

EUROTHERM Seminar Nr. 85  
INTERNATIONAL SEMINAR ON EJECTOR/JET-PUMP TECHNOLOGY AND APPLICATIONS

September 7-9, 2009 - Louvain-la-Neuve, Belgium

Programme

**Updated 1/09/2009**

**Sunday 6th evening 17h-20h** : Registration

**DAY 1**

**8h00**                      **Registration**

9h00                      Welcome address: Y. Bartosiewicz chair, Prof. Grégoire Winckelmans Head of the Institute of Mechanics, Material and Civil engineering, UCL.

9h25                      **Keynote Speech: INNOVATIVE SOLAR EJECTOR REFRIGERATION TECHNOLOGIES (Paper 33)**  
*B.J. Huang, J. H. Wu, H.Y. Hsu, J.H. Wang, and V.O.Petrenko*

**10h20**                      **Coffee**

10h50                      STATE OF ART OF SIMPLE AND HYBRID JET COMPRESSION REFRIGERATION SYSTEMS AND THE WORKING FLUID INFLUENCE  
**(Paper 14)**  
*González Bravo H. E., Dorantes Rodríguez R., Hernández Gutiérrez J., Román Aguilar R., Best y Brown R, and Terréz Peña H.*

11h10                      DEVELOPMENT AND MODELING OF LOW-GRADE HEAT DRIVEN PILOT EJECTOR REFRIGERATION MACHINE OPERATING WITH BUTANE  
**(Paper 7)**  
*V.O.Petrenko and O.S.Volovyk*

11h30                      MODELLING OF EJECTION CYCLE FOR SOLAR AIR-CONDITIONING  
**(Paper 25)**  
*K. Smierciew, D. Butrymowicz, J. Karwacki and M. Trela*

11h50                      PERFORMANCE OF EJECTOR COOLING SYSTEMS USING HYDROCARBON REFRIGERANTS **(Paper 3)**  
*Raul Roman A. and Jorge I. Hernandez*

12h10                      ACTIVITIES AROUND EJECTOR COOLING SYSTEM IN SOLAR AIR-CONDITIONING AT UCL **(No paper)**  
*Amel Hemidi, Jean-Marie Seynhaeve, and Yann Bartosiewicz*

**12h30**                      **Lunch**

14h10                      **Keynote Speech: HISTORICAL AND PRESENT DEVELOPMENTS OF EJECTOR REFRIGERATION SYSTEMS WITH EMPHASIS ON TRANSCRITICAL CARBON DIOXIDE AIR-CONDITIONING APPLICATIONS (Paper 5)**  
*Stefan Elbel*

- 15h05      COMPARISON ANALYSIS OF COP IMPROVEMENT METHODS FOR CO<sub>2</sub> TRANSCRITICAL REGRIGERATION CYCLES **(Paper 28)**  
*Wojciech Angielczyk, Dariusz Butrymowicz, Jean-Marie Seynhaeve and Yann Bartosiewicz*
- 15h25      ANALYSIS OF MIXING CHARACTERISTICS OF FLOW IN A TWO PHASE JET PUMP USED IN FLASH DESALINATION SYSTEM **(Paper 12)**  
*R. Senthil Kumar, S. Kumaraswamy, and A. Mani*
- 15h45      MODEL OF TWO-PHASE WATER-AIR EJECTOR **(Paper 26)**  
*Dariusz Butrymowicz*
- 16h05                      Coffee**
- 16h35      AN EXPERIMENTAL STUDY OF WATER-STEAM TWO-PHASE EJECTOR **(Paper 13)**  
*Bo Zhang, Jinsheng Lv and Fengjuan Xue*
- 16h55      MODEL OF STEAM-WATER INJECTOR **(Paper 27)**  
*D. Butrymowicz, R. Matysko, W. Angielczyk, M. Trela, and M. Bergander*
- 18h15                      Cocktail (till 19h30): Longeatitude**
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## DAY 2

