

Cairo 11th International Conference on Energy & Environment

Hurghada, Egypt
March 15-18, 2009

UNDER THE AUSPICES OF

H.E. Dr. Hani Helal

Minister of Higher Education and Scientific Research

H.E. Dr. Hassan Younis

Minister of Electricity & Energy

Eng. Maged George

Minister of State for Environmental Affairs

Honorary Chairman

Dr. Irvin D. Reid

*President, Wayne State University
Detroit, Michigan – USA*

FINAL PROGRAM

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Salih Al-Furaihi, Libya
Seungyon Cho, Korea
Yican Wu, China

Program At-A-Glance

Day	Time	Session	Room A		Room B	
Sunday March 15	All-Day	Arrival to Pyramisa Sahl Hashish, Registration, and Room Assignment				
		Dinner				
Monday -March 16	8:30 - 9:30	Opening Speeches				
		Opening Keynote Lectures				
	9:30 - 11:30	Kathryn A. McCarthy ; Associate Director, Nuclear Science & Technology-Idaho National Laboratory	The Role of Nuclear Energy in Our Future			
		George Apostolakis ; Distinguished Professor of Nuclear Science and Engineering, Massachusetts Institute of Technology (MIT)	Risk-Informed Regulation of Nuclear Power Reactors			
		Larry Kazmerski ; Director, National Center for Photovoltaics, National Renewable Energy Laboratory, DOE, USA	Photovoltaics Technology: Finally the Revolution Begins			
		Medhat El Messiry ; Professor of Biomedical Engineering, Faculty of Engineering, Cairo University (Vodafone Lecture)	The Environmental Impact of Electronic Waste and the Wireless Industry (Vodafone Lecture)			
	11:30 - 12:30	Questions & Answers, Moderated by M. A. Abdou, S. Abdelkhalek, C. Varandas, F. Abul Fotouh				
	12:30 - 13:00	Coffee Break				
	13:00 - 15:00	1	Title	Nuclear Energy & Applications - 1		Biodiesel Fuel
			Chair	C. Varandas (Portugal)		Naeim A. Henein (USA)
			Cochair	Medhat F. Matta (Canada)		N.G. Chalhoub (USA)
	15:00 - 15:15	Short Break				
15:15 - 17:15	2	Title	Nuclear Energy & Applications - 2		Fuels & Combustion	
		Chair	A. Islam M. Aly (Egypt)		Walter Bryzik (USA)	
		Cochair	X. Zhu (China)		Ming-Chia Lai (USA)	

Day	Time	Session	Room A	Room B	
Tuesday - March 17	9:00 - 11:00	3	Title	Desalination & Heat Transfer	Renewable Energy
			Chair	Vladimir Anastasov (IAEA)	Fuad Abul Fotouh (Egypt)
			Cochair	Azza Hafez (Egypt)	Faten H. Fahmy (Egypt)
	11:00 - 11:15	Short Break			
	11:15 - 13:15	4	Title	Environmental Issues	Industrial Applications
			Chair	Magdy A. Helal (Egypt)	Kassem M. Kassem (USA)
			Cochair	Kh. M. Heiza (Egypt)	A.K. Bakthavatsalam (India)
	13:15 - 14:00	Coffee Break			
	14:00 - 16:00	5	Title	Environmental Management	Energy Systems
			Chair	Mohamed T. El-Kolaly (Egypt)	Sadek Z. Kassab (Egypt)
Cochair			Gizine El-Diwany (Egypt)	Salama Abdelhady (Egypt)	
Wednesday - March 18	9:00 - 10:30	6	Title	Water & Waste Treatment - 1	Fuel Cells & Hydrogen
			Chair	Kamal Shaat (Egypt)	Alaa El-Sharkawy (USA)
			Cochair	Nagwa El Ebiary (Egypt)	Mohamed M. Ghoneim (Egypt)
	10:30 - 10:45	Short Break			
	10:45 - 12:15	7	Title	Water & Waste Treatment - 2	Air Pollution
			Chair	Nasün-Saygılı G (Turkey)	Samir M. Abd El-Aziz (Egypt)
			Cochair	Rawia El-Motaiam (Egypt)	Mumtaz Usmen (USA)
	12:15 - 1:15	Closing Session & Remarks			
1:30 PM	Conference Lunch				

