2012 2nd International Conference on Advances in Computational Tools for Engineering Applications

(ACTEA 2012)

Beirut, Lebanon
12 – 15 December 2012

Program

Welcome Reception & registration

Registration Check In

Opening Ceremony

Under the Patronage of His Excellency The Minister of Education and Higher Education Dr. Hassan Diab

Coffee Break

Coktail

Keynote Speaker I: Prof. Mohamad Sawan

Brain-Machine Interfaces for the Recovery of Neural Vital Functions

Mohamad Sawan, Professor
Canada Research Chair in Smart Medical Devices
Polystim Neurotechnologies Laboratory
Polytechnique Montreal

Session 1: Biomedical Systems

EMG Signal Processing and Diagnostic of Muscle Diseases
Onsy Abdul Alim (Beirut Arab University & Alexandria University, Lebanon); Mohamed Moselhy (Beirut Arab University, Lebanon); Fatima Mroueh (Beirut Arab University, Lebanon)
pp. 1-6

A Bio-Sensory System for Increase Implant Longevity for Occlusal Analysis
Safa ahmed hafez Elaskary (Arab Academy For Science and Technology, Egypt); Tamer M Nassef (Misr University for Science and Technology, Egypt); Mazhar Tayel (Alexandria University, Egypt)
pp. 7-10

Hardware platform to tests the availability of rooms in a medical center
Rabih Youssef Rezk (Lebanese German University, Lebanon); Charbel Sleiman (Lebanese German University, Lebanon); Roy Abi Zeid Daou (Lebanese German University, Lebanon)
pp. 11-14

Heart Rate variability(HRV) Analysis using DSP for the detection of Myocardial infarction
Firas Zakaria (Doctoral School & Lebanese University, Lebanon); Mohamad Khalil (Azm center for research in bioTechnology & Lebanese Univesrsity, Lebanon)
pp. 15-19

Session 2: Multimedia Systems

Reducing Language Barriers for Tourists Using Handwriting Recognition Enabled Mobile Application
Edgard Chammas (University of Balamand, Lebanon); Cristina Oprean (TELECOM ParisTech, Lebanon); Rami Al Hajj Mohamad (American University of the Middle East, Kuwait); Chafic Mokbel (University of balamand, Lebanon); Laurence Likforman Sulem (TELECOM ParisTech, France); Gérard Chollet (Telecom ParisTech, Canada)
pp. 20-23

Multiplexing Stereo Signals using Digital Watermarking
Chady El Moucary (Notre Dame University, Lebanon); Bachar A. ElHassan (Lebanese University, Faculty of Engineering, Branch1 & order of Engineers and Architects - Tripoli, Lebanon); Abdallah Kassem (Notre Dame University, Lebanon); Stephanie Mitri (Notre Dame University - Louaize, Lebanon); Joseph Cheikh-Wafa Rehban (Notre Dame University - Louaize, Lebanon); Youssef Nemer (Notre Dame University - Louaize, Lebanon)
pp. 24-28

An Ontology-Based System to Dynamically Extract Multimedia Elements for Children's Tutorials
Jihad Mohamad Aljaam (Qatar University, Qatar)
pp. 29-32

The Design and Development of a Lie Detection System using Facial Micro-Expressions
Michel J Owayjan (American University of Science & Technology, Lebanon); Ahmad Kashour (American University of Science & Technology, Lebanon); Nancy Al Haddad (American University of Science & Technology, Lebanon); Mohamad Fadel (American University of Science & Technology, Lebanon); Ghinwa Al Souki (American University of Science & Technology, Lebanon)
pp. 33-38

Lunch Break

Session 3: Telecommunications, Microwaves and RF (I)

Implementing an Enhanced Base Station using the Software Defined Radio (CUOPENBTS)
Islam Hashem (Faculty of Engineering, Cairo University, Egypt); Ahmed ElShaarany (Faculty of Engineering, Cairo University, Egypt); Ahmed Y AbdelBarr (Graduate Student of Cairo University & VALEO, Egypt); Eslam Hassan (Department of Electronics and Electrical Communication, Egypt); Magdi Fikri (Dept. of Electrical Engineering Cairo University Egypt, Egypt)
pp. 39-42