- 9h00      **Keynote Speech:** APPLICATION OF INNOVATIVE EJECTOR CHILLERS AND AIR CONDITIONERS OPERATING WITH LOW BOILING REFRIGERANTS IN TRIGENERATION SYSTEMS **(Paper 8)**  
*V.O. Petrenko*
- 9h55                      Coffee**
- 10h30      **Invited Speech:** SOLAR/HYBRID EJECTOR COOLING/HEAT PUMP SYSTEMS FOR BUILDING APPLICATIONS **(No paper)**  
*Omer Siddig (replace Saffa Riffat)*
- 11h25      MODELLING OF VARIABLE GEOMETRY SOLAR ASSISTED EJECTOR WITH COLD STORE **(Paper 30)**  
*M. Dennis, and Dr K. Garzoli*
- 11h45      EFFECT OF EJECTOR ON PERFORMANCE OF DIFFUSION SOLAR-ABSORPTION REFRIGERATION SYSTEM **(Paper 17)**  
*Adnan Sözen, and Engin Özbas*
- 12h05      AN EXPERIMENTAL INVESTIGATION OF AN EJECTOR OPERATING WITH R245FA **(Paper 21)**  
*David Scott, Zine Aidoun and Mohamed Ouzzane*
- 12h25      FLOW VISUALIZATION IN SUPERSONIC EJECTORS USING LASER TOMOGRAPHY TECHNIQUES **(Paper 16)**  
*A. Bouhanguel, P. Desevaux, and E. Gavignet*
- 12h45                      Lunch**

- 14h20      **Keynote Speech: WORLD'S FIRST EJECTOR CYCLE FOR MOBILE REFRIGERATORS TO STOP GLOBAL WARMING (Paper 20)**  
*Hirotsugu Takeuchi*
- 15h15      IMPROVEMENT OF REFRIGERATION CYCLE EFFICIENCY BY MEANS OF TWO-PHASE EJECTOR AS SECOND STAGE COMPRESSOR **(Paper 23)**  
*M. Bergander, D. Butrymowicz, and J. Karwacki*
- 15h35      INFLUENCE OF THE EXPANSION IN A STEAM NOZZLE ON THE PERFORMANCE OF TWO-PHASE EJECTOR **(Paper 10)**  
*Marian Trela, and Roman Kwidziński*
- 15h55      EXPERIMENTAL INVESTIGATION OF EFFECT OF MOTIVE NOZZLE DIAMETER ON PERFORMANCE OF LIQUID-VAPOUR EJECTOR **(paper 24)**  
*D. Butrymowicz, K. Smierciew, D. Regulska, J. Karwacki and M. Trela*
- 16h15                      Coffee**
- 16h35      1D STEADY STATE NUMERICAL MODEL FOR TWO-PHASE FLOW IN THE PRIMARY NOZZLE OF A REFRIGERANT EJECTOR **(Paper 31)**  
*S. Martel, M. Dostie, and Y. Mercadier*
- 16h55      PREDICTION OF CONDENSATION IN A TWO STAGE STEAM EJECTOR FOR A REFRIGERATION SYSTEM **(Paper 6)**  
*Giuseppe Grazzini, Adriano Milazzo, and Samuele Piazzini*
- 17h15      MULTIDIMENSIONAL MODELING OF CONDENSING TWO-PHASE EJECTOR FLOW **(Paper 34)**  
*David Schmidt, Michael Colarossi, and Mark J. Bergander*
- 17h35      PRESENTATION OF ACTIVITIES ABOUT EJECTORS AT WILSON, UKRAINE **(No paper)**  
*D.Buyadgie*
- 17h55                      Closing**
- 18h30                      Departure for dinner: Moulin de Villers**
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### **DAY 3**

- 9h00      **Keynote Speech: CFD ANALYSIS OF AN EJECTOR IN VAPOUR EJECTOR REFRIGERATION SYSTEM WITH ENVIRONMENT FRIENDLY REFRIGERANT (Paper 11)**  
*A.Selvaraju and A.Mani*
- 9h55      NUMERICAL EVALUATION OF A SIMPLE DEVICE TO CONTROL EJECTOR COOLING CYCLE OPERATION **(Paper 1)**  
*Szabolcs Varga, and Armando C. Oliveira*
- 10h15      EXPERIMENTAL VALIDATION OF CFD MODEL USED TO DESIGN JET-PUMPS **(Paper 19)**  
*Ali. E. Ablwaifa, Ian. W. Eames and Volodymyr Petrenko*
- 10h35                      Coffee**

- 11h00            3D CFD SIMULATION OF A SUPERSONIC AIR EJECTOR **(Paper 15)**  
*A. Bouhanguel, P. Desevaux, and E. Gavignet*
- 11h20            DESIGN-THEORETICAL STUDY OF CASCADE CO<sub>2</sub> SUB-CRITICAL  
MECHANICAL COMPRESSION / BUTANE EJECTOR COOLING CYCLE  
**(Paper 9)**  
*V.O.Petrenko, B.J. Huang and V.O. Ierin*
- 11h40            **Closing**
- 11h45            **Lunch**
- 13h00            **Departure for visit of Bruxelles (walking visit with an official  
guide scheduled at 15h-18h)**

**Presentations:**

Each author has 15 min presentation plus 5 min for questions. Keynote speakers have 45 min presentation and 10 min questions.

There will be a data projector in the room and a PC laptop with powerpoint. You are also free to use your own laptop.