

CONFERENCE

CCE

2022

**International Conference
on Electrical Engineering,
Computing Science and
Automatic Control**

NOVEMBER

9-11, 2022



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Schedule CCE 2022

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Schedule CCE 2022

AC: AUTOMATIC CONTROL, **BIO:** BIOMEDICAL ENGINEERING/ BIOMIMETICS, **COMM:** COMMUNICATIONS SYSTEMS, **CS:** COMPUTER SCIENCE AND COMPUTER ENGINEERING, **MEC:** MECHATRONICS, **MEE:** MECHANICAL ENGINEERING, **NANO:** NANOTECHNOLOGY, **POW:** POWER ELECTRONICS, **SSM:** SOLID-STATE MATERIALS, ELECTRON DEVICES AND INTEGRATED CIRCUITS, **AE:** AERONAUTICS AND AEROSPACE ENGINEERING/ AUTONOMOUS NAVIGATION

Wednesday November 9th, 2022			
CINVESTAV			
<i>Hour</i>	<i>Room 1</i>	<i>Room 2</i>	<i>Room 3</i>
10:00-11:30			Opening Ceremony and Plenary Prof. Silviu-Iulian NICULESCU, PhD. <i>Directeur de Recherche au CNRS, membre de l'équipe Inria "Disco"France. France.</i> Title: " Delay as a control parameter. A guided tour" <i>Session Chair: Dr. Daniel Alejandro Melchor Aguilar</i>
11:30-12:00	Break		
12:00-14:00	SSM 1 / NANO 1	CS 1	AC 1
14:00-16:00	Break		
16:00-18:20	SSM 2	BIO 1	MEC

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Thursday November 10th, 2022			
CINVESTAV			
<i>Hour</i>	<i>Room 1</i>	<i>Room 2</i>	<i>Room 3</i>
9:00-11:00	SSM 3 /NANO 2	POW	COMM/AE
11:00-11:30	Break		
11:30-12:30			Plenary Prof. Daniel Ulises Campos Delgado, PhD. <i>Professor of Autonomous University of San Luis Potosi (UASLP). Mexico.</i> Title: "Hybrid Classification Approach for Correlated Multimodality Images: Unmixing Processing + Artificial Intelligence" <i>Session Chair: Dr. Daniel Alejandro Melchor Aguilar</i>
12:30-13:00	Break		
13:00-14:00			Plenary Prof. Antonio Ramírez Treviño, PhD. <i>Professor of Center for Research and Advanced Studies of the National Polytechnic Institute - CINVESTAV, Guadalajara, Mexico.</i> Title: Fault Diagnosis in Petri Nets <i>Session Chair: Dra. Susana Ortega Cisneros</i>
14:00-16:00	Break		
16:00-18:20	SSM 4 /NANO 3	BIO 2	AC 2

AC: AUTOMATIC CONTROL, **BIO:** BIOMEDICAL ENGINEERING/ BIOMIMETICS, **COMM:** COMMUNICATIONS SYSTEMS, **CS:** COMPUTER SCIENCE AND COMPUTER ENGINEERING, **MEC:** MECHATRONICS, **MEE:** MECHANICAL ENGINEERING, **NANO:** NANOTECHNOLOGY, **POW:** POWER ELECTRONICS, **SSM:** SOLID-STATE MATERIALS, ELECTRON DEVICES AND INTEGRATED CIRCUITS, **AE:** AERONAUTICS AND AEROSPACE ENGINEERING/ AUTONOMOUS NAVIGATION

Friday November 11th, 2022			
CINVESTAV			
<i>Hour</i>	<i>Room 1</i>	<i>Room 2</i>	<i>Room 3</i>
9:00-11:00	NANO 4	BIO 3	AC 3
11:00-11:30	Break		
11:30-12:30	<p style="text-align: center;">Plenary Prof. Qiang Huang, PhD. Professor, Fellow of IISE and ASME. Epstein Department of Industrial and Systems Engineering. University of Southern California. United States of America (USA). <i>Title: "An Impulse Response Formulation for Machine Learning of 3D Printing Accuracy"</i> <i>Session Chair: Dr. Wen Yu Liu</i></p>		
12:30-13:00	Break		
13:00-14:20	SSM 5	CS 2	MEE
14:30-14:50	Closing ceremony		

