NOTRE DAME UNIVERSITY
—LOUAIZE—
جامعة سيدة اللـويــزة
NDU
GAUDIUM DE VERITATE

ACTEA'16 | REDEC'16
CONFERENCE PROGRAM
NOTRE DAME UNIVERSITY-LOUAIZE

REDEC 2016

CONFERENCE PROGRAM

THIRD INTERNATIONAL CONFERENCE ON ADVANCES IN COMPUTATIONAL TOOLS FOR ENGINEERING APPLICATIONS

&

THIRD INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY FOR DEVELOPING COUNTRIES

July 13-15, 2016

NOTRE DAME UNIVERSITY-LOUAIZE

FOREWORD

On behalf of Notre Dame University-Louaize (NDU) and the Organizing Committee of the Third International Conference on Advances in Computational Tools for Engineering Applications (ACTEA'16), it is my pleasure to welcome you to Notre Dame University in Zouk-Mosbeh, Lebanon.

The scientific program of ACTEA'16 includes daily keynote speeches by distinguished experts and around 50 technical presentations of the highest quality. The papers were selected following a solid reviewing process involving two to four reviewers per paper from an original pool of around 90 manuscripts submitted by authors from all over the world.

Authors of ACTEA'16 come from 21 different countries and represent more than 40 academic institutions and industrial partners worldwide. This diverse group of researchers/practitioners will definitely make the conference an ideal forum for meeting colleagues with similar or different backgrounds and discussing research topics of common interest.

The ACTEA'16 program is further supplemented by the sister track of the Third International Conference on Renewable Energy for Developing Countries (REDEC'16), joining ACTEA'16 for the first time and involving also another set of around 50 presentations. The joint event will further widen the scope and enrich the networking experience of all attendees as experts in computational tools and those working on energy-related issues have a lot to share.

The scientific program of the joint event is complemented by a rich social program which will give attendees the opportunity to explore a number of very interesting natural and historical sites in the region as well as to taste the local and world widely known culinary art.

I am very grateful to all the volunteers who made this event possible. The members of the Organizing Committee spent considerable time and efforts in numerous meetings in order to insure the success of the conference; many thanks go to the members of the Publicity/Publications Committee, the Finance Committee, the Local Arrangements Committee, the Scientific Committee and the Reviewers for their helpful and timely support.

We greatly value the support of our technical co-sponsor, the IEEE Region 8, the IEEE Lebanon Section, and the ASEE Lebanon Branch. Our corporate sponsors, Alfa and Byblos Bank, contributed a significant share in the success of the event. Last but not least, the contribution of the hosting institution, Notre Dame University-Louaize, through various units, is greatly appreciated.

Welcome to Lebanon and hope you will enjoy your time at ACTEA'16,

MICHEL HAYEK
ACTEA'16 General Chair

REDEC'16 FOREWORD

On behalf of the Organizing Committee, I would like to welcome all participants to REDEC 2016, the International Renewable Energy Conference for Developing Countries. Besides promoting the advancement of renewable energy technology and research, the aim of this conference is to enhance collaboration between researchers and academicians from different countries, provide a platform to exchange ideas, discover novel opportunities, meet colleagues and new friends, and discuss efficient solutions that can be adapted to specific economic, environmental and financial situations in the developing countries.

We are proud of having distinguished keynote speakers with proven experience presenting scientific issues from various viewpoints and proposing solutions to some matters related to energy conversion, power smart grids, and energy efficiency.

The Association of French Speaking Universities (AUF) provided us with the necessary support for organizing some French sessions. The aim is to involve authors from French speaking countries in the discussion and to let them present their research in French. Keynote speakers and authors presenting in French are expected to talk about renewable energy topics related to situations in Lebanon, Morocco, Tunisia, Algeria, Senegal and Chad. A special acknowledgement goes to our sponsors, supporters, institutions, organizations and universities whose financial contribution and support had upraised the conference expectations.

Finally, I would like to thank our keynote speakers, reviewers, all committees' members of REDEC 2016 for their effort and valuable contributions to this special event.

IMAD MOUGHARBEL
REDEC'16 Conference Chair

KEYNOTE SPEAKERS

**ABDULMOTALEB EL SADDIK,
FIEEE, FEIC, FCAE**
Distinguished Professor and University Research
Chair University of Ottawa, Canada

Topic: Smart Cities - A Multidisciplinary Research

STÉPHANE PLOIX, PhD
Professor, Grenoble Institute of Technology
France

Topic: Towards Interactive Smart-Buildings

DAWN BARDOT, PhD
Vice President, Technology Innovation Medical
Device Innovation Consortium
Minneapolis, USA

Topic: The Medical Device Innovation Consortium -
Regulatory Grade Computer Modeling
and Simulation

GEORGES BARAKAT, PhD
Professor, University of Le Havre,
Normandie, France

Topic: Recent Developments and Future Trends for
Multi-Mega Watts Wind and Tidal Generators

KAMAL AL-HADDAD, PhD
Professor, Ecole de Technologie Supérieure
Montreal, Canada

Topic: Power Electronic Converters for
Renewable Energy

SÉDDIK BACHA, PhD
Professor, Joseph Fourier University of Grenoble
France

Topic: Réseaux Intelligents et Micro-Réseaux

ACTEA'16/REDEC'16: SCHEDULE AT A GLANCE

Wednesday, July 13, 2016

Time			
8:00 a.m. - 9:00 a.m.	**Registration** Conference Business Center		
9:00 a.m. - 9:30 a.m.	**Opening Ceremony** Issam Fares Hall		
9:30 a.m. - 10:30 a.m.	**Keynote Lecture: Prof. Kamal Al-Haddad** Issam Fares Hall		
10:30 a.m. - 11:00 a.m.	**Coffee Break** Conference Business Center		
11:00 a.m. - 12:40 p.m.	TS.IA: **Electronics & FPGA** Fares Hall	TS.IB: **Thermal Sciences** Abu-Khater Hall	TS.IC: **French Session I** Friends Hall
12:40 p.m. - 2:00 p.m.	Lunch University Restaurant		
2:00 p.m. - 3:40 p.m.	TS.IIA: **Electromagnetics / Power** Fares Hall	TS.IIB: **Energy Management** Abu-Khater Hall	TS.IIC: **French Session II** Friends Hall
3:40 p.m. - 4:00 p.m.	**Coffee Break** Conference Business Center		
4:00 p.m. - 6:00 p.m.	TS.IIIA: **Civil Engineering Applications** Fares Hall	TS.IIIB: **Wind Energy & Hydropower** Abu-Khater Hall	TS.IIIC: **Energy Saving & Energy Storage** Friends Hall
6:00 p.m. - 11:00 p.m.	**Social Program I**		

