilloscopes and Analysis in Embedded Systems"

Hour: 15:30-16:30, Mexico City Time Zone

ROOM 4

Session Chair: Jonathan Meza



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

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

Thursday October 24th, 2024

8:30-9:30

Room 4

Session Chair: Dr. Luis Gerardo Trujillo Franco/Dr. Oscar Alejandro Pérez

ID 145 8:30-8:50 Hector S. Sanchez-Villegas, Luis G. Trujillo-Franco, Hugo F. Abundis-Fong and Gerardo Silva-Navarro.

On the evaluation of low-cost piezoelectric sensors in modal testing: A case study

Speaker: Luis G. Trujillo-Franco

ID 70 8:50-9:10 Oswaldo Emiliano Rufino-Arteaga and Oscar Alejandro Garcia-Perez.

Structural Health Monitoring in the Assembly of the Torsion Box and the Semi-wings

Speaker: Oswaldo Emiliano Rufino Arteaga

ID 129 9:10-9:30 Omar Sandre Hernandez, Jesus Patricio Ordaz Oliver, Roberto Morales and Enrique Hernández Rodríguez.

A Cascade Constrained MPC scheme for the Speed and Current Control of an Induction Motor Drive

Speaker: Enrique Hernández Rodríguez



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control **ROOM 4**



Plenary

Jorge I. Poveda, PhD

Professor in Electrical and Computer Engineering department at the University of California, San Diego, United States.

Talk Title: "Prescribed-Time Stability in Switched Systems with Resets: A Hybrid Dynamical Systems Approach"

**Thursday October 24th, 2024- 10:00-11:00, Mexico City Time Zone (GMT-6, Central Time)
ROOM 4**

Session Chair: Dr. Francisco Beltrán-Carbajal

Short Biography:

Dr. Poveda obtained his M.S. and Ph.D. degrees in Electrical and Computer Engineering from the University of California, Santa Barbara, in 2016 and 2018, respectively, under the supervision of Andrew R. Teel. He also worked as Research Intern at the Mitsubishi Electric Research Laboratories in 2016 and 2017. Subsequently, he was Postdoctoral Fellow at Harvard University (2018) and Assistant Professor at the University of Colorado, Boulder (2019-2022). Since 2022, he has been Assistant Professor in the Electrical and Computer Engineering department at the University of California, San Diego, where he also holds an affiliate appointment in the Mechanical and Aerospace Engineering Department. Dr. Poveda is the recipient of various awards, including the CRII (2020) and CAREER awards (2022) from NSF, the Young Investigator awards from AFOSR (2022) and SHPE (2024), the Donald P. Eckman Award (2023) from AACC, and the Best Paper Award from the IEEE Transactions on Control of Network Systems (2023).



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control **ROOM 4**

Plenary



Kevin McComber, PhD

CEO, Spark Photonics | Executive director, Spark Photonics Foundation
United States.

Talk Title: “Empowering Semiconductor Innovation: Cultivating Technology and Education through Photonics”

Thursday October 24th, 2024- 11:30-12:30, Mexico City Time Zone (GMT-6, Central Time)
ROOM 4

Session Chair: Dra. Arely Cano-Martínez

Short Biography:

Kevin McComber is the Co-Founder & CEO of Spark Photonics Design, a for-profit integrated photonics design services firm, and Executive Director of the Spark Photonics Foundation, a nonprofit STEM education, workforce development, and outreach organization. Dr. McComber previously worked at the Massachusetts Institute of Technology (MIT) in education and workforce initiatives, at Intel as a semiconductor process engineer, and in various business roles in financial services. He holds BS and PhD degrees from MIT in materials science and engineering.