Path Loss Model for Radio wave Propagation at VHF/UHF Bands using Electric Field Strength Measurement over Ilorin Middle-Belt, Nigeria
Obiseye Obiyemi (Department of Electrical and Electronic Engineering, Osun State University, Nigeria); Tunji Ibiyemi (University of Ilorin, Nigeria); Abiodun Gbenga-ilori (Department of Electrical and Electronic Engineering, University of Lagos, Nigeria); Joseph Ojo (Department of Physics, Federal University of Technology Akure, Nigeria)
pp. 43-46

Okumura-Hata Model Tuning for TETRA Mobile Radio Networks in Saudi Arabia
Mohammed Alamoud (Saudi Aramco, Saudi Arabia)
pp. 47-51

Error Analysis of Tiled Overlapped Subarrays
Tony Azar (Notre Dame University, Lebanon)
pp. 52-56

Session 4: Neural Networks

Bearing Fault Detection Using Neural Networks
Mayssa Hajar (Lebanese University & Doctoral School for Sciences and Bio-Technology, Azm Center, Lebanon); Mohamad Khalil (Azm center for research in bioTechnology & Lebanese Univesrsity, Lebanon)
pp. 57-60

Online Data fault detection in Wireless sensor networks
Mira Sarkis (Lebanese University, Faculty of Engineering & Ecole Doctorale de Sciences et de Technologie, Lebanon); Dima Hamdan (LCIS-Grenoble INP, Lebanon); Oum-El-Kheir Aktouf (Grenoble INP - LCIS, France); Ioannis Parissis (Grenoble INP - LCIS, France); Bachar A. ElHassan (Lebanese University, Faculty of Engineering, Branch1 & order of Engineers and Architects - Tripoli, Lebanon)
pp. 61-65

Error Correction Capabilities in Block Cipher
> Ahmed Belal (BAU, Lebanon); Bilal Owaidat (Beirut Arab University, Lebanon); Nayif M. Saleh (Beirut Arab University, Lebanon); Ramzi Jaber (Beirut Arab University, Lebanon)
> pp. 66-69

A Novel Petri net Model for Image Segmentation Entropic Thresholding based methods
> Linda Ahmad Mahmoudi (Beirut Arab University, Lebanon); Alaa Al Azawi (Beirut Arab University, Iraq); Ali El Zaart (Beirut Arab University, Lebanon); Ali Massoud Haidar (Beirut Arab University, Lebanon)
> pp. 70-74

Coffee Break

Session 5: Parallel Simulation and Processing

Mammogram Images Thresholding Based on Between-Class Variance Using a Mixture of Gamma Distributions
> Ali Ghosn (Beirut Arab University, Lebanon); Ali El-Zaart (Beurit Arab University, Lebanon)
> pp. 75-79

A Distributed Counter-based Non-blocking Coordinated Checkpoint Algorithm for Grid Computing Applications
> Gamal El-Sayed (Assiut University, Egypt); Khadra Hossny (Assiut University, Egypt)
> pp. 80-85

Mailbox-based Non Blocking Minimum-process Coordinated Checkpointing with message Logging for Hierarchical Computational Grid (MNMCCP)
> Gamal El-Sayed (Assiut University, Egypt); Aref Abdullah (Assiut University, Egypt)
> pp. 86-90

An Enhanced Kuan Filter for Suboptimal Speckle Reduction
> Adib Akl (Holy-Spirit University of Kaslik, Lebanon); Kamal Tabbara (Holy-Spirit University of Kaslik, Lebanon); Charles Yaacoub (Holy-Spirit University of Kaslik, Lebanon)
> pp. 91-95

Session 6: Analog and Mixed Signals

Multi-tone Analysis in Nonlinear Systems
> Admoon Andrawes (BRADFORD Company, Jordan)
> pp. 96-100

Rolling Bearing Diagnosis using Cyclostationary tools and neural networks
> Sarah Samad (Lebanese University, Doctoral School for Sciences and Technology, Lebanon); Amani Raad (Doctor at the Lebanese University, Doctoral School of Science and Technology, Lebanon)
> pp. 101-105

Design of a Rail-to-Rail, Low Output Impedance Class AB Power Amplifier for Envelope Tracking of Polar Modulators
> Atefeh Salimi (Isfahan University of Technology, Iran); Rasoul Dehghani (Isfahan University of Technology, Iran); Abdolreza Nabavi (Tarbiat Modarres University, Iran)
> pp. 106-109

4 Watt, 45% Bandwidth Si-LDMOS High Linearity Power Amplifier for Modern Wireless Communications Systems
> MHD Tareq Arnous (Technical University, Germany)
> pp. 110-113

