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**Edas information** <https://edas.info/p28537>

### **Virtual Room I information**

Zoom Meeting URL

<https://zoom.us/j/91955472076?pwd=NkZnMUtMQllrMTBHZUZ0UzdSQjITZz09>

Meeting ID: 919 5547 2076

Passcode: IMCET2021

### **Virtual Room II information**

Zoom Meeting URL

<https://zoom.us/j/96774311821?pwd=Y3lrR0UzK285ZDdTbzBHaytLc0Zvdz09>

Meeting ID: 967 7431 1821

Passcode: 351744

### **Organizing committee:**

#### **Conference chair**

-Bachar Elhassan

#### **Conference coordinator**

– Mohamad Awad

#### **Technical program Chairs**

– Hadi Kanaan

– Mohamad Awad

– Jacques Demerjian

#### **Finance chair**

– Youmni Ziadi

#### **Media Committee**

– Mohamad Kassab

– Anthony Sibaali

#### **Publication chairs**

– Walid Karam

– AbdAllah Kassem

#### **Publicity Chairs**

– Walid Fahs

– Nadine Abbass

– Sara Abou Chacra

#### **Industrial relation chair**

– Eddy Dib

– Jad Ashour

#### **Local committee**

– Rabih Rammal

– Line Sidawi

– Sirine Othman

#### **Award Committee**

– Mohamad Khalil

– Usamah Farroukh

– Nazih Moubayed

**OPENING SESSION:**

Chaired by Walid Karam

**Virtual Room I**9:10 – 9:20 **Conference coordinator** Mohamad Awad9:20 – 9:30 **Conference Chair** Bachar Elhassan9:30 - 10:30 **Keynote Speaker** - Prof. Ahmed Madian (Nile University, Giza, Egypt)**Chaired by** Abdallah Kassem (Notre Dame University-Louaize, Lebanon)**Virtual Room I**10:30 – 11:00 **Break****LECTURE SESSIONS:****Communications and Information Systems****Chaired by:** Chadi Abou Rjeily (Lebanese American Univ., Lebanon) and Sara Abou Chakra (Lebanese Univ., Lebanon)**Session time:** 11:00 - 12:30**Talk time per paper** 15 minutes**Virtual Room I****1- A Modified RC-pLMS Adaptive Beamformer for Secure Digital Communication**

Ghattas Akkad (ENSTA Bretagne, France); Ali Mansour (ENSTA Bretagne, France); Bachar Elhassan (Lebanese University, Faculty of Engineering, Branch1 &amp; order of Engineers and Architects - Tripoli, Lebanon); Elie Naim Inaty (University of Balamand, Lebanon)

**2- Performance of Narrowband IoT Link Adaptation with Rate and Energy Objectives**

Farah Yassine (Saint Joseph University, Lebanon); Oussama Bazzi (Lebanese University, Lebanon); Melhem El Helou (Saint Joseph University of Beirut, Lebanon); Samer Lahoud (ESIB, Saint-Joseph University of Beirut, Lebanon)

**3- Fast Link Adaptation with Partial Channel State Information for Orthogonal Multiple Access Multiple Relay Channel (OMAMRC)**

Ali Al Khansa (Orange labs &amp; University of Avignon, France); Raphael Visoz (Orange Labs, France); Yezekael Hayel (LIA, University of Avignon, France); Samson E Lasaulce (CRAN (CNRS - University of Lorraine), France); Rasha Al Khansa (American University of Beirut, Lebanon)

**4- Minimum UAV Fog Servers with Maximum IoT Devices Association Using Genetic Algorithms**

Nadine Abbas (Lebanese American University, Lebanon); Rayan Abusrewil (Lebanese American University, Lebanon); Amir Najjar (Lebanese American University, Lebanon); Sanaa Sharafeddine (Lebanese American University, Lebanon)

**5-Detecting Mental Disorders through Social Media Content**

Batoul Haidar (USJ, Lebanon); Rami Kanaan (Saint Joseph University, Lebanon); Rima Kilany (Saint-Joseph University, France)

## Power, Power Electronics, Industrial Electronics and Energy

**Chaired by:** Abdallah Kassem (Notre Dame Univ., Lebanon) and Mohamad Arnaot (Lebanese International Univ., Lebanon)

**Session time:** 11:00 - 12:30

**Talk time per paper** 15 minutes

**Virtual Room II**

### **1- A New Approach for Seven-Segment Display Control Based on One Control pin**

Rami Alkhatib (RHU, Lebanon); Abdulrahim El Mohamad (Rafik Hariri University, Lebanon); Hussein Harb (Rafik Hariri University, Lebanon); Nabil Miri (Rafik Hariri University, Lebanon); Ali Fares (Rafik Hariri University, Lebanon)

### **2- Model-Based Estimation for Improving the Resolution of the Pulsed Electroacoustic Method**

Mohamad Arnaout (LIU & BIU, Lebanon); Khaled Chahine (BAU, Lebanon)

