

November 28-29, 2024

**Program for 2024 International Conference on Smart Systems and Power Management (IC2SPM)**

Time (Beirut)	Room-A	Room-B
Thursday, November 28		
03:30 pm- 04:00 pm	OpCer: <a href="#">Opening Ceremony</a>	
04:00 pm- 05:00 pm	KS1: <a href="#">Bio-impedance Modeling of Plants</a>	
Friday, November 29		
08:30 am- 10:15 am	S1(A): <a href="#">Biomedical and Bio-informatics</a>	S1(B): <a href="#">Power Energy, Power Managements</a>
10:15 am- 10:25 am	CB1: <a href="#">Coffee Break</a>	
10:25 am- 11:35 am	S2(A): <a href="#">Computer Systems and W/S Applications</a>	S2(B): <a href="#">Neural Networks, AI, Machine Learning, Deep Learning</a>
11:35 am- 12:15 pm	LB: <a href="#">Lunch Break</a>	
12:15 pm- 01:25 pm	S3(A): <a href="#">Circuits and Systems, Control Systems, Instrumentation, and Robotics</a>	S3(B): <a href="#">AI, Machine Learning, Deep Learning</a>

**Thursday, November 28**

Thursday, November 28 3:30 - 4:00 (Asia/Beirut)

OpCer: Opening Ceremony

<https://zoom.us/j/98820721884?pwd=krdRswgU2KhIkx5ojS0N6RwRisDOGv.1>

Room-A

Thursday, November 28 4:00 - 5:00 (Asia/Beirut)

KS1: Bio-impedance Modeling of Plants

Prof. Ahmed Madian

**Keynote Speaker**

Room-A

Abstract Bio-impedance non-invasive measurement techniques usage is rapidly increasing in the agriculture industry. These measured impedance variations reflect tacit biochemical and biophysical changes of living and non-living tissues. Bio-impedance circuit modeling is an effective solution used in biology and medicine to fit the measured impedance. Bio-impedance measurements are used in the diagnosis of plants behavior to certain conditions such as fruit maturity, fruit ripening, analyzing the effect of heating and freezing conditions on fruits, measuring of root growth, and determining the water content and characteristic analysis of the root zone. Also, it is used to provide information about environmental change effect on fruits. There are other contributions in using bio-impedance measurements for different applications such as blood glucose measurement, monitoring insulin availability for personalized diabetes therapy, characterizing red blood cell micro-circulatory parameters, and tactile sensing bio-hybrid soft E-skin in soft robotics. This talk demonstrates the different bio-impedance plant electrical models, measurement methodology and optimization technique suitable for solutions. Extract the best circuit parameters circuit for the model that fit the experimental results via different optimization techniques from mathematical point of view to choose the best performance versus the complexity of the used algorithms.

November 28-29, 2024

**Friday, November 29**

Friday, November 29 8:30 - 10:15 (Asia/Beirut)

**S1(A): Biomedical and Bio-informatics**

**Room-A**

Chairs: Mohamad Abou Ali (University of the Basque Country, Spain), Mohammad Ayache (Beirut Arab University (BAU), Lebanon)

**[Detection of Parkinson's Disease Through Spiral Drawings Using Convolutional Autoencoders](#)**

Milana Kasab and Nadine Al Masri (Rafik Hariri University, Lebanon); Razan Moghrabi (Rafik Hariri University, Lebanon & RHU, Lebanon)

**[Early detection of Alzheimer's disease using Artificial Intelligence based on CSF biomarkers & MRI images](#)**

Aya Chahal and Khaled Anis Almir (Lebanese International University, Lebanon); Ahmad Diab (Lebanese University, Lebanon); Firas Zakaria (Lebanese International University, Lebanon); Lara Hamawy (LIU, Lebanese International University, Lebanon)

**[Epileptic Seizure Detection Using Energy Thresholding](#)**

Raja Mohammad Mourad (Lebanese International University, Lebanon); Ahmad Diab (Lebanese University, Lebanon); Zaher Merhi (Lebanese International University, Lebanon); Mohamad Khalil (Lebanese University - AZM Center for Biotechnology -DSST & Faculty of Engineering, Lebanon); Régine Le Bouquin Jeannès (Université de Rennes, France)

**[Personalized Game Design for Balance Rehabilitation in Multiple Sclerosis: Insights from Neuroimaging and Neurophysiological Test](#)**

Hiyam Ibrahim (Lebanese University, Lebanon & Cologne University of Applied Science, Germany); Ahmad Diab (Lebanese University, Lebanon); Mohamad Khalil (Lebanese University - AZM Center for Biotechnology -DSST & Faculty of Engineering, Lebanon); Emmanuel Guardiola (Cologne University of Applied Sciences, Germany)

