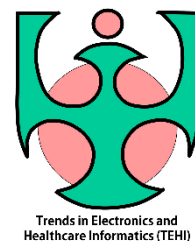


***2nd International Conference on Trends in
Electronics and Health Informatics
Puebla, Puebla, Mexico,
7th-9th December 2022***

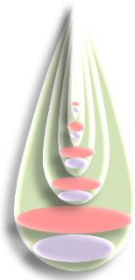


GENERAL PROGRAM

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International Institute of Invincible Rhythm

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Graphic program

2nd International Conference on Trends in Electronics and Health Informatics			2nd International Conference on Trends in Electronics and Health Informatics			2nd International Conference on Trends in Electronics and Health Informatics		
December 7th, 2022 (Wednesday)			December 8th, 2022 (Thursday)			December 9th, 2022 (Friday)		
Day 1			Day 2			Day 3		
08:30	09:00	Conference Check-in	08:30	15:00	Chair: Miller Toledo, FCFM-BUAP	08:30	15:00	Chair: Eduardo Lugo, Université de Montréal
09:00	09:30	INAUGURATION	08:30	09:10	Keynote 2	08:30	09:10	Keynote 4
09:30	17:15	Chair: Dr. Siva K. Krishnan, IFUAP-BUAP	09:10	09:30	Invited Talk 1	09:10	09:30	Invited Talk 3
09:30	10:10	Keynote 1	09:30	09:45	TRACK 1	09:30	09:45	TRACK 3
10:10	11:00	Workshop 1 (Part 1)	09:45	10:00		09:45	10:00	
11:00	11:15	Coffe Break	10:00	10:15		10:00	10:15	
11:15	13:45	Worshop 1 (Part 2)	10:15	10:30		10:15	10:30	
13:45	15:00	Lunch Break	10:30	10:45		10:30	10:45	
15:00	16:00	Workshop 2 (Part 1)	10:45	11:00		10:45	11:00	
16:00	16:15	Coffe Break	11:00	11:15	Coffe Break	11:00	11:15	Coffe Break
16:15	17:15	Worshop 2 (Part 2)	11:15	11:30	TRACK 1	11:15	11:30	TRACK 3
			11:30	11:45		11:30	11:45	
			11:45	12:00		11:45	12:00	
			12:00	12:15		12:00	12:15	
			12:15	14:00	Lunch Break	12:15	14:00	Lunch Break
			14:00	14:40	Keynote 3	14:00	14:40	Keynote 5
			14:40	15:00	Invited Talk 2	14:40	15:00	Invited Talk 4
			15:00	15:15	TRACK 2	15:00	15:15	TRACK 4
			15:15	15:30		15:15	15:30	
			15:30	15:45		15:30	15:45	
			15:45	16:00		15:45	16:00	
			16:00	16:15	Coffe Break	16:00	16:15	Coffe Break
			16:15	16:30	TRACK 2	16:15	16:30	TRACK 4
			16:30	16:40		16:30	16:45	
			16:40	16:50		16:45	16:55	
			16:50	17:00		16:55	17:25	
			17:00	17:10				
			17:10	17:20				
			17:20	17:30				
								FINAL REMARKS

Keynotes

Keynote 1 (Virtual)

Date: Wednesday, December 7, 2022

9:30 – 10:10 h



Prof. Salvador E. Venegas Andraca

School of Engineering and Sciences, Tecnológico de Monterrey, MEX

Email: contact@unconventionalcomputing.org

Web: <https://venegas-andraca.org/>

Talk

Quantum computing: from the lab to the market

Biography

Prof. Salvador Venegas is a scientist and consultant devoted to scientific research, technology development, technology transfer, and teaching. He is the Principal Investigator of the Unconventional Computing Lab (research group) and a Professor of Computer Science at Tecnológico de Monterrey. His work is focused on understanding all scientific and societal aspects of computation as well as on contributing towards the economic development of modern society based on science and technology. He is a leading scientist in the field of quantum walks, cofounder of the field of Quantum Image Processing and founder of quantum computing in Mexico. He holds a Ph.D. in Physics and an M.Sc. by research in Computer Vision, both degrees awarded by The University of Oxford. He also holds an MBA and a BSc in Digital Electronics & Computer Science, both degrees awarded by Tecnológico de Monterrey.

