



American University of Beirut
Munib and Angela Masri Institute of
Energy and Natural Resources



The Third International Conference on Efficient Building Design

October 4th – October 5th, 2018

Thursday, October 4

Thursday, October 4, 10:15 – 11:15

Keynote Talk 1

Dr. Qingyan "Yan" Chen

Inverse Design of Indoor Environment by CFD-Based Optimal Methods

Chair: Dr. Fadl Moukalled, AUB

Room: Jassim Al-Qatami Engineering Lecture Hall

Thursday, October 4, 11:15 – 13:15

Technical Paper Session 1

Alternative Energy Use in Buildings

Chair: TBA, Co-Chair: TBA

Room: Jassim Al-Qatami Engineering Lecture Hall

1. Controlling Sunlight Entering the Indoor Space through Windows Using Dual Solar Screens

Esam M. Alawadhi, PhD

2. Energy Comparison of Air Conditioning Split System VS. Solar Absorption Systems with Optimization for a Prototype Educational Building

Mr. Hesham Mohamed Safwat and Mr. Osman Mohamed Ibrahim

3. Contributing Algorithms of Energy Efficiency and Renewable Energy in the Residential, Commercial and Industrial Sectors

Dr. Georges El-Jamal

4. Establishment of a Sustainable Energy Action Plan: Case Study of Union of Municipalities of Shouf-Soueijany
Dr. Sabine Saad

Thursday, October 4, 11:15 – 13:45

Technical Paper Session 2

Energy Efficiency, Comfort and Climate

Chair: TBA, Co-Chair: TBA

Room: M207

1. Design Optimization for Maintaining Occupants Outdoor Thermal Comfort

Haneen Hamdan, ME

2. Transition Engineering the Water-Electricity Nexus Operating in Building Services and Urban Heat Islands - Concept Design - Is Air-Conditioning Really Necessary?

Dr. Eric Peterson

3. Holistic Approach to Energy Performance of Green Built Environment

Essam E Khalil, PhD, PE

4. Benefits from Combination of Centralized Ventilation Systems and Decentralized Conditioning Units

Dr. Maciej Danielak

5. Prediction and Control of Noise and Vibration within a Sport Facility

Ms. Ghina Annan

Thursday, October 4, 14:45 – 15:45

Keynote Talk 2

Dr. Arsen Melikov

Design of Indoor Environment by Creating Shared Values

Chair: Prof. Kamel Ghali, AUB

Room: Jassim Al-Qatami Engineering Lecture Hall

Thursday, October 4, 15:45 – 18:15

Technical Paper Session 3

Energy Conservation Strategies I

Chair: TBA, Co-Chair: TBA

Room: Jassim Al-Qatami Engineering Lecture Hall

1. A Four Step Approach for Energy Conservation and Retrofitting Interventions for Residential Buildings

Mr. Mohamad Hajj Hassan

2. Investigation of Thermal Comfort in a Space Conditioned by Liquid Desiccant Membrane Chilled Ceiling/ Displacement Ventilation System

Ms. Racha Seblany

3. Interrelationship between Architectural and Mechanical Aspects of the Building Envelope Design

Mr. Hadi Maamoun

4. Hygrothermal Engineering Analysis of Walls and Roofs in Hot and Humid Climates

Ms. Ghina Annan

5. Global Trends in Collaborative Infrastructure Development to Foster Economically, Environmentally and Socially Sustainable Built Environment in Regional Economies

Dr. Om Taneja

Thursday, October 4, 15:45 – 17:45

Technical Paper Session 4

Indoor Air Quality and Thermal Comfort

Chair: TBA, Co-Chair: TBA

Room: M207

1. Mathematical Modeling of Hybrid Cooling Vest Integrated with Bio-Heat Model for Assessing Cooling Effect on Humans in Hot Conditions

Mr. Ragheb Raad

2. Effect of Inter-Segmental Ventilation on the Segmental Heat Losses by Means of Electric Circuit Analogy

Dr. Nagham Ismail , PhD

3. Numerical Study on PCM-Desiccant Cooling Vest to Improve Cooling and Performance of Workers in Hot Humid Conditions

Dr. Mariam Itani

4. Quantifying Losses Due to Thermal Discomfort: An Agent Based Modeling Approach

Mr. Mohamad Awada

Friday, October 5

Friday, October 5, 9:30 – 10:30

Keynote Talk 3

Mr. William F. McQuade

Overview of Low GWP Refrigerant Options and the Current State of Global Regulation

Chair: Prof. Walid Chakroun

Room: Jassim Al-Qatami Engineering Lecture Hall

Friday, October 5, 11:00 – 13:00

Technical Paper Session 5

Modeling, Simulation, and Standards

Chair: TBA, Co-Chair: TBA

Room: Jassim Al-Qatami Engineering Lecture Hall

1. A Comparative Assessment of the Performance of Cooling Systems for Large Scale High-Density Data Centers Using CFD Simulations

Mr. Khaled Abu Howeij

2. A Full Three-Dimensional Simulation of an Industrial Baking Oven

Mr. Mohamad Al Nasser

3. CFD-Optimized Radiant Cooling with Dedicated Outdoor Air System (DOAS) for High Ceilinged Spaces in Hot and Dry Climates

Mr. Youssef Ghoussoub

4. Leveraging Digital Transformation in Regional Economies with Concomitant Skills Development of People for More Efficient Operations and Resilience of Buildings over their Life-Cycle

Dr. Om Taneja

Friday, October 5, 11:00 – 13:30

Session 6

Industrial Sessions

Chair: Mr. Mazen Hossien, Co-Chair: Mr. Ahmed El-Bitar

Room: M207

Speakers TBA

Friday, October 5, 14:15 – 15:15

Keynote Talk 4

Mr. Dan Hamza-Goodacre

How to Maximize the Historical Opportunity to Improve Cooling Efficiency

Chair: Dr. Nesreen Ghaddar, AUB

Room: Jassim Al-Qatami Engineering Lecture Hall

Friday, October 5, 15:30 – 18:00

Technical Paper Session 7

Heat Recovery and Applications

Chair: Dr. Mohamad Ahmad, Co-Chair: TBA

Room: Jassim Al-Qatami Engineering Lecture Hall

1. High Solar Combi-Plus System Using PCM Storage: KSA Case Study

Dr. Mohamad Hmadi

2. Sustainable Design in Metro Stations

Dr. Anne Beh

3. Energy Performance and Occupant Comfort in an Office Building: Co-simulation of an Agent-Based Behavior Model with EnergyPlus

Mr. Mohamad Awada

4. Principles of Split Mass Flow and Heat Shifting Psychrometrics toward Efficient Comfort Management

Dr. Peter Phillips

Friday, October 5, 15:30 – 18:00

Technical Paper Session 8

Chair: TBA, Co-Chair: TBA

Room: M207

1. World Class Energy Efficient HVAC System for New 'Twisty Tower' in South Africa

Dr. Pieter de Bod, PE

2. Energy Conservation for an Office Building in a Hot Climate, Kuwait

Dr. Hari Dalal

3. A Simplified Model for Predicting Contaminant Spread in Rooms Conditioned with Combined Displacement and Personalized Ventilation Systems

Ms. Douaa Al-Assaad

4. Feasibility Assessment for Retrofitting an Energy-Efficient Hospital Building through Energy Modelling and Field Investigation

Mr. Fu Jen Wang