Day : Monday -March 16
Session : 0AB
Time : 8:30 - 12:30

8:30 – 9: 30 **Opening Speeches**

9:30 – 11:30 **Opening Keynote Lectures**

The Role of Nuclear Energy in Our Future

Kathryn A. McCarthy; Associate Director, Nuclear Science & Technology-Idaho National Laboratory (USA)

Risk–Informed Regulation of Nuclear Power Reactors

George Apostolakis; Distinguished Professor of Nuclear Science and Engineering, Massachusetts Institute of Technology (MIT, USA)

Photovoltaics Technology: Finally the Revolution Begins

Larry Kazmerski; Director, National Center for Photovoltaics, National Renewable Energy Laboratory, DOE (USA)

***The Environmental Impact of Electronic Waste and the Wireless Industry
(Vodafone Lecture)***

Medhat El Messiry; Professor of Biomedical Engineering, Faculty of Engineering, Cairo University (Egypt)

11:30 – 12:30 **Questions & Answers**

Moderated by: M. A. Abdou (USA), S. Abdelkhalek (USA),
 C. Varandas (Portugal), F. Abul Fotouh (Egypt)

Day : Monday -March 16
Session : 1A
Time : 13:00 - 15:00
Chairman : C. Varandas (Portugal)
Co-Chairman : Medhat F. Matta (Canada)

Nuclear Energy & Applications - 1

Strategy For The Development of Nuclear Fusion As An Energy Source

C. Varandas

Portugal

Atomic Energy of Canada Limited (AECL) Nuclear Infrastructure Development - Candu Experience

Ala Alizade

Canada

Technology Transfer and Localization for the Candu Reactor

Medhat F. Matta

Canada

The Plasma Neutron Source As A Driver in A Sub-Critical Reactor

A.V.Anikeev, E.P.Kruglyakov, K.Noack, A.D.Rogov, and Yu.A.Tsidulko

Russia

Evaluation of Physical Protection System Effectiveness for a Hypothetical Facility Against Sabotage

*E. A. Osman, M. I. El-Gazar, M. K. Shaat, A. A. EL-Kafas, W. I. Zidan, and
A. A. Wadoud*

Egypt

Day : Monday -March 16
Session : 1B
Time : 13:00 - 15:00
Chairman : Naeim A. Henein (USA)
Co-Chairman : N.G. Chalhoub (USA)

Biodiesel Fuel

Comparison between Autoignition, Combustion and NOx Emission Characteristics of Soy Bean based Biodiesel and ULSD fuels

Naeim A. Henein, Kaushik Acharya, Mufaddel Dahodwala and Walter Bryzik **USA**

The Future of Renewable Fuel: The Biodiesel Story

K. Y. Simon Ng, Haiying Tang, Shuli Yan, Nadia Abunasser, Manhoe Kim, Kapila Wadu-mesthrige, and Steven O. Salley **USA**

Biodiesel Fuel from Jatropha Oil Via Non-Catalytic Supercritical Methanol Transesterification

S. Hawash, N. Kamal, F. Zaher, O. Kenawi and G. El Diwani **Egypt**

Ultrasound Assisted Extraction and Trans-Esterification of Rapeseed

N.N.Ibiari, S.A.Abo El-Enin, N.K.Attia and G.El-Diwani **Egypt**

A Study on the Feasibility of Biodiesel Production from Jatropha in Egypt

G .EL Diwani , Shadia R Tewfik , Salwa I. Hawash and Nahed. Kamal **Egypt**

Day : Monday -March 16
Session : 2A
Time : 15:15 - 17:15
Chairman : A. Islam Aly (Egypt)
Co-Chairman : X. Zhu (China)

Nuclear Energy & Applications - 2

Addressing Challenges to Development of Laser Fusion Energy

Mohamed Sawan

USA

Large Scale Computations For Multiphase Flows and Turbulent Flows in Nuclear Engineering.

