

LAST ANNOUNCEMENT

Updated: April 24, 2017

The 14th CRYOGENICS 2017

IIR International Conference & Exhibition



Dresden, Germany

May 15 – 19, 2017



Top Conference Partner

ILK Dresden



Conference Bags Sponsor



Welcome Party Sponsor



Conference USB Proceedings Sponsor



TABLE OF CONTENTS

Table of Contents	2
General Information	2
Travel Information	3
Instructions for Authors	4
Committees	5
Programme at a Glance	6
Programme in Detail	7
Social Events	14
Technical Visits on Friday, May 19, 2017	14
Exhibition	15
Top Conference partner	16
Conference Organization	16

GENERAL INFORMATION

Conference venue

Dorint Hotel

Address: Grunaer Strasse 14, 01069 Dresden, www.dorint.com/dresden

On-site registration

The registration & information desk is located on the 1st floor in front of the lecture hall.

Registration & information hours:

Monday 16:00 - 19:00

Tuesday 08:00 - 18:30

Wednesday 08:00 - 17:30

Thursday 08:00 - 17:30

You can check your **accepted payment** on the website before the arrival to Dresden. You need to know your registration ID (not identical with your paper ID) for identification of your payment. This number is written on the official confirmation you have received from ICCEX Conference Office.

!!! PLEASE NOTE THAT ONLY PAYMENTS IN CASH ARE ACCEPTED ON SITE !!!

Name badge

A name badge is issued upon registration. The badge should be worn throughout the conference. The badge serves as an admission pass to all lectures, the exhibition, the welcome party, coffee breaks and lunches, the dinner and technical excursions included in the registration fee.

Accommodation

You don't need any accommodation voucher. Our rooming lists has been sent to the hotel reception desk.

Internet Access

Free wireless Internet access is available in the entire conference area. You can use the WiFi "Dorint" and the password is: Dresden 2017.

Lunches

Lunches are included in the registration fee and will be served at the Dorint hotel restaurant on the 1st floor. One non-alcoholic drink is included, all other drinks should be paid by participants themselves.

Dress Code

Attire during the entire conference is business casual.

Liability

Neither the organizers of the conference nor the Dorint hotel will assume any responsibility for damage or injury to persons or property during the conference. The registration fee does not include any insurance for participants. It is recommended that all participants make their own arrangements with respect to health and travel insurance.

Smoking Policy

Smoking is forbidden in the conference area. If you are unable to refrain from smoking, the Dorint hotel will provide information on areas designated for smoking.

Parking

Parking spaces are available at the Dorint hotel, however, the parking fee is not included in the registration fee. Expenses for the parking must be covered separately by the participants. The price is 15 €/day.

There are also several large public parking places behind the Dorint hotel: Pirnaische Street (7 €/day) or Lingner Alee (3 €/day).

Electricity

The voltage in Germany is 230 V. European-style round two-pin plugs are used.

Bank Services and Exchange

The German currency is EURO (€). The official exchange rate is published daily in the newspapers. Exchange facilities are available at the airport, main train stations and exchange agencies. Cash and travellers checks are easily exchanged in banks and hotels. Most hotels and restaurants accept international credit cards. Cash machines are always available outside of bank opening hours.

Tipping

Tipping in restaurants and bars is generally at 5-10%.

Shopping

Shops in central Dresden are usually open Monday to Saturday from 10am to 8pm. The Altmarkt-Galerie in the city centre is open until 9pm. Large supermarkets and shopping centres are open until 10pm.

On Sundays, shops are closed, with some exceptions such as bakeries, train stations and petrol stations.

Tax

All prices in Germany already include VAT 19% or 7%.

First Aid Telephone Numbers

112: General Emergency (Fire, Ambulance)

110: Police

TRAVEL INFORMATION

The easiest means to get to Dresden is by train or by plane, flying to Dresden International airport or airports close to Dresden.

Dresden International Airport

There is the possibility to fly directly to Dresden International airport only from specific (!) international or national airports. Dresden International airport is situated around 10km in the north of the city. The easiest way to get to the city centre is by train or taxi.

How to reach the conference site from the Airport Dresden

by Airport Shuttle (S-Bahn S2)

- The underground station is located in the terminal building. Double-decker trains run every 30 minutes between the airport and the city centre.
- Get out of the train at station "Dresden Bahnhof Mitte" or Main Station "Dresden Hbf." For Further information please look at "By train"

by Taxi:

- The taxi stands are directly in front of the terminal exits. Taxi drivers accept cash and on request various credit cards. The taxi journey between the airport and Dorint Hotel costs around 30 €.

Airports close to Dresden: Berlin-Schönefeld Airport, Leipzig/Halle Airport and Prague Airport

Participants can also land first at other airports in cities located close to Dresden like Berlin, Leipzig or Prague and make their own way to Dresden. All three airports are in a distance of approximately 160 km to Dresden.

- There are regular bus connections from Berlin-Schönefeld to the train station Dresden with a travel time of approximately 2 hours.
- There are regular train connections from Leipzig/Halle to the train station Dresden with a travel time of approximately 1,5 hours.
- There are regular train and bus connections from Prague main station to main station Dresden with a travel time of approximately 2 hours. However, additional time has to be considered to come from Prague airport to the main station in Prague.

Local transportation in Dresden

Dresden has a very convenient local traffic system reaching nearly all locations in Dresden by trams and buses. Tickets are available: in the ticket machines at a lot of public transport stops, in the ticket machines inside the trams, at the bus driver, at DVB-Service Locations. More information is available at www.dvb.de.

