

DRAFT MINUTES**Indianapolis (IN), Tue June 25, 2024, 1:00 PM - 3:00 PM (CDT).****Hybrid, In-Person and Virtual Remote Participation.****In-Person: JW Marriott Room 310 (3), Indianapolis, IN.****Meeting summary for UNSC-IIR Meeting (06/25/2024)****Quick recap.**

First, there was a research presentation on the principles and potential of electrochemical heat pumps. Then, the committee discussed the financial situation of the USNC. The committee also deliberated on future plans, the role of USNC representing a member country, and potential policy changes that might affect their category. Lastly, the USNC agreed to support a proposal from Purdue University to host the 2031 International Congress on Refrigeration and Air Conditioning.

Action Items:

1. Brian and Kashif to follow up with DOE to secure the payment for US membership dues before October 31st, 2024.
2. Lorenzo to request an extension from IIR until October 31st, 2024 to pay the US membership dues for Category 3.
3. Purdue University to provide a backup payment to IIR if DOE payment is not received by October 31st, 2024.
4. Purdue University team (Eckhard Groll, Craig Bradshaw, Davide Ziviani, and Brian Barrett) to prepare a proposal to host the IIR International Congress of Refrigeration in 2031 by December 31st, 2024.
5. Lorenzo to request letters of support from ASHRAE, NIST, and DOE for the proposal to host the IIR International Congress of Refrigeration in 2031.
6. David Ziviani to distribute the updated membership list for 2024 to the committee.
7. Incoming officers (Yunho Hwang, Stefan Elbel, Harshad Inamdar, Davide Ziviani, Hanlong Wan, and Harrison Skye) to coordinate with current officers for a smooth transition by July 1st, 2024.
8. Lorenzo to distribute the presentation materials from Didier Coulomb to the committee.

1. CALL TO ORDER/OPENING COMMENTS/ INTRODUCTION OF MEMBERS AND GUESTS

L. Cremaschi called the meeting to order at 2:15 pm CDT.

Attendees

- Lorenzo Cremaschi
- Yunho Hwang
- Harshad Inamdar
- Xudong Wang

- Eric Ramon
- Rohit Dhumane
- Junyoung Kim
- Massoud Neshan
- Stefan Elbel
- Brian Fricke
- Eckhard Groll
- Riley Barta
- Vance Payne
- Neal Lawrence
- Kashif Nawaz
- SA Sherif
- Davide Ziviani
- Bill Murphy
- S.A. Sherif
- Junyoung Kim
- Didier Coulomb
- Yosr Allouche

2. REVIEW OF AGENDA

No changes to the agenda

3. APPROVAL OF MINUTES – Meeting of Jan 23, 2024

The meeting minutes for the USNC Meeting in Chicago on Jan 23, 2024, were approved unanimously by the USNC Committee.

4. REVIEW OF ACTION ITEMS – Meeting of Jan 23, 2024

1: L. Cremaschi to discuss better pipeline of membership through ASHRAE membership.
→ASHRAE appears not interested in hosting USNC-IIR as an additional committee under its organization.

5. RESEARCH PRESENTATION

2023 USNC/IIR Outstanding Young Research Paper Award: Junyoung Kim, Purdue University

“Evaluation metrics of electrochemically active working fluids for heat pumping cycles”

(Junyoung Kim, James E. Braun, Eckhard A. Groll, Davide Ziviani (2023).

Int. J. of Refrigeration, 152, 50-61, <https://doi.org/10.1016/j.ijrefrig.2023.05.016>

In a study, Dr. Kim discussed the principles and potential of electrochemical heat pumps. He explained the working cycle and assessed various working fluids using thermodynamic modeling. The study found that certain working fluid pairs can produce high COP for heat pump applications. Challenges associated with low power density and the need for a compact design were also discussed.

6. UPDATES BY THE IIR DIRECTOR Coulomb

Didier presented the IIR 's recent strategic moves to address global refrigeration issues through partnerships, strengthening national committees, and increased training. He also announced organizational changes, including upcoming conferences on natural refrigeration, electrochemical technologies, and solid-state technologies. The next IIR congress was confirmed for South Korea in August 2027, with the possibility of the US hosting the IIR congress in 2031.

Didier informed the committee about the financial situation, stating that expenses would rise while contributions from member countries and private members were not increasing. He mentioned that they expected to have deficits this year and hoped for better financial results next year.

Lorenzo asked Didier to send him information about the IIR meeting for distribution to the USNC members and interested persons. The committee members also discussed the ongoing financial situation, particularly the shortfall from the DOE contributions. Brian Fricke was working on getting a contribution from the DOE to help cover the shortfall. The committee agreed on the need for a single payment to cover the current outstanding invoice.

7. FINANCIAL REPORT STATUS Elbel

Stefan Elbel gave an update on the financial status of the USNC/IIR.

- ASHRAE payments have now resumed
- NIST 2023 payment is expected to be received in the next month.
- DOE is behind on payments; still waiting for June 2022 and 2023 payments
- The USNC-IIR has about \$5,000 in its account right now due to missing payments from DOE.

