



Canadian Embassy **in Lebanon**
Ambassade du Canada **au Liban**

INTERNATIONAL CONFERENCE ON THERMAL ENGINEERING: THEORY AND APPLICATIONS

Scientific Program



**May 31-June 4, 2004
BEIRUT-LEBANON**

Sunday May 30, 2004

16:00-19:30 Early Registration
19:30- Reception hosted by the Canadian Embassy

Monday May 31, 2004

08:00-09:30 Registration

Master of Ceremony: M. Z. Saghir

09:30-11:00 Opening Ceremony

President of the Lebanese Order of Engineers and Architecture in Beirut
Mr Sobhi Bissat
H.E Minister of Environment Mr. Fares Bouez
H.E Canadian Ambassador Mr. Michel Duval
H.E President Emile LAHOUD represented by
H.E Minister of Energy and Water, Mr. Ayoub Hmayed

11:00-11:30 Morning Break

11:30-12:15 Plenary Lecture by Prof. D.B. Ingham

Fluid Flows Through Porous Media: A Review and a Geological Application

12:15-13:00 Plenary Lecture by Prof. D. Siginer

Heat Transfer Enhancement in the Flow of Complex Fluids in Straight Tubes

13:00-14:20 Lunch Sponsored by the Lebanese Order of Engineers and Architecture in Beirut.

Lunch Speaker: Mr. Nabil Abu Jaoudé

14:20-15:20 Heat Transfer Session I

Chair: D. Siginer

ICTEA-HT1-01 Echanges Thermiques et Phases Fluides
R. Prud'homme, S. Préau

ICTEA-HT1-02 Numerical and Experimental Investigation for Reverse Flow in an Isothermal Inclined Tube

I.Voicu, T. Maré, A.G. Schmitt, C.T. Nguyen, N. Galanis

ICTEA-HT1-03 MHD-Mixed Convection Heat Transfer from Radiant Vertical Cylinder
H.M. Duwairi, S. Al-Araj

15:20-15:40 Afternoon Break

15:40-17:40 Porous Media Session I

Chair: D. Ingham

ICTEA-PM1-01 Simulation Numérique du Phénomène de Condensation Autour d'un Tube Elliptique dans un Milieu Poreux

R. Kibboua, A. Azzi

ICTEA-PM1-02 Augmentation of Natural Convection Heat Transfer by a Rotating Cylinder Placed in a Cavity

A. M. Al-Amiri, N. Abu-Sitta

ICTEA-PM1-03 A New Hybrid Scheme to Simulate Thermal Flows in Porous Media Based on Lattice Boltzmann and Finite volume Methods

A. Al-Zoubi, G. Brenner

ICTEA-PM1-04 Ecoulement Incompressible à Surface Libre

M. Amara, F. El Dabaghi, C.K. Kloucha

ICTEA-PM1-05 Air Filtration and Indoor Air Quality

W. Chakroun, I. Al-Attar, N. Al-Mutawa

ICTEA-PM1-06 Convection Thermosolutal dans un Milieu Poreux Anisotrope Saturé par une Solution Acqueuse au Voisinage du maximum de la densité
F. Oueslati, R. Bennacer, H. Sammouda , A. Belghith

Tuesday June 1, 2004

Chair: F. El Dabaghi

8:00-8:40 **Keynote Lecture by Dr C. C. Bennett**
Partnerships Protect Water Supplies

8:40-9:20 **Keynote Lecture by Prof M. De Lemos**
The Double Decomposition Concept for Turbulent Heat and Mass Transport in Porous Media

9:20-10:00 Combustion Session I Chair: M. De Lemos

ICTEA-CS1-01 Ultra Stable Flame for a Coaxial Gaseous Burner
H.A. Moneib, K.M. Shebl

ICTEA-CS1-02 The Representation of the Heat Source in the Fire Calculation
S. Dhimdi, P. Vandevle

10:00-10:20 Morning Break

10:20-12:00 Environmental Session I Chair: M. Mehrvar

ICTEA-ES1-01 Kinetic Wave Overland Flow Modeling
R.H. Mohtar, F.H. Jaber

ICTEA-ES1-02 Adaptation de Maillage via les Indicateurs D'Erreur pour les Equations de Saint-Venant
N. Guelmi, M. Amara, F. El Dabaghi

