

## INTERNATIONAL CONFERENCE

IIR Commission B2 with B1 and D1



## Ammonia Refrigeration Technology

May 9-11, 2013, Ohrid, Republic of Macedonia

Hotel "Metropol"

Programme Sponsors: **eurammon**, and **iir** - International Institute of Ammonia Refrigeration

### About the Conference

In the last years the CFC and HCFC refrigerants are mostly replaced with HFCs which are high potent greenhouse gases and are included in the Kyoto Protocol. In many reports there are alarming projections of GHG emissions including HFCs. In Europe an EU Regulation 842 on F-gases is introduced. More than 100 countries support the proposal for phase-down of HFCs within the Montreal Protocol, but an agreement is not reached. On the last UN Climate Conferences the negotiations were unsuccessful. In a meantime new HFC refrigerants (named as HFOs) with low GWP are announced.

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: chemical companies, manufacturers of equipment, distributors, users, environmental organizations, politicians and the public.

Despite many difficulties, the global trend towards using natural refrigerants is intensifying. There are very positive signals in Europe and some parts in the world where expanding use of ammonia, carbon dioxide and hydrocarbons in various applications is occurring. We will eliminate all uncertainties in the future regarding both Protocols and environmental regulations applying to natural refrigerants.

Of all refrigerants applied today, ammonia is the oldest: it is a 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, safety and regulations. It is very clear: by using more ammonia refrigeration, we are employing environmentally friendly technology.

The previous four conferences were very successful, so we look forward to the 5th Conference on Ammonia Refrigeration Technology. You are welcome in the beautiful city of Ohrid and Ohrid Lake !

## **Main Topics of the Conference**

### **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

### **Timetable**

Deadline for submission of abstracts: **September 30, 2012**

Notification of acceptance: **October 31, 2012**

Deadline for submission of full paper: **January 15, 2013**

Notification of acceptance: **February 15, 2013**

**[www.mf.ukim.edu.mk/web\\_ohrid2013/ohrid-2013.html](http://www.mf.ukim.edu.mk/web_ohrid2013/ohrid-2013.html)**