Basic fares for normal tickets:

- valid for one hour for 2,30 €
- valid for one day for 6 €
- valid for whole week for 21 €

How to reach the conference site

from Main Station: Take a tram No. 3 or 7 to stop "Pirnaischer Platz", change to tram No. 1, 2, 4, or 12 to stop "Deutsches Hygiene-Museum".

from station "Dresden Bahnhof Mitte": Take a tram No. 1, 2, 4, or 12 to stop "Deutsches Hygiene-Museum"

INSTRUCTIONS FOR AUTHORS

Lectures

- The official language is English. No translation will be provided.
- All speakers should upload their presentations on a computer in the lecture room before start of the first morning session, during the lunch break or during the coffee break at the latest.
- Please use an USB memory stick to provide your presentation. CRYOGENICS 2017 doesn't allow the use of speakers' own laptops for their presentations.
- CRYOGENICS 2017 accepts only presentation material in MS PowerPoint format.
- If you want to check your presentation before your lecture, don't hesitate to contact conference assistants in the lecture hall, they are ready to help you.
- All speakers are requested to register in time to receive their badges and other conference materials.

Each presenter has 15 minutes for his/her lecture and 3 minutes for a discussion. There will be discussion immediately after the lectures; a common discussion can take place when all papers scheduled for the session have been presented. All presenters are thus requested to remain for the entire session.

When it is time for your lecture, go to the podium immediately when the previous speaker has finished the presentation and answered questions. The session chair will introduce your lecture and ask you to start your presentation.

Please start your presentation considering the following:

1. Start immediately on the topic and avoid another introduction given by yourself.
2. Pace your talk to end at the scheduled ending time.
3. Please observe the time allocated for your presentation and discussion.
4. Please follow instructions of the session chairman.
5. During the time for discussion, listen carefully to the questions from the audience and answer them briefly. If you cannot answer the questions briefly, ask for a private discussion after the session.

Poster Presentations

- All authors are asked to display their poster presentations within the whole conference time, from Tuesday till Thursday.
- The special poster session is allocated in the programme on Wednesday, May 17, 2017 in the afternoon / evening.
- Please display your presentations on Tuesday morning or immediately after your arrival, and take your posters down from poster tables on Thursday during the afternoon coffee break at the latest. Posters that are not dismantled will be removed by staff and discarded.
- Please note, that it is not possible to print out your poster on site at the hotel.

Poster table size

The pintable is **1450 mm high and 1180 mm wide**, the dimension of A0 format is recommended.

Poster Competition

All authors of poster presentations have a chance to take part in the poster competition.

- Your poster should be displayed during the whole conference
- You should be ready in front of your poster to answer all questions during the poster session on Wednesday evening.

Each conference participant will receive an “evaluating sticker” together with her/his name badge and will have an opportunity to appreciate one poster contribution.

The deadline for your evaluation is on Thursday during the lunch break.

The Conference Scientific Jury is going to review all posters and the winners will be announced at the closing ceremony. The decision of the Jury will be final and no clarification will be given.

Benchmarks: Originality, Technical merit/ validity, Completeness, Quality of data and findings, Results and conclusions, Clarity of tables, graphs and figures, Readability and design

COMMITTEES

Organizing & Programme Committee

Vaclav Chrz (Chair), Czech Republic
Christoph Haberstroh, Germany
Ralf Herzog (Vice-chair), Germany
Zdenek Kaiser, Czech Republic
Jürgen Klier, Germany
Tomáš Králík, Czech Republic
Radovan Kundera, Czech Republic
Martin Lánský (Secretary), Czech Republic
Pavel Měřička, Czech Republic
Stanislav Šafrata, Czech Republic
Pavel Schustr, Czech Republic
Gabriele Spörl, (secretary), Germany
Pavel Urban, Czech Republic
Martin Vinš, Czech Republic

Romana Kočová, ICCEX, Czech Republic
Alžběta Kočová, ICCEX, Czech Republic

International Advisory Committee

Alexey M. Arkharov, Russia (Past President of the IIR Commission A2)
Maciej Chorowski, Poland (President of the IIR Commission A2)
Václav Chrz, Czech Republic (Conference Chairman / Past President of the IIR Comm. A2)
Didier Coulomb, France (Director of the IIR)
Dimitri Delikaris, Switzerland
Alexander Feher, Slovakia (IIR Commission A1)
Jacques Guilpart, France (President of the IIR Section C)
Christoph Haberstroh, Germany (IIR Commission A1)
Ralf Herzog, Germany (Conference Vice-Chairman / President of the IIR Section A)
Zdeněk Kaiser, Czech Republic (Past V-President of the IIR Commission A1)
Mohammad Kalbassi, United Kingdom
Jürgen Klier, Germany
Philippe Lebrun, France (Past President of the IIR Section A)
Noboru Motomura, Japan (President of the IIR Commission C1)
Aleš Srnka, Czech Republic (President of the IIR Commission A1)
Stanislav Šafrata, Czech Republic (Past V-President of the IIR Commission A1)
Ralph Scurlock, United Kingdom (Chairman of the International Advisory Committee)
Marcel ter Brake, The Netherlands

PROGRAMME AT A GLANCE

MONDAY, MAY 15, 2017

- 16:00 – 19:00 Registration of participants
19:00 – 21:00 Welcome party (Sponsored by [HEROSE GmbH](#))

TUESDAY, MAY 16, 2017

- 09:00 – 09:15 Opening
09:15 – 10:55 Cryogenics in Particle Physics I
10:55 – 11:15 Coffee Break
11:15 – 13:15 Cryogenics in Particle Physics II
13:15 – 14:00 Lunch Break
14:00 – 16:00 Superconductivity
16:00 – 16:20 Coffee Break
16:20 – 18:20 Superconductivity & Cryogenics

WEDNESDAY, MAY 17, 2017

- 08:30 – 10:30 Hydrogen & Helium
10:30 – 10:50 Coffee Break
10:50 – 12:30 Cryobiology
12:30 – 14:00 Lunch Break
14:00 – 16:20 Liquefied Natural Gas
16:00 – 16:20 Coffee Break
16:20 – 17:20 Cryocoolers & Cooling Cycles
17:30 – 18:30 Poster Session

THURSDAY, MAY 18, 2017

- 08:30 – 10:30 Design of Industrial Equipment
10:30 – 10:50 Coffee Break
10:50 – 12:10 Cryobiology & Cryotherapy
12:10 – 13:15 Lunch Break
13:15 – 15:15 Rare Gases
15:15 – 15:40 Coffee Break
15:40 – 17:40 Air Separation & Cryogenic Energy Storage
17:40 – 18:10 Closing Ceremony / Poster Award / Farewell
19:30 – 23:00 Conference Dinner

FRIDAY, MAY 19, 2017

- 08:30 – 12:30 ILK Dresden
12:30 – 15:00 Leibniz Institute
08:30 – 13:00 HZDR

PROGRAMME IN DETAIL

FOLLOW THE INFO POSTER IN THE REGISTRATION AREA TO CHECK POSSIBLE CURRENT CHANGES.