### **3- Online Detection for Faults in Transmission Lines**

Ali Reda (LIU, Lebanon); Imad Al Kurdi (LIU, Lebanon); Ziad Noun (Lebanese International University, Lebanon); Ali Koubayssi (Lebanese International University, Lebanon); Mohamad Arnaout (LIU & BIU, Lebanon); Rabih Rammal (International University of Beirut, Lebanon)

### **4- A Review on Electric Vehicles Battery Chargers and AC/DC Converters for Fast Charging Stations**

Sandy Atanalian (Ecole de Technologie Supérieure, Canada); Kamal Al-Haddad (Ecole de technologie supérieure, Canada); Rawad Zgheib (Hydroquebec, Canada); Hadi Y. Kanaan (Saint-Joseph University, Lebanon)

### **5- A Comparative Study of Open-End Winding Drive Systems for Hybrid Fuel Cell-Battery Fed Electric Vehicles**

Khaled Safsouf (Saint-Joseph University of Beirut, Lebanon); Jean Sawma (Université Saint-Joseph, Lebanon); Hadi Y. Kanaan (Saint-Joseph University, Lebanon)

12:30 to 13:30 **BREAK**

## Computer Systems and Applications

**Chaired by:** Mohamad Awad (National Council for Scientific Research, Lebanon) and Ismail El Sayad (Lebanese International Univ., Lebanon)

**Session time:** 13:30 - 15:00

**Talk time per paper** 15 minutes

**Virtual Room I**

### **1- Detecting Overlapping Semiconductor Nanopillars and Characterization**

Michael Wishon (Georgia Institute of Technology & GT-CNRS UMI 2958 Georgia Tech Lorraine, France); Georges Chahine (Georgia Institute of Technology, France)

### **2- Trip-based prediction of hybrid electric vehicles velocity using artificial neural networks**

Nay Abi Akl (Lebanese American University, Lebanon); Jawad Khoury (Lebanese American University, Lebanon); Charbel Mansour (Lebanese American University, Lebanon)

### **3- Human Firewall: Cyber Awareness using WhatsApp AI Chatbot**

Georges El Hajal (Bordeaux University, France); Roy Abi Zeid Daou (Lebanese German University, Lebanon); Yves Ducq (University of Bordeaux 1 & IMS Laboratory, France)

### **4- Google Earth Engine (GEE) cloud computing based crop classification using radar, optical images and Support Vector Machine Algorithm (SVM)**

Mohamad Mostafa Awad (National Council for Scientific Research, Lebanon)

### **5- Rapid design and verification experience using flexible cycle-accurate NoC simulator**

Mostafa Rizk (Lebanese International University & Lab-STICC, Lebanon); Jean-Philippe Diguët (Lab-STICC / CNRS, France); Amer Baghdadi (Télécom Bretagne, France)

### **6- Democratizing Heavy-Lift Multi-Rotors Design**

Guy Maalouf (AUB, Lebanon); Mariette Awad (Lebanon, Lebanon)

## Control Systems, Instrumentation and Robotics

**Chaired by:** Naseem Daher (American Univ. of Beirut, Lebanon) and Flavia Khatounian (Saint Joseph Univ., Lebanon)

**Session time:** 13:30 - 15:00

**Talk time per paper** 15 minutes

**Virtual Room II**

### **1- Implementation of Quadrotor Path Planning Using Fluid Flow Equations**

Abdel-Razzak Abdallah Merheb (International University of Beirut & Lebanese International University, Lebanon); Hassan M. Noura (Islamic University of Lebanon, IUL & School of Engineering, Lebanon); Marc Anthony Mannah (School of Engineering, the International University of Beirut (BIU), Beirut, Lebanon & ECAM LaSalle, Lyon, France); Ahmad Haddad (Lebanese International University, Lebanon)

### **2- Behavior of a 2-Mass Tuned-Mass-Damper (TMD) on a Single Degree of Freedom (SDOF) System**

Joseph Iskandar (University of Bordeaux, Lebanon); Nabil Fares (University of Balamand, Lebanon); Xavier Moreau (University of Bordeaux I, France); Roy Abi Zeid Daou (Lebanese German University, Lebanon)

### **3- Bidirectional Manipulation of a Buoy With a Tethered Quadrotor UAV**

Ahmad Kourani (American University of Beirut, Lebanon); Naseem Daher (American University of Beirut, Lebanon)

### **4- A Composite Model Predictive and Super Twisting Sliding Mode Controller for Stable and Robust Trajectory Tracking of Autonomous Ground Vehicles**

Hassan El Atwi (American University of Beirut, Lebanon); Naseem Daher (American University of Beirut, Lebanon)

### **5- A Simple Neural Network for Efficient Real-time Generation of Dynamically-Feasible Quadrotor Trajectories**

Mohammad Lakis (American University of Beirut, Lebanon); Naseem Daher (American University of Beirut, Lebanon)

### **6- Input-Output Stability Based Model Reference Adaptive Control of a Passive Pneumatic Teleoperation System**

Leen Daher (American University of Beirut, Lebanon); Naseem Daher (American University of Beirut, Lebanon)