TECHNICAL PROGRAM

ID	Hour	Automatic Control (AC)
		Session AC 1 - Automatic Control Wednesday November 9th, 2022 12:00-14:00 Room 3 Session Chair: Dr. Rubén Garrido Moctezuma
ID 14	12:00-12:20	Jocabed Mendoza, Adolfo Perrusquia and Juan Alejandro Flores Campos. <i>Mechanical Advantage Assurance Control of Quick-return Mechanisms in Task Space</i>
ID 56	12:20-12:40	Miguel Rosas Jiménez, Miguel Ramírez Barrios, Manuel Mera Hernández, Rodrigo Mora Martínez and Alejandro Florencio. <i>Design and Performance Evaluation of PID Controllers for a Buck Converter for Electrosurgical Units</i>
ID 61	12:40-13:00	Olga Lidia Jiménez Morales, Jessica Jazmín Maldonado and Rubén Garrido. <i>Robust Adaptive Control of Servo Systems</i>
ID 108	13:00-13:20	Jesús Guerrero, Jorge Torres and Monica Zúñiga. <i>Improvement of the PD controller Based on the Disturbance Observer for Trajectory Tracking in Underwater Vehicles</i>
ID 121	13:20-13:40	Jesús Eduardo Pacheco Villegas, Vicente Parra-Vega and Anand E. Sánchez-Orta. <i>BLF-based Robust Navigation of Nonholonomic Mobile Robots Subject to Unmatched Disturbances</i>
		Session AC 2 - Automatic Control Thursday November 10th, 2022 16:00-18:20 Room 3 Session Chair: Dr. Miguel Bernal
ID 15	16:00-16:20	Juan Javier Montesinos García, Jorge Luis Barahona-Ávalos, Yoswaldo Gómez-Cabrera, Jesús Linares-Flores and José Antonio Juárez-Abad. <i>Modeling and control for a class of non-linear systems with non-affine polynomial control input</i>
ID 18	16:20-16:40	Rafael Duarte, Raymundo Márquez, Miguel Bernal and Adolfo Soto. <i>New Results for Stability Analysis of Time-Delay Nonlinear Systems Represented by Exact Takagi-Sugeno Models</i>
ID 23	16:40-17:00	Suresh Thenozhi, Ulises Mondragón Cárdenas and Antonio Concha Sánchez. <i>Observer Design for a Duffing-Holmes System with Uncertainties</i>

- ID 40** 17:00-17:20 Juan J. López Solórzano and Yuriy S. Shmaliy.
H ∞ FIR Filter Gain Computation for Disturbed Systems using Linear Matrix Inequality
- ID 95** 17:20-17:40 Marco A. Gomez, Christopher D. Cruz-Ancona and Leonid Fridman.
Safe Sliding Mode Control
- ID 110** 17:40-18:00 Jorge Enrique Ayala-Carrillo, Christian Alejandro Trejo-Ramos, Ernesto Olguín-Díaz and Vicente Parra-Vega.
Backstepping Control for Tracking of Solenoid Valve Actuated Pneumatic Continuum Soft Robots

Session AC 3 - Automatic Control

Friday November 11th, 2022

9:00-11:00

Room 3

Session Chair: **Dr. Efren Mezura**

- ID 28** 9:00-9:20 Chadi Riman and Pierre E. Abi-Char.
A Priority-based Modified A* Path Planning Algorithm for Multi-Mobile Robot Navigation
- ID 47** 9:20-9:40 Diego Tristán-Rodríguez, Rubén Garrido and Efrén Mezura-Montes.
Tuning of a Modified Model Reference Adaptive Controller using a PSO Algorithm
- ID 51** 9:40-10:00 Jorge Alberto Lizárraga Rodríguez, José Javier Ruíz León and Edgar Nelson Sánchez Camperos.
Phymastichus-Hypothenemus-based Algorithm for Optimal Node Selection on Pinning Control of Complex Networks
- ID 53** 10:00-10:20 Juan Manuel Ibarra-Zannatha, Oscar González Miranda, Cruz Barrera Ramírez, Luis Antonio López Miranda, Samuel Rudyard Arellano Aguilar and Luis Ángel Darío Osuna Castañeda.
Integration of Perception, Planning and Control in the AutoMINY 4.0