Keynote 2 (Virtual)

Date: Thursday, December 8, 2022

8:30 – 9:10 h



Khashayar Misaghian, PhD

Sage-Sentinel Smart Solutions, JP

Email: k.misaghian@sagesentinel.com

Web: <https://sagesentinel.com/>

Talk

Preventive Age-Tech vs. Falling, CAN

Biography

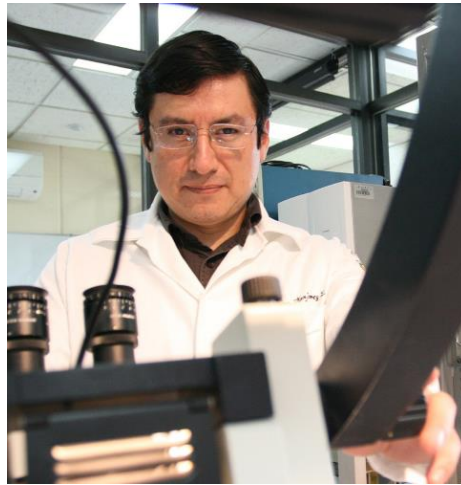
Khashayar Misaghian, Ph.D., is the CEO of the Sage-Sentinel Smart Solutions KK (Japan) and an external researcher at Okinawa Institute of Science and Technology (OIST). Dr. Misaghian's B.Sc. and M.Sc. studies were in electrical and biomedical engineering. Whereas he received his Ph.D. in the neuroscience of vision and psychophysics from Université de Montreal. The Age-Tech, Technology transfer, computational modeling of cognitive and perceptual decision-making processes, understanding the neural mechanisms, computer vision, deep neural networks, noise, variability, stochastic behavior, and Bayesian processes are his areas of interest and investigation.

Keynote 3 (Face-to-face)

Date: Thursday, December 8, 2022

14:00 – 14:40 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)



Prof. Elias Manjarrez López

Instituto de Fisiología, Benemérita Universidad Autónoma de Puebla (BUAP), MEX

Email: elias.manjarrez@correo.buap.mx

Web: <https://neurophys.buap.mx/>

Talk

Augmentation effects in the brain produced by random noise stimulation: Physiology and clinical applications

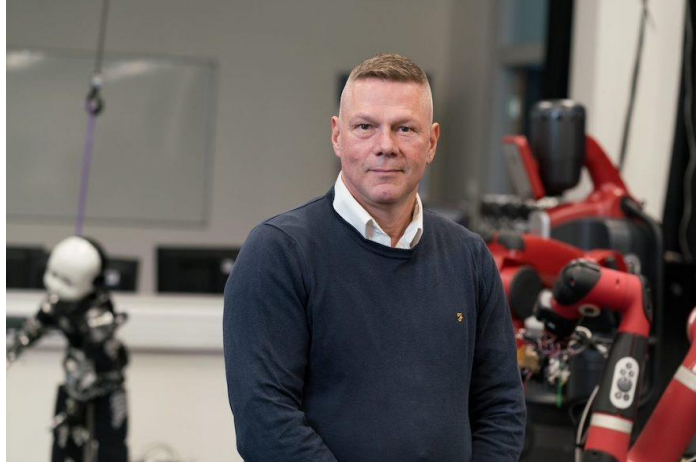
Biography

Elias Manjarrez received a B.Sc. degree in physics, an M.Sc. degree in physiology from Benemérita Universidad Autónoma de Puebla (BUAP), México, and a Ph.D. degree in neuroscience from CINVESTAV-IPN, México, in 2000. He was invited professor at the Neurological Clinic, Albert-Ludwigs University of Freiburg, Germany (2011). Since 2001, he is Head of the Integrative Neurophysiology Laboratory, Institute of Physiology, BUAP. His areas of interest include integrative neurophysiology, experimental neurophysics, mathematical modeling, and biomedical applications of sensors and actuators.

Keynote 4 (Virtual)

Date: Friday, December 9, 2022

8:30 – 9:10 am



Prof. David Brown

Nottingham Trent University, UK

Email: david.brown@ntu.ac.uk

Web: <https://www.ntu.ac.uk/staff-profiles/science-technology/david-brown>

Talk

Some uses of machine learning to support students with learning disabilities and autism.