MONDAY, MAY 15, 2017

REGISTRATION

16:00 – 19:00

WELCOME PARTY SPONSORED BY [HEROSE GMBH](#).

19:30 – 21:00

TUESDAY, MAY 16, 2017

OPENING CEREMONY

Chair: Chrz V., Coulomb D., Herzog R.

09:00 **OPENING CEREMONY**

SESSION I / CRYOGENICS IN PARTICLE PHYSICS I

Chairs: Srnka A., Herzog R.

09:15 076 ●●● KEYNOTE ●●●

OVERVIEW OF THE DEVELOPMENT AND PROTOTYPING OF THE CRYOSTATS AND CRYOGENIC SYSTEMS FOR THE LBNF/DUNE PROJECT

Bremer Johan, Adamowski Mark, Chalifour Michel, Michael Geynisman, Haaf Kevin, Creus Prats Joaquin, Nessi Marzio, Norris Barry, Montanari David

09:35 054 **PROGRESS OF THE FAIR CRYOGENIC SYSTEM**

Kollmus Holger, Kauschke Marion, Martínez-López Mónica, Täschner Alexander, Schroeder Claus H.

09:55 024 **THE STATUS OF THE MANUFACTURING AND TESTING OF SC MAGNETS FOR THE NICA PROJECT AND SIS100 SYNCHROTRON**

Khodzhibagiyan Hamlet, Fischer Egbert

10:15 045 **CRYOGENIC SYSTEM FOR MULTI-PURPOSE DETECTOR AT NICA**

Nikita Emelianov, Nikolay Agapov, Anton Konstantinov, Iulia Mitrofanova, Anton Emelianov

10:35 096 **THE CRYOGENIC SYSTEM FOR THE ULTRA-COLD NEUTRON SOURCE OF THE TECHNICAL UNIVERSITY OF MUNICH : MAIN FEATURES AND COMMISSIONING**

Bernhardt Jean-Marc, Dauguet Pascale, Hergat Thibault, Mantileri Christophe, De Maeyer Peter, Frei A., Bocquet C., Cristiano F., Schilcher J., Wenisch S., Wlokka S.

COFFEE BREAK

10:55 – 11:15

SESSION II / CRYOGENICS IN PARTICLE PHYSICS II

Chairs: Herzog R., Srnka A.

11:15 039 **OVERVIEW OF THE LIQUID ARGON CRYOGENICS FOR THE SHORT BASELINE NEUTRINO PROGRAM (SBN) AT FERMILAB**

Norris Barry, Bremer Johan, Chalifour Michel, Delaney Mike, Dinnon Mike, Doubnik Roza, Geynisman Michael, Hentschel Steve, Kim Min Jeong, Montanari Claudio, Montanari David, Schwartz Frederick, Stefanik Andy, Tillman Justin, Zuckerbrot Mike

11:35 029 **OPERATIONAL DATA ANALYSIS OF THE STANDARD COMMERCIAL HELIUM LIQUEFIER/REFRIGERATOR**

Nagimov Ruslan, Kishi David, Koscielniak Shane, Koveshnikov Alexey, Laxdal Robert

11:55 034 **MASS FLOW REDUCTION BY A HEATER-CAPILLARY COMBINATION FOR THE CRYOGENIC SYSTEM OF SIS100 AT FAIR**

Eisel Thomas, Kauschke Marion, Schroeder Claus H., Streicher Branislav, Szeligowska Anna, Walter Franz, Kollmus Holger

12:15 055 **CRYOGENICS FOR THE SUPER-FRS AT FAIR**

Wamers Felix, Xiang Yu, Kauschke Marion, Martínez-López Mónica, Schroeder Claus H., Täschner Alexander, Kollmus Holger

12:35 037 ANALYSIS OF THE THERMAL LOADS ON THE NICA ACCELERATOR COMPLEX
Konstantinov Anton, Khodzhibagiyan Hamlet, Agapov Nikolay, Mitrofanova Iulia

12:55 084 THE ANALYSIS OF THE THERMO-ACOUSTIC OSCILLATION EFFECT OCCURRENCE POSSIBILITY AND MITIGATION FOR THE VALVE BOXES OF CRYOGENIC DISTRIBUTION SYSTEM FOR THE ESS LINAC ELLIPTICAL SECTION
Polinski Jaroslaw, Chorowski M., Fydrych J.

LUNCH BREAK

13:15 – 14:00

SESSION III / SUPERCONDUCTIVITY

Chairs: Delikaris D., Kade A.