ID Hour **Biomedical Engineering/ Biomimetics (BIO)**

Session BIO 1- Biomedical Engineering/ Biomimetics

Wednesday November 9th, 2022

16:00-18:20

Room 2

Session Chair: **Dr. Luis Antonio García Espinosa**

- ID 80** 16:00-16:20 Texar Javier Ramírez Guzmán, Arturo Vera Hernández, Lorenzo Leija Salas and Citlalli Jessica Trujillo Romero.
Comparative Study on Cooling System Antenna versus Non-Cooling System Antenna in Multilayer Phantoms using Low Treatment Power

- ID 20** 16:20-16:40 Arturo González-Mendoza, Ivett Quiñones-Urióstegui, Leonardo Anaya-Campos and Emanuel Medina-Morales.
Unity Lower limb Motion Capture Application
- ID 118** 16:40-17:00 Juan Pablo Cavazos Carrizales and Francisco José Ruiz Sánchez.
Computer Vision Interface for Symbolic Programming of Cartesian Motion to introduce Visually Impaired Children into Robotic Sciences
- ID 43** 17:00-17:20 Laura Ivonne Flores-Nuñez, José Alberto García-Limón, Frank Martínez-Suárez, Ramon Casanella and Carlos Alvarado-Serrano.
J Wave Detection Algorithm of the BCG in Chair and Bed using Continuous Spline Wavelet Transform
- ID 5** 17:20-17:40 Lauro Armando Contreras Rodríguez, Eladio Cardiel, Ángel Llanas Soto, José Antonio Barraza Madrigal and Pablo Rogelio Hernández Rodríguez.
Human Upper Limb Motion Recognition Using IMU sensors and Artificial Neural Networks
- ID 35** 17:40-18:00 Luis Carlos Olivares Rueda, Aldo Yair Tenorio Barajas, Claudia Oliva Mendoza Barrera and Víctor Manuel Altuzar Aguilar.
Simulation of PCR Kinetics in Convective Flow Systems
- ID 39** 18:00-18:20 Leasly Atzuri González-Muñoz, Luis Orozco-Magdaleno, Vania Alice Ortiz-Yescas, Adrián Octavio Ramírez-Morales, Blanca Tovar-Corona and Luis Brayan Zacatelco-Barrios.
Training with a Neurofeedback System for the Control of a Drone Using Electroencephalographic Signal

Session BIO 2 - Biomedical Engineering/ Biomimetics

Thursday November 10th, 2022

16:00-18:20

Room 2

Session Chair: **Dr. Luis Antonio García Espinosa**

- ID 62** 16:00-16:20 Rafael Bayareh Mancilla, Wilfrido Gómez Flores, Christian Daul, Josefina Gutiérrez, Lorenzo Leija, Didier Wolf and Arturo Vera.
Consideration for segmentation based on radiometric data processing, towards the research of quantitative medical thermography
- ID 74** 16:20-16:40 Hugo S. Gamboa, Laura Delgado Rangel, Fernando Pérez Escamiroso, José Antonio Gutiérrez Gnechi, José Rubén Huerta Osnaya and Daniel Lorias Espinoza
Device, Continuous Passive Motion-CPM, for the rehabilitation of motor skills of the forearm and wrist using a mobile application and Arduino
- ID 114** 16:40-17:00 Matías Alvarado, Ivan Valdespin, Moises León and Sergio Alcalá.
Genetic Network of Breast Cancer Metastasis in Lymph Nodes via Information Theory Algorithms
- ID 111** 17:00-17:20 Carlos Andrés Cortés Aguilar, Vicente Parra Vega and Nadia Vanessa García Hernández.
An Immersive Haptic Wearable Hand Exoskeleton

- ID 49** 17:20-17:40 Frank Martínez-Suárez, José Alberto García-Limón, Dalila Rivera-Córdova, Laura Ivonne Flores-Nuñez, Oscar Casas and Carlos Alvarado-Serrano.
Long-Term Continuous Ambulatory ECG Monitor with Beat-to-Beat Heart Rate Measurement in Real Time using ESP32
- ID 50** 17:40-18:00 Oliverio Arellano Cardenas, Luis Martín Flores Nava, Felipe Gómez Castañeda and José Antonio Moreno Cadenas.
ECG Arrhythmia Classification for Comparing Pre- Trained Deep Learning Models
- ID 26** 18:00-18:20 Eduardo Vázquez-Santacruz, J.A. Vázquez-Santacruz and R. de J. Portillo-Vélez.
Analysis of a Sole-Profile Definition in an Ankle Foot Orthosis Device