Abstract

This presentation will cover the case for applying Artificial Intelligence Tools for Education (AIEd) with students with Intellectual Disability and Autism, where schools are receiving more diverse students in their classrooms requiring diverse teaching. Approaches that address the real issue of teachers not having enough capacity to attend to each child's individual learning needs, or to support their best behavioral outcomes in class are called for, to ensure that all students are supported to develop their full academic and social potential. Approaches to using eXplainable AI (XAI) will be covered, as are the reasons for pursuing such methods in light of the vulnerabilities of such students.

Keynote 5 (Face-to-face)

Date: Friday, December 9, 2022

14:00 – 14:40 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)



Prof. Andreas M. Köster

Chemistry Department, CINVESTAV-IPN, MEX.

Email: akoster@cinvestav.mx

Web: <https://quimica.cinvestav.mx/es-mx/>

Talk

Simple Magnetic Superatoms

Biography

Andreas M. Köster was born in Steinhude, Germany, in 1964. He studied Chemistry at the Leibniz Universität of Hannover, where he received his Diploma in 1989 with a thesis work about aromaticity. He earned his Dr. rer. nat. degree in Theoretical Chemistry under the supervision of Prof. Karl Jug at the Leibniz Universität of Hannover in 1992 with a work about chemical reactivity. A short research stays after the dissertation with Prof. Roman Nalewajski in Krakow, Poland, introduced him to density functional theory. At the beginning of 1993 he started his postdoctoral research stay with Prof. Dennis R. Salahub in Montréal, Canada. Since this time, he is involved in the technical implementation and development of the density functional theory code deMon. Based on this work a major research interest became the development of first principles molecular integral approximations. In 1995, Andreas M. Köster returned to Germany to start a Habilitation, funded by the Deutsche Forschungsgemeinschaft. During the next four years a new density functional method with a particular focus on auxiliary functions was developed that has later formed the basis for a new version of the deMon code, now named deMon2k. After obtaining his *venia legendi* for Theoretical Chemistry in 1999 he worked as Privatdozent at the Chemistry Department of the Leibniz Universität of Hannover. In the same year he followed a call to the research center CINVESTAV in Mexico to take up a titular Professor position in Theoretical Chemistry. Since then, he worked at the Chemistry Department of Cinvestav. His research interests are, among others, the development of density functional theory methods and their applications to fundamental problems in Chemistry. Dr. Köster is the leading author of deMon2k, a quantum chemistry computer code used by hundreds of

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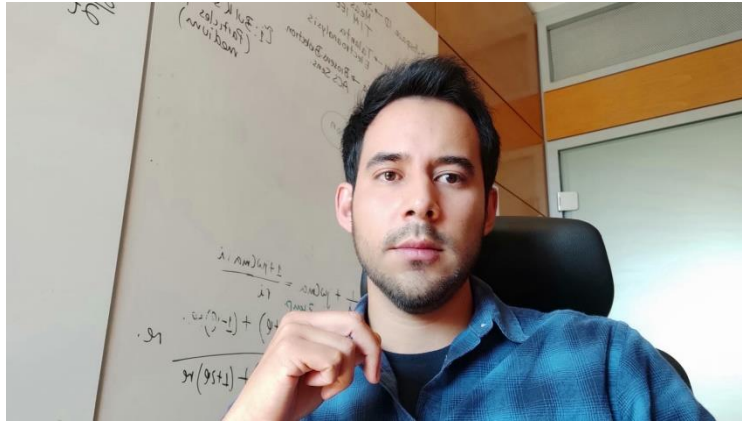
researchers all around the world. He has published more than 150 peer-reviewed research articles that received over 5000 citations. He has supervised 13 Ph.D. theses in Theoretical Chemistry and mentored more than 20 postdoctoral research associates at CINVESTAV. He delivered more than 150 invited lectures at international conferences, universities, and research centers. He received several recognitions among them are the Leibniz award of the Ministry for Science and Art of Lower Saxony and the SNI-III fellowship of CONACYT. He was fellow of the Studienstiftung des Deutschen Volkes, the Fonds der Chemischen Industrie and the Deutschen Forschungsgemeinschaft.

