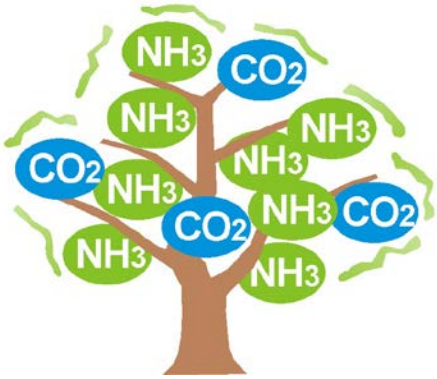
International Institute of Refrigeration

Institut International du Froid

FIRST ANNOUNCEMENT AND CALL FOR PAPERS

7th INTERNATIONAL CONFERENCE



Ammonia and CO_2 Refrigeration Technologies

IIR Commissions: B2 with B1, D1

May 11-13, 2017, Ohrid, Republic of Macedonia

Organized by
Faculty of Mechanical Engineering, University "Ss. Cyril & Methodius" - Skopje
www.mf.edu.mk/web_ohrid2017/ohrid-2017.html

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

ABOUT THE CONFERENCE

The concentrations of greenhouse gases in the atmosphere are increasing continuously. There are alarming projections of GHG emissions including HFCs. In Europe the Regulation No 517/2014 on F-gases has been introduced with many restrictions and gradually phase-down. The 27 Meeting of the Parties (in 2015) decided to negotiate for phase-down of HFCs within the Montreal Protocol. Recently, new HFC refrigerants (named HFOs) with low GWPs are appeared on the market.

The choice of refrigerant (and technology) has become a very complicated issue. In the RAC 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.

After several conversions CFCs -> HCFCs -> HFCs -> HFOs(?), 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 and CO_2 are the oldest that have been used since the 19th century. The topics of the conference are: design of modern ammonia and new CO_2 systems and technological innovations, improving energy efficiency, various applications, technical guidelines and safety regulations. It is very clear: by using more ammonia and CO_2 refrigerants, we are employing environmentally friendly technologies.

The previous six conferences were very successful, so we look forward to the 7th Conference on Ammonia and CO_2 Refrigeration Technologies. Use the opportunity to see the beautiful city of Ohrid and Ohrid Lake!

MAIN TOPICS

Design of modern ammonia (NH_3) systems and technological innovation
Low charge ammonia technology; Small size ammonia systems; Factory-made units;
Advanced design and testing methods;
Compatibility of ammonia with metals and new oils.

Design of carbon dioxide (CO_2) refrigeration and heat pump systems
Transcritical and subcritical operation;
Modifications of cycles to improve the energy efficiency;
Development of CO_2 systems intended for hot climate;
Ejector as an expansion device.

New innovative components
Plate and "shell & plate" heat exchangers; DX evaporators;
Microchannel air-cooled condensers; Improved evaporative condensers;
Semi-hermetic and hermetic ammonia compressors;
High-pressure ammonia and CO_2 compressors.

Energy efficiency of ammonia and CO_2 refrigerating systems
Advantages of ammonia and CO_2 versus fluorocarbon-based systems;
New secondary coolants; CO_2 as a secondary coolant;
NH_3/CO_2 cascade systems.

Applications of ammonia and CO2 refrigeration
Cold stores, food and drink industries; Supermarkets; Air-conditioning systems (liquid chillers);
Heat pumps (medium and high temperature heating).

Absorption machines
Modified absorption cycles; Trigeneration and district cooling.

Ammonia and CO2 systems in developing countries
Modernisation, improvements, technical assistance, barriers.

Technical and safety issues; Guidelines and training materials
Regulations on the construction and operation of ammonia and CO_2 refrigerating systems;
Education and training for: best practices, operating procedures, handling 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;
Current and future use of natural refrigerants; Montreal and Kyoto Protocol, phase-down of HFCs.