14:00 031 ●●● KEYNOTE ●●●
STATUS OF THE NICA CRYOGENICS AT JINR
Mitrofanova Iulia, Agapov Nikolay, Konstantinov Anton, Krakovsky Boris, Popov Oleg, Udut Vadim

14:20 075 SERIAL CRYOGENIC TESTS OF SC-MAGNETS FOR NICA PROJECT
Nikiforov Dmitry, Kostromin Sergey, Loshmanova Kseniia

14:40 021 CRYOGENIC INFRASTRUCTURE FOR THE SERIAL MAGNET TEST FACILITY FOR FAIR
Schroeder Claus H., Walter Franz, Beusch Andreas, Breidert Anna, Streicher Branislav, Eisel Thomas, Kollmus Holger

15:00 047 EVALUATION OF MECHANICAL DISPLACEMENTS IN SUPERCONDUCTING ACCELERATOR MAGNET ARRAYS
Ceballos Velasco Jorge, Serna Moreno María del Carmen, Datskov Vladimir, Fischer Egbert

15:20 041 CRYOGENICS IN HIGH-CURRENT BUSBARS – SOLUTIONS AND REQUIREMENTS
Hanebeck Claus, Huwer Stefan, Schreiner Florian, Reiser Wolfgang

15:40 093 SIS100 HTS LOCAL CURRENT LEADS - CRYOGENIC PERFORMANCE
Datskov Vladimir, Bleile Alexander, Hess Guenter, Fischer Egbert

COFFEE BREAK

16:00 – 16:20

SESSION IV / SUPERCONDUCTIVITY & CRYOGENICS

Chairs: Mierau A., Králík T.

16:20 104 CRYOGENIC COMPONENTS FOR A SUPERCONDUCTING DC-RAIL
Zerweck Ulrich, Kuhn Moritz, Kade Andreas, Wischer Manuel, Schroeder Gunar, Klier Jürgen

16:40 046 CHALLENGES OF HIGH FIELD LARGE BORE SUPERCONDUCTING “OUTSERTS” FOR RESEARCH MAGNETS
Neil Clarke, Steven Ball, Joe Brown, Ziad Melhem, Andy Twin, Dave Warren

17:00 019 PROTOTYPE MODULAR CRYOSTAT UTILIZED FOR 10 MW OFFSHORE SUPERCONDUCTING WIND TURBINE
Sun Jiuce, Sanz Santiago, Ramalingam Rajinikumar, Neumann Holger

17:20 052 COMMISSIONING RESULTS OF THE JT-60SA CRYOGENIC SYSTEM
Hoia Christine, Bonne François, Roussel Pascal, Lamaison Valerie, Girard Sylvain, Fejoz Pascal, Goncalves Romain, Vallet Jean-Claude, Legrand Jerome, Langevin Babiliste, Maccagnan Michel, Pudys Vincent, Wanner Manfred, Cardella Antonino, Di Pietro Enrico, Kamiya Koji, Natsume Kyohei, Ohtsu Kiichi, Oishi Makoto, Honda Atsushi, Kashiwa Yoshitoshi, Kizu Kaname, Koide Yoshihiko

17:40 103 ROLE OF THE SUPERCONDUCTIVITY IN RADIATIVE HEAT TRANSFER
Králík Tomáš, Musilová Věra, Srnka Aleš, Foř Tomáš, Frolec Jiří

WEDNESDAY, MAY 17, 2017

SESSION V / HYDROGEN & HELIUM

Chairs: Haberstroh Ch., Kundera R.

- 08:30 001 ●●● KEYNOTE ●●●**
PROBLEMS OF BULK STORAGE AND SHIPPING OF LIQUID HYDROGEN IN VOLUMES OF 10,000 TO 100,000 CUBIC METERS AT ONE BAR PRESSURE
Scurlock Ralph presented by Christoph Haberstroh
- 08:50 006 UNDERSTANDING THE PHYSICAL PHENOMENA THAT OCCUR INSIDE HEAT EXCHANGERS FOR LIQUEFACTION OF HYDROGEN**
Wilhelmsen Øivind, Skaugen Geir, Berstad David, Aasen Ailo, Neksa Petter
- 09:10 056 ASPECTS OF HYDROGEN LIQUEFIER SCALE-UP – PROCESS AND EQUIPMENT DESIGN**
Cardella Umberto, Decker Lutz, Klein Harald
- 09:30 063 CRYOGENIC CO₂ CONDENSATION AND MEMBRANE SEPARATION OF SYNGAS FOR LARGE-SCALE LH₂ PRODUCTION**
Berstad David, Wilhelmsen Øivind, Skjervold Vidar, Neksa Petter
- 09:50 010 STUDY ON SET PRESSURE ADJUSTMENT METHODS OF CRYOGENIC SPRING LOADED SAFETY RELIEF VALVES**
Weber Christina, Heidt C., Henriques A., Schwenzer J.C., Grohmann S.
- 10:10 051 SIMULATION OF GAS FLOW THROUGH CRYOGENIC HELIUM MIXED-FLOW TURBINE AND HELIUM TURBINES IN-HOUSE TESTING AND VIBRATION DIAGNOSTICS**
Kohut Vojtěch, Kundera Radovan, Chromek Lukáš

COFFEE BREAK

10:30 – 10:50

SESSION VI / CRYOBIOLOGY

Chairs: Spörl G., Mericka P.

- 10:50 026 ●●● KEYNOTE ●●●**
CRYOPRESERVATION BY VITRIFICATION: BASIC THERMODYNAMIC PRINCIPALS, METHODS AND DEVICES
Katkov Igor I., Bolyukh Vladimir F.
- 11:10 038 LOW TEMPERATURE PHOTO PYROELECTRIC STUDY ON THE GLASSY STATE IN THE PRESENCE OF CRYOPROTECTANTS - COMPARISON WITH DSC AND VISCOSITY STUDIES**
Mathew Allen, Escorne Benoit, Ellass Abdelaziz, Goutier Fabrice, Baudot Anne, Louis Gérard, Hadj Sahraoui Abdelhak
- 11:30 005 HOW LONG DO WE NEED TO STORE CRYOPRESERVED CELLS AND TISSUES**
Mericka Pavel, Strakova Hana, Lanska Miriam, Belada David, Zak Pavel, Sterba Lubomir, Brandejs Daniel, Honegrova Barbora
- 11:50 014 FROM VIAL TO MULTIWELL - CONTROLLED RATE FREEZING IN A CONVECTIVE ENVIRONMENT**
Reinsch Holger, Kretschmer René, Spörl Gabriele
- 12:10 114 CRYO-HANGING DROPS: TOWARDS READY-TO-USE FROZEN BIOLOGICAL SAMPLES FOR SCREENING PURPOSES IN 96 WELL PLATE FORMAT**
Meiser Ina, Schmidt Katharina, Neubauer Julia C., Zimmermann Heiko

LUNCH BREAK

12:30 – 14:00 (LUNCH / IIR BUSINESS MEETING)

SESSION VII / LIQUEFIED NATURAL GAS

Chairs: Lánský M., Kundera R.