Tomoaki Kunugi

Japan

Consistency of the Fungal Ecosystem in a Simulated Radioactive Wastes Disposal Site

S. B. Eskander, S. M. Abu El- Soud, S. M. Abd El-Aziz, O. A. Awad Alah and H. El-Sayad

Egypt

Radioactive Measurement in Gas Flow Lantern Mantles Used in Egypt

M. Fayez Hassan, Kh. M.Hella and T.A.Salama

Egypt

Evaluations of 5 Years of Radioactive Environmental Monitoring

X. Zhu, F. Wang, F. Li

China

Environmental Risk Assessment of Prolonged Use of Sewage Wastewater in Irrigation at El-Gabal El-Asfar Farm: Alleviation Using Ionizing Radiation

Rawia El-Motaïam

Egypt

Day : Monday -March 16
Session : 2B
Time : 15:15 - 17:15
Chairman : Walter Bryzik (USA)
Co-Chairman : Ming-Chia Lai (USA)

Fuels & Combustion

Solvent Refining of Straight Run Diesel Fuel By Various Solvents Phase Equilibrium

Sana I. Hassan, Omar I.Sif El-Din , Sahar M.Tawfik **Egypt**

Experimental Investigations on the Combustion of Gaseous Fuels

A. A. El-Mallah, Said M. A. Ibrahim, A. El-Fatih Farrag and M. Saber Gad **Egypt**

Modelling of Gaseous Fuels Combustion

A. A. El-Mallah, Said M. A. Ibrahim, A. El-Fatih Farrag, Gad M.Saber **Egypt**

Study the Effect of Chemical Structures of Solvent on the Excess Free Energies of Solution

Farag F.M and Sahar M. Tawfik **Egypt**

Monitoring of Butane-Propane Mixture For Improved Energy Efficiency in LPG Fired Furnaces

A.K.Bakthavatsalam **India**

Hydrodynamic Frictional Losses of the Piston-Assembly

M. Hakeem, N.G. Chalhoub, N. Khaled and N.A. Henein **USA**

Effect of Diesel After-Treatment Systems on Vehicle Thermal Protection

Alaa El-Sharkawy **USA**

Day : Tuesday - March 17
Session : 3A
Time : 9:00 - 11:00
Chairman : Vladimir Anastasov (Austria)
Co-Chairman : Azza Hafez (Egypt)

Desalination & Heat Transfer

Condensation of Flue Gases in Boilers

Ali El-Shamy Ramadan

Egypt

Modeling of the Turbulent Transport of the Passive Scalars in the Heated Cylinder Flow Wake

T. F. Oda

Egypt

Comparative Analysis of Heat Transfer Performance for Various Fin Geometries to Perform the Optimum Heat Sink

Z. S. Abdel-Rehim and Ashraf Lashine

Egypt

لإستعداد الماء وإنتاج الكهرباء والطاقة المتجددة البديلة المزاياء البيئية والإقتصادية وتحسين الأداء بالنظام الثلاثي
Mohamed Abd El Karim El-Sofy

KSA

Environmental Aspects of Nuclear Desalination

V. Anastasov and I. Khamis

Austria

An Integrated Approach to Hydrogen and Seawater Desalination Using Renewable Resources

Azza Hafez, Maaly Khedr, Mervet Badr, Kamel-Elkhatib, Hanaa Gaddala

Egypt

The Nuclear Cogeneration Power Desalting Plants NCPD: Feasibility Study for Kuwait

M. A. Darwish, Fatimah M. Al Awadhi, and Awaer Ben Amer

Kuwait

Day : Tuesday - March 17
Session : 3B
Time : 9:00 - 11:00
Chairman : Fuad Abul Fotouh (Egypt)
Co-Chairman : Faten H. Fahmy (Egypt)

Renewable Energy

Theoretical and experimental efficiency of Vee corrugated absorber plate of solar collectors

Helal M. Monir, Khalil H. K. Adel, Tadros H. Wagih, Hassan M. M. Ibrahim **Egypt**

A New System to Produce Cooling and Power Using Solar Thermal Energy

Zeinab Sayed Abdel Rehim **Egypt**

Automatic Orientation of Solar Photovoltaic Panels to Increase Efficiency

Ahmed M. Abu Hanieh **Palestine**

Augmented Solar Chimney with Unglazed Perforated Solar Passive Dryer (UPPD) for the Medicinal Plants

Ahmed Hasanein **Egypt**

Multifunctional Solar Powered System

Leon B. Begrambekov **Russia**

Design and Feasibility of PV Systems for High Schools in Iraq

Ali Al-Karaghoul and L.L. Kazmerski **USA**

Day : Tuesday - March 17
Session : 4A
Time : 11:15 - 13:15
Chairman : Magdy A. Helal (Egypt)
Co-Chairman : Kh. M. Heiza (Egypt)

