



## 9th IIR Gustav Lorentzen Conference 2010: natural refrigerants - real alternatives

### 12-14 April 2010: Technical sessions - preliminary program

The following is based on papers received and registered in as of early January. Papers will be regrouped according to the conference schedule. Please note - so far not all papers on the list have been finally accepted and therefore changes may still occur. The event organisers retain the right to alter or amend details of the event program - including speakers and papers presented.

Title	Author	Country	Main Topic
<b>Ammonia</b>			
Ammonia and CO2 combined package systems for commercial and industrial applications	Andrey Andrusenko	Australia	Ammonia
Automatic multi-objective optimisation based shape design: Application to design the evaporator for an Ammonia low capacity refrigerator	A.Mosavi	Hungary	Ammonia
Groundwater system with ammonia heat pumps saves 70% of energy.	Henrik Winther	Denmark	Ammonia
Elimination of wet return lines in ammonia systems	Anders Mønsted	Denmark	Ammonia
Air cooled chillers with ammonia	Andy Pearson	UK	Ammonia
<b>Carbon Dioxide</b>			
CO2 - A refrigerant from the past with prospects of being one of the main refrigerants in the future	Petter Nekså	Norway	CO2
Energy Efficiency Comparisons between CO2 Cascade System and the Direct Expansion Conventional Systems using R404A and R22 for Supermarket Plants.	Alessandro da Silva	Brazil	CO2
The Study of a Two-stage Compression CO2 Cycle with Two different Temperature Evaporators	Hong Hyun Cho	Korea	CO2
CO2-only refrigeration systems with two-stage gas coolers for the Australian climate	Michael Bellstedt	Australia	CO2
RESEARCH ON THE PERFORMANCE OF THE CO2 SCREW COMPRESSOR IN THE NH3/CO2 CASCADE REFRIGERATION SYSTEM	Wu Huagen	China	CO2
DEVELOPMENT OF A TWIN SCREW CO2 COMPRESSOR AND ITS APPLICATION IN NH3/CO2 CASCADE REFRIGERATION SYSTEM	Wu Huagen & Prof. Xing Ziwen	China	CO2
Flooded compression in CO2 scroll compressors	Ian Bell	USA	CO2
Latest developments in compressors and refrigeration systems using the refrigerant R744 (CO2)	Manuel Fröschle & Kaiser, Harald	Germany	CO2
Experimental investigation on the effect of mixing length on the performance of two-phase ejector for CO2 refrigeration cycle with and without heat exchanger	Ariel Marasigan & Masafumi Nakagawa	Japan	CO2
EXPERIMENTAL INVESTIGATION OF DIFFERENT EJECTOR GEOMETRIES FOR R-744 TRANSCRITICAL SYSTEMS	Armin Hafner	Norway	CO2
Experimental study on working stability in transcritical CO2 compression-ejection system	Guangming Chen	China	CO2
1-D COMPUTATIONAL MODEL OF A MOTIVE NOZZLE FOR THE R744 TWO-PHASE EJECTOR	Krzysztof Banasiak	Poland	CO2
Improvement of vane motion in a rotary vane expander for a CO2 heat pump cycle	Hyun J. Kim	Korea	CO2
Improved rotary vane expander for transcritical CO2 cycle by introducing high pressure into the vane slots	Jia Xiaohan	China	CO2
COOLING OF SUPERHEATED REFRIGERANTS FLOWING INSIDE MINI AND MICRO TUBES STUDY OF HEAT TRANSFER AND PRESSURE DROP. CO2 CASE STUDY.	M Hammad	Jordan	CO2