Invited Talks

Invited Talk 1 (Virtual)

Date: Thursday, December 8, 2022

9:10 – 9:30 h



Dr. Roberto Giovanni Ramírez Chavarría

Instituto de Ingeniería, Universidad Autónoma de México (UNAM), MEX

Email: RRamirezC@iingen.unam.mx

Web:

<http://www.paginaspersonales.unam.mx/app/webroot/index.php/academicos/datosContacto/alias:robertogiovanniramirez>

Talk

A Novel Bioimpedance Soft Sensor via Adaptive Estimation

Biography

He received the B.Sc. degree in computer science engineering in 2013 and the M.Sc. and Ph.D. degrees in electrical engineering, from the Universidad Nacional Autónoma de México (UNAM), in 2015 and 2019, respectively. In 2019, he held a Postdoctoral position at the Instituto de Ingeniería, UNAM (IIUNAM), working in the design and development of sensors and biosensors. Also, he has been a Visitant Researcher at Vrije Universiteit Brussel (Belgium), KTH Royal Institute of Technology (Sweden), and Grenoble INP (France), in 2017, 2018, and 2019, respectively. Currently, he is an Assistant Professor at Electro-Mechanics Department at IIUNAM. His research group focuses on novel sensing platforms for environmental, biotechnology and health applications. His research interests include biosensors and bioelectronics, smart sensors, instrumentation, and signal processing. He is the principal author of seven high-impact paper journals and ten international conference papers. He regularly teaches undergraduate and master courses on electronics, instrumentation and applied sciences. He has won several prizes related with technological developments, innovative solutions, and scientific challenges. Currently, he is member of the National System of Researchers in Mexico.

Invited Talk 2 (Face-to-Face)

Date: Thursday, December 8, 2022

14:40 –15:00 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)



Dr. Héctor Hugo Cerecedo-Núñez

Applied Optics Laboratory, Physics Faculty, Universidad Veracruzana, MEX

Email: hcerecedo@uv.mx

Web: www.uv.mx/loa

Talk

Experimental Setups in Biophotonics

Biography

Héctor Hugo Cerecedo-Núñez obtained his Ph.D. in Optics from the National Institute of Astrophysics, Optics, and Electronics (INAOE), Puebla, México. He had a postdoctoral position in 2002 at the Center for Photonics Technology, Blacksburg, VA, USA. He is now a tenured, full professor and co-founder of the Applied Optics Laboratory at the Physics Faculty, Universidad Veracruzana, Xalapa, Ver. México. His recent work has utilized optical fibers to trap & manipulate matter; also, he is involved with optical fiber sensors, biophotonics, and optical metrology topics. Member of OPTICA (OSA), SPIE, and Mexican Academy of Optics.

Invited Talk 3 (Virtual)

Date: Friday, December 9, 2022

9:10 – 9:30 h



Tanu Wadhera, PhD

School of Electronics, Indian Institute of Information Technology Una, INDIA

Email: tanu.wadhera@iiitu.ac.in

Web: <https://iiitu.ac.in/departement/school-of-electronics/faculty/>

Talk

Next Generation Internet of Healthcare Things: Design of Biosensors for Commercial Devices as Smart Diagnostic Tools

Biography

Dr. Tanu Wadhera received the Bachelor of Technology (B.Tech.) degree in Electronics and Communication Engineering from the Govt GNE College, Punjab, India, in 2013 and the Master of Technology (MTech.) degree in Signal Processing from the Punjabi University Punjab, India in 2015. She completed her PhD from the National Institute of Technology (NIT) Jalandhar, India, in July 2021. She also served as a Research Associate in the Department of Electrical Engineering, Indian Institute of Technology (IIT) Delhi, from Nov 2020 to July 2021. Now she is serving as Assistant Professor in the School of Electronics, Indian Institute of Information Technology Una, Una, Himachal Pradesh -177209, India. She has published her work in reputed journals; including Elsevier Springer, Taylor & Francis; Wiley and many other platforms. She is Review editor of Frontiers in Psychology and serving as a reviewer of different journals, Biomedical signal processing and control, Expert System with Applications, Frontiers in Neuroscience, to name a few. Her Research Interests include Biomedical signal processing; Biosensors; Artificial Intelligence, Assistive Technology, Cognitive neuroscience, Signal Processing.

Invited Talk 4 (Face-to-face)

Date: Friday, December 9, 2022

14:40 – 15:00 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)



Prof. Jorge Castro Ramos

Optics Department, Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), MEX

Email: jcastro@inaoe.mx

Web: https://www.optica.inaoep.mx/laboratorios/optica_biomedica.php

Talk

To be announced

Biography

Dr. Castro received his PhD in optics from the National Institute of Optical Astrophysics and Electronics (INAOE, 2000). He is one of the creators and leader of the Biomedical Instrumentation and Optics Group. He is the author of more than 50 international publications. His research focus is in optical design, systems quality verification opticians and in the area of biomedical optics. He applied Raman spectroscopy to develop a painless detection technique of diabetes and chronic degenerative diseases through biomarkers.

