

# Special Issue Devoted to Selected Papers from the Eleventh Arab Academy of Sciences International Conference on "Water-Energy Nexus and Waste Water Treatment for a Sustainable Arab World"

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## **Editorial:**

This is the 11th annual Meeting of the Arab Academy of Sciences. It was attended by experts in the areas of renewable energy, water treatment, as well as waste recycling and treatment from the Middle East and North Africa, Europe and North America. Following the opening welcome of the Arab Academy secretary by, Prof. Elias Baydoun, The president of the Academy His Excellency Prof. Adnan Badran delivered an inspiration speech addressing the water-energy thread in Arab world. Over the two days, four thematic sessions were targeted:

- (i) Innovative Water Treatment Technologies for the Arab World,
- (ii) Alternate and Efficient Energy Systems for the Arab Middle East
- (iii) Environmental Remediation Strategies
- (iv) Smart Grids which was entrained in the form of a panel discussion,

Two Keynote talks were addressed during the technical sessions: The 1st was "Alternate Energy: Geothermal Energy, Alternate Solid Fuels", and the 2nd was "Educational Programs on Sustainable Energy and Entrepreneurship".

Fifty six delegates representing over 25 nationalities attended the meeting which included 26 invited talks. The panel session on, "Smart Grids" had participants from both academia and industry and government which included a lively discussion on electricity conservation by minimizing both technical and nontechnical losses in the electric grid and sharing the experience of the transformation part of Lebanon to smart metering.

The technical sessions concluded by a discussion in which participants actively posed many relevant questions addressed to the speakers and other delegates. These discussions were very focused and added considerable value to the overall sessions that continued to lunch tables and side meetings.

Following the final technical session a general session headed by Dr. Sohail Murad was devoted to the conference outcome in the form of future recommendation resulting from the deliberations during the conference. These recommendations including:

- (i) Continue to publish the outcome of the conference in the IJTEE journal to add more Trademark value to the conference and the Arab Academy of Science.
- (ii) More efforts need to put forward for Arab countries to develop their own technologies to address local challenges, since technologies developed by developed countries may not be suitable, smart grids applications is a pivotal example.
- (iii) Future conferences should continue to be a bridge for interactions between the North and South, so participation form developed countries should be continued.
- (iv) Efforts should be made to invite more policy makers to the conference to minimize the gaps between science and water and energy policies of Arab countries.
- (v) More emphasis needs to target the assessment of geothermal energy potential in Arab countries especially for heating and cooling; the American

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University in Madaba, Amman can be used as reference.

- (vi) More outreach to the stakeholders (taxpayers) in Arab countries to more clearly define the societal contributions of science and technology, to help increase funding of research and development.
- (vii) Future conferences should be expanded to include food security as a focus area. This would be in line with the recent Kuwait summit of Arab leaders which identified water, energy and food security as the main challenges to the Arab Middle East.
- (viii) Issues on Climate Change and CO<sub>2</sub> mitigation plans for the Arab world should be addressed in future conferences.
- (ix) More industrial leaders should be invited and encourage to attend future meetings, since it is important to include business plans in any future recommendations from the conference sessions.
- (x) The conference should include an exhibit area where leading industries from the Middle East can highlight their latest products.
- (xi) There is a need to publicize the conference further both in Arab countries as well as in Europe and North America.
- (xii) Open up for more graduate student participation in the form of poster session and early networking.

The editor of this special issue would like to thank the authors for their efforts in providing an extended version of their papers. Also, he would like to express his deep appreciation for the hard work and diligence of the other reviewers. Special gratitude is given to the Editor in Chief of the International Journal of Thermal and Environmental Engineering Dr. Bilal Akash, for contentedly accepting this work to appear in his esteemed journal. Lastly and most importantly, I would like to immensely thank the main organizer and host of the conference, Dr. Elias Baydoun and HE. Dr. Adnan Badran, for their diligent preparation, extended support and the friendly welcoming of the conference participants.