Session BIO 3 - Biomedical Engineering/ Biomimetics

Friday November 11th, 2022

9:00-11:00

Room 2

Session Chair: **Dr. Fernando Pérez Escamirosa**

- ID 93** 9:00-9:20 Daniela Ávila-Cabrera, Rafael Bayareh-Mancilla, Arturo Vera-Hernández, Josefina Gutiérrez-Martínez and Lorenzo Leija-Salas.
Clinical and Thermographic Database of Patients with Diabetes Mellitus with Perspective for Quantitative Studies.
- ID 86** 9:20-9:40 Jorge Alberto Rodríguez Ramírez, Mario Ibrahim Gutiérrez Velasco, Arturo Vera Hernández, Carlos Alther Negreira Caseres and Lorenzo Leija Salas.
Acoustic and Thermal Analysis in Blood Vessel into Muscle for Pressure Study Related to Cavitation
- ID 66** 9:40-10:00 Marzela Sánchez Osti, Jesús Carlos Pedraza Ortega, Luis Antonio Salazar Licea, Efrén Gorrostieta Hurtado and Cecilia Gabriela Rodríguez Flores.
Comparison of Key Point Detector Methods for Microcalcification's ROI Identification on Breast Images: An alternative to SIFT.
- ID 37** 10:00-10:20 Dalila Rivera-Córdova, Frank Martínez-Suárez, José Alberto García-Limón and Carlos Alvarado-Serrano.
Automatic Delineation Algorithms of ECG Atrial Electrical Activity Waves Based on the Continuous Wavelet Transform with Splines
- ID 4** 10:20-10:40 Edel-Serafín Hernandez-Gomez, Jose-Luis Olvera-Cervantes and Nefi-David Pava-Chipol.
Microwave dielectric spectroscopy for determination of ethanol concentration in brandy
- ID 54** 10:40-11:00 Cecilia Gabriela Rodríguez Flores, Jesús Carlos Pedraza Ortega, Luis Antonio Salazar Licea, Marco Antonio Aceves Fernández and Marzela Sánchez Osti.
A survey of approaches in Deep Learning techniques for the detection and classification of mammography abnormalities.

ID Hour **Communications systems (COMM) / Aeronautics and Aerospace Engineering -Autonomous Navigation (AE)**

Session COMM /AE

Thursday November 10th, 2022

9:00-11:00

Room 3

Session Chair: **Dr. Gaspar González Briseño**

- ID 72** 9:00-9:20 Ramakrishna Vakulabharanam and Anil Kumar Tipparti.
Low complexity and High Performance Sphere Detection Technique for MIMO Communication Systems
- ID 122** 9:20-9:40 Giselle M. Galvan-Tejada, Miguel Herraiz-Sarachaga, Mario Mendoza-Barcenas and Zian Aguirre.
Space Weather observations and HF transmissions around the 2021 autumn equinox
- ID 127** 9:40-10:00 Luis Adolfo Luna-Rodríguez, Francisco Javier Rodríguez-Navarrete, Susana Ortega-Cisneros, Miguel Rivera-Acosta, Jorge Rivera-Domínguez and Juan José Raygoza Panduro.
Implementation of 8-Channel Pulse Width Modulation with AXI4-Lite Interface
- ID 12** 10:00-10:20 Jorge Aguilar-Torrentera, Giselle M. Galvan-Tejada and José Ramón Rodríguez-Cruz.
Capacitively Coupled Bandpass Filter Using Defected Ground Structure Featuring Shield Current Control
- ID 46** 10:20-10:40 Fernando Duarte López, Juan Manuel Bustamante, José Leonel Sánchez, Luis Héctor Manjarrez, Filiberto Muñoz Palacios and Eduardo Steed Espinoza.
A Strategy for Airfoils Selection in the Design of Customized Aircraft Models for Flight Simulation Testing
- ID 81** 10:40-11:00 Gandhi Alexis Sinhue Contreras Torres, Rodolfo García Rodríguez, Carlos Roberto Domínguez Mayorga and Eduardo Steed Espinoza Quesada.
Adaptive Backstepping Control for the Longitudinal Flight of a Blended Wing Body Aircraft