Environmental Issues

Assessment of Noise Levels in Arafat Area During Hajj Season 2006

Dr Abdulaziz R. Seroji

KSA

Effect of Fire and High Temperature on The Properties of Self Compacted Concrete

M. A. Helal and Kh. M. Heiza

Egypt

Environmental Impact Assessment of A Ruptured Natural Gas Pipeline

Osama Badr and Pratheesh Ben

Egypt

Design and Construction of a Wind Tunnel for Environmental Flow Studies

*Hamoud A. Al-Nehari, Ali K. Abdel-Rahman, Abd El-Moneim Nassib,
and Hamdy M. Shafey*

Egypt

Climate Change and Millennium Development Goals (MDGs): Libyan Perspective

*El-Hadi Mohmed El-Magerbi, Ibrahim Mohammed Saleh, and
S.P.Bindra*

Libya

Day : Tuesday - March 17
Session : 4B
Time : 11:15 - 13:15
Chairman : Kassem M. Kassem (USA)
Co-Chairman : A.K. Bakthavatsalam (India)

Industrial Applications

Surface Properties of Electroless Plated (Ni-P-Cu-W-Zn)

I. E. Ayoub, I. S. Ibrahim and A. El. Dakroury

Egypt

Technologically Enhanced Pb-210 and Po-210 in Iron and Steel Industry

Bakr W.F., Khater A.E.M

Egypt

The Characteristics of Zinc Deposition in Electroless Nickel-Copper Plating

I. E. Ayoub, I. S. Ibrahim and A. El. Dakroury

Egypt

Modeling Techniques of Vibro-Impact Interaction in Mechanical Systems

Ihab F. Grace, Raouf A. Ibrahim, and Robert Banasik

USA

Effect of Non-Woven Polyester and Hollow Polyester Fibers on the Sound Absorption of the Material Construction

A.A. Mahmoud and M. Abd El Gawad Saif

Egypt

Empirical Correlations for the Performance of Belt Skimmer Operating under Environmental Dynamic Conditions

Sadek Z. Kassab

Egypt

Day : Tuesday - March 17
Session : 5A
Time : 14:00 - 16:00
Chairman : Mohamed T. El-Kolaly (Egypt)
Co-Chairman : Gizine El-Diwany (Egypt)

Environmental Management

Environmental Friendly Solutions Concerning The Thermal Behaviour of The Manufacturing Equipment

M.S. Popa, M. Popa, D. M. Sîrbu

Romania

Environmental Medicine: From Goals to General Practice

M. Popa, D. Sîrbu, D. Curşeu

Romania

The CORAL Initiative For Sustainable Development Strategies in The Domain of Coastal Regions. Towards The Second Phase.

Evangelos M. Mylonas

Greece

Organizational and Operational Improvements For Smaller Engineering Firms in Michigan

T.Najib, M. Usmen, and E. Kazan

USA

Environmental Factors for Growth of Aquatic Weeds and Their Management Biologically in Irrigation Egyptian Channels

Salwa M. Abou El Ella, Magdy M. Hosny, and Madiha M. Hassan

Egypt

Challenges of Education & Training in Energy & Environment: A Case Study of Libya

Hadi Shandool & S.P.Bindra

Libya

Day : Tuesday - March 17
Session : 5B
Time : 14:00 - 16:00
Chairman : Sadek Z. Kassab (Egypt)
Co-Chairman : Salama Abdelhady (Egypt)

Energy Systems

Computationally Efficient Procedure for Handling the Powertrain Constraints in Marine Vessel Simulations

N.G. Chalhoub and N. Khaled

USA

Optimization of Alternative Cooling Tower Capacity Control Methods

Y. A. Rihan, I. S. Ibrahim, I. E. Ayoub, S. E. Soliman

Egypt

Capacity Control of Oil-Injected Twin-Rotors Screw Compressor

Kassab S. Z., Adam I. G. and Elgohary H. A.

