



## Decarbonization



# Decarbonization activities at AIST

Decarb SC Liaison Taskforce

2024 Fall meetings

Association for Iron & Steel Technology

# Agenda

---

- ✦ **Welcome – David Marshall (Sub-Committee Chair)**
- ✦ **Request Minute-taker**
- ✦ **Past Liaison Task Force (18-June) – David M.**
- ✦ **AIST planned fall-2024 events – David M.**
- ✦ **Webinar planning – David M.**
- ✦ **Liaison exchange / AISTech 2025 – David M.**
- ✦ **Technical Presentation: “Global Status of CCS”**
- ✦ **Next Meeting: Wed 12/4/2024**



# AIST DSC / Liason roster

*under Energy & Utilities Technical Committee (EUTC)*

| Full Name                   | Company  | Position        |
|-----------------------------|--|-----------------|
| Mr. David Marshall          | Performance Improvement Inc.                   | – TC Chair      |
| Dr. Felix Firsbach          | Badische Stahl-engineering GMBH                | – TC Vice Chair |
| Mr. Frank L. Baumgardner    | Nucor Steel-Decatur LLC                        | PTTC            |
| Mr. Deni Bellai             | Hugo MIEBACH GmbH                              | CSRTC           |
| Mr. Robert E. Brunelli      | TMEIC Corporation Americas                     | HSRTC           |
| Dr. Vincent F. Chevrier     | Midrex Technologies, Inc.                      | DRITC           |
| Mr. Corey A. Clevenger      | Superior Engineering LLC                       | PCMTC           |
| Dr. Stavros G. Fountoulakis | ArcelorMittal Global R&D - East Chicago        | GTC             |
| Mr. John R. Hill            | Cleveland-Cliffs Inc.                          | EUTC            |
| Mr. Ramesh V. Khajjayam     | Primetals Technologies USA LLC                 | EATC            |
| Mr. James M. Lash           | AJF, Inc.                                      | RSTC            |
| Mr. William F. Lucas        | Fives ST                                       | LPTC            |
| Mr. Joseph H. Morey, III    | Morey Industrial Consulting                    | IMTC            |
| Dr. Michael F. Peintinger   | Smart Steel Technologies Inc.                  | DATC            |
| Mr. Kyle W. Vanover         | Steel Dynamics Inc. - Flat Roll Group - Butler | ESTC            |
| Dr. Igor Vieira             | Nucor Steel Arkansas                           | MPPATC          |



# AIST DSC / Activities to 2024

*under Energy & Utilities Technical Committee (EUTC)*

- ✦ **AIST „Decarbonization“ definition document with common agreement issued**
  
- ✦ **Sustainable Technologies for Steel Manufacturing Grant (annual)**
  - ✦ AIST established Grant Selection Committee
  - ✦ US\$30,000 per award
  - ✦ This grant was established to challenge university teams from engineering, scientific and mathematical departments at North American universities to submit proposals for grant funding in the theme area of sustainable technologies for steel manufacturing, including decarbonization, CO<sub>2</sub> reduction and carbon capture, utilization and storage (CCUS), among other related technologies.
  
- ✦ **Cooperation via Decarbonization Liaison Network**
  - ✦ Finalized decarb definitions in joint effort [https://www.aist.org/AIST/aist/AIST/Technology\\_Committees/AIST-Liaison\\_Decarbonization\\_decarb\\_definition\\_Rev\\_E-06-July-2022.pdf](https://www.aist.org/AIST/aist/AIST/Technology_Committees/AIST-Liaison_Decarbonization_decarb_definition_Rev_E-06-July-2022.pdf)
  - ✦ Collected 3 topics where decarb is influencing TC work and technical field
  
- ✦ **AIST Topic Specialist Workbook across technical fields established**
  
- ✦ **AISTech 2024 - Columbus**





# AIST DECARBONIZATION WEBINARS

Decarbonization Opportunities  
for Industry Education

[AIST.org](https://www.aist.org)



# AIST DSC / Webinars listening

under Energy & Utilities Technical Committee (EUTC)