ID Hour **Computer Science and Computer Engineering (CS)**

Session CS 1 - Computer Science and Computer Engineering

Wednesday November 9th, 2022

12:00-14:00

Room 2

Session Chair: **Dr. Mario Garza Fabre**

- ID 48** 12:00-12:20 Ali Alouache.
Experimental Validation of Nonlinear Optimization Frameworks for Solving Bundle Adjustment in Structure from Motion

- ID 67** 12:20-12:40 Nusrat Jahan and Md. Al Mehedi Hasan.
Autoencoder-based unsupervised anomaly detection for Covid-19 screening on chest x-ray images
- ID 69** 12:40-13:00 Krishna Kumar A, Deepika D and Ramakrishna V.
Design of smart fertilizer chain system from factory to farmer
- ID 78** 13:00-13:20 Carlos Alexander Osorio Quero, Daniel Durini, José de Jesús Magdaleno, José Martínez Carranza and Rubén Ramos-García.
2D NIR-SPI spatial resolution evaluation under scattering condition
- ID 90** 13:20-13:40 Carlos Minutti-Martinez, Antonio Galindo, Luis F. Valdez-Garduño and Miguel Mata-Rivera.
Exploring nonlinear effects of air pollution on hospital admissions by disease using gradient boosting machines

Session CS 2 - Computer Science and Computer Engineering

Friday November 11th, 2022

13:00-14:20

Room 2

Session Chair: **Dr. Adan José García**

- ID 16** 13:00-13:20 Marisol Vera-Arellano and Ernesto López-Mellado.
Discovering a class of Workflow Nets with Reduced Exceeding Language
- ID 91** 13:20-13:40 Daniela-Lizbeth Hernández-Sánchez, Eddy Sánchez-DelaCruz, Cecilia-Irene Loeza-Mejía and Arnulfo-Gamaliel Hernández-González.
Supplier classification by applying AutoML
- ID 82** 13:40-14:00 José M. Macías-Macías, Juan A. Ramírez-Quintana, Alejandro A. Torres-García and Mario I. Chacón-Murguía.
Recognition of P300 Wave and SSVEP using a Capsule Neural Network
- ID 29** 14:00-14:20 Andrés Hernández Pineda, Norma Patricia Muñoz Sevilla and José Antonio Moreno Cadenas.
Data Analytics Application of NOM-172-Semarnat-2019: Mexico City Case Study

ID Hour **Mechatronics (MEC)**

Session MEC - Mechatronics

Wednesday November 9th, 2022

16:00-18:20

Room 3

Session Chair: **Dr. Juan Fernando Peza Solís**

- ID 33** 16:00-16:20 Mario Salama, Nouran Adel and Ayman El-Badawy.
Multi-Robot Flocking Control Using Multi-Agent Twin Delayed Deep Deterministic Policy Gradient

- ID 64** 16:20-16:40 Ahmed Alrefaie, Mohamed Ibrahim and Hesham Ibrahim.
Semi-Active Road-Vehicle Dynamics by implementing Neuro-Fuzzy Controlled damper
- ID 8** 16:40-17:00 Héctor S. Sánchez-Villegas, Luis G. Trujillo-Franco and Hugo F. Abundis-Fong.
On the evaluation of free-decay and impulse-response modal testing techniques
- ID 119** 17:00-17:20 Isaac Alejandro García Briones, Benjamín Nicolas Trinidad, Salatiel García Nava, Fabrice Le Bars, Sergio Salazar Cruz and Filiberto Muñoz Palacios.
Development of a vision algorithm for close-range relative navigation of underwater vehicles
- ID 125** 17:20-17:40 Luis Martin Hernández-Villa, Daniel Alejandro Melchor-Aguilar and Gerardo Silva-Navarro.
On implementation of delayed resonator with position and velocity feedback