Wednesday, July 14, 2016

Time			
8:00 a.m. - 9:00 a.m.	**Registration** Conference Business Center		
9:00 a.m. - 10:00 a.m.	**Keynote Lecture: Prof. Abdulmotaleb El Saddik** Issam Fares Hall		
10:00 a.m. - 10:30 a.m.	**Coffee Break** Conference Business Center		
10:30 a.m. - 12:30 a.m.	TS.IVA: **Control Systems** Fares Hall	TS.IVB: **Materials** Abu-Khater Hall	TS.IVC: **Smart Power Systems & Micro-Grids** Friends Hall
12:30 a.m. - 2:00 p.m.	Lunch University Restaurant		
2:00 p.m. - 2:40 p.m.	**Keynote Lecture: Prof. Stéphane Ploix** Issam Fares Hall		
2:40 p.m. - 3:20 p.m.	**Keynote Lecture: Prof. Georges Barakat** Issam Fares Hall	**Keynote Lecture: Prof. Seddik Bacha** Friends Hall	
3:20 p.m. - 3:40 p.m.	**Coffee Break** Conference Business Center		
3:40 p.m. - 6:00 p.m.	TS.VA: **Bioengineering Systems** Fares Hall	TS.VB: **Solar Energy** Abu-Khater Hall	TS.VC: **Electric Drives & Electric Vehicles** Friends Hall
6:00 p.m. - 11:00 p.m.	**Social Program II**		

- ACTEA'16 Tracks
- REDEC'16 Tracks

Friday, July 15	8:00 a.m. - 9:00 a.m.	**Registration** Conference Business Center		
	9:00 a.m. - 10:00 a.m.	**Keynote Lecture: Dr. Dawn Bardot** Issam Fares Hall		
	10:00 a.m. - 10:30 a.m.	**Coffee Break** Conference Business Center		
	10:30 a.m. - 12:50 a.m.	TS.VIA: **Communication / Signal Processing** Fares Hall	TS.VIB: **Software Tools / Education** Abu-Khater Hall	TS.VIC: **Renewable Energy Resources** Friends Hall
	12:50 p.m. - 2:00 p.m.	Lunch University Restaurant		

WEDNESDAY, JULY 13

8:00 a.m. - 9:00 a.m.	**Registration**	Conference Business Center

9:00 a.m. - 9:30 a.m.	**Opening Ceremony**	Fares Hall

Introduction by Jeanette Elias (Notre Dame University-Louaize, Lebanon)

9:00 a.m. ACTEA'16 Welcome Note, Dr. Michel Hayek, General Chair, Dean of Engineering, Notre Dame University-Louaize, Lebanon

9:05 a.m. REDEC'16 Welcome Note, Dr. Imad Mougharbel, General Chair, Lebanese University, Lebanon

9:10 a.m. IEEE, Dr. Imad ElHajj, President of IEEE Lebanon Section, American University of Beirut, Lebanon

9:15 a.m. AUF, Mr. Herve Sabourin, Directeur de Bureau Moyen-Orient

9:20 a.m. Welcome Speech, Rev. Fr. Walid Moussa, President, Notre Dame University-Louaize, Lebanon

9:30 a.m. - 10:30 a.m.	**Keynote Lecture I**	Fares Hall

Introduction by Semaan Georges (Notre Dame University-Louaize, Lebanon)

ENERGY QUALITY AND CONSTRAINTS UNDER RESTRICTED HIGH PENETRATION FROM RENEWABLE SOURCES INTO SMART MICRO AND NANO-GRIDS

Prof. Kamal Al-Haddad
Ecole de Technologie Supérieure, Montreal, Canada

10:30 a.m. - 11:00 a.m.	**Coffee Break**	Conference Business Center

11:00 a.m. - 12:40 p.m.	**Session IA: Electronics & FPGA**	Fares Hall

Co-Chairs: Kamal Al-Haddad (Ecole de Technologie Supérieure, Montréal, Canada) & Mustapha Hamad (Notre Dame University-Louaize, Lebanon)

11:00 a.m. - 11:20 a.m. Simulation and Optimization of HEMTs, Hesameddin Ilatikhameneh (Purdue University, USA),Reza Ashrafi (McGill University, Canada), Sina Khorasani (Sharif University of Technology, Iran)

11:20 a.m. - 12:40 p.m. Enhanced Parallel Implementation of the K-Means Clustering Algorithm, Mohammed Baydoun (Beirut Research and Innovation Center, Lebanon), Mohammad Dawi (American University of Beirut, Lebanon), Hassan Ghaziri (Beirut Research and Innovation Center, Lebanon)

12:40 p.m. - 12:00 p.m.	The Effect of Incident Angle and Filling Factor on Dispersion Properties of One Dimensional Photonic Crystal, Badreddine Mamri (University Frères Mentouri, Algeria), Ouarda Barkat (University Frères Mentouri, Algeria)
12:00 p.m. - 12:20 p.m.	ANSI C Front-End Enhancement for CUPSHOP HW/SW Partitioning Tool, Ahmed Hamed (Faculty Of Engineering, Cairo University & Mentor Graphics Corporation, Egypt), Rania Hassan (Faculty of Engineering, Cairo University, Egypt), Mohamed B Abdelhalim (Arab Academy for Science, Technology & Maritime Transport, Egypt), Serag E. D. Habib (Faculty of Engineering, Cairo University, Egypt)
12:20 p.m. - 12:40 p.m.	FPGA Realization of ALU for Mobile GPU, Mohammed Tolba (Nile University, Egypt), Ahmed H. Madian (Egyptian atomic energy authority, NCRRT, Egypt), Ahmed Radwan (Faculty of Engineering, Cairo University, Egypt)

11:00 a.m. - 12:40 p.m.	**Session IB: Thermal Sciences/Energy** Abu Khater Hall

Co-Chairs: Sami Karaki (American University of Beirut, Lebanon) & Michel Hayek (Notre Dame University-Louaize, Lebanon)

11:00 a.m. - 11:20 a.m.	Effect of the Angle of Attack of a Rectangular Vortex Generator on the Heat Transfer in a Parallel Plate Flow, Assadour Khanjian (LUNAM University & Lebanese International University, Lebanon), Charbel Habchi (Notre Dame University-Louaize, Lebanon), Serge Russeil (Mines Douai, France), Daniel Bougeard (Ecole des mines de Douai, France), Thierry Lemenand (University of Angers, France)
11:20 a.m. - 12:40 p.m.	Temperature Control of a finite Diffusive Interface Medium Applying CRONE Second Generation, Roy Abi Zeid Daou (Lebanese German University, Lebanon), Xavier Moreau (University of Bordeaux I, France), Fady Christophy (University of Bordeaux I, Lebanon)
12:40 p.m. - 1:00 p.m.	Analysis of a Wave Roller Energy-Harvesting Device, Christine Khairallah (Lebanese University, Lebanon), Elias Eid (Lebanese University, Lebanon), Pierre Rahme (Lebanese University, Lebanon), Charbel Bou-Mosleh (Notre Dame University-Louaize, Lebanon)
1:00 p.m. - 1:20 p.m.	An Investigation on Coupling Fuel Cell and Photovoltaic Systems for Power Generation, Ahmad Haddad (Lebanese International University, Lebanon), Mohamad Ramadan (Lebanese International University, Lebanon), Mahmoud Khaled (Lebanese International University, Lebanon), Khaled A. Chahine (Lebanese International University, Lebanon)
1:20 p.m.- 1:40 p.m.	Hydrogen Production and Filling for Fuel Cell Cars, Rayan Najdi (American University of Beirut, Lebanon), Tarek Shaban (American University of Beirut, Lebanon), Mohammad Mourad (American University of Beirut, Lebanon), Sami Karaki (Ameican University of Beirut, Lebanon)