- 14:00 023 CO₂ AND H₂S CRYOGENIC REMOVAL PROCESS EVALUATION FOR THE BIOGAS UPGRADING AND LIQUEFACTION**
Spitoni Marco, Xiong Xiaojun, Arteconi Alessia, Polonara Fabio, Lin Wensheng
- 14:20 012 PERFORMANCE ANALYSIS ON A NOVEL SMALL-SCALE AUTO-CASCADE NATURAL GAS LIQUEFACTION SYSTEM UTILIZING A RECTIFYING COLUMN**
Song Qi, Wang Hui, Ren Bin, Wang Qin, Chen Guangming

- 14:40 090 ANALYSIS OF CASCADE CYCLE AND REVERSE BRAYTON CYCLE BASED BOG RELIQUEFACTION SYSTEMS FOR THEIR SUITABILITY IN LNG CARRIER SHIPS WITH DUAL FUEL ENGINES**
Kochunni Sarun Kumar, Chowdhury Kanchan
- 15:00 092 BRAZED PLATE HEAT EXCHANGER (BPHE) FOR SMALL SCALE NATURAL GAS LIQUEFACTION PLANT APPLICATION**
Ju Yonglin, Wu Jitan, He Tianbiao, Felgenhauer Bjorn, Cong Peizhong
- 15:20 109 COMPACT LNG REGASIFICATION PLANTS AND FUELING STATIONS**
Pavlak Josef, Matl Pavel
- 15:40 057 AN EXPERIMENTAL STUDY ON THE WORKING CHARACTERISTICS OF A METHANE-CHARGED CRYOGENIC LOOP HEAT PIPE**
Guo Yuandong, Lin Guiping, Zhang Hongxing, Miao Jianyin, He Jiang, Bai Lizhan

COFFEE BREAK

16:00 – 16:20

SESSION VIII / CRYOCOOLERS & COOLING CYCLES

Chairs: Klier J., Grohmann S.

- 16:20 108 CRYOGENIC COOLING SYSTEM BRAYTON WITH NEW CONFIGURATION FOR 10 J/10 HZ YB:YAG MULTI-SLAB BASED LASER SYSTEM AT ELI-BEAMLINES PROJECT**
Schustr Pavel, Fibrich M., Polan J., Rus B., Dostalova M., Plasil V., Simek J.
- 16:40 017 NUMERICAL MODELING OF POROUS NOZZLES FOR REGENERATOR OF STIRLING CRYOCOOLER**
Arkharov Ivan, Navasardyan Ekaterina, Parkin Alexey, Kulik Viktoriya
- 17:00 028 INFLUENCE OF CRYOGENIC TEMPERATURE PROCESSES ON THE WORK OF THE LINEAR PULSE ELECTROMECHANICAL CONVERTER**
Bolyukh Vladimir F., Kryukova Natalia V., Katkov Igor I.

POSTER SESSION

17:30 – 18:30

Chairs: Grohmann S., Klier J.

THURSDAY, MAY 18, 2017

SESSION IX / DESIGN OF INDUSTRIAL EQUIPMENT

Chairs: Vinš M., Polinski J.

- 08:30 085 COMPACT PLUG&PLAY MONITORS FOR PRECISE LOW TEMPERATURE MEASUREMENTS**
Fischer Egbert, Datskov Vladimir, Seifert Frank, Gust Norbert, Kade Andreas, Klier Jürgen
- 08:50 053 EXPERIMENTAL STUDY ON THERMAL STRESS OF CRYOGENIC TANK DURING DIFFERENT COOL DOWN PROCESS**
Zhu Kang, Ma Yuan, Li Cui, Li Yanzhong
- 09:10 094 CRYOGENIC SAFETY VALVES TO PROTECT SYSTEMS IN ITER DURING QUENCH**
Boersch Michael, Drache Johannes, Weber Daniel
- 09:30 099 ANALYTICAL MODEL FOR A LEAK DETECTION SYSTEM ON ARIANE 5 LAUNCHER CRYOGENIC INTERFACES**
Cencetti Marco, Niccolai Jean-François
- 09:50 072 A COMPUTATIONAL STUDY FOR CHARACTERIZING CAVITATING FLOW IN HYDROFOILS OPERATING AT CRYOGENIC CONDITIONS**
Mishra Arpit, Roy Arnab, Ghosh Parthasarathi
- 10:10 007 MODELLING OF A COUNTER-FLOW HEAT EXCHANGER FOR CRYOGENIC MIXED REFRIGERANT CYCLES**
David Gomse, Thomas M. Kochenburger, Steffen Grohmann

COFFEE BREAK

10:30 – 10:50

SESSION X / CRYOBIOLOGY & CRYOTHERAPY

Chairs: Sumida S., Katkov I.

- 10:50 110 ●●● KEYNOTE ●●●**
OBSERVATIONS OF PROLIFERATION AND DIVISION OF FROZEN-THAWED MESENCHYMAL STEM CELLS (MSCS) USING A TIME-LAPSE CINEMICROSCOPY
Sumida Saijo, Kitamura T., Kaihou T., Rowe A.W.
- 11:10 112** **STUDY OF REHYDRATION INJURY IN LYOPHILIZED RED BLOOD CELLS**
Li Wenhui, Hong Shuqing, Zhang Ying, Li Ling, Song Ning, Zhou Xiaoming, Liu Zhong
- 11:30 018** **MAY THE SURGERY BE A SOURCE OF HAPPINESS?!**
Butorina Antonina, Vozdvizhenskiy Ivan, Arkharov Alexey, Matveev Valeriy
presented by Ivan Arkharov
- 11:50 059** **IMPACT OF PERSONAL CHARACTERISTICS ON WHOLE BODY CRYOSTIMULATION SETTINGS: A NUMERICAL SIMULATION STUDY USING THE FPC MODEL**
Bröde Peter, Fiala Dusan, Viroux Patrick, Tiemessen Ivo, Trembley Jon P.

