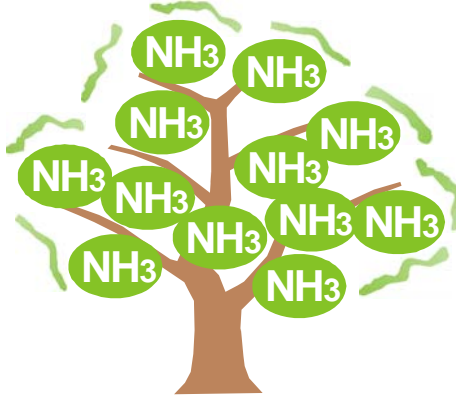


## FIRST ANNOUNCEMENT AND CALL FOR PAPERS

### INTERNATIONAL CONFERENCE



## Ammonia Refrigeration Technology

IIR Commissions: B2 with B1, D1

April 14-16, 2011, Ohrid, Republic of Macedonia



Organized by  
Faculty of Mechanical Engineering, University "Ss. Cyril & Methodius" - Skopje  
[www.mf.edu.mk](http://www.mf.edu.mk)

Programme Sponsors: **eurammon**, and **iifar** (International Institute of Ammonia Refrigeration)

### ABOUT THE CONFERENCE

Various decisions were already implemented in certain countries and negotiations have begun at international levels in order to reduce HFCs emissions. On the last UN Climate Conference (2009) the negotiations were unsuccessful. In many reports there are alarming projections of GHG emissions including HFCs.

In the refrigeration and air-conditioning industry, confusion and uncertainties related to working fluids in many applications are continuing. In addition, there are many groups with diverging interests.

Acceleration of HCFC phase-out through new commitments (2007) within the framework of the Montreal Protocol depends on the replacement technologies available on the market and also depends on the scientific community. Technology transfer enabling climate friendly technologies to be introduced is required, especially in developing countries.

The global trend towards using natural refrigerants is intensifying. There are very positive signals in some parts in Europe where expanding use of ammonia, carbon dioxide and hydrocarbons. We will eliminate all uncertainties in the future regarding both Protocols and environmental regulations applying to natural refrigerants. Ammonia is the oldest and unique refrigerant that has been used continuously since the 19th century.

The topics of the conference are: design of modern ammonia systems and technological innovation, improving energy efficiency, various applications, technical guidelines and safety regulations.

The previous three conferences were very successful, so we look forward to the 4th Conference on Ammonia Refrigeration Technology. You are welcome in the beautiful city of Ohrid and Ohrid Lake!

## MAIN TOPICS

### Design of modern ammonia systems and technological innovation

Current and future use of natural refrigerants; the Kyoto Protocol and beyond  
Low charge NH<sub>3</sub> technology, factory-made units, systems at a new level of quality improvement  
Plate type heat exchangers; Direct expansion of ammonia systems  
Expansion in applications with lower size capacity; Testing of components  
Compatibility of ammonia and metals; Ammonia and (miscible) oils for small DX systems

### Energy efficiency of ammonia refrigeration

Comparison: ammonia and fluorocarbon-based systems  
Ammonia - indirect cooling compared with direct evaporation of HCFCs and HFCs  
NH<sub>3</sub>/CO<sub>2</sub> and other cascade systems

### Applications of ammonia refrigeration

Cold stores, Agro-food industries, Supermarkets, Air-conditioning systems, Heat Pumps

### Absorption machines

### Ammonia systems in developing countries

Renewal and improvements, technical assistance

### Technical and safety standards

Regulations on the construction and operation of ammonia refrigerating systems

### Guidelines, instructions and training materials

Education and training for: best practices, operating procedures, handling of ammonia and safe operation

### Public awareness of the image and benefits of natural refrigerants

Crucial and sustainable contributions to a better environment; Barriers to market penetration

## KEYNOTE SPEAKERS



**Andy Pearson, UK**  
Star Refrigeration  
Member of IIR Commission E1  
IIAR Board of Directors



**Predrag Hrnjak, USA**  
University of Illinois  
Secretary of IIR Commission E2  
IIAR Board of Directors



**Anders Lindborg, Sweden**  
Ammonia Partnership AB  
Honorary member of IIR  
Commission D1



**John Thome, Switzerland**  
Ecole Polytechnique Fédérale de  
Lausanne (EPFL), Laboratory of Heat  
and Mass Transfer - Director

### International Scientific/Technical Committee

President: Andy Pearson (President of IoR; Member of IIR Commission E1), UK  
Jocelyn Bonjour (Secretary of IIR Commission B1), France  
Risto Ciconkov (Member of IIR Commissions B2 and E2), Macedonia  
Ray Clarke (Former President of AIRAH), Australia  
Herman Halozan (Former President of IIR Commission E2), Austria  
Predrag Hrnjak (Secretary of IIR Commission E2; IIAR Board of Directors), USA  
Kuniaki Kawamura (Vice-president of JSRAE, Member of IIR Comm. E2), Japan  
Anders Lindborg (Honorary member of IIR Commission D1), Sweden  
Natalia Mednikova, VNIHI, Russia  
Bjorn Palm (Vice-President of IIR Commission B1), Sweden  
Joachim Paul (President of IIR Executive and Management Committees), Denmark  
Fabio Polonara (Vice-President of IIR Commission B1), Italy  
Sietze van der Sluis (President of IIR Section D), Netherlands  
Thomas Spanich (eurammon executive board), Germany  
David Tanner (President of IIR Science and Technology Council), Australia  
Branislav Todorovic (Member of IIR Commission E2), Serbia  
Jeff Welch (Former IIAR Chairman), USA