Registration Check In

Keynote Speaker II: Prof. Corrado Schenone

Numerical Modeling of Environmental Noise
Corrado Schenone (Università degli Studi di Genova, Italy)
pp. 114-119

Coffee Break

Session 7: Computational Electromagnetic

A Compact Quad-band Metamaterial-based Antenna for Wireless Applications
Ferhad Kasem (American University of Beirut, Lebanon); Mohammed Al-Husseini (American University of Beirut, Lebanon); Ali Ramadan (American University of Beirut, Lebanon); Abdullah Haskou (American University of Beirut (AUB), Lebanon); Karim Youssef Kabalan (American University of Beirut, Lebanon); Ali El-Hajj (American University of Beirut, Lebanon)
pp. 120-123

A Calibrated near Field Scanning System applied to the Characterization of IC Electromagnetic Radiation
Mouhamad Abou Chahine (Eseo-Emc Group, France); Richard Perdriau (ESEO, France); Mohamed Ramdani (ESEO, France); Alaa Saleh (Iut saida, Lebanon)
pp. 124-127

General and Complete 2D TLM Curvilinear Node
Hussein Youssef (Universite Libanaise, Lebanon)
pp. 128-133

Dispersion Analysis of a 3D-TLM Particular Curvilinear Node: Cylindrical Node
Hussein Youssef (Universite Libanaise, Lebanon)
pp. 134-139

Session 8: Control Systems, and Robotics

Analysis of the Fractional Order System in the thermal diffusive interface - Part 1: application to a semi-infinite plane medium
Roy Abi Zeid Daou (Lebanese German University, Lebanon); Xavier Moreau (University of Bordeaux I, France); Riad Assaf, PE (University of Bordeaux I, Lebanon); Fady Christophy (University of Bordeaux I, Lebanon)
pp. 140-144

A Novel Approach to the Eye Movement Analysis Using a High Speed Camera
Krystian Radlak (Silesian University of Technology, Poland); Bogdan Smolka (Silesian University of Technology, Poland)
pp. 145-150

Analysis of the Fractional Order System in the Thermal Diffusive Interface - Part 2: application to a finite plane medium
Riad Assaf, PE (University of Bordeaux I, Lebanon); Xavier Moreau (University of Bordeaux I, France); Roy Abi Zeid Daou (Lebanese German University, Lebanon); Fady Christophy (University of Bordeaux I, Lebanon)
pp. 151-155

Session 10: Telecommunications, Microwaves and RF (II)

Capacitive Loading for Miniaturization and Performance Improvement of Transmission Lines
Hamza Issa (Beirut Arab University - Debbieh - Damour Branch, Lebanon); Jean-Marc Duchamp (Grenoble INP, France); Soubhi Abou Chahine (Beirut Arab University, Lebanon); Philippe Ferrari (IMEP-LAHC, France)
pp. 156-160

Radio Frequency Identity Prototype for Lebanese Vehicles
Michel J Owayjan (American University of Science & Technology, Lebanon); Roni S. Saassouh (American University of Science & Technology, Lebanon); Bashir Al-Dibs (American University of Science & Technology, Lebanon); Rouba Jardak (American University of Science & Technology, Lebanon); Fadi Al-Banna (American University of Science & Technology, Lebanon)
pp. 161-165

Modeling and Analysis of SCIS Wireless Networks to Improve their Performance
Hayam Alyasiri (Ministry of Communications, Iraq); Mustafa Saad Mustafa (Al-Nahrain University, Iraq)
pp. 166-171

Development of Stripe Biometric Based Fingerprint Authentications Systems in Automated Teller Machines
Hammed Lasisi (Osun State University, Nigeria); Adedeji Ajisafe (Osun State University, Nigeria)
pp. 172-175

Optimal Combiner Design for Outphasing RF Amplification Systems
Mohamad El-Asmar (Lebanese French University (LFU), Lebanon); Ahmed Birafane (Ecolr de technologie superieure, Canada); Ammar Kouki (Ecole de Technologie Supérieure, Canada); Ahmad El-Rafhi (Lebanese French University (LFU), Lebanon)
pp. 176-181

Session 9: Test and Verification

A Symbolic Method for the Web Service Composition Problem
Hikmat Farhat (Notre Dame University, Lebanon); Guillaume Feuillade (IRIT, France)
pp. 182-185