15:00 - 16:00 **Keynote Speaker** - Prof. Josep M. Guerrero (Aalborg University, Denmark)

**Chaired by** Hadi Kanaan (Saint Joseph University, Lebanon)

**Virtual Room I**

## Biomedical and Bioinformatics

**Chaired by:** Mohammad Ayache (Islamic Univ. Lebanon, Lebanon) and Mohamad Diab (Rafik Hariri Univ., Lebanon)

**Session time:** 16:00 - 17:30

**Talk time per paper** 15 minutes

**Virtual Room I**

### **1- Design and Implementation of an Instrumented walking cane for Detection of Freezing of Gait**

Joelle Haidar Ahmad (Lebanese German University, Lebanon); Alain Asmar (Lebanese German University, Lebanon); Roy Abi Zeid Daou (Lebanese German University, Lebanon); Ali Hayek (University of Kassel, Germany); Josef Boercsoek (University of Kassel, Germany); Javier Serrano (UPM, Spain)

### **2-Design and Implementation of a Smart Soldier Uniform**

Antoine Abi Zeid Daou (Saint Joseph University, Lebanon); Christian Haddad (Saint Joseph University, Lebanon); Roy Abi Zeid Daou (Lebanese German University, Lebanon)

### **3- On Data Bias and the Usability of Deep Learning Algorithms in Detecting COVID-19 based on ChestX-ray**

Hassane Ezzeddine (American University of Beirut, Lebanon); Mariette Awad (AUB, Lebanon); Bassem Mourany (AmericanUniversity of Beirut, Lebanon); Alain Abi Ghanem (American University of Beirut, Lebanon)

### **4- Multi-Sensor Data Fusion for Smart Home Reliable Pedestrian Localization**

Lina Achaji (Inria, France); Mohamad Daher (ULF and Lille University, Lebanon); Maan El Badaoui El Najjar (Université des Sciences et Technologies de Lille, France); Francois Charpillet (Université de Lorraine, France)

### **5- Adjusting Local Conformational Sampling For Fragment Assembly Protein Structure Prediction Based On Secondary Structure Complexity**

Jad Abbass (Lebanese International University, Lebanon & Kingston University, United Kingdom (Great Britain)); Jean-Christophe Nebel (Kingston University, United Kingdom (Great Britain))

## **Power, Power Electronics, Industrial Electronics and Energy**

**Chaired by:** Khalil Khoury (Lebanese Univ., Lebanon) and Chantal Maatouk (Saint Joseph Univ. ,Lebanon)

**Session time:** 16:00 - 17:30

**Talk time per paper** 15 minutes

**Virtual Room II**

### **1-Evaluation of the Effectiveness of Standalone Hybrid Systems for Small Residential Units: Case Study Lebanon**

Marc Anthony Mannah (School of Engineering, the International University of Beirut (BIU), Beirut, Lebanon & ECAM LaSalle, Lyon, France); Michel Nahas (Australian College of Kuwait, Kuwait); Ahmad Haddad (Lebanese International University, Lebanon);

Abdel-Razzak Abdallah Merheb (International University of Beirut & Lebanese International University, Lebanon)

### **2-Dynamic Modeling of Energy Systems Adapted to Low Energy Buildings- Case study in Lebanon**

Nadine Yehya Yehya (Saint Joseph University, Lebanon); Chantal Maatouk (Saint Joseph University, Lebanon)

### **3-Examination and optimization of the design parameters for the thermal hysteresis phenomenon of the phase change material**

Sandy Khoury (Universite Saint-Joseph de Beyrouth, Lebanon); Chantal Maatouk (Saint Joseph University, Lebanon); Khalil Khoury (Lebanese University, Lebanon); Flavia Khatounian (Université Saint Joseph de Beyrouth, Lebanon)

### **4-Wind-Driven Scheduling of Compressed Air and Latent Heat Storage for Optimal Gas Turbines Operation**

Tony Karam (Saint Joseph University of Beirut & Lebanese International University, Lebanon); Chantal Maatouk (Saint Joseph University, Lebanon)

### **5- On the possibility of using simple weather forecast in the adaptation of building envelopes for energy efficiency**

Rayan Hammoud (Saint Joseph University, Lebanon)

### **6- Integration of PV power plant through HVDC link**

Fadi El Awar (Saint-Joseph University of Beirut, Lebanon); Hadi Y. Kanaan (Saint-Joseph University, Lebanon)

**17:30 – 18:00 Closing session**



**IEEE 3rd International Multidisciplinary Conference  
on Engineering Technology 2021 (IMCET'21)  
Beirut, Lebanon, Dec. 9 2021**

**Thursday 9 December, 2021**

15:00 – 16:00 **Keynote Speaker** - Prof. Yong Shi (University of Nebraska at Omaha, USA)  
**Chaired by:** Jacques Bou Abdo (University of Nebraska at Kearney, USA)    **Virtual Room I**