11:00 a.m. - 12:40 p.m.	**Session IC: French Session I** Friends Hall

Chair: Gilbert Menguy (Professeur Honoraire d'Université, Paris)

11:00 a.m. - 11:20 a.m.	Le Photovoltaïque Lié au Réseau : Problèmes Posés, Walid Deghaili (Conseiller en Energie, Liban)
11:20 a.m. - 12:40 p.m.	Les Dysfonctionnements des Installations Photovoltaïques, Bassam Ouaida (Ex-Directeur Général de Trans-énergie)
12:40 p.m. - 1:00 p.m.	Les Sources Hybrides d'Énergie Renouvelable, Rafic Younés (Doyen de la Faculté de Génie à l'UL, Liban)
1:00 p.m. - 1:20 p.m.	La Recherche dans le Domaine des Energies Renouvelables - Le Cas du Maroc, Mohamed Garoum (Sous-directeur de l'EST Salé-Rabat, Maroc)
1:20 p.m.- 1:40 p.m.	Estimation de l'Irradiation Solaire Globale Mesurée par des Modèles Semi-Empiriques dans des Sites Marocains, Najma Laaroussi (EST Salé-Rabat, Maroc), Mohammed Garoum (EST Salé-Rabat, Maroc), Saad Raefat (EST Salé-Rabat, Maroc), Amir Feiz (EST Salé-Rabat, Maroc), Karima El Azhary (EST Salé-Rabat, Maroc)

12:20 p.m. - 2:00 p.m.	**Lunch Break** University Restaurant

2:00 p.m. - 3:40 p.m.	**Session IIA: Electromagnetics/Power** Fares Hall

Co-Chairs: Sina Khorasani (Sharif University of Technology, Iran) & Elias Nassar (Notre Dame University-Louaize, Lebanon)

2:00 p.m. - 2:20 p.m.	TGV versus TSV: A Comparative Analysis, Khaled Salah Mohamed (Mentor Graphics, Egypt)
2:20 p.m. - 2:40 p.m.	Development of Circularly Polarized Cavity Backed Slot Antennas Using SIW Structure, Mohmmad H Neshati (Ferdowsi University of Mashhad, Iran), Abbas Soltan (Ferdowsi University of Mashhad, Iran)
2:40 p.m. - 3:00 p.m.	Non-Destructive Measurements of Dielectric Constant of Thin Dielectric Films with Metallic Backing using Coplanar Transmission Line, Hussein Kassem (Lebanese International University, Lebanon)
3:00 p.m. - 3:20 p.m.	STATCOM Dynamic Modeling and Integration in Power Flow, Mohamad Khaldi (University of Balamand, Lebanon), Amanda Tadros (University of Balamand, Lebanon)
3:20 p.m.- 3:40 p.m.	Sensorless Fuzzy Logic Based Adaptive Vector Control for Self-Starting Single Phase Induction Motor Drive, Yaser Anagreh (Yarmouk University, Jordan), Saleh Radaideh (Jordan University of Science and Technology, Jordan)

| 2:00 p.m. - 3:40 p.m. | **Session IIB: Energy Management** | Abu Khater Hall |

Co-Chairs: Rita Najjar (ALMEE, Lebanon) & Assaad Bakkar (Ecotech, Lebanon)

2:00 p.m. - 2:20 p.m.   Electrical Energy Management for Advance Smart Home Systems: Introduction, Mohamad Nassereddine (Western Sydney University, Australia), Jamal Rizk (University of Western Sydney, Australia), Ali Hellany (Western Sydney University, Australia), Mahmood H. Nagrial (UWS, Australia), Ahmad Rafhi (ULF & Falculy of Eng, Lebanon), Ziad Obeid (ULF & Faculty of Engineering, Lebanon), Khaled Hajar (Gipsa-lab, France)

2:20 p.m. - 2:40 p.m.   Minimizing Energy Consumption in Wastewater Treatment Plants, Walid Ghoneim (Arab Academy for Science and Technology, Egypt), Ahmed Helal (AASTMT, Egypt), Mohamed Gaber (East Waste Water Treatment Plant, Egypt)

2:40 p.m. - 3:00 p.m.   Reinforcing Existing Thermal Power Plants in Lebanon with Photovoltaics, Ali H Assi (Lebanese International University, Lebanon), Omar K. Al Kaaki (Lebanese International University & KVA sal, Lebanon), Mohammad Ghassani (Lebanese International University, Lebanon)

3:00 p.m. - 3:20 p.m.   Short Term Load Forecasting Using Hybrid Adaptive Fuzzy Neural System: The Performance Evaluation, Daud Mustafa Minhas (University of Lahore, Pakistan), Muhammad Usman (University of Lahore, Pakistan), Abu Hurayra Bin Ahmad (University of Lahore, Pakistan), Adnan Warraich (University of Lahore, Pakistan), Hisham Khalil (University of Lahore, Pakistan)

3:20 p.m.- 3:40 p.m.   Renewable Energy Resources and Recovery Opportunities in Wastewater Treatment Plants, Walid Ghoneim (Arab Academy for Science and Technology, Egypt), Ahmed Helal (AASTMT, Egypt), Mohamed Gaber (East Waste Water Treatment Plant, Egypt)

| 2:00 p.m. - 3:40 p.m. | **Session IIC: French Session II** | Friends Hall |

Co-Chairs: Gilbert Menguy (Professeur Honoraire d'Université, Paris) & Bassam Ouaida (Trans-Energy, France)

2:00 p.m. - 2:20 p.m.   Effets du pH, de la Température et de l'Agitation sur la Production du Biogaz en Régime Mésophile, Amine Hajji (EST Salé-Rabat, Maroc), Mohammed Rhachi (EST Salé-Rabat, Maroc), Mohammed Garoum (EST Salé-Rabat, Maroc), Najma Laaroussi (EST Salé-Rabat, Maroc)

2:20 p.m. - 2:40 p.m.   Analyse Préliminaire des Tendances du Secteur du Bâtiment en Relation avec l'Efficacité Energétique au Maroc, Najlae Habibi (EST Salé-Rabat, Maroc), Mohammed Garoum (EST Salé-Rabat, Maroc), Amine Hajji (EST Salé-Rabat, Maroc), Najma Laaroussi (EST Salé-Rabat, Maroc)

2:40 p.m. - 3:00 p.m.   Amélioration des Paramètres Thermiques de Matériaux de Locaux de Construction à Base d'Argile, Abdallah Dadi Mahamat (Université de thiès & INSTA, Senegal), Mahamoud Khayal (CNRD, Chad), Ahmat Mahamat (Sarh University, Chad), Malloum Soultan (INSTA (CHAD), Chad)

3:00 p.m. - 3:20 p.m.   Amélioration de l'Efficacité Energétique des Bâtiments en Utilisant du Bêton Léger, Azibert Oumar Abdelhakh, Ahmat Mahamat Saleh, Malloum Soultan, Djibril Sow, Gilbert Menguy, Salif Gaye