ICTEA-ES1-03 Characteristics Finite Element Method for Shallow Water Equations
F. El Dabaghi, A. El Kacimi, B. Nakhle

ICTEA-ES1-04 Modeling Vehicle Emissions in Transportation Networks
A. G. Hobeika

ICTEA-ES1-05 Modeling of Sea Water Intrusion in Mediterranean Coastal Aquifers
A. Al-Bitar, R. Ababou

12:00-13:00 Enhanced Oil Recovery Session Chair: K. Ghorayeb

ICTEA-EO1-01 Measuring, Modelling and Financial Expenses of Fouling by Petroleum in a Refinery Preheating Section
L. Oufar, N. Labsi, A. Mouheb

ICTEA-EO1-02 Mass transfer from a rotating disk to a non-Newtonian Bingham plastic fluid
A.A. Rashaida, D.J. Bergstrom, R.J. Sumner

ICTEA-EO1-03 Upscaling in Fractured Heterogeneous Media: Permeability and Mass Exchange Coefficient
M. Kfoury, B. Ngetinger, M. Quintard, R. Ababou

13:00-14:00 Lunch Break

14:00-15:20 Porous Media Session II Chair: A. AlAmiri

ICTEA-PM2-01 Analysis of Mass Transfer Processes During Advective Air Movement in Contaminated Soil
R.H. Mohtar, M. Rahbeh

ICTEA-PM2-02 Modeling of Heat Transfer in a Moving Packed Bed: Case of the Preheater in Nickel Carbonyl Process

- ICTEA-PM2-03 R. Henda, D. Falcioni
Analysis of Turbulent Mass Transport in Porous Media Considering both
Temperature and Concentration Gradients
- ICTEA-PM2-04 M.J.S. De Lemos
Convective Flows of a Binary Liquid Confined in a Shallow Porous
Cavity Subject to Cross Heat Fluxes
A. Bahloul, S. Teinturier, P. Vasseur, H. Beji

15:20-15:40 Afternoon Break

15:40-17:40 Combustion Session II Chair: W. Najem

- ICTEA-CS2-01 An experimental Investigation for the Aeration by Jet Pump with
Multiple Jet nozzles in the Driving Jet Flow
M.S. El-Salak, W.A. Aissa, A.M. Gelany
- ICTEA-CS2-02 Contribution à l' Etude de la Vitesse de Propagation de l' Onde de
Combustion d' une Composition Pétrotechnique
A. Benmansour, A. Bengueddache
- ICTEA-CS2-03 Experimental and CFD Investigation of the Performance of a Supersonic
Air Ejector
Y.A. De Sousa, M. Khan, P. Desevaux
- ICTEA-CS2-04 An Experimental Investigation for the Performance of a Jet Pump with
Multiple Jets in the Driving Jet Flow
M.S. El-Salak, W.A. Aissa, A.M. Gelany
- ICTEA-CS2-05 Spray Characterization for an Isothermal Spray with Different Coflowing
Air Configurations
K.M. Shebl, H.A. Moneib, M.A. Nosier, S.F. El-Sherief, A.A. Emara
- ICTEA-CS2-06 Modes of Instability in Turbulent Swirling Flames and Isothermal Jets
A.R. Masri, Y.M. Al-Abdeli, G.R. Marquez, S.H. Starner

**20:00- Dinner Sponsored by Université St Joseph, Ecole Supérieure
d'Ingénieurs de Beyrouth
Guest Speaker: Dean Wajdi Najem**