Workshops

Workshop 1 (Face-to-face)

Course: Introduction to deMon2k

Date: Wednesday, December 7, 2022

9:30 – 13:30 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)

Lecturer: Prof. Andreas M. Köster

Chemistry Department, CINVESTAV-IPN, MEX.

Email: akoster@cinvestav.mx

Web: <https://quimica.cinvestav.mx/es-mx/>

Workshop 2 (Face-to-face)

Course: Fundamentals in Optics for Biophotonics

Date: Wednesday, December 7, 2022

15:00 – 17:00 h

Room: Auditorium “Joaquin Ancona Albertos”, FCFM-BUAP (Building 3, ground floor)

Lecturer: Dr. Héctor Hugo Cerecedo-Núñez

Applied Optics Laboratory, Physics Faculty, Universidad Veracruzana, MEX

Email: hcerecedo@uv.mx

Web: www.uv.mx/loa

WEDNESDAY

December 7th

*2nd International Conference on Trends in Electronics and Health Informatics
Puebla, Pue., Mexico, 7th-9th December 2022*

Day 1: December 7th	Beginning	End
Conference Check-in	08:30	09:00
INAUGURATION	09:00	09:30
Keynote 1. Prof. Salvador E. Venegas Andraca School of Engineering and Sciences, Tecnológico de Monterrey, MEX Talk. <i>Quantum computing: from the lab to the market</i>	09:30	10:10
Workshop 1. Introduction to deMon2k (Part 1) Prof. Andreas M. Köster CINVESTAV-IPN, MEX This course is a compressed version of the deMon2k hands-on sessions that accompany the annual deMon developer workshops. After a basic introduction to Quantum Chemistry and its implementation in the deMon2k program I plan to discuss the following topics: <ul style="list-style-type: none"> • Single point energy calculations • Molecular orbital diagrams • Molecular property calculations • Molecular structure optimizations • Hierarchical transition state search • Intrinsic reaction coordinates • Molecular dynamics simulations 	10:10	11:00
Coffe break	11:00	11:15
Workshop 1. Introduction to deMon2k (Part 2)	11:15	13:45
Lunch break	13:45	15:00
Workshop 2. Fundamentals in Optics for Biophotonics (Part 1) Dr. Héctor Hugo Cerecedo-Núñez Applied Optics Laboratory, Physics Faculty, Universidad Veracruzana, MEX Abstract. In this short workshop, we will briefly introduce biophotonics and discuss the qualitative physical fundamentals of light, which will help us understand some applications in biophotonics.	15:00	16:00
Coffe break	16:00	16:15
Workshop 2. Fundamentals in Optics for Biophotonics (Part 2)	16:15	17:15

THURSDAY

December 8th

Day 2: December 8th	Beginning	End
<p>Keynote 2. Dr. Khashayar Misaghian (VIRTUAL) Sage-Sentinel Smart Solutions, JAPAN Talk: <i>Preventive Age-Tech vs. Falling</i></p> <p><i>Abstract:</i> The age demographic of the world is experiencing the most dramatic change in history. That is due to the unprecedented increase in life expectancy accompanied by a decline in the birth rate. For example, by 2050, the population over 60 will constitute 20% of the world population. Consequently, this new shift will pose significant challenges to our world, including the shortage of paid or unpaid caregivers, maintaining health, maintaining longevity and independence, and finally, funding the extended life after retirement. Age-Tech, the type of technology that addresses the needs of older adults and their caregivers by design, is believed to be the most prominent candidate to tackle many of these challenges. In 2022 more than 200 companies and start-ups offer various aging solutions.</p> <p>Nevertheless, “preventive” Age-Tech is not a big part of it. Among all emerging threats to longevity, trauma is a significant cause of morbidity, disability, and mortality in older adults, which is not the case for younger ages. Census shows traumatic fall accidents are the leading cause of these traumas. Therefore, a preventive Age-Tech that anticipates an accident on time and prevents it must be the first response to this hazard category to decrease the gap between life expectancy and the health/wellness expectancy of older adults.</p> <p>Here we review the current state of Age-tech solutions to the fall problem and investigate how the available range of solutions address the established aging challenges. Furthermore, we explore the prospective technological approaches and their impediments to fall prevention. And finally, we outline a few frameworks that could serve as tangible approaches to deal with the existing bottlenecks like scarcity and sparsity of data.</p>	08:30	09:10
<p>Invited Talk 1. Dr. Roberto Giovanni Ramírez Chavarría Instituto de Ingeniería, UNAM, MEX Talk: A Novel Bioimpedance Soft Sensor via Adaptive Estimation</p> <p><i>Abstract:</i> Electrical bioimpedance is a non-invasive technique that provides relevant physiological information about the properties of biological media. In practice, bioimpedance is quantified by measuring a potential drop across two inner electrodes in response to an alternating current (AC) excitation at two outer electrodes. Several techniques exist to retrieve either the real and imaginary components, or the magnitude and phase. Commonly, it considers a signal treatment stage where the real and imaginary impedance components can be extracted using analog readout circuits, mixed-signal devices and all-digital demodulators.</p> <p>Recently, technological trends aim to integrate bioimpedance measurement systems for wearable devices and infield applications. Though several advances</p>	09:10	09:30