ID **Hour** **Mechanical Engineering (MEE)**

Session MEE - Mechanical Engineering

Friday November 11th, 2022

13:00-14:20

Room 3

Session Chair: **Dr. Oscar Alejandro García Pérez**

- ID 32** 13:00-13:20 Arslan Saleem, Tehmina Ambreen and Carlos E. Ugalde-Loo.
Modeling and Performance Evaluation of Heat Pump Water Heater Systems
- ID 126** 13:20-13:40 Jorge Iván Valdes-Ceron and Gerardo Silva-Navarro.
On the validation of an acoustic black hole in Euler-Bernoulli beams: experimental results
- ID 123** 13:40-14:00 Javier Leal-Gutiérrez, David Romero-González and Oscar Alejandro Garcia-Perez.
Experimental Modal Analysis for a T09 AEROMAX type Aircraft's Mechanical Structure
- ID 124** 14:00-14:20 David Romero-González, Javier Leal-Gutiérrez and Oscar Alejandro Garcia-Perez.
Optimal Positioning for Energy Harvesters on a T09 AEROMAX type Aircraft's Wing

ID **Hour** **Nanotechnology (Materials and Applications) (NANO)**

Session NANO 4 - Nanomaterials and Applications

Friday November 11th, 2022

9:00-11:00

Room 1

Session Chair: **Dra. María de la Luz Olvera Amador**

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|--------------|-------------|--|
| ID 2 | 9:00-9:20 | Francisco Javier Gómez Cano, Odin Reyes Vallejo, Jose Juan Jhonatan Diaz Lopez, Velumani Subramaniam and Abdelhadi Kassiba.
<i>Effect of the oxidation degree on the bandgap of graphene oxides by Tour method</i> |
| ID 52 | 9:20-9:40 | J.A Melchor-Robles, Jacobo Martínez-Reyes, Karen Rodríguez-Rosales, A. Maldonado-Álvarez, Francisco Javier de Moure Flores and María de La Luz Olvera-Amador.
<i>Nanostructured Films of Bi₂SeO₅ Deposited by Pulsed Laser Ablation</i> |
| ID 55 | 9:40-10:00 | Carina Gutiérrez Ojeda, Mario Moreno Moreno, Ponciano Rodriguez Montero, Alfredo Morales Sánchez, Víctor Aca and Leticia Tecuapetla Quechol.
<i>Effect of thermal annealing on the photoluminescence properties of bilayer arrays of SiO₂ and TiO₂ nanospheres and its application as down conversion layers in c-Si solar cells</i> |
| ID 73 | 10:00-10:20 | Alberto Antonio Espinoza Peyrot and Luis Alberto Castellanos Rivera.
<i>Simulation of square diaphragm as substrate for nanostructured thin film underwater acoustic transducers</i> |
| ID 17 | 10:20-10:40 | José Juan Jhonatan Diaz López, Beatriz Estefania Montaña Flores, Francisco Javier Gomez Cano, Ivan de Jesus Ornelas Cruz, Iouri Kudriavtsev, Isamel Cosme Bolaños and Svetlana Mansurova.
<i>Influence of the composition of glass substrates on CH₃NH₃PbI₃ films properties deposited by Spin-Coating</i> |

ID	Hour	Power Electronics
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Session POW- Power Electronics

Thursday November 10th, 2022

9:00-11:00

Room 2

Session Chair: **Dr. Mario Andrés Aguilar**

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|---------------|-------------|---|
| ID 88 | 9:00-9:20 | Roberto Morales Caporal, Omar Sandre Hernández and Andrés A. Valdéz Fernández.
<i>Model Predictive Control for Single-Phase Cascaded H-Bridge Five-Level Inverter</i> |
| ID 106 | 9:20-9:40 | Mauricio Sanabria-Villamizar, Irvin Lopez-Garcia, Francisco Beltrán-Carbajal and Maximiliano Bueno-López.
<i>Estimation and Detection of Oscillations in Electrical Power Systems</i> |
| ID 10 | 9:40-10:00 | José Díaz-Bernabé and Arturo Morales-Acevedo.
<i>Adaptive incremental conductance as a highly efficient maximum power point tracking algorithm for photovoltaic systems under partial shading</i> |
| ID 19 | 10:00-10:20 | Mario Andrés Aguilar Orduña, Hebertt Sira Ramírez and Brian Camilo Gómez León.
<i>Maximum Power Point Tracking for direct drive Wind Turbines: An Active Disturbance Rejection Control approach</i> |