Wednesday June 2, 2004

- 8:00-8:40 Keynote Lecture by Prof. J.K. Platten Chair: Z. Saghir**
The Soret Effect
- 8:40-9:20 Keynote Lecture by Dr K. Ghorayeb**
Thermal Diffusion in Hydrocarbon Reservoirs
- 9:20-10:00 Double Diffusion Session I Chair: J.K. Platten**
- ICTEA-DD1-01 An Unified Extended Thermodynamic Description of Diffusion,
Thermodiffusion, Suspensions, and Porous Media
G Lebon, T. Desaive and P. Dauby
- ICTEA-DD1-02 P.I.V Observations of the Double-Diffusive Convection System
R. Abdeljabar, M.J. Safi, F. Onofri
- 10:00-10:20 Morning Break**
- 10:20-12:20 Double Diffusion Session II Chair: R. Abdeljabar**
- ICTEA-DD2-01 Thermal and Concentrational Marangoni Convection at Liquid/Air
Bubble Interface

- ICTEA-DD2-02 K.G. Kostarev, A.L. Zuev, A. Viviani
Unsteady Numerical Simulation of Double Diffusive Convection Heat Transfer in a Pulsating Horizontal Heating Annulus
- ICTEA-DD2-03 A.M. Al-Amiri, K. Khanafer, M.F. Lightstone
Nonsimilarity MHD-Forced Convection Heat Transfer from Radiate Porous Surfaces with Constant Heat Flux
- ICTEA-DD2-04 H.M. Duwairi
Numerical Simulation of the Effect of Convection on Dendritic Solidification
- ICTEA-DD2-05 N. Al-Rawahi, G. Tryggvason
Modeling of Thermosolutal Convection in a Rectangular Enclosure during Solidification of a Binary Alloy (eg. Al with 7% Si)
- ICTEA-DD2-06 A. Djimli, M. Kadja, R. Bessaih
SLES Concentration Effect on the Rheology of Dish Washing Liquid
- A. Al-Shawabkeh

12:20-14:00

Lunch Break

14:00-15:20

Heat Transfer Session II

Chair: A. Viviani

- ICTEA-HT2-01 An Alternative Two Phase Flow Based Virtual Simulator for Aeration Process in Lakes
M. Abdelwahed, F. ElDabaghi, D. Ouazar
- ICTEA-HT2-02 Comparative Exergy Analysis of the Principal Water-LiBr Absorption Cycles
D. Boer, M. Medrano, M. Nogues
- ICTEA-HT2-03 Vapor-Liquid Equilibria of n-Alkanes Down to 10^{-4} Pa Measured by an Original Saturation Method
A. Razzouk, J. Saab, I. Mokbel, J. Jose
- ICTEA-HT2-04 Prediction of a Packaged Air Conditioning Unit Flow and Heat Transfer Characteristics: Experimental and Numerical Study
A.M. Al-Nasser, R. Ben-Mansour, H.A. Al-Saedi, A.M. Doughan

15:20-15:40

Afternoon Break

15:40-17:40

Heat Transfer Session III

Chair: G. Lebon

- ICTEA-HT3-01 Steady Thermal Comfort by Radiant Heat Transfer: Impact of Heater Position
N. Ghaddar, K. Ghali, M. Salam
- ICTEA-HT3-02 Thermal Analysis of Electric Discharge Machining Process
N. Ben Salah, F. Ghanem, K. Ben Atig
- ICTEA-HT3-03 Radiant Floor Heating: An Opportunity for Energy Conservation
K. Ghali, S. Chehade, K. El-Khoury
- ICTEA-HT3-04 Experimental Analysis of Hydrodynamics and Influence of Temperature in a Food Dryer
K. Daoud, M. Hamoudi, H. Abchiche
- ICTEA-HT3-05 A Transiently Heated Micro Thermocouple Anemometer
M. Khan, F. Lanzetta, E. Gavignet, P. Nika
- ICTEA-HT3-06 Numerical Study of Bidimensional Steady Natural Convection in Space Annuli Between Two Elliptic Confocal Ducts: Influence of the Slope Angle
D. Mahfoud, M. Daguinet

Thursday June 3, 2004

9:00-10:00	Bus departure from Movenpick
10:00-12:00	Visit to Geitta Grotto
12:00-13:00	Visit to the old Zouk Village
13:00-15:00	Lunch at Bander restaurant Guest speaker: Minister Fares Bouez
15:00-17:00	Visit to Byblos
17:00	Return to the Movenpick Hotel