have been reported around classical synchronous measurement systems, the development of alternative schemes could enlarge bioimpedance applications. In this talk, we will introduce an attractive bioimpedance soft sensor, which uses adaptive estimation techniques to online retrieve the in-phase and quadrature signals in bioimpedance applications. Therefore, the system pretends to provide a cost-effective and software-based device, suitable for portable and in-field bioimpedance measurements with high performance and robustness.		
TECHNICAL SESSION 1 TRACK 1- Artificial Intelligence and Soft Computing		
WORK ID: 12 <i>Kavitha B.R.</i> , "New Benchmarking on Offline Handwritten Character Recognition for Tamil Character Databases"	09:30	09:45
WORK ID: 11 <i>Carmen Ceron</i> , "Grouping by mixture of normals for breast cancer in two groups, benign and malignant"	09:45	10:00
WORK ID: 3 <i>Vladimir Bakhtin</i> , "Experimental study of high-frequency drill string vibrations under different conditions"	10:00	10:15
WORK ID: 10 <i>Marco Antonio Esperón Pintos</i> , "Obtaining fractal dimension for gene expression time series using an artificial neural network"	10:15	10:30
WORK ID: 4 <i>Paulo Aarón Aguirre-Alvarez</i> , "Flexible Systolic Hardware Architecture for Computing a Custom Lightweight CNN in CT Images processing for Automated COVID-19 Diagnosis"	10:30	10:45
WORK ID: 7 <i>Redwanul Islam</i> , "Epileptic Seizure Detection from EEG Signal Using ANN-LSTM mode"	10:45	11:00
Coffe break	11:00	11:15
WORK ID: 2 <i>Rashed Mustafa</i> , "Facial Expression Recognition using Extended CNN"	11:15	11:30
WORK ID: 8 <i>Mayesha Bintha Mizan</i> , "Dimensionality Reduction in Handwritten Digit Recognition"	11:30	11:45
WORK ID: 1100 <i>Saurav Mallik</i> , "Integrated Linear Regression and Random Forest Framework for E-Commerce Price Prediction of Pre-Owned Vehicle"	11:45	12:00
Work ID: 1101 To be announced	12:00	12:15
Lunch break	12:15	14:00
Keynote 3. Prof. Elías Manjarrez López Instituto de Fisiología, BUAP MEX Talk: <i>Augmentation effects in the brain produced by random noise stimulation: Physiology and clinical applications.</i>	14:00	14:40

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Puebla, Pue., Mexico, 7th-9th December 2022*