LUNCH BREAK

12:10 – 13:15

SESSION XI / RARE GASES

Chairs: Schustr P., Symonenko Iu.

- 13:15 080** **LOW-TEMPERATURE NATURAL HELIUM SEPARATION PROCESSES FOR OBTAINING 3HELIUM ISOTOPE**
Kupriyanov Maksim
- 13:35 016** **THE ANALYSIS OF REFRIGERATION CYCLES IN THE TECHNOLOGIES OF PRODUCING OF NEON AND ITS STABLE ISOTOPES AT T = 28 K**
Bondarenko Vitaly, Dalakov Petar, Symonenko Iurii, Matveev Eduard
- 13:55 025** **NEW CRYOGENIC PROCESSES IMPLEMENTED FOR 3 γ MEDICAL IMAGING WITH LIQUID XENON**
Virone Loïck, Beupère Nicolas, Briend Pierre, Butterworth James, Carlier Thomas, Cherel Michel, Cussonneau Jean-Pierre, Gallego Lucía, Le Ray Patrick, Masbou Julien, Morteau Éric, Staempflin Martin, Stutzmann Jean-Sébastien, Thers Dominique
- 14:15 015** **THE EXTRACTION OF RARE GASES BY DESUBLIMATION METHOD**
Chyhrin Artem, Pylypenko Borys, Bondarenko Andrey
- 14:35 013** **THE USING OF GAS-DYNAMIC COOLERS AT CRYOGENIC TEMPERATURES**
Bondarenko Vitaly, Tyshko Dmytro, Vigurginska Svitlana

COFFEE BREAK

14:55 – 15:15

SESSION XII / AIR SEPARATION & CRYOGENIC ENERGY STORAGE

Chairs: Chrz V., Arkharov I.

- 15:15 106** **LIQUID AIR ENERGY STORAGE - PART OF THE JOINT PROJECT "OFFSHORE WIND SOLUTION"**
Großmann Björn, Eggers Detlef, Bobsin Philipp, Wendt Christian, Matthies Rene, Ebert Kevin, Glück Nikolai
- 15:35 098** **ENERGY AND EXERGY ANALYSIS OF USING LIQUID AIR FOR GENERATING AIR CONDITIONING AND POWER FOR DOMESTIC BUILDINGS**
Ahmad Abdalqader, Al-Dadah Raya, Mahmoud Saad
- 15:55 008** **EXERGY-BASED METHODS FOR AIR SEPARATION**
Tesch Stefanie, Morosuk Tatiana, Tsatsaronis George
- 16:15 086** **IDENTIFICATION OF DETERIORATED COMPONENTS IN AN AIR SEPARATION PLANT AND EVALUATING THEIR IMPACT ON OVERALL PERFORMANCE THROUGH STEADY STATE SIMULATION**
Singla Rohit, Chowdhury Kanchan
- 16:35 091** **ANALYSIS FOR A SAFER DESIGN OF HIGH PRESSURE OXYGEN PRESSURE REDUCING STATIONS IN STEEL PLANTS**
Posa Lokesh, Ghosh Parthasarathi, Chowdhury Kanchan
- 16:55 030** **CRYOGENICS-BASED ENERGY STORAGE CONCEPTS: EVALUATION USING EXERGY-BASED METHODS**
Hamdy Sarah, Tatiana Morosuk, George Tsatsaronis

CLOSING CEREMONY / POSTER AWARD / FAREWELL

17:15 – 17:450

CONFERENCE DINNER

19:30 – 23:00

FRIDAY, MAY 19, 2017

TECHNICAL EXCURSIONS

08:30 ILK DRESDEN

08:30 HZDR

12:30 LEIBNIZ INSTITUTE (IWF)