**[FieldMaster: An Innovative Visual Field-Testing System with Enhanced Accuracy and Usability](#)**

Mohamad Abou Ali (University of the Basque Country, Spain); Ali Hage-Diab and Mohamad Hajj-Hassan (Lebanese International University, Lebanon); Lara Hamawy (LIU, Lebanese International University, Lebanon); Ali H Cherry (International University of Beirut, Lebanon); Abdallah Kassem (Notre Dame University, Lebanon)

**[GAN for MRI Reconstruction in Federated Learning](#)**

Hanan Morsel and Khoulood Samrouth (Arab Open University, Lebanon); Nader Bakir (Beirut Arab University, Lebanon); Vadim Pak (Peter the Great Saint Petersburg Polytechnic University, Russia)

## **S1(B): Power Energy, Power Managements**

### **Room-B**

Chairs: Mohamad Arnaout (American University of the Middle East, Lebanon & College of Engineering and Technology, Kuwait), Abdallah El Ghaly (Beirut Arab University, Lebanon)

### **Methodology to Build Demand Profiles for the Simulation of Renewable Energy Communities**

Alejandro Comitre Bueno and Sebastián Puche Pascual (Universidad de Málaga, Spain); Sebastian Martin Rivas (University of Malaga, Spain)

### **Effectiveness Investigation of the Droop Control through Solar Inverters and Synchronous Generators in an Island Hybrid Micro-Grid: A Lebanese Case Study**

Ali Koubayssi (LIU & BIU, Lebanon); Mohamad Arnaout (College of Engineering and Technology, American University of the Middle East, Kuwait)

### **Optimal Reactive Power Compensation for Hybrid Multi-Source Systems Operating in Different IEEE Distribution Buses: Enhancing Voltage Stability and Loss Reduction**

Ali Koubayssi (LIU & BIU, Lebanon); Mohamad Arnaout (College of Engineering and Technology, American University of the Middle East, Kuwait)

### **Power System Stability and Load Flow Analysis for a Grid-Tied Photovoltaic System: Lebanon Case Study**

Wassim Z Sarrieddine and Abdallah El Ghaly (Beirut Arab University, Lebanon)

### **A Comprehensive Synthesis of Frequency Stability in Isolated AC Microgrids**

Fatemeh Abedini (University of Technology of Chemnitz, Germany & University of Technology Chemnitz, Germany); Jens Teuscher (University of Technology Chemnitz, Germany)

### **Autonomous Heat Loss Detection in Buildings for Efficient Façade Control and Energy Management**

Ali Waqas and Mohamad Araji (University of Waterloo, Canada)

Friday, November 29 10:15 - 10:25 (Asia/Beirut)

### **CB1: Coffee Break**

Room-A, Room-B

**Friday, November 29 10:25 - 11:35 (Asia/Beirut)**

## **S2(A): Computer Systems and W/S Applications**

### **Room-A**

Chairs: Vassilis Alimisis (National Technical University of Athens, Greece), Ali Massoud Haidar (Beirut Arab University, Lebanon)

### **S2(A).1 [Evaluation of Point-MAE for Robust Point Cloud Classification Across Diverse Datasets](#)**

Rita Younes (Université La Sagesse, Lebanon); Charles Yaacoub (Université Catholique de Lille, France); Grace El Khoury (ULS, Lebanon); Jalal Possik (Catholic University of Lille, France); Roy Abi Zeid Daou (Université La Sagesse, Lebanon)

### **S2(A).2 [An Automatic Transfer Switch \(ATS\) System based on cost effectiveness - Lebanese Case Study](#)**

Riham Ginzarli (Lebanese International University LIU, Lebanon); Lina Nachabe (Ecole Mines Saint Etienne, France & Universite Telecom Sud Paris -Evry, France); Chadi Nohra (Beirut Arabic University, Lebanon); Akram Hussein, Hussein Malas and Mouhamad Khawla (Lebanese International University LIU, Lebanon)

### **S2(A).3 [TinyML System for Touch Modality Classification based on Multisensory Glove](#)**

Ali Ibrahim (LIU, Lebanon); Mohamad Yaacoub (University of Genova, Italy); [Hiba Al Youssef](#) (Lebanese International University, Lebanon)

## **S2(B): Neural Networks, AI, Machine Learning, Deep Learning**

### **Room-B**

Chairs: Ahmad Diab (Lebanese University, Lebanon), Lara Hamawy (LIU, Lebanese International University, Lebanon)

### **S2(B).1 [Image Steganalysis Scheme based on Transfer Learning using CNN, BiLSTM](#)**

Sumia Abdulhussien Al-obaidi, Sr (Tabriz University & Ministry of Higher Education and Scintific Reserch - Iraq Baghdad, Iran); Mina Zolfy Lighvan and Mohammad Asadpour (University of Tabriz, Iran); [Mustafa Talal Al-naseri, Jr.](#) (Tabriz University, Iraq)