ID 70 10:20-10:40 Santosh Yadav Maddu and Nitin Ramesh Bhasme.
Performance analysis of Direct Torque Control of Induction Motor using Snetly real-time Controller

ID 57 10:40-11:00 Amit Kumar.
Power Quality Issues and Harmonics Performance Analysis for Non Linear Load in Power Distribution System

ID Hour **Solid-state materials, Electron Devices and Integrated Circuits (SSM)/ Nanotechnology (Materials and Applications) (NANO)**

Session SSM 1/NANO 1 - Synthesis and Characterization of Materials

Wednesday November 9th, 2022

12:00-14:00

Room 1

Session Chair: **Dr. Gabriel Romero Paredes**

ID 21 12:00-12:20 Rosa Nava-Sánchez, Gaspar Casados and Arturo Morales-Acevedo.
Effect of the P3HT concentration in the precursor solution on the crystallinity of annealed P3HT thin films prepared by spin-coating

ID 41 12:20-12:40 Odín Reyes Vallejo, Rocío Magdalena Sánchez Albores, Arturo Fernández Madrigal, Francisco Javier Gómez Cano, Carlos Alonso Meza Avendaño, José Juan Díaz López, Ashok Adhikari and Sebastián Joseph Pattiyamattom.
Chemical bath deposition of Cu₂O thin films on FTO substrates: Effect of sequential deposition.

ID 34 12:40-13:00 Daniel Trejo-Zamudio, José Guadalupe Quiñones-Galván, Francisco Javier de Moure-Flores, María Lucero Gómez-Herrera and José Santos-Cruz.
Structural and thermoelectric properties of SnO₂:Bi thin films

ID 77 13:00-13:20 Hichem Ferhati, A Bendjerad, Fayçal Djeflal, A Benhaya and A Saidi.
Effects of annealing on the structural and optical properties of sputtered SiC/Ag/SiC multilayer

ID 94 13:20-13:40 Luz Margarita Balcazar Villatoro, José Josué Rodríguez Pizano, Ashok Adhikari, Arturo Maldonado Álvarez and María de La Luz Olvera Amador.
Characterization of Gallium-Doped ZnO Thin Films Deposited by the Ultrasonic Spray Pyrolysis Technique

ID 100 13:40-14:00 Francisco Javier Cano, Odin, Araceli Romero-Nuñez, Javier Covarrubias García, Alejandra García-Sotelo, Velumani Subramaniam and Abdel Hadi Kassiba.
MB adsorption by TiO₂/GO nanocomposites: A comparison of the synthesis method

Session SSM 2 - Synthesis and Characterization of Materials

Wednesday November 9th, 2022

16:00-18:20

Room 1

Session Chair: **Dr. Mauricio Ortega López**

- ID 13** 16:00-16:20 Ashok Adhikari, Hugo César Ramos López, Odín Reyes Vallejo and Dr. Velumani Subramaniam.
Study the Effect of Annealing Treatment on the Properties of CdS Thin Films Grown by the Chemical Bath Deposition Method
- ID 22** 16:20-16:40 Olaf Ramírez-Iturbe, Rosa María Nava-Sánchez and Arturo Morales-Acevedo.
On the stability of CsxFA(1-x)PbI3 layers obtained by a single step spin coating process
- ID 102** 16:40-17:00 Jian E. Tineo Soto and Arturo Morales-Acevedo.
Optical, Morphological and Structural Properties of Hybrid CH3NH3PbBr3 Perovskite Thin Films Deposited via a Single Step Spin-Coating Process
- ID 65** 17:00-17:20 Rocío Magdalena Sánchez Albores, Edna Iris Ríos Valdovinos, Francisco Pola Albores, Carlos Alonso Meza Avendaño, Arturo Fernández Madrigal, Joel Moreira Acosta and Odín Reyes Vallejo.
FeOOH, α -Fe2O3, and ZnFe2O4 thin films grown by electrodeposition method: Study for photoanode development
- ID 83** 17:20-17:40 Jonathan Ortiz Vázquez, Ramón Peña Sierra, Lucía Ivone Juárez Amador and Miguel Galván Arellano.
Amorphous-Ga2O3/GaAs(100) anisotype heterojunctions with amorphous-Ga2O3 n-type films grown by magnetron sputtering