POSTERS A1

- A1 004 **CRYOGENIC SYSTEM AND TEMPERATURE CONTROL OF SUPERCONDUCTING WIGGLERS WITH INDIRECT COOLING**
Bragin A.V., Khruschev S.V., Mezentsev N.A., V.Lev, Shkaruba V.A., Tsukanov V.M., Syrovatin V.M., Tarasenko O.A., Volkov A.A., Zolotarev K.V.
- A1 027 **EXERGETIC ANALYSIS OF REVERSE BRAYTON CRYOCOOLER FOR DIFFERENT COOLING LOADS AT 65 K FOR HTS CABLES**
Dhillon Aman Kumar, Dutta Rohan, Ghosh Parthasarathi
- A1 032 **THERMAL PERFORMANCE OF A HELIUM PULSATING HEAT PIPE**
Pfothenhauer John, Fonseca Luis Diego, Miller Franklin
- A1 033 **A MODEL FOR MANUSCRIPT SUBMITTED TO THE 14TH IIR CONFERENCE ON OVERVIEW OF THE LONG-BASELINE NEUTRINO FACILITY CRYOGENIC SYSTEM**
Montanari David, Adamowski Mark, Bremer Johan, Delaney Michael, Diaz Aurélien, Doubnik Roza, Haaf Kevin, Hentschel Steve, Norris Barry, Voirin Erik
- A1 035 **NUMERICAL STUDY ON FLOW CONDENSATION IN SUBCOOLED OXYGEN BEND PIPES OF LIQUID ROCKET**
Zhu Kang, Ma Yuan, Li Cui, Li Yanzhong
- A1 036 **STUDY ON PROPAGATION OF TEMPERATURE DISTURBANCE IN INDIRECT-DRIVE INERTIAL CONFINEMENT CRYOGENIC TARGET SYSTEM**
Li Cui, Li YanZhong, Chen PengWei, Zhao Jun, Zheng Jiang
- A1 040 **THE GERSEMI VERTICAL CRYOSTAT AT FREIA**
Santiago Kern Rocío, Thermeau Jean-Pierre, Gajewski Konrad, Hermansson Lars, Eriksson Johan, Bujard Philippe, Junquera Tomás, Dieudegard Florian, Ruber Roger
- A1 049 **HIGH POROSITY OPEN-CELL METAL FOAM AS POTENTIAL CANDIDATE FOR SPACE CRYOGENIC RADIATOR**
Dixit Tisha, Ghosh Indranil
- A1 062 **DRASTIC INCREASE OF EFFICIENCY OF INDUCTION-DYNAMIC DEVICES BY USING CRYOGENIC COOLING: EXPERIMENTAL EVIDENCE**
Bolyukh V.F., Oleksenko S.V., Katkov I.I.
- A1 064 **INFLUENCE OF LASER EXCITATION ON INVERSE PROXIMITY EFFECT IN BIOI/NB NETEROSTRUCTURES**
Lotnyk Dmytro, Komanický Vladimír, Bunda Viktor, Feher Alexander
- A1 066 **MODIFIED CALIBRATION FREE METHOD FOR AC MAGNETIZATION LOSS MEASUREMENT**
Lubomír Frolek, Jozef Pitel, Juraj Tančár
- A1 068 **DESIGN AND DEVELOPMENT OF CRYOGENIC SYSTEM FOR CRYOGENIC UNDULATOR AT NSRRC**
Yu Yung-Teng, Huang Jui-Che, Yang Chin-Kang, Chang Cheng-Hsing, Jan Jyh-Chyuan, Chang Cheng-Hsiang, Hwang Ching-Shiang
- A1 070 **RESEARCH OF PARTIAL HYBRID COMPRESSION TECHNOLOGY APPLIED TO ULTRA-LOW TEMPERATURE REFRIGERATION AND AIR LIQUEFACTION**
Staicovici Mihail-Dan

- A1 077 DESIGN OF CRYOGENIC TEST FACILITY FOR TURBO-EXPANDER OF DIFFERENT CONFIGURATIONS FOR LIQUID HELIUM PLANT**
Patel Vishal, Sahu AnantaKumar, Dave Haresh, Saikiran Paramkusam, Shah Bhagyashri, Prajapati Dhaval, Vyas Hardik, Thummar Pintu, Shah Ronak, Nema Priya, Mamgain Nitin
- A1 079 DESIGN OF EFFICIENT OIL COALESCER FOR HELIUM COMPRESSOR AND OIL REMOVAL SYSTEM**
Patel Vishal, Sahu AnantaKumar
- A1 095 DEVELOPMENT OF A CRYOCOOLER SET-UP DEDICATED TO THE CHARACTERIZATION OF HIGH SENSITIVITY SUPERCONDUCTING RADIOFREQUENCY COILS**
Michel Geahel, Laurène Jourdain, Georges Willoquet, Jean-Christophe Ginefri, Luc Darrasse, Cornelis Jacominus van der Beek, Javier Briatico, Marie Poirier-Quinot
- A1 102 EFFECT OF GOLD COATING ON EMISSIVITY AND ABSORPTIVITY OF TI-6AL-4V ALLOY**
Frolec Jiří, Králík Tomáš, Musilová Věra, Urban Pavel
- A1 105 EFFECT OF THERMAL RADIATION ON LOW TEMPERATURE MEASUREMENT FOR VARIOUS TYPES OF TEMPERATURE SENSOR INSTALLATIONS**
Pavel Urban, Pavel Hanzelka, Tomáš Králík, Ivan Vlček, Aleš Srnka
- A1 111 EFFECT OF TEMPERATURE VARIATION ON COLD ELECTRONICS BASED LC OSCILLATOR FOR RRR MEASUREMENT**
Karunanithi Rangasamy, Sagar Pankaj, Singh Gour Abhay

POSTERS A2

- A2 022 A HYDROSTATIC PRESSURIZATION TEST OF HIGH PRESSURE HELIUM GAS STORAGE VESSELS AT IPR**
Sharma Rajiv, Tanna Vipul, Patel J .C., Panchal Rohit, Nimavat Hiren, Srikanth GLN, Patel Ketan, Shah Pankil, Panchal Pradip, Christian Dikens, Sonara Dasarath, Garg Atul, Bairagi Nitin, Patel Rakesh, Mahesuria Gaurang, Purwar Gaurav, Pradhan Subrata
- A2 087 COMPARISON OF DIRECT EXPANSION AND COMBINED DIRECT EXPANSION AND ORGANIC RANKINE CYCLE FOR POWER GENERATION BY UTILIZING LNG COLD ENERGY**
Joy Jubil, Chowdhury Kanchan
- A2 097 STUDY AND OPTIMIZATION OF ENERGY CONSUMPTION IN AN LNG PLANT**
Ahmed Belgacem, Sarah Hamdi, Yahia Haniz
- A2 107 LAB-SCALE HELIUM LIQUEFIER**
Tobias Adler
- A2 116 BOIL-OFF PREVENTION AND THERMAL MODELLING OF LNG FUELLING STATIONS**
Kováčová Irina, Chrz Václav
- A2 117 THE PURITY OF LIQUID HELIUM REVISITED**
Gabal Miguel, Sesé Javier, Rillo Conrado, Spagna Stefano
- A2 118 METHODS OF ENHANCEMENT OF PORTABLE CRYOGENIC SYSTEMS UP TO THE RANGE OF 85K TEMPERATURE**
Mostytskyi Andrii, Baklan Oleg, Litvinenko Maxim
- A2 119 HEAT TRANSFER ANALYSIS OF PUMP SUMP FOR LNG**
Pavlenko Daria, Chrz Václav

POSTERS C1

- C1 002 USING LIQUID NITROGEN FOR CONIFER PLANT SEED CONSERVATION**
Arapetian Emma, Usatenko Yuriy, Scherbina Marina

SOCIAL EVENTS

Welcome Party on Monday, May 15, 2017

Time: 19:30 - 21:00

Place: **at the Dorint hotel** (= conference site)

Participation is complimentary for registered participants and accompanying persons.