Friday June 4, 2004

9:00-10:00	Turbulent Flow Session I	Chair: G. Nasr
ICTEA-TF1-01	Large Eddy Simulation of Rotating Turbulent Convection Using the Estimation Subgrid Scale Model S.J. Klotzkin, F.P. Deek	
ICTEA-TF1-02	Two Dimensional Clothing Ventilation Model for a Walking Human K. Ghali, N. Ghaddar, J. Harathani	
ICTEA-TF1-03	Turbulent Kinetic Energy Distribution across the Interface Region Between a Porous Medium and a Clear Fluid M.J.S. De Lemos	
10:00-10:20	Morning Break	
10:20-12:00	Material Science Session I	Chair: Z. Fawaz
ICTEA-MS1-01	The Effect of Vibrations on Material Processing-related Transport Phenomena in Space S. Hassan, T. Lyubimova, D. Lyubimov and M. Kawaji	
ICTEA-MS1-02	On Some Latent Heat Effects on Solid/Liquid Transition During Floating Zone Growth From the Melt E. Semma, M. El Ganaoui and R. Bennacer	
ICTEA-MS1-03	Numerical Investigation of the Vertical Parallel-Plates Natural Convection Flows for Low-Prandtl Fluids A. Campo, O. Manca, B. Morrone	
ICTEA-MS1-04	Modeling Substrate Concentrations and Biofilm Growth in Pipeline Systems M.M. Al-Darbi, K. Agha, M.R. Islam	
ICTEA-MS1-05	Transient MHD Free Convection on a Moving Isothermal Vertical Plate with Chemical Reaction M. Al-Odat	
12:00-13:00	Environmental Session II	Chair: R. Henda
ICTEA-ES2-01	Integration of Advanced Oxidation Technologies and Biological Processes for the Treatment of Water and Wastewater: Trends and Advances M. Mehrvar	
ICTEA-ES2-02	Etude Experimentale d'un Ecoulement Contre Courant Air-Eau dans un Lit Poreux H. Kahalerras, K. Bouhadeh, S. Boudraa and S. Chikh	
ICTEA-ES2-03	Experimental Investigation of the Transient Response of a Latent Heat Storage Unit A. Benmansour, M.A. Hamdan	

13:00-14:00	Lunch Break	
14:00-15:20	Heat Transfer Session IV	Chair: K. Khoury
ICTEA-HT4-01	Application of an Association Model to Environmental & Thermal Engineering Technology S. Derawi, M. Michelsen, G. Kontogeorgis, E. H. Stenby, C. Jiang, M.Z. Saghir	
ICTEA-HT4-02	Stochastic Prediction of Wind Profiles using Simulated Laser Distortion Data M. A. Gadalla	
ICTEA-HT4-03	Dimensionnement, Simulation et Optimisation d'un Condenseur C. Fakih, G.B. Fakih and E. Eloud	
ICTEA-HT4-04	On the Controllability of Cross-Flow Heat Exchanger Working in a Wet Environment S. Alotaibi	
15:20-15:40	Afternoon Break	
15:40-17:40	Heat Transfer Session V	Chair: M. Gadalla
ICTEA-HT5-01	Etude Numérique d'un Jet Thermique Faiblement Confine à Densité Variable B. Imine, O. Imine, I. Gökalp	
ICTEA-HT5-02	Analyse du Transfert Radiatif Instationnaire: Utilisation de Limiteurs de Flux M. Francoeur, D.R. Rouse, R. Vaillon	
ICTEA-HT5-03	A Volume Cavity Model for Transient Cavitating Pipe Flow M. Kessal and R. Bennacer	
ICTEA-HT5-04	Adsorption and Regeneration Characteristics of R12 on a Porous Molecular Sieve M. A. Gadalla	
ICTEA-HT5-05	MHD-Mixed Convection from Radiate Vertical Isothermal Surface Embedded in Saturated Porous Media R. A. Damseh	
ICTEA-HT5-06	Second Law Analysis in a Partly Porous Double Pipe Heat Exchanger N. Allouache, S. Chikh	
17:40-18:00	Closing Ceremony	