• **Workshop 1:**

- BRAND: **RASPBERRY by GeekFactory**
- Expositor: **Jesús Rubén Santa Anna**
- Topic: **Building an IoT device with Raspberry Pi Pico W**
- **Description:**
 - What is Raspberry Pi Pico?
 - Differences between Pico VS Other Raspberries
 - Protocol MQTT
 - Data aggregators for IoT sensors
 - Creating a dashboard for data visualization
 - Python code for sending data via MQTT
 - Remote relay control via MQTT
 - Conclusion
- Duration: 2 Hours
- Hour: **13:00-15:00, Mexico City Time Zone, ROOM 4**
- Session Chair: Jonathan Meza



•**Workshop 2:**

- BRAND: **RASPBERRY by GeekFactory**
- Expositor: **Jesús Rubén Santa Anna**
- Topic: **Getting started for Raspberry Pi5 with the AI Kit**
- Description:
 - Object detection in video
 - Body pose estimation
 - Vehicle recognition
 - Facial recognition
 - Integration with node-red and automation
 - Python code for sending data via MQTT
 - Use with Python
 - Possible projects
- Duration: **2 Hours**
- Hour: **16:30-18:30, Mexico City Time Zone, ROOM 4**
- Session Chair: **Jonathan Meza**



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

Session SSM 3 - Solid-state materials, Electron Devices and Integrated Circuits –

Machine Learning meets Semiconductors Electronics

Friday October 25th, 2024

8:30-9:50

Room 4

Session Chair: Dr. Felipe Gomez Castañeda

ID 32 8:30-8:50 Andrey Sarahy Santiago Rosales, Gerardo Marcos Tornez Xavier, Merlina Angélica Navarro Villanueva, Oliverio Arellano Cárdenas, Luis Martín Flores Nava and Felipe Gómez Castañeda.

Digital Emulation System for Combined Cycle Plants based on Machine Learning

Speaker: Andrey Sarahy Santiago Rosales

ID 80 8:50-9:10 Luis Elias Salgado Solano, Oliverio Arellano Cárdenas, Luis Martin Flores Nava and Felipe Gómez Castañeda.

Bearing Failure Classification with Metaheuristic Adjust of the Extreme Learning Machine Model

Speaker: Luis Elias Salgado Solano

ID 43 9:10-9:30 Daniel Apolinar Amaro Caraveo, Arturo Velasco Hernández, Claudia Elena Pérez García, José Santos Cruz, Francisco Javier de Moure Flores and Sandra Andrea Mayén Hernández.

Novel Synthesis of Bi₂MoO₆ Thin Films for Sunlight-driven Photocatalysis

Speaker: Daniel Apolinar Amaro Caraveo



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control **ROOM 4**

Plenary

David Estrada, PhD

Professor of Materials Science and Engineering at Boise State University and Co-Founder of INFlex Labs, Boise Idaho, United States



Talk Title: "Building the future of printed electronics based on 1D and 2D semiconductors"

Friday October 25th, 2024- 10:00-11:00, Mexico City Time Zone (GMT-6, Central Time)

ROOM 4

Session Chair: Dra. Arely Cano-Martínez

Short Biography:

David Estrada is originally from Nampa, Idaho. From 1998 to 2004 he served in the United States Navy as an Electronics Warfare Technician/ Cryptologic Technician – Technical. David achieved the rank of Petty Officer First Class in 2003 before receiving an honorable discharge and returning to Idaho to pursue his undergraduate education at Boise State University (BSU) where he was a Ronald E. McNair scholar. After completing his Bachelor of Science in Electrical Engineering from BSU in May of 2007, he began graduate studies at the University of Illinois at Urbana-Champaign (UIUC) under the direction of Professor Eric Pop. David received his Master of Science in Electrical Engineering from UIUC in 2009, and his Doctor of Philosophy in Electrical Engineering at UIUC in 2013. David then joined Prof. Rashid Bashir's Laboratory of Integrated Bio Medical Micro/Nanotechnology Applications as a Visiting Postdoctoral Researcher before moving to the Materials Science and Engineering Department at Boise State University. David is the recipient of the NSF and NDSEG Graduate Fellowships. His work has been recognized with several awards, including the Gregory Stillman, John Bardeen, and SHPE Innovator of the Year awards. His research interests are in the areas of emergent semiconductor nanomaterials and bionanotechnology.