✦ [https://www.youtube.com/playlist?list=PL0KTY\\_xZ4Cf3H\\_WcTfHaUZi7y5UglxCZ8](https://www.youtube.com/playlist?list=PL0KTY_xZ4Cf3H_WcTfHaUZi7y5UglxCZ8)

✦ **Completed webinars added to** <https://www.aist.org/conference-expositions/webinars/webinar-recaps>:

- ✦ Decarb 101 & 102 for Young professionals
- ✦ Decarbonizing EAF plants
- ✦ Oxyfuel combustion fundamentals & technologies

| Time           | Title   | Participants                     | Organizers                       |
|----------------|---|----------------------------------|----------------------------------|
| 05/06/<br>2021 | Decarbonization Pathways – Europe & North America   | 230 attendees<br>in 24 countries | David Marshall<br>Felix Firsbach |
| 10/06/<br>2021 | Decarbonizing Background and Current BF Fuel Strategies   | 184 in 20<br>countries           | David Marshall<br>Felix Firsbach |
| 12/13/<br>2022 | Decarbonization 101 - Exploring Life Cycle Sources and Measuring of CO <sub>2</sub> Emissions                         | 265 in over 15<br>countries      | David Marshall<br>Felix Firsbach |
| 03/30/<br>2023 | Decarbonization 102 - Hydrogen Ironmaking - Managing Expectations of H <sub>2</sub> Transformation and Its Many Color | >200 in over 10<br>countries     | Mike Grant<br>Britt MacKinnon    |
| 04/20/<br>2023 | Decarbonization of EAF steelmaking  | 144 in over 10<br>countries      | David Marshall<br>Felix Firsbach |
| 10/26/<br>2023 | OxyFuel technologies with different hydrogen carriers   | >165 in over 10<br>countries     | Euan Evenson<br>Mike Grant       |

## ✦ Note

- ✦ Webinars are **our tool to scrape the surface** globally for new information without repeating what was said during AISTech and other conferences.
- ✦ Very important but difficult: **Commercialism**.



# AIST DECARBONIZATION WEBINARS

- Steelmaking with Zero Carbon Iron Units
- Decarbonizing: Background and Current BF Fuel Strategies
- H<sub>2</sub> Injection into the Blast Furnace
- MENA Webinar: Environmental Sustainability and Energy Conservation
- Computational Modeling and Field Validation of Advanced Thermal System for Energy, Carbon and NOx Reduction



**AIST.org**

*All webinars developed by AIST Technology Committees and Member Chapters*





# AIST DECARBONIZATION WEBINARS

- Decarbonization 101: Exploring the Lifecycle Sources and Measuring of CO<sub>2</sub> Emissions
- Decarbonization 102: Hydrogen Ironmaking-Managing Expectations of H<sub>2</sub> Transformation & Its Many Colors
- The Evolution, Metallurgy and Operational Experience of EAF and SAF Steelmaking
- Oxy-Fuel Technologies with Different Hydrogen Carriers
- Decarbonizing the Global Steel Industry (upcoming in 2024)



**AIST.org**

*All webinars developed by AIST Technology Committees and Member Chapters*



# AIST DSC / Liaisons exchange, 2025 Planning

*under Energy & Utilities Technical Committee (EUTC)*

## ✦ Spring 2025 Meetings, Conferences and Workshops

### ✦ AISTech 2025 – Nashville

- ✦ DSC is, as always, organizing joint sessions with different committees
- ✦ DSC, is NOT competing with other committees
- ✦ **We need you to support the link** between your committee's papers chair and the DSC's papers chair **before 15th September**
- ✦ Question:

**What does your committee want to do regarding decarbonization and how can we create valuable sessions for 2025**



# AIST DSC / Fall meetings

---

*under Energy & Utilities Technical Committee (EUTC)*

## **Please use these slides**

**Topic:** Communication within AIST

**Registration:** These slides are for free sharing in your committee

**Please use them during your committee's**

AISTech meeting and **latest during the fall meeting**