An Investigation of Beirut Soil Properties
Elsy Ibrahim (Notre Dame University, Lebanon); Dalia Youssef Abdel Massih (Notre Dame University - Louaize, Lebanon); Jacques Harb (Notre Dame University, Louaize, Lebanon)
pp. 186-191

Classifying Sentiment in Arabic Social Networks: Naïve Search versus Naïve Bayes
Maher M. Itani (Beirut Arab University - Mathematics and Computer Science Department, Lebanon); Lama Hamandi (American University of Beirut, Lebanon); Rached Zantout (Beirut Arab University, Mathematics and Computer Science Department, Lebanon); Islam Elkabani (Beirut Arab University, Mathematics and Computer Science Department, Lebanon)
pp. 192-197

Hybrid active power filter based on diode clamped inverter and hysteresis band current controller
Khaled Mahafzah (Yarmouk University, Jordan)
pp. 198-203

Lunch Break

Session 11: Image and Signals Processing (II)

A Survey of Entropy Image Thresholding Techniques
Linda Ahmad Mahmoudi (Beirut Arab University, Lebanon); Ali El Zaart (Beirut Arab University, Lebanon)

pp. 204-209

Recognition of Triangular Traffic Signs Using the Number of Peaks Algorithm
Lama Hamandi (American University of Beirut, Lebanon); Khaled Almustafa (Prince Sultan University, Saudi Arabia); Rached Zantout (Beirut Arab University, Mathematics and Computer Science Department, Lebanon); Hasan R. Obeid (Zawya, Lebanon)
pp. 210-214

Determining the geographic effect of gas flaring using multi-SAR Azimuth Processing
Maurice Ezeoke (University College London & National Space Research and Development Agency, United Kingdom); Kin-Fai Tong (UCL, University of London, United Kingdom); Tracy Adole (University of East Anglia, United Kingdom); Andrew Lovett (University of East Anglia, United Kingdom)
pp. 215-219

Mammogram Images Thresholding Using Different Thresholding Techniques
Moumena Al- Bayati (Beurit Arab University, Iraq); Ali El-Zaart (Beurit Arab University, Lebanon)
pp. 220-224

Session 12: Power Electronics

Modern Power Switch: Silicon Carbide Technology
Jennifer Najjar (Saint-Joseph University - ESIB, Lebanon); Rita Khalil (Saint-Joseph University - ESIB, Lebanon); Paul Akiki (Saint-Joseph University - ESIB, Lebanon); Hadi Kanaan (Saint-Joseph University, Lebanon)
pp. 225-230

Fast-Response Power Factor Computation Technique
Amer Atta Yaseen (College of Electrical and Electronic Techniques, Foundation of Technical Education, Iraq)
pp. 235-240

Fractional Order Systems in the Electrical domain - Part 1: background and introduction
Roy Abi Zeid Daou (Lebanese German University, Lebanon); Xavier Moreau (University of Bordeaux I, France); Clovis Francis (Lebanese university, Lebanon)
pp. 241-246

Fractional Order Systems in the Electrical domain - Part 2: implementation results and uncertainties influence
Roy Abi Zeid Daou (Lebanese German University, Lebanon); Xavier Moreau (University of Bordeaux I, France); Clovis Francis (Lebanese university, Lebanon)
pp. 247-251

Coffee Break

Session 13: Engineering Education

An approach to a pattern for business process management and deployment of software engineering for small companies in a crossplatform era
Antonio Jesús Fernández-García (Ingenieros Alborada IDI & Universidad de Almería, Spain); Luis Iribarne (University of Almería, Spain); Javier Criado (University of Almería, Spain); Jesus Vallecillos (University of Almería, Spain)
pp. 252-256

An Overview of Simulation Tools for Renewable Applications in Power Systems
Hiba Al-Sheikh (Lebanese International University, Lebanon); Nazih Moubayed (Lebanese University, Lebanon)
pp. 257-261

Reconfigurable Computing FPGA Tools Challenges: Accessing SRAM Design Example
Mouna Nakkar (University of Dammam, Saudi Arabia)
pp. 262-264

A Model for Stock Price Forecasting Based on ARMA Systems
Mohammad Foad Anaghi (Amirkabir University of Technology, Iran); Yaser Norouzi (Amirkabir University of Technology, Iran)
pp. 265-268

Session 14: Computer Architecture and Memories

Graphics Processor Performance Analysis for 3D Applications
Joseph Issa (Santa Clara University, USA); Silvia Figueira (Santa Clara University, USA)
pp. 269-272