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4**
Automatic Control



Honoring Deceased Professor (Special Ceremony in Spanish)

PhD. José Antonio Moreno Cadenas
PhD. Vyacheslav Elyukhin



In charge of Arturo Escobosa, Alfredo Reyes and Ramón Peña



2024 21st International Conference on Electrical Engineering, Computing Science and **ROOM 4** Automatic Control

Invited Lecture



Anibal Pacheco, PhD

Senior postdoctoral research in the Pervasive Electronics Advanced Research Laboratory, Universidad de Granada, Spain.

Talk Title: "Radiofrequency Circuits with Nano-Structured Material-Based Devices and Their Compact Modeling"

Friday October 25th, 2024- 11:30-12:30, Mexico City Time Zone (GMT-6, Central Time)

ROOM 4

Session Chair: Dra. Arely Cano-Martínez

Short Biography:

Aníbal Pacheco-Sánchez is a senior postdoctoral research in the Pervasive Electronics Advanced Research Laboratory, Universidad de Granada, Spain. He received the Dr.-Ing. (Ph. D.) degree in Electrical and Computer Engineering from the Technische Universität Dresden (TUD), Germany in 2019 and the Master of Science degree in Telecommunications Engineering and bachelor degree in Electronics and Telecommunications from the Instituto Politécnico Nacional (IPN), Mexico, in 2011 and 2008, respectively. He worked as a postdoctoral researcher at the NANOCOMP group in Universitat Autònoma de Barcelona (UAB), Spain. He was a guest researcher at the Center for Advanced Electronics Dresden, Germany between 2012 and 2017. In 2023, he was a visiting researcher at Université de Lille, France and at Universidad de Granada, Spain. He is a member of the Electron Devices Society and the Nanotechnology Council, both of the IEEE, and he is a guest professor at IPN, Mexico since 2023. His present research interests involve advanced characterization, parameter extraction, compact and numerical modeling of emerging devices based on one-dimensional (1D) and two-dimensional (2D) materials for high-frequency (HF), energy-efficient and terahertz applications.



2024 21st International Conference on Electrical Engineering, Computing Science and Automatic Control

ROOM 4

Session SSM 4 - Solid-state materials, Electron Devices and Integrated Circuits

Next-Generation Thin Films for Transparent Electronics

Friday October 25th, 2024, 12:40-14:40

Room 4

Session Chair: **Dr. David Mateus Torres Herrera/ Dr. Gabriel Romero Paredes**

Dr. David Mateus Torres Herrera

ID 19 12:40-13:00 Rosa Nava-Sanchez, Gaspar Casados-Cruz and Arturo Morales-Acevedo.

High conductivity copper iodide (γ -CuI) thin films deposited by a spin-coating technique

Speaker: Gaspar Casados-Cruz

ID 25 13:00-13:20 Kacha Kalinka, Hichem Ferhati, Adel Bendjerad, Fayçal Djeflal and A Benhaya.

Effects of Ni/Cu Bilayer Structure On The Optical and Electrical Characteristics of Al-doped ZnO Thin-Film

Speaker: Ferhati Hichem

ID 82 13:20-13:40 Gabriela Barron, Maria de La Luz Olvera, Arturo Maldonado and Heberto Gomez Pozos.

Structural, electrical and optical properties of ZnO films deposited by ultrasonic chemical spraying for application as transparent conductors

Speaker: Gabriela Barron

Dr. Gabriel Romero Paredes

ID 127 13:40-14:00 Luz Margarita Balcazar Villatoro, Arturo Maldonado Alvarez and Maria De La Luz Olvera Amador.

Transparent and conductive Al-doped ZnO thin films. Influence of Al concentration

Speaker: Luz Margarita Balcazar Villatoro

ID 134 14:00-14:20 Eduardo Benito Ramirez, Arturo Maldonado and Maria de La Luz Olvera.

Effect of Doping ZnO Films with Cu on the Decoloration of Methylene Blue by Photocatalysis

Speaker: Eduardo Benito Ramirez Martinez