3:20 p.m.- 3:40 p.m.   Configuration d'un Parc Eolien, Said Zergane, Seyf Eddine Guesmia

| 3:40 p.m.- 4:00 p.m. | **Coffee Break** | Conference Business Center |

| 4:00 p.m. - 5:40 p.m. | **Session IIIA: Civil Engineering Applications** | Fares Hall |

Co-Chairs: Jacques Harb (Notre Dame University-Louaize, Lebanon) & Ghazi Asmar (Notre Dame University-Louaize, Lebanon)

4:00 p.m. -4:20 p.m.   Computer-Aided Measurements of the Electrical Resistivity Fields in Concrete Mixtures with and without Polyethylene Terephthalate, Naji Khoury (Notre Dame University-Louaize, Lebanon), Yara Maalouf (Notre Dame University-Louaize, Lebanon), Sophia Ghanimeh (Notre Dame University-Louaize, Lebanon), Gerard-Philippe Zehil (Notre Dame University-Louaize, Lebanon)

4:20 p.m. - 4:40 p.m.   Investigating the Evolution of Naameh Landfill and its Surrounding Vegetation Using Multispectral Spaceborne Imagery, Kamale Zakhem (Notre Dame University-Louaize, Lebanon), Gisele Zakhem (Notre Dame University-Louaize, Lebanon), Susane Jahjah (Notre Dame University-Louaize, Lebanon), Georges Zakhem (Notre Dame University-Louaize, Lebanon), Elsy Ibrahim (Notre Dame University-Louaize, Lebanon)

4:40 p.m. - 5:00 p.m.   Use of MASW and Electrical Resistivity in Assessing a Small Earth Dam in Remote Area, Yara Maalouf (Notre Dame University-Louaize, Lebanon), Naji Khoury (Notre Dame University-Louaize, Lebanon)

5:00 p.m. - 5:20 p.m.   Quantification of Construction and Demolition Waste: a Measure Toward Effective Modeling, Sophia Ghanimeh (Notre Dame University-Louaize, Lebanon), Dima Jawad (Notre Dame University-Louaize, Lebanon), Pamela Semaan (Notre Dame University-Louaize, Lebanon)

5:20 p.m.- 5:40 p.m.   Electrical Resistivity Tomography to Address Earth Dams and their Failure at the Laboratory scale, Naji Khoury (Notre Dame University-Louaize, Lebanon), Elsy Ibrahim (Notre Dame University-Louaize, Lebanon), Yara Maalouf (Notre Dame University-Louaize, Lebanon)

4:00 p.m. - 6:00 p.m.	**Session IIIB: Wind Energy & Hydropower**	Abu Khater Hall

Co-Chairs: Mazen Ghandour (Lebanese University, Lebanon) & Nazih Moubayed (Lebanese University, Lebanon)

4:00 p.m. -4:20 p.m.   Short-Term Hydro Generation Scheduling of Cascade Plants Operating on Litani River Project – Lebanon, Bassam Bou-Fakhreddine (Lebanese University, Lebanon), Sara Abou Chakra (Lebanese University & UIT, Lebanon), Imad Mougharbel (Lebanese University, Lebanon), Alain Faye (Equipe OC, France), Yann Pollet (Conservatoire National des arts et Métiers, France)

4:20 p.m. - 4:40 p.m.   Modeling and Real-Time Simulation of a DFIG-Based Wind Energy Conversion System, Marc Anthony Mannah (Lebanese International University, Lebanon), Ali Hammoud (Lebanese International University, Lebanon), Ahmad Haddad (Lebanese International University, Lebanon), Rodrigue Elias (Lebanese International University, Lebanon), Hassan Bazzi (Lebanese International University, Lebanon)

4:40 p.m. - 5:00 p.m.   Comparison of Different Types of Generator for Wind Energy Conversion System Topologies, Anissia Beainy (Lebanese University & USJ-ESIB, Lebanon), Nazih Moubayed (CRSI, Lebanese University, Lebanon), Chantal Maatouk (Saint-Joseph University, Lebanon), Fouad Kaddah (Saint-Joseph University, Lebanon)

5:00 p.m. - 5:20 p.m.   Locations of Vortices and their Impacts on the Aerodynamic Performances of a Diffuser and a DAWT, Mouldi Kardous (CRTEn, Tunisia)

5:20 p.m.- 5:40 p.m.   Integration of Energy Storage in a Wind-Diesel Hybrid System: Techno-Economical & Operational Advantages, George El-Jamal (Saint-Joseph University, Lebanon), Hussein Ibrahim (Wind Energy Techno-Centre, Canada), Mazen Ghandour (Lebanese University, Lebanon)

5:40 p.m.- 6:00 p.m.   A Parametric Design Algorithm for Building Integrated Photovoltaics with Net-zero Energy Performance, Mohamad T. Araji and Iqbal Shahid (University of Manitoba, Canada)

4:00 p.m. - 6:00 p.m.	**IIIC: Energy Saving & Energy Storage**	Friends Hall

Co-Chairs: Imad Mougharbel (Lebanese University, Lebanon) & Adnan Jouni (ALMEE, Lebanon)

4:00 p.m. -4:20 p.m.   Integration of Different Modules for Regenerative Braking Control of a Two Front Wheel-Driven EV, Khaled Itani (ISAE Cnam Liban, Lebanon), Alexandre De Bernardinis (Ifsttar & Satie, France), Zoubir Khatir (IFSTTAR, France), Ahmad K Jammal, AJ (MEHE - Republic of Lebanon & Directorate General of Higher Education, Lebanon)

4:20 p.m. - 4:40 p.m.   A Detailed Review on the Parameters to Be Considered for an Accurate Estimation on the PEVs SOC, Claude Ziad El-Bayeh (Ecole de Technologie Superieure, Canada), Imad Mougharbel (Lebanese University, Lebanon), Maarouf Saad (École de technologie supérieure, Canada), Ambrish Chandra (Ecola de Technologie, Superieure, Canada), Serge Lefebvre and Dalal Asber (IREQ, Canada), Laurent Lenoir (Ecole Polytechnique de Montreal, Canada)

4:40 p.m. - 5:00 p.m.   Solar-Assisted Air-Conditioning for Energy Saving in a Feeder in Sulaimani Governorate, Parikhan Muhsin Ali (Sulaimani University, Iraq), Dlzar Majeed and Askandar M. Amin (University of Sulaimani, Iraq)

5:00 p.m. - 5:20 p.m.   Improving Performance of Batteries by Using Charge Equalization Systems - Experimental Validation, Hussein Ibrahim and Karim Belmokhtar (Wind Energy TechnoCentre, Canada), Mazen Ghandour (Univeriste Saint Joseph- ESIB, Lebanon)

5:20 p.m.- 5:40 p.m.   Different Mathematical Models of Convection during Phase Change, Farah Souayfane (University of Nice Sophia Antipolis and lebanese university), Farouk Fardoun (Lebanese University, Lebanon), Pascal Biwole (University of Nice Sophia Antipolis, France)

5:40 p.m.- 6:00 p.m.   Preparation of Ni-Co-Mg-Al Mixed Oxides Derived from LDH and their Performance in the DRM, Carole Tanios (Littoral University, Lebanon), Sandy Bsaibes (Lebanese University, Lebanon), Mira Nawfal (ULCO and CNRS, Lebanon), Madona Labaki (Lebanese University, Lebanon), Cédric Gennequin and Haingomalala Lucette Tidahy (Université du Littoral Côte d'Opale, France), Bilal Nsouli (CNRS, Lebanon), Antoine Aboukaïs and Edmond Abi-Aad (Univ Lille Nord de France, France)