Evaluation of a variable suction gas heat exchanger in a liquid chiller system using carbon dioxide as refrigerant.	Håvard Rekstad	NORWAY	CO2
DISTRIBUTED TEMPERATURE MEASUREMENTS ON A U-PIPE THERMOSYPHON BOREHOLE HEAT EXCHANGER WITH CO2	José Acuna	Sweden	CO2
Investigation of Performance Enhancement of Transcritical CO2 Cycle due to Gas Cooler with Discontinuous Fins	Pamela Reasor	USA	CO2
A review of in-tube condensation heat transfer of CO2 at low temperatures	Pradeep Bansal	New Zealand	CO2
A Carbon Dioxide Domestic Hot Water Heat Pump with Double Wall Plate Heat Exchanger Gas Cooler	Silvia Minetto & Sergio Giroto	Italy	CO2
EFFECT OF POLYOLESTER OIL ON THE POOL NUCLEATE BOILING HEAT TRANSFER COEFFICIENT OF CARBON DIOXIDE	Yoshinori TAKAISHI	Japan	CO2
Compact Brazed Plate Heat Exchangers for CO2 Heat Pump Water Heaters	Yunho Hwang	USA	CO2
EXPERIMENTAL ANALYSIS AND SIMULATION OF AN INTEGRATED CO2 HEAT PUMP FOR LOW-HEATING-ENERGY BUILDINGS	Andreas Heinz	Austria	CO2
Reversible R744 (CO2) heat pumps applied in public trains	Armin Hafner	Norway	CO2
THEORETICAL ANALYSIS AND EXPERIMENTAL TEST OF A CO2 HOUSEHOLD HEAT PUMP DRYER	Ferdinando Mancini	Italy	CO2
Development of General-purpose energy system analysis software -ENEGY FLOW +M- ~Application to CO2 heat pump system~	Kohmei Nakajima	Japan	CO2
100KW CO2 WATER HEAT SOURCE HEAT PUMP DEVELOPMENT AND STUDY FOR FOOD INDUSTRY IN JAPAN AND IDEAL APPLICATION IN AUSTRALIA	Motobumi (Mike) Ono	Japan	CO2
An experimental study on performance assessment of a transcritical CO2 heat pump system under varying refrigerant charge amount	Neeraj Agrawal	India	CO2
Maximization of the SPF through optimised control of a CO2 heat pump	Sebastian Ott	Germany	CO2
Evolution of CO2 systems design based on practical experience from supermarket installation in the Northern Europe	Anatolii Mikhailov (will be replaced by another presenter)	Denmark	CO2
The evolution of CO2 refrigeration from trial to roll out in Tesco stores	Andy Campbell	UK	CO2
CO2 Supermarket Refrigeration System for Hot Climates	Silvia Minetto & Sergio Giroto	Italy	CO2
Market introduction of commercially viable CO2 supermarket refrigeration systems.	Oliver Finckh	Germany	CO2
Compact, lightweight unitary-type air-conditioner using transcritical R744 designed for energy efficient operation in hot climates	Stefan Elbel	USA	CO2
CO2 cooling for Particle Physics Detectors	Auke-Pieter Colijn & Bart Verlat	Netherlands	CO2
CO2 REFRIGERATION SYSTEMS FOR OFFSHORE PROCESS COOLING	Ben Adamson	Australia	CO2
AN EXPERIMENTAL STUDY OF CO2 THERMODYNAMIC CYCLES	Cláudio Melo	Brazil	CO2
Evaluation of Suction Valve Failure Modes applied in CO2 Compressor	Eduardo Luis Gaertner + José Nilton Fonseca Jr.	Brazil	CO2
Evaporative cooling with carbon dioxide for the detectors upgrade at the Large Hadron Collider	Marco Oriunno	USA	CO2
Energy analysis of vortex tube integrated transcritical carbon dioxide compression refrigeration systems (VTITCCRS)	Paramjit Singh	India.	CO2
Development of CO2 Freezer for Commercial Use	Satoshi Imai	Japan	CO2
An overview of development and test capabilities for CO2 commercial refrigeration systems.	Tobias Siel	Germany	CO2