<p><i>Abstract:</i> Because randomness is an intrinsic feature of our brain, it can be employed to improve its function. For example, transcranial electrical noise stimulation or some other types of random-noise interventions can increase sensory perception, attention, and brain excitability in healthy participants and patients with several neurological disorders. In this talk, I will describe a historical perspective of several experimental studies from our laboratory contributing to this research field. In addition, I will include a narrative of some neurotechnologies, such as optogenetic-noise-photostimulation, that we recently developed to examine mechanisms of transcranial random noise stimulation.</p>		
<p>Invited Talk 2. Dr. Héctor Hugo Cerecedo-Núñez Applied Optics Laboratory, Physics Faculty, Universidad Veracruzana, MEX Talk: <i>Preventive Age-Tech vs. Falling</i></p> <p><i>Abstract:</i> This talk will show some experimental arranges, developed in a proven and prototype ambit. We will show those, has examples as future research and practical implementations.</p>	14:40	15:00
TECHNICAL SESSION 2 TRACK 2- Healthcare Informatics		
<p>WORK ID: 23 Anirban Bandyopadhyay, "How does microtubular network assists in determining the location of daughter nucleus: electromagnetic resonance as key to 3D geometric engineering"</p>	15:00	15:15
<p>WORK ID: 15 Lisset Noriega de los Santos, "Molecular docking study of oxido-vanadium complexes with proteins involved in breast cancer"</p>	15:15	15:30
<p>WORK ID: 21 Pawan Kumar Singh, "Multi-level Stress detection using ensemble filter-based feature selection Methodology"</p>	15:30	15:45
<p>WORK ID: 29 José Antonio Piceno, "Computational Study of the Contribution of Nucleoside Conformations to 3D Structure of DNA"</p>	15:45	16:00
<p>Coffe break</p>	16:00	16:15
<p>WORK ID: 28 Abhishek Shrivastava, "HI applications for ADHD Children: A case for enhanced visual representations using novel and adapted guidelines"</p>	16:15	16:30
<p>WORK ID: 31 Alexandra Deriabina, "Computational Study of Absorption and Emission of Luteolin Molecule"</p>	16:30	16:40
<p>WORK ID: 5 Eduardo Lugo, "Cognitive Assessment and Trading Performance Correlations"</p>	16:40	16:50
<p>WORK ID: 22 Anirban Bandyopadhyay, "Amyloid- can form fractal antenna-like networks responsive to electromagnetic beating & wireless signaling"</p>	16:50	17:00
<p>WORK ID: 32</p>	17:00	17:10

*2nd International Conference on Trends in Electronics and Health Informatics
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<i>Andrea Ruiz Millán, "Efficiency of Molecular Mechanics as a Tool to Understand the Structural Diversity of Watson-Crick Duplexes"</i>		
WORK ID: 33 <i>César Morgado, "Conformational Changes of Drew-Dickerson Dodecamer in the Presence of Caffeine"</i>	17:10	17:20
WORK ID: 35 <i>Harinipriya Seshadri, "ZnO Nanoparticles Tagged Drug Delivery System"</i>	17:20	17:30

FRIDAY

December 9th

Day 3: December 9th	Beginning	End
Keynote 4. Dr. David Brown Nottingham University, UK Talk: <i>Some uses of machine learning to support students with learning disabilities and autism</i> Abstract: This presentation will cover the case for applying Artificial Intelligence Tools for Education (AIEd) with students with Intellectual Disability and Autism, where schools are receiving more diverse students in their classrooms requiring diverse teaching. Approaches that address the real issue of teachers not having enough capacity to attend to each child's individual learning needs, or to support their best behavioural outcomes in class are called for, to ensure that all students are supported to develop their full academic and social potential. Approaches to using eXplainable AI (XAI) will be covered, as are the reasons for pursuing such methods in light of the vulnerabilities of such students.	08:30	09:10
Invited Talk 3. Dr. Tanu Wadhera School of Electronics, Indian Institute of Information Technology Una, INDIA Talk: <i>Next Generation Internet of Healthcare Things: Design of Biosensors for Commercial Devices as Smart Diagnostic Tools</i> Abstract: Next generation healthcare focus will be on biosensing the non-invasive collectable biofluids such as Sweat, urine, and saliva which hosts an extensive range of biomarkers to target the infectious diseases as well as neurodisorders such as Autism, Schizophrenia and stratifying other mentalhealth conditions. So far, with glucose biosensor, blood analysis proved to be an established and standardized analyte to physiologic feedback analysis. In Healthcare 5.0, the focus on biosensor needs to be on designing portable devices on chip with facility to remotely fetch the continuous monitoring data for a healthy lifestyle and patient-centric modules. In terms of fluidic input analyte, human sweat can be good initiation, this talk will focus on – (i) essentials of design of biosensor which considers innovative bioreceptor selection for extraction of significant bioinformatics from input sample (say Human Sweat), (ii) design of the testing bed which needs to be promising in terms of processing acquired data and reaching to a conclusive decision which can be accessed remotely.	09:10	09:30
TECHNICAL SESSION 3 TRACK 3- IoT and Data Analytics		
WORK ID: 1 <i>Juan Moisés Arredondo Velázquez, "Trimmed-TDL-Based Time-to-Digital Converter for Time-of-Flight applications implemented on Cyclone V FPGA"</i>	09:30	09:45
WORK ID: 13 <i>Puspraj Singh Chauhan, "High-Power Analysis for Outage Probability and Average Symbol Error Probability over Non-Identical - Double Shadowed Fading"</i>	09:45	10:00