6:00 p.m. - 11:00 p.m.	**Social Event I**

6:00 p.m. -8:30 p.m.   Transportation, Sightseeing at Harissa Shrine & Jbeil Old Souks

8:30 p.m.- 10:30 p.m.   Dinner at a local restaurant to be announced during the conference

10:30 p.m.   Ride to hotels

THURSDAY, JULY 14

8:00 a.m. - 9:00 a.m.	**Registration**	Conference Business Center

9:00 a.m. - 9:30 a.m.	**Keynote Lecture II**	Fares Hall

Introduction by Dr. Abdallah Kassem (Notre Dame University-Louaize, Lebanon)

SMART CITIES - A MULTIDISCIPLINARY RESEARCH

Abdulmotaleb El Saddik, FIEEE, FEIC, FCAE
Distinguished Professor and University Research Chair
University of Ottawa, Canada

10:30 a.m. - 10:30 a.m.	**Coffee Break**	Conference Business Center

10:30 a.m. - 12:30 p.m.	**Session IVA: Control Systems**	Fares Hall

Co-Chairs: : Abdulmotaleb El Saddik (University of Ottawa, Canada) & Luigi Del Re (Johannes Kepler University Linz, Austria)

10:30 a.m. - 10:50 a.m.   Adaptive Direct Fuzzy Control of SISO Nonlinear Systems Using a Fuzzy Reference Model, Sanaz Tahmasebi (South Tehran Branch Islamic Azad University, Iran), Mojtaba Ahmadieh Khanesar (Semnan University, Iran), Mohammad Teshnehlab (Islamic Azad University Science and research camps, Iran)

10:50 a.m. - 11:10 a.m.   Bio-mimetic Approach in Digital Artificial Neuro-Science, Ziad Doughan (Beirut Arab University, Lebanon), Wassim Itani (Beirut Arab University), Ali Massoud Haidar (Beirut Arab University, Lebanon)

11:10 a.m. - 11:30 a.m.   Automated Downlink Satellite Dish Alignment System using Mobile Application (SatFinder), Michel J Owayjan (American University of Science & Technology, Lebanon), Mohamed El-Adham (American University of Science & Technology, Lebanon), Wael Kmash (American University of Science & Technology, Lebanon), Mohammad Moussa (American University of Science & Technology, Lebanon)

11:30 a.m. - 11:50 a.m.   Towards a Fully Coordinated Vehicle Control Strategy, Hassan Shraim (Lebanese University, Lebanon), Reine Talj (Heudiasyc, Compiègne, France), Clovis Francis (Lebanese university, Lebanon) ,Alaa Daher (Student Lebanese University, Lebanon),Ali Charara (Heudiasyc, Compiègne, France)

11:50 a.m. - 12:10 p.m.   Simulating the Effect of Ultrasonic Ranging Errors on Parallel Parking Performance, Rohit Garg (Johannes Kepler University Linz, Austria),

Gabriele Zanardo (Johannes Kepler University Linz, Austria), Romand Schmied (Johannes Kepler University Linz, Austria), Luigi del Re (Johannes Kepler University Linz, Austria)

12:10 p.m. - 12:30 p.m.   Residuals Generation and Evaluation using Modified Extend Least-Squares Parameter Estimation Algorithm, Nasar Aldian Shashoa (Azzaytuna University, Libya)

10:30 a.m. - 12:30 p.m.	**Session IVB: Materials**	Abu Khater Hall

Co-Chairs: Elie Badr (Notre Dame University-Louaize, Lebanon) & Francis Francis (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 10:50 a.m.   Modeling and Simulating a PWP Cell for the Electric Characterization of Space Dielectric Materials, Mohamad Arnaout (LIU & Electrical Engineer, Lebanon), Khaled A. Chahine (Lebanese International University, Lebanon), Wassim Salameh (Lebanese International University, Lebanon)

10:50 a.m. - 11:10 a.m.   Semi-Analytical Model for the Mechanical Behavior of a Spinning Viscoelastic Layer Under Gravity Loads, Gerard-Philippe Zehil (Notre Dame University-Louaize, Lebanon)

11:10 a.m. - 11:30 a.m.   Optimization of Composite Forming Processes using Nonlinear Thermal Models and the Proper Generalized Decomposition, Chady Ghnatios (Notre Dame University-Louaize, Lebanon

11:30 a.m. - 11:50 a.m.   Finite Element Modeling of Longitudinal Permeability Component of a Stitched Fabric, Mostafa Mortada (Lebanese International University, Lebanon), Zahra Wehbi (Lebanese International University, Lebanon), Mohamad Karaki (Lebanese International University, Lebanon), Ali Hallal (Lebanese International University, Lebanon), Mohamad S Hammoud (Lebanese International University, Lebanon)

11:50 a.m. - 12:10 p.m.   Poroelastic Properties Identification Through Micro Indentation Modeled by Using the Proper Generalized Decomposition, Chady Ghnatios (Notre Dame University-Louaize, Lebanon), Christian Mathis (Laboratory for Surface Science and Technology, Switzerland), Francisco Chinesta (GeM UMR CNRS, Ecole Centrale Nantes, France)

12:10 a.m. - 12:30 a.m.   A Combined Analytical and Computational Approach to the Structural Behavior of Composite Tubes, Gerard-Philippe Zehil (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 12:30 p.m.	**Session IVC: Smart Power Systems & Micro-Grids**	Friends Hall

Co-Chairs: Semaan Georges (Notre Dame University-Louaize, Lebanon) & Tilda Akiki (Holy Spirit University of Kaslik, Lebanon)

10:30 a.m. - 10:50 a.m. Introducing Micro-Grids in Lebanon, Ali H Assi (Lebanese International University, Lebanon), Omar K. Al Kaaki (Lebanese International University & KVA sal, Lebanon)

10:50 a.m. - 11:10 a.m. Implementation Challenges of Automatic Demand Response for Households in Smart Grids, Yassine Abdulsalam (University of Ottawa, Canada)

11:10 a.m. - 11:30 a.m. Voltage Stability Based on the Implementation of a Coordinate Secondary Voltage Control System, Nivine Abou Daher (Lebanese University & Saint Joseph University, Lebanon), Imad Mougharbel (Lebanese University, Lebanon), Maarouf Saad (École de technologie supérieure, Canada), Hadi Y. Kanaan (Saint-Joseph University, Lebanon

11:30 a.m. - 11:50 a.m. Improvement of Overall Performance of Benghazi North Combined Power Plant, Salah Masheiti (University of Benghazi, Libya), Jamal Abdusamad (University of Newcastle upon Tyne, United Kingdom), Awad Shamekh (University of Benghazi, United Kingdom), Awad Bodalal (University of Benghazi, Libya)

11:50 a.m. - 12:10 p.m. Optimal Centralized Control Application on Microgrids, Khaled Hajar (Gipsa-lab, France), Ahmad Hably (Université Grenoble Alpes, GIPSA-Lab, France)