Stefan Elbel and Lorenzo discussed the USNC's financial situation and future plans, acknowledging potential changes that might lower their category status. Lorenzo emphasized the need for a clear plan and compliance but couldn't approve the 2023-24 payment to Paris due to funding shortages. The committee also discussed their role as a member country, their willingness to collaborate, and potential misalignments with the Department of Energy (DOE). Lastly, they reviewed a proposal that Lorenzo emailed to Didier in May 2023. They expressed frustration about past and present category drops and proposed reaching out to US Department of Energy connections for support.

There was also a discussion on the confusion and discrepancy regarding the payment and membership fees for corporate members. They agreed on the need for a solution, with Lorenzo suggesting a letter to the relevant authority to address the issue. Lorenzo also proposed an extension of the deadline for USNC 2023-24 payment due to administrative changes in the DOE office. The discussion included plans for additional funding for FY25 and the expected payment commitment from the DOE. Yosr emphasized the importance of highlighting the benefits of membership to government budgets.

8. MEMBERSHIP Ziviani

Davide will ask for a list of current US-based IIR members to IIR headquarter in Paris and will review and update the list as needed.

9 DISCUSSION USNC-IIR Status and Future Plan All

Stefan and Lorenzo discussed a proposal for an extension to pay their category 3 dues to October 30, 2024, with either by the DOE dues being paid or by asking Purdue University to cover a contribution of 10K if DOE contributions are not received. They confirmed their commitment to stay in Category 3 until May 2025, with a possible reevaluation of their categorization starting

June 1, 2025. Didier discussed the difficulties of the US police situation and its potential impact on their budget.

The committee agreed on the proposal, with Didier assuring his availability for assistance while in Purdue next month. They also discussed the need for sustainable strategies to retain and secure membership, potential partnerships with other organizations, and the importance of a systematic approach.

10. UPCOMING COMMISSION MEETINGS Fricke

Commission meetings will be held at Purdue Conferences and Gustav Lorentzen Conference this summer 2024.

11. TECHNICAL PROGRAMS

11a. Purdue Conference & USNC Short course Groll

Herrick Lab Conference at Purdue University Updates and Challenges

Eckhard Groll shared the latest update on the Purdue Conference, which is scheduled to take place at Purdue on July 15-18, 2024. He expressed optimism about exceeding the enrollment target of 30 and predicted a surge in revenue after deducting expenses. Eckhard also noted that this year's conference would have fewer papers and attendees due to capacity limits and the effects of the Covid-19 pandemic. He highlighted that several eminent speakers were lined up and mentioned some changes in their process, including a decrease in the number of tracks. Eckhard also discussed challenges faced by visa restrictions from certain countries and the need for more submissions from Europe.

11b. Gustav Lorentzen Conference on Natural Refrigerants Hwang

The conference is hosted by the University of Maryland (College Park, MD) on Aug 11-14, 2024. Over 250 abstracts were received, and 150 papers will be presented at the conference.

11c Other technical programs Groll & Ziviani

IIR 2031 Congress Proposal and Support

Davide led the discussion on preparations for the 2031 International Congress on Refrigeration and Air Conditioning to be hosted by Purdue University. The proposal, which needs support from the USNC, was to be submitted by November 31st. Eckhard emphasized the importance of securing sponsorship and support letters from major organizations like DOE, NIST, and ASHRAE. A motion to support the proposal was passed.

12 Incoming USNC-IIR Officers for the 2024 – 2028 Cycle Cremaschi

The officers for the next four years were elected. They are as follows:

UNSC-IIR Officers 2024 – 2028:

Chairman: Yunho Hwang (University of Maryland)

Vice-chair: Stefan Elbel (Creative Thermal Solution and TU Berlin)

Secretary: Harshad Inamdar (Rheem Manufacturing Company)

Treasurer: Davide Ziviani (Purdue University)

Webmaster: Hanlong Wan (Pacific Northwest National Laboratory) (– continuing officer)

Membership: Harrison Skye (NIST)

13. ANNOUNCEMENT OF NEXT MEETING

The conversation ended with plans to continue the hybrid meeting format for the next meeting in February 2025.

DRAFT



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TC Sign-in Sheet

Meeting Info: USNC-11R Date: 06/25/2024

Name	Affiliation	E-mail	Member (Voting, Corresponding, PCM, or Guest?)	YEA Member? (Yes/No)	Int'l Member? (Yes/No)
Lucretia Cremaschi	Auburn Univ.	lbc0247@auburn.edu			
HARSHAD INAMDAR	RHEEM MANUFACTURING	hinamdor@alummi.purdue.edu			
BRIAN FRICKE	ORNL	FRICKEBA@ORNL.GOV			
Yunho Hwang	U of Maryland	yhhwang@umd.edu			
Xudong Wang	AHRI	Xwang@ahrinet.org			
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Massoud Neshan	Arneg USA	neshan@gmail.com			
Stefan Elbel	TU Berlin CTS	stefanelbel@gmail.com			

Name	Affiliation	E-mail	Member (Voting, Corresponding, or Guest?)	YEA Member? (Yes/No)
Nily Barta	Purdue Univ.	bartar@purdue.edu	/	/
Vance Payne	NIST	Vance.payne@nist.gov		