The Welcome Party is sponsored by [HEROSE GmbH](#).



Conference Dinner on Thursday, May 18, 2017

Time: 19:30 – 23:00

Place: **Italienisches Dörfchen Restaurant** (Theaterplatz 3)

- walking distance from the conference site, 15 min.

The conference dinner is included in registration fees. Conference badges and invitation cards are necessary.

Tickets for other guests are available at the registration desk.

TECHNICAL VISITS ON FRIDAY, MAY 19, 2017

The updated information will be announced on the info-poster in the registration area.

Excursions ILK Dresden + Leibniz Institute

Institute for Air Handling and Refrigeration (ILK)

Commission: A1, A2, C1

Address: Bertolt-Brecht-Allee 20, 01309 Dresden, Germany, www.ilkdresden.de

Leibniz Institute for Solid State and Materials Research Dresden (IWF)

Commission: A1, A2

Address: Helmholtzstraße 20, 01069 Dresden, Germany, www.ifw-dresden.de

08:30 – meeting point in front of the Dorint hotel

08:45 – departure (by a taxi, included in the fee)

09:00-11:30 – excursion (2-3 groups)

11:30 to 12:15 – refreshment & discussion

12:30 – departure from ILK Dresden to the IWF (by a taxi, included in the fee)

No conference transport from the ILK Dresden back to the Dorint hotel is provided.

A taxi can be arranged on request (your own payment)

Excursion IWF only

12:20 – meeting point in front of the Dorint hotel

12:30 – departure to the Leibniz Institute (by a taxi, included in the fee)

13:00-14:30 – excursion (2 groups)

No conference transport from the Leibniz Institute back to the Dorint hotel is provided.

A taxi can be arranged on request (your own payment)

Helmholtz-Zentrum Dresden-Rossendorf e. V.

Commission: A1, A2

Address: Bautzner Landstraße 400, 01328 Dresden, Germany, www.hzdr.de

8:20 – meeting point on front of the Dorint hotel

8:30 – departure by a taxi

9:30-11:45 – excursion

12:00 – departure

12:45 – Main railway station Dresden / Dorint

EXHIBITION

The Cryogenics Exhibition will take place in the Lohengrin Hall on the same floor as the main lecture room and registration area.

The exhibition will be open for all registered participants from Tuesday, May 16, 9:00 till Thursday, May 18, 16:00.

Registered exhibitors (updated on April 11, 2017)

Best Systemy Grzewcze

Świdnica, Poland
www.systemy-grzewcze.pl

Chart Ferox, a.s.

Děčín, Czech Republic
www.chart-ferox.com

Cryoandmore Budzylek GbR

Neuss, Germany
www.cryoandmore.de

Cryo Diffusion SAS

Lery, France
www.cryodiffusion.com

Cryophysics GmbH

Darmstadt, Germany
www.cryophysics.de

Cryotec Anlagenbau GmbH

Wurzen, Germany
www.cryotec.de

Cryotherm GmbH & Co.KG

Kirchen (Sieg), Germany
www.cryotherm.de

Flowserve Essen GmbH

Essen, Germany
www.flowserve.de

ILK Dresden

Dresden, Germany
www.ilkdresden.de

ISISAN Kayseri Serbest Bolge Subesi

Kayseri, Turkey
www.isisan.com.tr

Dr. Jürgen Christian Müller

Frankfurt am Main, Germany
www.jcmueller.de

NEXANS Deutschland GmbH

Hannover, Germany
www.nexans.de

PBS Velká Bíteš

Velká Bíteš, Czech Republic
www.pbsvb.cz

RUAG Space GmbH

Vienna, Austria
www.ruag.com/thermal

Stöhr Armaturen GmbH & Co.KG

Königsbrunn, Germany
www.stoehr-valves.de

tec-lab GmbH

Taunusstein, Germany
www.tec-lab.de

WEKA AG

Bäretswill, Switzerland
www.weka-ag.ch

TOP CONFERENCE PARTNER

ILK Dresden



The **ILK Dresden** is an independent research enterprise with the legal status of a non-profit limited liability company/institute.

The **ILK Dresden** operates as a research institute with approximately 150 employees in the field of statutory industry-related research, development and technology transfer, mainly for

- Cryogenics
- Low Temperature Physics (cryophysics)
- Cryomedicine and cryobiology
- Refrigeration and refrigerating equipment
- Heat pump technology
- Heat and mass transfer
- Refrigerants and working fluids
- Heating, ventilation, air conditioning, including fluid mechanics and acoustics
- Air pollution control, particle separation, clean air technology
- Utilization of solar energy
- Applied energy engineering, energy recovery
- Water purification, desalination
- Material engineering
- Measurement and control technology
- Sensor development

The total R&D service portfolio of the ILK comprises:

- Process and product development
- Studies, consulting and expertise
- Scientific technical services, as well as experimental testing and analyses and investigations of facilities, components and materials according to international standards
- Innovative planning
- Manufacturing and prototyping

The **ILK Dresden** is structured into main departments. These departments comprise different fields of technology, which are subdivided into technical departments and working groups.

The **ILK Dresden** has an experimental test area of more than 3000 m² with 60 experimental and test facilities as well as more than 25 scientific and technical laboratories at its disposal.

At the **ILK Dresden** further education of students is facilitated by ILK's numerous contacts with different kinds of universities in the form of conducting and supervising internships, master, diploma, and PhD-theses.

CONFERENCE ORGANIZATION



ICCEX Ltd.

Praha, Czech Republic

www.iccex.cz

Contact person: Romana Kočová / romana@iccex.cz