12:10 a.m. - 12:30 a.m. Power Sharing Enhancement for Islanded Microgrid Based on PCC rms-Voltage Online Estimator, Hassan Moussa (Université de Lorraine), Jean-Philippe Martin and Serge Pierfederici (Université de Lorraine, France), Nazih Moubayed (CRSI, Faculty of Engineering, Lebanese University, Lebanon)

12:30 p.m. - 2:00 p.m. **Lunch Break** University Restaurant

2:00 p.m. - 2:40 p.m. **Keynote Lecture III** Fares Hall

Introduction by Imad Mougharbel (Lebanese University, Lebanon)

TOWARDS INTERACTIVE SMART BUILDINGS

Prof. Stéphane Ploix
Grenoble Institute of Technology, France

2:40 p.m. - 3:20 p.m. **Keynote Lecture IV** Fares Hall

Introduction by Mazen Ghandour (Lebanese University, Lebanon)

RECENT DEVELOPMENTS AND FUTURE TRENDS FOR MULTI-MEGA WATTS WIND AND TIDAL GENERATORS

Prof. Georges Barakat
Université Lehavre, France

2:40 p.m. - 3:20 p.m. **Keynote Lecture V** Friends Hall

Introduction by Gilbert Menguy (Professeur Honoraire d'Université, Paris)

RÉSEAUX INTELLIGENTS ET MICRO-RÉSEAUX

Prof. Seddik Bacha
Joseph Fourier University of Grenoble, France

3:20 p.m. - 3:40 p.m. **Coffee Break** Conference Business Center

3:40 p.m. - 5:40 p.m. **Session VA: Bioengineering Systems** Fares Hall

Co-Chairs: Dawn Bardot (Medical Device Innovation Consortium, Minneapolis, USA) & Najib Metni (Notre Dame University-Louaize, Lebanon)

3:40 p.m. -4:00 p.m. Cascade of Nonlinear Entropy and Statistics to Discriminate Fetal Heart Rates, Amira J. Zaylaa (American University of Beirut, Lebanon), Soha Saleh (Kessler Foundation), Fadi Karameh (American University of Beirut, Lebanon), Ziad Nahas (AUB, Lebanon), Ayache Bouakaz (UMRS INSERM U930 CNRS ERL3106 Université François Rabelais, France)

4:00 p.m. - 4:20 p.m. Aging Effect on Apples Bio-impedance using AD5933, Ahmed Abo Bakr (Nile University, Egypt), Ahmed Radwan (Faculty of Engineering, Cairo University, Egypt), Ahmed H. Madian (Egyptian atomic energy authority, NCRRT, Egypt), Ahmed Elwakil (University of Sharjah, United Arab Emirates, UAE)

4:20 p.m. - 4:40 p.m. Passive Vibration Absorber for Tremor in Hand of Parkinsonian Patients, Sarah Gebai (Lebanese International University, Lebanon), Mohamad S Hammoud (Lebanese International University, Lebanon), Ali Hallal (Lebanese International University, Lebanon), Ali Alshaer (Lebanese International University, Lebanon), Hassan Khachfe (LIU, Lebanon)

4:40 p.m. - 5:00 p.m. Fractional-Order Synchronization of Two Neurons Using Fitzhugh-Nagumo Neuron Model, Mina Armanyos (Nile University, Egypt), Ahmed Radwan (Faculty of Engineering, Cairo University, Egypt), Ahmed H. Madian (Egyptian atomic energy authority, NCRRT, Egypt)

5:00 p.m.- 5:20 p.m. Effect of Extensive Training Load on the Classification Accuracy for a Three Class Motor Imagery Based Brain-Computer Interface, Mohamed Zaky (Arab Academy for Science, Technology and

Maritime Transport, Egypt), Mohamed Khedr (Virginia Tech, USA), Abd Elmonem Nasser (Arab Academy for Science and Technology & Maritime Transport, Egypt)

5:20 p.m.- 5:40 p.m.	Design and Testing Tool for a Safe Monitoring System for Neurodegenerative Disorder Patients, Nashaat El Halabi (AUST, Lebanon),Roger Achkar (American University of Science and Technology, Lebanon),Roy Abi Zeid Daou (Lebanese German University, Lebanon), Ali Hayek (University of Kassel, Germany), Josef Boercsoek (University of Kassel, Germany)

3:40 p.m. - 6:00 p.m.   Session VB: Solar Energy   Abu Khater Hall

Co-Chairs: Ali Assi (Lebanese International University, Lebanon) & Semaan Georges (Notre Dame University-Louaize, Lebanon)

3:40 p.m. - 4:00 p.m.	Using Double-Layer Thin Film Coating With Meta-Material to Increased Transmission for Solar Cell, Mohamad Habli (Lebanese International University, Lebanon), Sara Ossaily and Mahmoud Fardoun (LIU, Lebanon)
4:00 p.m. - 4:20 p.m.	My PV TOOL A Matlab-Based Tool to Study the Series and Shunt Resistances in Photovoltaic Modules, Mohamad Arnaout (LIU & Electrical Engineer, Lebanon), Ali H Assi, Wassim Salameh and Khaled A. Chahine (Lebanese International University, Lebanon)
4:20 p.m.. - 4:40 p.m.	Implementing a Didactic Photovoltaic Energy Laboratory for Developing Countries, Bechara Nehme (Holy Spirit University of Kaslik (USEK)), Tilda Akiki (University Holy Spirit Kaslik, Lebanon)
4:40 p.m. - 5:00 p.m.	Power from Photovoltaic Installed in the Middle of the Lebanese High-Ways, Mohamad S Hammoud (Lebanese International University (LIU), Lebanon), Ali H Assi, Karim Rammal, Hikmat Ghabris and Wassim Salameh (Lebanese International University, Lebanon), Omar K. Al Kaaki (Lebanese International University & KVA sal, Lebanon), Mohammad Ghassani (Lebanese International University, Lebanon)
5:00 p.m. - 5:20 p.m.	A Performance Evaluation of an Installed Photovoltaic System without Energy Storage, Achraf Nasser eddine and Imad Hage chehade (Industrial Research Institute (IRI), Lebanon)
5:20 p.m. - 5:40 p.m.	Voltage Control of Power Distribution Networks with Photovoltaic Distributed Generations, Semaan Georges (Notre Dame University-Louaize, Lebanon)
5:40 p.m. - 6:00 p.m.	The Role of Geothermal Energy in Efficient Building Performance, Farah El Zein (Lebanese University, Lebanon), Osama Omar (Beirut Arab University, Lebanon), Nizar Hage (Lebanese University, Lebanon)

3:40 p.m. - 6:00 p.m.   Session VC: Electric Drives & Electric Vehicles   Friends Hall

Co-Chairs: : Imad Mougharbel (Lebanese University, Lebanon) & Nazih Moubayed (Lebanese University, Lebanon)