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WORK ID: 18 <i>Luis Fernando Caporal, "Hjorth Parameters in Event-Related Potentials to Detect Minimal Hepatic Encephalopathy."</i>	10:00	10:15
WORK ID: 19 <i>Shaliendra Kumar Sinha, "The V-Band Substrate Integrated Waveguide Antenna for MM Wave Application"</i>	10:15	10:30
WORK ID: 26 <i>Hugo Avalos Sánchez, "The influence of an extended optical mode on the performance of microcavity forced oscillator"</i>	10:30	10:45
WORK ID: 34 <i>Maria R. Jiménez-Vivanco, "Optical and Structural study of a Fibonacci structure manufactured by Porous Silicon and porous SiO₂"</i>	10:45	11:00
Coffe break	11:00	11:15
WORK ID: 6 <i>Yai Romero López, "CO₂ Monitoring System to Warning Possible Risk of Spread of COVID 19 in Classrooms"</i>	11:15	11:30
WORK ID: 27 <i>A. J. Carmona-Carmona, "Synthesis and characterization of Fe₃O₄@SiO₂ core/shell nanocomposite films"</i>	11:30	11:45
Work ID 1102 <i>Suneeta Mohanty, "Personalized Recommender System for House Selection"</i>	11:45	12:00
Work ID 1103 To be annouced	12:00	12:15
Lunch break	12:15	14:00
Keynote 5. Prof. Andreas M. Köster Chemistry Department, CINVESTAV-IPN, MEX Talk: <i>Simple Magnetic Superatoms</i> <i>Abstract:</i> With the rise of nanoscience, the tailoring of magnetic molecules and materials has gained a new dimension. In this talk I review the concept of superatoms and extend it to magnetic superatoms. Based on Born-Oppenheimer molecular dynamics (BOMD) simulations of the Na ₅₅ ⁺ cluster a new type of magnetic superatom will be introduced. After the rationalization of the electronic structure of these Hund type clusters a systematic search for new simple magnetic superatoms is presented. A particular attention is given to the accurate description of molecular spin states in density functional theory. The computational challenge of BOMD simulations for these new magnetic superatoms is discussed in terms of the newly developed parallel tempering molecular dynamics approach.	14:00	14:40
Invited Talk 4. Dr. Jorge Castro Ramos Optics Department, Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE), MEX Talk: <i>Applications of machine learning and Raman spectroscopy in detection of chronic degenerative diseases</i>	14:40	15:00

TECHNICAL SESSION 4 TRACK 4- Electronics		
WORK ID: 9 <i>Valentina Bastida</i> , "Design of a development board based on the microcontroller ATmega328P, including a symmetric low noise voltage source"	15:00	15:15
WORK ID: 14 <i>Shailendra Singh</i> , "Performance Assessment of n+ SiGe based dielectrically modulated vertical tunnel field-effect transistors (DM-VTFET) for lower power biomedical application"	15:15	15:30
WORK ID: 20 <i>Jia Hau Ang</i> , "A Hybrid Transfer Learning and Segmentation approach for the Detection of Acute Lymphoblastic Leukemia"	15:30	15:45
WORK ID: 25 <i>Yuan Shen</i> , "Logistic regression approach to a joint classification and feature selection in lung cancer screening using CPRD data"	15:45	16:00
Coffe break	16:00	16:15
WORK ID: 30 <i>Erico Azevedo</i> , "Information Fields in the human realm: an approach using Faraday shielding, physical distance and Autonomic Balance multiple measurements."	16:15	16:30
WORK ID: 36 <i>MD. Mahabub Hossain</i> , "A Smart Automation System for Controlling Environmental Parameters of Poultry Farms to Increase Poultry Production"	16:30	16:45
WORK ID: 7 <i>Redwanul Islam</i> , "Epileptic Seizure Detection from EEG Signal Using ANN-LSTM mode"	16:45	16:55