FPGA Based Path Solvers for DFGs in High Level Synthesis
Deepa Yagain (Visveswaraya Technological University, India); Vijaya Krishna A (P E S Institute of Technology, India)
pp. 273-278

A Performance Estimation Model for GPU-Based Systems
Joseph Issa (Santa Clara University, USA); Silvia Figueira (Santa Clara University, USA)
pp. 279-283

Toward a framework for intra-enterprise competency modeling
Reza Vatankhah Barenji (Eastern Mediterranean University, Turkey); Majid Hashemipour (Eastern Mediterranean University, Turkey); Ali Vatankhah Barenji (Eastern Mediterranean University, Turkey); David A. Guerra-Zubiaga (Texas A and M University, USA)
pp. 284-288

Conference Dinner (Lebanese Restaurant)

Registration Check In

Key: Keynote Speaker III: Dr. Mohamed El-Hadidy

Coffee Break

Session 15: CAD and Design Simulation tools

An experimental study of ultrasonic vibration-assisted grinding
Eman NassaR (Higher Technological Institute, Egypt); Amal NassaR (Higher Technological Institute, Egypt)
pp. 289-291

A Hybrid Wavelet Transform and Anfis Model for Short Term Electric Load Prediction
Mordjaoui Mourad (University 20 August 1955 Skikda, Algeria); Boudjema Bouzid (University of Skikda, Algeria); Bouabaz Mohamed (Unoversity 20 August 1955 Skikda, Algeria)
pp. 292-295

Tensile Behaviors Of Aluminum Matrix Composites In Extrusion Simulation Experiments
Amal NassaR (Higher Technological Institute, Egypt); Eman NassaR (Higher Technological Institute, Egypt)
pp. 296-300

Edge Detection In Mammogram Images Using Log-Normal Distribution
Ali El-Zaart (Beurit Arab University, Lebanon); Wafaa Al-Jibory (Beirut Arab University, Iraq)
pp. 301-305

Session 16: Image and Signals Processing (III)

Simulation of Random Effects in Transmission Line Models via Stochastic Differential Equations
Lubomir Brancik (Brno University of Technology, Czech Republic); Edita Kolarova (Brno University of Technology, Czech Republic); Ales Prokes (Brno University of Technology & Sensor, Information and Communication Systems Research Centre, Czech Republic)
pp. 306-310

Improved Wavelet Wiener Estimator In Image Denoising
Issam Dagher (University of Balamand, Lebanon)
pp. 311-314

Session 17: FPGA Systems

SRAM-Based FPGA Design Techniques for Safety Related Systems Conforming to IEC 61508 a Survey and Analysis
Ali Hayek (University of Kassel, Germany); Josef Boercsoek (University of Kassel, Germany)
pp. 319-324

Hardware Simulator Design for LTE Applications with Time-Varying MIMO Channels
Bachir Habib (IETR-INSA Rennes & IETR, France); Gheorghe Zaharia (IETR-INSA de Rennes, France); Ghais El Zein (IETR-INSA Rennes, France)
pp. 325-329

SEU Simulation by Fault Injection in PSoC Device: Preliminary Results
Wassim Mansour (TIMA Labs. & Institut National Polytechnique de Grenoble (INPG), France); Wassim El Falou (Lebanese University, Lebanon); Haissam Ziade (Lebanese University, Lebanon); Rafic A. Ayoubi (University of Balamand, Lebanon); Raoul J Velazco (TIMA, France)
pp. 330-333

FPGA Implementation of a Three-Way Asynchronous DDR2 Memory Controller
Georges Daou (NDU, Lebanon); Abdallah Kassem (Notre Dame University, Lebanon); Mustapha Hamad (Notre Dame University-Louaize, Lebanon); Chady El Moucary (Notre Dame University, Lebanon)
pp. 334-337

Session 18: Low Power, Photonics and Optical Systems

Degradation of Free Space Optical Communication Performance Caused by Atmospheric Turbulence
Ales Prokes (Brno University of Technology & Sensor, Information and Communication Systems Research Centre, Czech Republic); Lubomir Brancik (Brno University of Technology, Czech Republic)
pp. 338-341

Energy-aware schedulers for Real-Time Energy Harvesting systems with Quality of Service requirements
Maissa Abdallah (IRCCYN & LUNAM University, France); Maryline Chetto (IRCCYN, France); Audrey Queudet (IRCCYN, France)
pp. 342-347

Lunch Break + Awards

Trip to Jeita Grotto & Harissa

Free Day