3:40 p.m. - 4:00 p.m.	Including Core Losses in Induction Motors Dynamic Model, Gabriel Khoury (Université Saint Joseph de Beyrouth, Lebanon), Ragi Ghosn (Saint Joseph University, Lebanon), Flavia Khatounian (Université Saint Joseph de Beyrouth, Lebanon), Maurice Fadel (Laplace University, France), Mathias Tientcheu (Leroy Somer, France)
4:00 p.m. - 4:20 p.m.	Online Forecasting of Electrical Load for Distributed Management of Plug-in Electric Vehicles, Ahmad Hably (Université Grenoble Alpes, GIPSA-Lab, France), Khaled Hajar (Gipsa-lab, France)
4:20 p.m.. - 4:40 p.m.	Flux Estimation Algorithms for Electric Drives: A Comparative Study, Mohamad Koteich (Renault)
4:40 p.m. - 5:00 p.m.	Energy Equalization Module for Modular Multilevel Converters in Variable Speed Motor Drives, Mohammad Sleiman (Ecole de Technologie Supérieure, Canada), Mohamad Koteich (Groupe Renault, France), Handy Blanchette (Ecole de technologie supérieure, Canada), Hadi Y. Kanaan (Saint-Joseph University, Lebanon), Kamal Al-Haddad (Ecole de technologie supérieure, Canada)
5:00 p.m. - 5:20 p.m.	Assessment of the Functions Achieved by a Bidirectional Charger of Electric Vehicles in Smart Grids, Rawad Zgheib (ÉTS & GRÉPCI, Canada), Kamal Al-Haddad (Ecole de technologie supérieure, Canada), Innocent Kamwa (Hydro-Québec/IREQ, Canada)
5:20 p.m. - 5:40 p.m.	Enhancing Frequency Regulation Coverage for Electric Vehicles in a Smart Grid Environment, Irfan S. Al-Anbagi (University of Regina, Canada), Yassine Abdulsalam and Hussein Mouftah (University of Ottawa, Canada)
5:40 p.m. - 6:00 p.m.	Optimization of Design Parameters of a Net Zero Energy Home, Fatima Harkouss and Farouk Fardoun (Lebanese University, Lebanon), Pascal-Henry Biwole (University of Nice-Sophia Antipolis, France)

6:00 p.m. - 11:00 p.m.   Social Event II

6:00 p.m. -8:30 p.m.	Sightseeing at Jeita Grotto
8:30 p.m.- 10:30 p.m.	Dinner at a local restaurant to be announced during the conference
10:30 p.m.	Ride to hotels

FRIDAY, JULY 15

8:00 a.m. - 9:00 a.m.	**Registration**	Conference Business Center

9:00 a.m. - 10:00 a.m.	**Keynote Lecture VI**	Fares Hall

Introduction by Dr. Najib Metni (Notre Dame University-Louaize, Lebanon)

**THE MEDICAL DEVICE INNOVATION CONSORTIUM -
REGULATORY GRADE COMPUTER MODELING AND SIMULATION**

Dawn Bardot, PhD
Vice President, Technology Innovation
Medical Device Innovation Consortium
Minneapolis, USA

10:00 a.m. - 10:30 a.m.	**Coffee Break**	Conference Business Center

10:30 a.m. - 12:30 p.m.	**Session VIA: Communication/Signal Processing**	Fares Hall

Co-Chairs: Imad ElHajj (American University of Beirut, Lebanon) & Chady El-Moucary (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 10:50 a.m.   Proactive Channel Allocation for Multimedia Applications over CSMA/CA-Based CRNs, Raghid Morcel (American University of Beirut, Lebanon), Hadi Sarieddeen (American University of Beirut, Lebanon), Imad H Elhajj (American University of Beirut, Lebanon), Ayman Kayssi (American University of Beirut, Lebanon), Ali Chehab (American University of Beirut, Lebanon)

10:50 a.m. - 11:10 a.m.   Bio-inspired Optimization for Feature Set Dimensionality Reduction, Esraa Elhariri (Fayoum University, Egypt), Nashwa El-Bendary (Arab Academy for Science, Technology & Maritime Transport, Egypt), Aboul Ella Otifey Hassanien (University of Cairo, Egypt)

11:10 a.m. - 11:30 a.m.   On the Blind Classification of Parametric Quadrature Amplitude Modulations, Hadi Sarieddeen (American University of Beirut, Lebanon), Zaher Dawy (American University of Beirut, Lebanon)

11:30 a.m. - 11:50 a.m.   Digital architecture of 8x8 MIMO Hardware channel simulator for Time-Varying heterogeneous systems with LTE-A, 802.11ac and VLC signals, Bachir Habib (USEK, Lebanon), Badih E Baz (Holy Spirit University of Kaslik, Lebanon)

11:50 a.m. - 12:10 p.m.   Simple Ultra-Wideband Antennas with Holes in the Band of 20-50 GHz, Elias Rachid (USJ, Lebanon)

12:10 p.m. - 12:30 p.m.   Double-Sided Bifurcations in Tent maps: Analysis and Applications, Ahmed Radwan (Faculty of Engineering, Cairo University, Egypt), Wafaa Sayed (Assistant Lecture, Egypt), Hossam A. H. Fahmy (Cairo University, Egypt)

10:30 a.m. - 12:30 p.m.	**Session VIB: Software Tools/Education**	Abu Khater Hall

Chair: Michel Owayjan (American University of Science & Technology, Lebanon) & Abdallah Kassem (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 10:50 a.m.   EmSBoT: A Lightweight Modular Software Framework for Networked Robotic Systems, Long Peng (Vrije Universiteit Brussel, Belgium), Fei Guan (Vrije Universiteit Brussel, Belgium), Luc Perneel (Vrije Universiteit Brussel, Belgium),Hasan Fayyad-Kazan (Vrije Universiteit Brussel, Belgium), Martin Timmerman (Vrije Universiteit Brussel, Belgium)

10:50 a.m. - 11:10 a.m.   A Smart Lock System using Wi-Fi Security, Abdallah Kassem (Notre Dame University, Lebanon), Sami Murr (Notre Dame University-Louaize, Lebanon), George Jamous (NDU, Lebanon),Elie Saad (NDU, Lebanon), Marybelle Geagea (NDU, Lebanon)

11:10 a.m. - 11:30 a.m.   An Educational Electric Power Simulator, Mohamad Arnaout (LIU & Electrical Engineer, Lebanon), Khaled A. Chahine (Lebanese International University, Lebanon), Marc Anthony Mannah (Lebanese International University, Lebanon), Rabih Rammal (LIU, Lebanon)

11:30 a.m. - 11:50 a.m.   The Ribbon Microphone - An Educational Aid, Marius van Wyk (Stellenbosch University & CSIR, South Africa),Petrie Meyer (Stellenbosch University, South Africa)

11:50 a.m. - 12:10 p.m.   Vehicles Recognition from Partial Images, Salwan Alwan (Rafik Hariri University, Lebanon), Mohamad El Abed (Rafik Hariri University, Lebanon), Rached Zantout (Rafik Hariri University, Lebanon)

12:10 a.m. - 12:30 a.m.   C-Thru: The Intelligent Device for Autonomous Visually Impaired Individuals, Hadeel El Achkar (Notre Dame University-Louaize, Lebanon), Mira Zebian (Notre Dame University-Louaize, Lebanon), Joseph Issa (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 12:50 p.m.	**Session VIC: Renewable Energy Resources**	Friends Hall