International Scientific/Technical Committee

President: Andy Pearson, Former President of IoR; Member of IIR Commission E1, UK
Hein Auracher, Former President of IIR section B, Germany
Georgy Belozerov, Member of IIR Commission D1, Russia
Jocelyn Bonjour, Vice-President of IIR Commission B1, France
Jiangping Chen, member of UNEP RTOC Committee, China
Risto Ciconkov, Member of IIR Commission B2 and E2, Macedonia
Sergio Girotto, Enex, Italy
Armin Hafner, SINTEF, Norway
Predrag Hrnjak, Member of IIR Commission E2, USA
Kuniaki Kawamura, President of JSRAE, President of IIR Comm. D1, Japan
Gert Koster, Member of IIR Commission B2, Netherlands
Tomasz Lokietek, Secretary of IIR Commission B2, Poland
Natalia Mednikova, VNIHI, Russia
Vasile Minea, Member of IIR Commission E2, Canada
Mike Odey, Vice-President of IIR Commission B2, New Zealand
Alexander Pachai, Member of UNEP RTOC Committee, Denmark
Bjorn Palm, Member of IIR Commission B1, Sweden
Branimir Pavkovic, Member of IIR Commission E1, Croatia
Fabio Polonara, Vice-President of IIR Commission A2, Italy
Alessandro Da Silva, member of UNEP RTOC Committee, Brazil
Eric Smith, IIAR Vice-President and Technical Director, USA
Thomas Spänich (eurammon executive board), Germany
Zoran Stajic, Vice-President of IIR Commission B2, Serbia
Oleg Tochenyy, Cooltech, Russia

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, Primatehna doo, Macedonia
Vasil Ciconkov, Energija doo, Macedonia
Samoil Ciconkov, Energija doo, Macedonia

IIR Communications and Conference Manager: Mrs. Deonie Lambert

INFORMATION FOR AUTHORS

Abstracts are to be written in English, submitted electronically. Author of the accepted abstract 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 and phone number.

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 , or info@energija.com.mk

Timetable

Deadline for submission of abstracts	September 30, 2016;
Notification of acceptance	October 31, 2016;
Deadline for submission of full paper	January 15, 2017
Notification of acceptance	February 15, 2017

Instructions for manuscript preparation and all information are available on the conference web site www.mf.edu.mk/web_ohrid2017/ohrid-2017.html .
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 gala dinner and sightseeing in the old town of Ohrid (or another tour).

Registration fee

Full registration in Euros

	IIR members	Non-IIR mebers
By March 31	350	390
After March 31	400	440

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.mk
sales@metropol-ohrid.com.mk

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, two of them are available on May: "Metropol" and "Bellevue".

Room rates, EUR (per person)

Hotel	Occupancy	BB	HB
METROPOL****	1/1	54	59
	1/2	42	47
BELLEVUE****	1/1	54	59
	1/2	42	47

OTHER INFORMATION

Ohrid: www.ohrid.com.mk
Macedonia: www.travel-macedonia.com.mk; www.exploringmacedonia.com
Flights: www.airports.com.mk
Visa information: 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 km² 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.



International Institute of Refrigeration

The International Institute of Refrigeration (IIR) is the only independent intergovernmental science and technology based organization which promotes knowledge of refrigeration and associated technologies that improve quality of life in a cost-effective and environmentally sustainable manner including: Food quality and safety from farm to consumer ; Comfort in homes and commercial buildings ; Health products and services; Low temperature technology and liquefied gas technology ; Energy efficiency; Use of non-ozone depleting and low global warming refrigerants in a safe manner.
Members of the IIR include Member Countries. Member Countries take part in IIR activities via the commission members they select. Moreover, companies, laboratories, universities… can become corporate or benefactor members of the IIR.
The IIR provides its members with tailored services meeting a wide range of member-country, national and international organizations, decision-makers, researchers and refrigeration practitioners needs.
The head office of the IIR and its entire staff are located in Paris.
Find out more about the IIR on: www.iifiir.org.

More information:
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