Session SSM 3 /NANO 2- Semiconductor Devices

Thursday November 10th, 2022

9:00-11:00

Room 1

Session Chair: **Dr. Yasuhiro Matsumoto**

- ID 120** 9:00-9:20 José Josué Rodríguez Pizano, Luz Margarita Balcázar Villatoro, Arturo Maldonado Álvarez and María de La Luz Olvera Amador.
Study of sensing properties of ZnTe synthesized by mechanosynthesis for detecting gas CO
- ID 76** 9:20-9:40 F Djeflal and Hichem Ferhati.
New Ge-gate IR Phototransistor based on Doping Engineering Aspect: Photodetection Properties and Circuit Level Investigation
- ID 75** 9:40-10:00 F Djeflal and Hichem Ferhati.
Numerical Investigation of a New GeSn MIR Phototransistor based on IGZO TFT Platform
- ID 1** 10:00-10:20 Christian Joven-Rodríguez, Arturo Morales-Acevedo and Roberto Bernal-Correa.
Electrostatic Model for Semiconductor Radial Nanowire Heterojunctions

- ID 92** 10:20-10:40 Eduardo González and Iván R. Padilla.
Class AB Differential Amplifier Implemented as an Impedance Gyration and its Applications
- ID 98** 10:40-11:00 Goban Kumar Panneer Selvam, María de La Luz Olvera Amador and Arturo Maldonado Alvarez.
Fabrication of pure tin oxide pellets at different annealed temperatures for CO and C₃H₈ gas sensors

Session SSM 4 / NANO 3 Solar Cells/Photocatalysis

Thursday November 10th, 2022

16:00-18:20

Room 1

Session Chair: **Dra. María Verónica Estrella**

- ID 42** 16:00-16:20 Ariadna Daniela García Caballero, Karen Rodríguez Rosales, Sandra Andrea Mayén Hernández, Claudia Elena Pérez García, José Santos Cruz and Francisco Javier de Moure Flores.
Optoelectronic properties of CdS thin films doped with F by CBD and its application in CdTe-based solar cells
- ID 9** 16:20-16:40 Ashok Adhikari, Luis Dorian Valencia, Jorge Conde and Dr. Velumani Subramaniam Ordóñez.
Simulation of Theoretical and Experimental Parameters of Materials Used in CIGSe Thin Film Solar Cells by SCAPS software
- ID 107** 16:40-17:00 Ian Carlos Flores-Contreras, Victor Cabrera-Arenas and Luis Martin Resendiz-Mendoza.
Analysis of Irregular Morphologies and Mobilities of Organic Solar Cells by Simulation
- ID 38** 17:00-17:20 Salomón Moreno Alcocer, Karen Rodríguez Rosales, Jorge Cruz Gómez, José Santos Cruz, Angel Guillén Cervantes and Francisco Javier de Moure Flores.
Substrate temperature effect of CdTe films grown by PLD on photovoltaic properties of CdS/CdTe solar cells
- ID 79** 17:20-17:40 José Josué Rodríguez Pizano and María De La Luz Olvera Amador..
Photocatalytic degradation of Malachite Green dye from ZnTe powders under visible light
- ID 68** 17:40-18:00 Rodrigo Dominguez, María Verónica Estrella, Jaime Vega and Arturo Maldonado.
Efficient photodecoloration catalysts, based on ZnO nanoparticles coated in two steps on glass substrates

Session SSM 5 - VLSI

Friday November 11th, 2022

13:00-14:20

Room 1

Session Chair: **Dr. Felipe Gómez Castañeda**

- ID 3** 13:00-13:20 Alvaro Anzueto-Rios, Felipe Gomez-Castaneda, Luis Martín Flores-Nava, and José-Antonio Moreno-Cadenas
Metaheuristic Method for Dimensionality Reduction Tasks
- ID 31** 13:20-13:40 Iván Shin Cao Chong-Cervantes, Álvaro Anzueto-Ríos, José Antonio Moreno-Cadenas, Mario Alfredo Reyes-Barranca and Luis Martín Flores-Nava.
Eye Fundus Image Processing Using Fuzzy Logic