## Organizing Committee

President: Risto Ciconkov, (Skopje University), Member of IIR Commission B2 and E2

Didier Coulomb, Director of the IIR

Karin Jahn, (Eurammon Management)

Atanas Kocov, Dean of the FME, Skopje University, Macedonia

Slave Lasovski, Primatohna doo, Macedonia

Vasil Ciconkov, Energija doo, Macedonia

Samoil Ciconkov (Skopje University)

IIR Conference Manager: Mrs. Susan Phalippou

## INFORMATION FOR AUTHORS

Abstracts are to be written in English, submitted electronically. Author of the accepted abstracts will be invited to submit a full paper. At least one author of each paper must attend the conference to present the paper.

The abstract should be no longer than 250 words, on A4 paper. It should include:

- Title of the paper

- Up to five keywords

- Name(s), address, e-mail address, phone & fax numbers

Please indicate the preferred mode of presentation (oral or poster).

Submit the abstract or paper in electronic form by e-mail to: [ristoci@ukim.edu.mk](mailto:ristoci@ukim.edu.mk) , or [info@energija.com.mk](mailto:info@energija.com.mk)

## Timetable

Deadline for submission of abstracts September 30, 2010

Notification of acceptance October 31, 2010

Deadline for submission of full paper January 10, 2011

Notification of acceptance February 10, 2011

Instructions for manuscript preparation and all information are available on the conference web site

[www.mf.edu.mk](http://www.mf.edu.mk)

Accepted papers presented at the conference will be available as registered separate papers during the conference.

All papers will be published on CD-ROM in the final proceedings.

## REGISTRATION AND FEES

Full conference fee includes: participation at the conference, supply of the separate printed papers, final proceedings during the conference, coffee breaks, conference dinner and sightseeing in the old town of Ohrid (or another tour).

### Registration fee

Full registration

by March 15, 2009 350 EUR

after March 15, 2009 400 EUR

Accompanying persons 120 EUR

## ACCOMMODATION

Accommodation is not included in the conference fee. Accommodation is available at the conference facility, in a four-star hotel and in three-star hotel.

### Venue:

Metropol Lake Resort

Hotel Metropol \*\*\*\*

[www.metropol-ohrid.com](http://www.metropol-ohrid.com)

[sales@metropol-ohrid.com](mailto:sales@metropol-ohrid.com)

Metropol Lake Resort is sited in the most beautiful part of the east coast of the Lake Ohrid, with the lake view from one side, and mountain view from the other side. The resort consists of three hotels on the same location: "Metropol", "Bellevue" and "Tourist".

Room rates, EUR (per person)

Hotel	Occupancy	BB	HB
METROPOL ****	1/1	54	59
	1/2	42	47
BELLEVUE****	1/1	50	55
	1/2	39	44
TOURIST***	1/1	35	40
	1/2	25	30



## OTHER INFORMATION

Ohrid: [www.ohrid.org.mk](http://www.ohrid.org.mk);

Macedonia: [www.travel-macedonia.com.mk](http://www.travel-macedonia.com.mk); [www.exploringmacedonia.com](http://www.exploringmacedonia.com)

Flights: [www.airports.com.mk](http://www.airports.com.mk)

Visa information: [www.mfa.gov.mk](http://www.mfa.gov.mk)

(Visa is not necessary for most of the countries.)

## OHRID

Ohrid is a city-museum with numerous archaeological treasures, with a number of early Christian basilicas, a great number of churches, luxurious mosaics, valuable archaeological sites and an antique theatre, which confirm that Ohrid was a cultural centre of the ancient era.

Lake Ohrid, the blue Macedonian pearl, is one of the oldest and best-preserved lakes in the world. It lies at an altitude of 695 m, has an area of 358 km<sup>2</sup> and maximum depth of 289 m. The crystal-clear lake water and the unpolluted environment afford a breath of untouched nature.

Ohrid and Lake Ohrid have been named a world cultural and natural heritage listed city under the protection of UNESCO since 1980.

Over the centuries, an enormous and colourful heritage of beautiful architecture, crafts and traditions has evolved. Combined with its scenic lake and mountainscape, interesting town and village architecture, local hospitality, climate and delicious fresh food, a visit to the Ohrid area will be deeply rewarding.



## IIR

The International Institute of Refrigeration (IIR) is a scientific and technical intergovernmental organization enabling pooling of scientific and industrial know-how in all refrigeration fields on a worldwide scale.

The IIR's mission is to promote knowledge of refrigeration technology and all its applications in order to address today's major issues, including food safety and protection of the environment (reduction of global warming, protection of the ozone layer), and the development of the least developed countries (food, health).

The IIR has 61 member countries representing 80% of the global population, and corporate and individual members in all refrigeration spheres; it is rigorously neutral and aims to express balanced, constructive viewpoints. The head office of the IIR and its entire staff are located in Paris.

The conference is a joint conference of Commission B2 (Refrigerating equipment) with Commission B1 (Thermodynamics and transfer processes) and Commission D1 (Refrigerated storage).

Find out more about the IIR on: [www.iifir.org](http://www.iifir.org).

More information:

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