Egypt

Effect of Pumping Stations Problems on Efficiency and Power Generation

S. M. Abdel-Rahman and Sami A. A. El-Shaikh

Egypt

Performance of a Pumping System Handling Nile Water Hyacinth under Variable Operating Conditions

Mohamed F. Khalil, Sadek Z. Kassab, Ahmed A. Abdel Naby, and Ali Azouz

Egypt

Performance Enhancement of The Existing Doha West Power Plant in The State of Kuwait Using Engineering Equation Solver EES

Tariq J. Al-Derbass, Maram D. Al-Shammari and Bader S. Al-Azmi

Kuwait

Thermodynamic Analysis of Electric Charges and Magnetic Flux

Salama Abdelhady

Egypt

Day : Wednesday - March 18
Session : 6A
Time : 9:00 - 10:30
Chairman : Kamal Shaat (Egypt)
Co-Chairman : Nagwa El Ebiary (Egypt)

Water & Waste Treatment - 1

A Coal Sorption Process for the Control of Heavy Metals in Wastewater Treatment

A. Z. Ahmed, H.M. Soliman and M. A. Elmoneam

Egypt

Wastewater Disinfection Alternatives

Amal Ibrahim

USA

Quality Assessment of Harvested Rainwater for Domestic Uses

Jamal Radaideh, Kamel AlZboon

Jordan

Evaluation The Efficiency of Centralized Wastewater Treatment System in Jordan and The Necessity of Decentralized System

Matthias Barjenbruch, Kamel AlZboon

Jordan

Experimental and Modeling Studies on Boron Removal in Fixed Bed

Demirçivi, P., Nasün-Saygılı, G

Turkey

Bioconversion Efficiency of The Parthenium Weeds As Substrate and Subsequent COD Removal in Anaerobic Batch Digestion.

Hameed Soliman

Ethiopia

Day : Wednesday - March 18
Session : 6B
Time : 9:00 - 10:30
Chairman : Alaa El-Sharkawy (USA)
Co-Chairman : Mohamed M. Ghoneim (Egypt)

Fuel Cells & Hydrogen

Hydrogen Production As A Clean Energy For Fuel Cells By Steam Reforming of Methanol Over Different Types of Catalyst

Amer M. Al-Shareef

Libya

Photo-Generation of Hydrogen From Aqueous Colloidal Nano-Particles of Some Metal-Oxides Semiconductors

Kasem K. Kasem, Carmen Davis and Melissa Dahn

USA

Effect of Minor Alloying Elements on the Oxidation Behaviour of Some Cr-Ferritic Steels For SOFC Interconnects

K.EL Menshawy, H.EL Dakhly, A.A.EL Sayed, O.A.Abdelal, H.A.Ahmed and S.M.EL Raghy

Egypt

PEM Fuel Cell Water Transport - Simulation and Neutron Imaging Experiment

Peng Quan and Ming-Chia Lai

USA

Day : Wednesday - March 18
Session : 7A
Time : 10:45 - 12:15
Chairman : Nasün-Saygılı G (Turkey)
Co-Chairman : Rawia El-Motaiam (Egypt)

Water & Waste Treatment - 2

Performance of a Combined Chemical and Biological Waste Water Treatment Plant Producing Effluent Can Be Used for Irrigation

Anwar. Z. Ahmed, H. M. Soliman and M. A. Elmoneam **Egypt**

Performance Advantages of a Dry Sump Lubrication System

Badih Jawad, Mark Hastings and Brian E. Johnson **USA**

Increasing The Efficiency of Converting Solid Wastes Into Compost

Nader R. Mitry **Egypt**

Removal of Lead By An Emulsion Liquid Membrane

Rania Sabry **Egypt**

Recycling of PV Modules: An Ethical and Economical Approach for Sustainable Energy

Fuad Abul Fotouh **Egypt**

Separation and Purification of Silver by Thiol Derivatives from Different Acids Solution

Amal Mohamed Ibrahim Ali **Egypt**

Day : Wednesday - March 18
Session : 7B
Time : 10:45 - 12:15
Chairman : Samir M. Abd El-Aziz (Egypt)
Co-Chairman : Mumtaz Usmen (USA)

Air Pollution

Effect of HCR (Hydrocarbons Recirculation) on Cranking Period and Hydrocarbons Emissions During Cold Start of a DI Diesel Engine