### **S2(B).2 [Detecting Advanced Persistent Threats on a Network Using Machine Learning](#)**

Georges Francis (Arab Open University, Lebanon); Majed Sanan (Lebanese University, Lebanon); [Makram Hatoum](#) (Arab Open University, Lebanon); Nader Bakir (Beirut Arab University, Lebanon); Khoulood Samrouth (Arab Open University, Lebanon)

### **S2(B).3 [Exploring Data Imbalance Challenges in Cervical Cancer Detection Using Advanced Deep Learning Models](#)**

Ali H Cherry (International University of Beirut, Lebanon); [Fatima Hashem](#), Imad Kobagi and Mohammad Othman (Lebanese International University, Lebanon); Mohamad Abou Ali (University of the Basque Country, Spain); Lara Hamawy (LIU, Lebanese International University, Lebanon); Mohamad Hajj-Hassan and Ali Hage-Diab (Lebanese International University, Lebanon); Abdallah Kassem (Notre Dame University, Lebanon)

### **S2(B).4 [An ChatGPT-Powered Customer Service Bot With Advanced Anti-Spam Mechanism](#)**

Asmaa Bastami and Anas El Hussein (City University, Lebanon)

**Friday, November 29 12:15 - 1:25 (Asia/Beirut)**

**S3(A): Circuits and Systems, Control Systems, Instrumentation, and Robotics**

**Room-A**

Chairs: Roy Abi Zeid Daou (Université La Sagesse, Lebanon), Hiba S Bazzi (Beirut Arab University, Lebanon)

**S3(A).1 [A High-Speed, Low-Power Analog Integrated Artificial Neural Network for Parkinson's Disease Classification](#)**

Vassilis Alimisis (National Technical University of Athens, Greece)

**S3(A).2 [Design and Implementing of Innovative Joystick for Shooting Games](#)**

Charbel Akiki and Jean Pierre El Zaneti (Université La Sagesse, Lebanon); Gaby H Abou Haidar (American University of Science and Technology, Lebanon); Roy Abi Zeid Daou (Université La Sagesse, Lebanon)

**S3(A).3 [The CRONE Sky Hook approach to suspension: a strategy focused on 100% vibrational comfort](#)**

Fouad Farah and Roy Abi Zeid Daou (Université La Sagesse, Lebanon); Xavier Moreau (University of Bordeaux I, France)

**S3(A).4 [A Stable Dual Second Order Generalized Integrator Phase-Locked Loop System for Grid Synchronization by Means of Anti-Windup Limiter](#)**

Nizar Daou (ISAE - Cnam Liban, Lebanon); Jean Sawma (Université Saint-Joseph, Lebanon); Flavia Khatounian (Université Saint Joseph de Beyrouth, Lebanon)

**S3(B): AI, Machine Learning, Deep Learning**

**Room-B**

Chairs: Nadine Bou Dargham (Notre-Dame University, Lebanon), Khoulood Samrouth (Arab Open University, Lebanon)

**[Unveiling a Cutting-Edge Dataset for Oil Tank Detection: YOLO Models Put to the Test](#)**

Adel Chehade (Lebanese University, Lebanon); Mostafa Rizk (Lebanese International University & Lab-STICC, Lebanon)

**[Deep Learning Based Spatial Source Localization Using High-Density Surface EMG Signals](#)**

Zeina Safa and Rawad Khanafer (Lebanese International University, Lebanon); Soumaya Berro (Lebanese International University, Lebanon & University of Technology of Compiègne, France); Ahmad Diab (Lebanese University, Lebanon); Mohamad Hajj-Hassan (Lebanese International University, Lebanon); Ali H Cherry (International University of Beirut, Lebanon); Sofiane Boudaoud (UMR University of Technology of Compiègne (UTC), France)

**[Advancing Medical Image Processing: A Comparative Analysis of 'Naturalize' and Traditional Augmentation Techniques for Enhanced Diagnostic Accuracy](#)**

Ali H Cherry (International University of Beirut, Lebanon); Mohamad Abou Ali (University of the Basque Country, Spain); Fadi Dornaika (University of Basque Country and Ikerbasque Foundation, Spain); Ali Hage-Diab (Lebanese International University, Lebanon)

**[Artificial Intelligence-Based Estimation of Energy Production and Consumption of Buildings from Satellite and Aerial Footage](#)**

Harun Can Tunç and Sait Gazi Yıldırım (Yıldız Technical University, Turkey); Ali Durusu (Yıldız Technical University, Turkey)

**Room-A**

Zoom Link

<https://zoom.us/j/98820721884?pwd=krdRswgU2KhIKx5ojS0N6RwRisDOGV.1>



**Room-B**

Zoom Link

<https://zoom.us/j/96695893456?pwd=QqRkXOrHBjUdBgLdowsMmli4SV8m0p.1>