Co-Chairs: Khalil Khoury (Lebanese University, Lebanon) & Talal Salem (Notre Dame University-Louaize, Lebanon)

10:30 a.m. - 10:50 a.m.   Estimation Model for Global Solar Radiation in Lebanon, Achraf Nasser eddine and Imad Hage chehade (Industrial Research Institute (IRI), Lebanon)

10:50 a.m. - 11:10 a.m.	Evaluation of National Energy Action Plan: The Case of the Lebanese NEEAP (2011-2015), Adel Mourtada (Lebanese University & ALMEE, Lebanon), Adnan Jouni (Lebanese University & ALMEE, Lebanon), Rita Najjar (Lebanese University, Lebanon)
11:10 a.m. - 11:30 a.m.	Hybrid Photovoltaic-Diesel A Feasibility Study in Lebanon, Adel Mourtada (UL-ALMEE, Lebanon), Hanine Tarabay Nasr and Dana Saad (Lebanese University, Lebanon)
11:30 a.m. - 11:50 a.m.	Renewable Energy in Saudi Arabia: Current Status, Initiatives and Challenges, Samir Elnakla (Prince Mohammad Bin Fahd University, Saudi Arabia)
11:50 a.m. - 12:10 p.m.	Renewable Energy Integration into Existing Power Plants, Tannous Chalhoub (Lebanese University; Faculty of Engineering, Lebanon)
12:10 p.m. - 12:30 p.m.	Experimental Study on the Production of Diesel-Like Fuel from Waste Polyethylene Via Pyrolysis, Chantal Kassargy and Sary Awad (Ecole des Mines de Nantes, GEPEA), Gaetan Burnens (Ecole des Mines de Nantes, GEPEA, France), Khalil Kahine (Lebanese University, Lebanon), Khaled Loubar (Ecole des Mines de Nantes, GEPEA, France), Mohand Tazerout (Ecole des Mines de Nantes, GEPEA)
12:30 p.m. - 12:50 p.m.	Clean Energy Generation through Psychrophilic Anaerobic Digestion of Food and Landscape Wastes, Sophia Ghanimeh (Notre Dame University-Louaize, Lebanon), Charbel Abou Khalil and Lucien Ibrahim (Notre Dame University-Louaize, Lebanon), Elsy Ibrahim (Notre Dame University-Louaize, Lebanon)

12:50 p.m. - 2:00 p.m.	**Lunch**	University Restaurant

• The social event I includes transportation from the campus to the Notre Dame of Lebanon Shrine, Harissa, and then to the historic sites of Jbeil, a city believed to be one of the oldest continuously inhabited cities in the world. The break includes visits to the Old Souks with some free time for fun. Thereafter all participants will gather in a local restaurant to taste the delicious local foods.

   All fees are included in the registration.

• The social event II includes transportation from the campus to the cavernous natural site of Jeita Grotto, selected in the final list of the new Seven Wonders of the World. After the visit, attendees will be transported to the mountainous area and will gather in a local restaurant to taste the local foods.
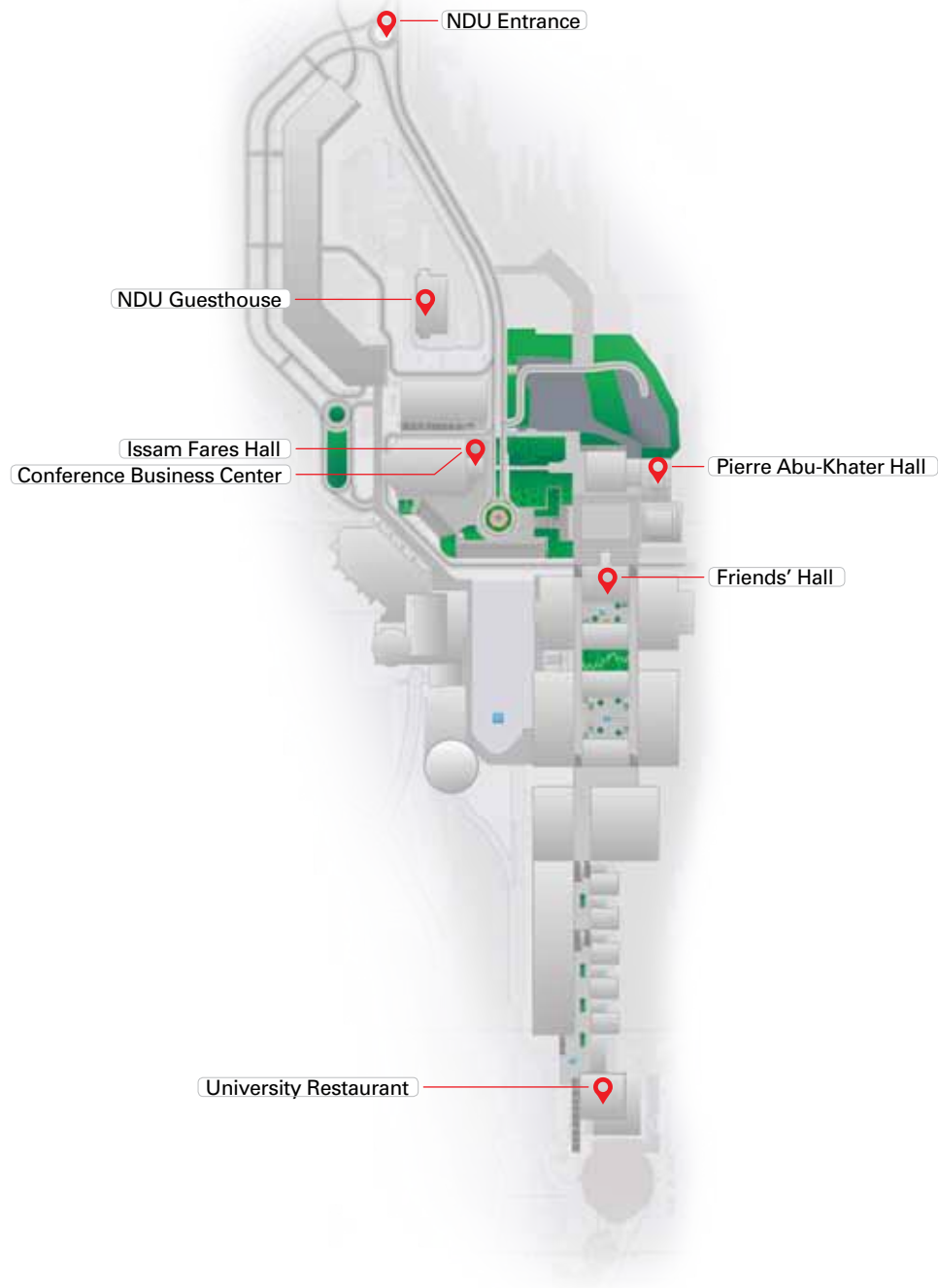
   All fees are included in the registration.

• Tour of the main campus of Notre Dame University-Louaize, including the engineering laboratories, is available upon request for groups. Please inquire at the registration desk.

NDU CAMPUS MAP

- NDU Entrance
- NDU Guesthouse
- Issam Fares Hall
- Conference Business Center
- Pierre Abu-Khater Hall
- Friends' Hall
- University Restaurant

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