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<b>Hydrocarbons</b>			
PRELIMINARY TESTS ABOUT HEAT TRANSFER DURING FLOW BOILING OF CARBON DIOXIDE AND PROPANE BLEND	Alfonso William MAURO	Italy	Hydrocarbon
ANALYSIS OF THE USE OF DIFFERENT HEAT EXCHANGERS IN PROPANE HEAT PUMPS	Francisco Vera	Spain	Hydrocarbon
Safe use of hydrocarbon based chillers and application solution	Alexander Pachai	Denmark.	Hydrocarbon
Performance Assessment of Air Conditioners with HC 290	Atul Padalkar	India	Hydrocarbon
SolarChill TECHNOLOGY -Solar powered direct drive refrigerators with hydrocarbon refrigerants	Per Henrik Pedersen	Denmark	Hydrocarbon
<b>Other</b>			
NATURAL REFRIGERANTS IN DEVELOPING COUNTRIES, PROBLEMS AND SUGESTIONS	Risto Ciconkov	Macedonia	Other
Experimental study on a gas-injected heat pump with variable speed compressor at hot weather conditions	Min Woo Jeong	Korea	Other
Parameters affecting the performance of a dewpoint cooler consisting of a counter flow heat exchanger using water as refrigerant	Martien Janssen	Netherlands	Other
Reduction of Heat Transfer inside Compressor Combined with Expander	Masanobu Wada	Japan	Other
Elemental modelling of an evaporator in a cascade refrigeration system	Pradeep Bansal	New Zealand	Other
STATE OF THE ART REVIEW OF ALTERNATIVES REFRIGERANTS IN AUTOMOBILE AIR CONDITIONING SYSTEMS	Enio Bandarra Filho	Brazil	Other
Using natural refrigerants in supermarkets and cold storage plants	Vasile Minea	Canada	Other
AN HFC/HCFC FREE FOOD PROCESSING PLANT: THE ENERGY AND ENVIRONMENTAL BENEFITS OF A TWO STAGE TRANSCRITICAL CO2 REFRIGERATION PLANT	Klaas Visser	Australia	Other
Determining the tribological properties of lubricant-refrigerant mixtures	Margrit Junk	Germany	Other
Genetic Programming Based New Correlation For Tray Point Efficiency In Wide Boiling Range Binary Distillation	Parvin Jouybanpour	Iran	Other
<b>Slurry</b>			
Comparative analysis of secondary CO2 systems and water based brines in industrial and commercial refrigeration applications	Anatolii Mikhailov (will be replaced by another presenter)	Denmark	Slurry
SALT SLURRIES AS SECONDARY REFRIGERANT	Gratiela TARLEA	Romania	Slurry
Performance Comparison of a Static Ice-Bank and Dynamic Ice Slurry Cool Thermal Energy Storage Systems	Marino Grozdek	Croatia	Slurry
Numerical and experimental investigation of coils in a Phase Change Thermal Energy Storage System	N.H. Steven Tay	Australia	Slurry
Measurements of vapor-liquid equilibrium properties for the binary refrigerant, carbon dioxide + dimethyl ether	Yohei KAYUKAWA	Japan	Slurry
<b>Sorption</b>			
On-Site Testing of a Novel Indirect Evaporative Cooler	Frank Bruno	Australia	Sorption
Air Conditioning with Liquid Sorption Solutions	Franzke Uwe	Germany	Sorption
Modelling and Parametric Analysis of Silica-Gel Desiccant Wheels	Stephen White	Australia	Sorption
SINGLE PHASE HEAT TRANSFER STUDY OF LITHIUM BROMIDE IN A BRAZED PLATE HEAT EXCHANGER.	Geydy Luz Gutiérrez Urueta	Spain	Sorption
Thermal conductivity enhancement of binary nanoemulsions for absorption application	Yong Tae KANG	Korea	Sorption
PRELIMINARY EXPERIMENTAL RESULTS OF A LIQUID DESICCANT COOLING SYSTEM AND COMPARISON WITH EMPIRICAL CORRELATIONS	Armando PORTORARO	Italy	Sorption
Natural Working Fluids Based Heat Recovery Options for Driers in the Dairy Industry	Jianfeng Wang	New Zealand	Sorption
PERFORMANCE ANALYSIS OF WASTE HEAT-DRIVEN COOLING CUM DESALINATION ADSORPTION CYCLE	Kim Choon Ng & Kyaw Thu	Singapore	Sorption
Measurement and study of thermophysical properties of imidazolium ionic liquids as absorption cycle	Danxing ZHENG	China	Sorption
VAPOR PRESSURE OF ALKYLTRATES WORKING PAIRS FOR ABSORPTION REFRIGERATION CYCLES WITH HIGH TEMPERATURE DRIVING HEAT	Mahmoud Bourouis	Spain	Sorption
Solar Cooling in Australia: The future of air-conditioning?	Paul Kohlenbach	Australia	Sorption
Australian Solar Cooling Interest Group	Paul Kohlenbach	Australia	Sorption
Thermally-driven ammonia-water absorption systems	Vasile Minea	Canada	Sorption
Theoretical analysis to a hybrid ammonia-water refrigeration cycle	Danxing ZHENG	China	Sorption
INFLUENCE OF SOLUTION HEAT EXCHANGER EFFICIENCY ON THE PERFORMANCE A SIMPLE EFFECT H2O-LiBr ABSORPTION SYSTEM	Geydy Luz Gutiérrez Urueta	Spain.	Sorption
A method to reduce rectification loss for absorption refrigeration	Guangming Chen	China	Sorption
Experimental evaluation of a small capacity H2O-LiBr absorption heat pump in cooling and heating modes	Jerko Labus	Spain	Sorption
A Prognosis of Ejector Cooling	Mike Dennis	Australia	Sorption
Thermodynamic simulation of alternative absorption heat pumping processes using natural refrigerants	Oleksandr Kolenko	Austria	Sorption
Effect of the approach to equilibrium factor in an absorption cycle with integrated compression booster	Rubén Ventas Garzón	Spain	Sorption
DEVELOPMENT OF A SMALL SCALE AMMONIA/WATER ABSORPTION CHILLER	Thomas Brendel	Germany	Sorption
STATISTICAL STUDY OF EXPERIMENTAL RESULTS FOR AN ADIABATIC ABSORPTION SYSTEM	Geydy Luz Gutiérrez Urueta	Spain	Sorption
EFFECTIVE THERMAL CONDUCTIVITY OF WATER BELOW 273,16 K	O.B. Tsvetkov	Russia	Sorption
RECENT DEVELOPMENTS OF SORPTION CHILLERS IN EUROPE	Uli Jacob	Germany	Sorption
<b>Technical Workshop</b>			
Technical Workshop: A closer look at evaporative Adiabatic Wet Bulb Cooling and Diabatic Dew-point Cooling, using water (R718) as refrigerant.	P.G.H. Uges	Netherlands	Technical Workshop

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