Rafik N. Rofail, Walter Bryzik and Naeim A. Henein

USA

Air Pollution Impacts and EEAA Reduction Strategies

Ahmed Abu El Seoud and Ashraf S. Ibrahim

Egypt

Global Climate Change Implications Upon Infectious Diseases

D. Curşeu, M. Popa, D. Sîrbu

Romania

Approaches on Climate Change for Risk Management Planning

D. Sîrbu, D. Curşeu, M. Popa, M. S. Popa

Romania

Simulation of Short Range Hermitized Atmospheric Dispersion in Low-Wind Convective Conditions

Khaled S. M. Essa, and Maha S. El-Otaify

Egypt

Day : March 16 - March 18
Session : Poster

Poster Session

Optimal Sizing, Economic Study and Reliability of Different Configurations of Photovoltaic Systems

Amal A. Hassan, Faten H. Fahmy, Abd El-Shafy A. Nafeh, Mohamed A. El-Sayed **Egypt**

Solar Energy Library for New Millennium

Faten H. Fahmy **Egypt**

Optimal Mathematical Model of Medical Tourism Village at Euan Mousa

Faten H. Fahmy **Egypt**

Influence of Radiation, pH and Salts on Hydrogels Stimulation for Biological Applications

Mona Eid **Egypt**

Analytical Solution of the Three-Dimensional Atmospheric Advection Diffusion Equation using Green's Method

Khaled S.M. Essa, I. Hassan, Soad.M. Etman and S.F.H. Esmail **Egypt**

Adsorption of Heavy Metals from Aqueous Solutions onto Silica Extracted from Agro-Residues in Single Zn, Cu and Ni Systems

H. A. Hanafi, S. A. Kandil and A. A. M. Daifullah **Egypt**

Synthesis of Grafted Hydrogels As Mono-Divalent Cation Exchange For Drug Delivery

M.B. El-Arnaouty and M. Eid **Egypt**

Geothermal Hot Water and Space Heating System in Egypt

Faten H. Fahmy, Hanaa M. Farghally, and Mohamed A. H.EL-Sayed **Egypt**

Post-Treatment Alternatives For UASB Pretreated Poultry Manure Wastewater

Kaan Yetilmezsoy, Zehra Sapci-Zengin and Emel Kocak **Turkey**

The Stirling Engine Application to The Energetic Recovery By Biomass Organic Waste.A Planned Plant in The Salerno Province.

A. Senatore and G. Di Napoli **Italy**

Proposed Regulations of High Risk Industrial Facilities

Soheir.T. El-Hemamy **Egypt**

Day : March 16 - March 18
Session : Poster

Poster Session (continued)

Control and Optimal Sizing of PV-Wind Powered Rural Zone in Egypt

Faten H. Fahmy, Hanaa M. Farghally, and Mohamed A. H.EL-Sayed **Egypt**

Analysis of Instantaneous and Continuous Migration of Radionuclides from Disposal Facility

N. S. Mahmoud **Egypt**

سياسات الطاقة المتجددة إقليميا وعالميا

Mohamed M. El Khayat and Maged Karam El-Din **Egypt**

Analysis of Dose Distribution for the Gamma Cobalt Irradiation Therapy Unit in Normal and Emergency Conditions

Moustafa Aziz, M. A. El-Ahdal and A. A. Tawfik **Egypt**

Environmental Assessment of Light in Research Center

Nadia Mahmoud Sirag **Egypt**

Performance of A Large Area Back Contact Silicon Solar Cell in a Desert Zone

Ahmed Ghitas, M. Sabry **Egypt**

Thermal Investigation Model of Building in Helwan Governorate

M. H. Khalil **Egypt**

Investigation of Chemical and Genotoxic Characterization of Golden Horn Surface Water by Using SOS Chromotest

Emel Kocak, M. Talha Gonullu, Semra Yilmaz and Mustafa Petek **Turkey**

Magnetic Augmented Rotational System - Application to Wind Mills

Arun Ramadass, Tony Chow and N. M. Ravindra **USA**

Methodology to Predict Air Quality State in Urban Areas: Evaluation of Gaussian Dispersion Models Against Measurements Near a Major Road in Naples

Paolo Iodice, Massimo Cardone, Adolfo Senatore **Italy**

Determination of Atmospheric BTEX Compounds in A Highly Topographic

Dr. Yilmaz YILDIRIM **Turkey**